

UNISYS

**MAPPER[®] User
Workshop (4R2/36R1)
Student Guide
Volume 2**

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9

Totalize

Objectives

Upon completion of this module, you should be able to

Obtain arithmetic totals of data in reports using the TOTALIZE (TOT) function

Use the following features of TOT

Horizontal arithmetic

Vertical arithmetic

Justify totals

Round totals

Obtain subtotals

Use constant values

Fill fields with constant data

Copy contents of one field to another

Options to modify the action of TOT

Learning Sequence

- **Totalize function**
- **Horizontal arithmetic**
- **Rounding**
- **Constants**
- **Justification**
- **Cumulation**
- **Vertical arithmetic**
- **Subtotaling**
- **Options**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

Report Calculations

- **Four functions: A (not discussed in this course), TOT, CAL, ICAL**
- **TOT**
 - Horizontal (line by line) arithmetic
 - Vertical (grand total by field) arithmetic
 - Averages
 - Subtotals
 - Rounding
 - Cumulation
 - Moving field contents
 - Filling fields
- **Produces a result**
- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Perform math operations'
 - Select 'Totalize data'
 - Fill in the mask
- **Direct Access**
 - Enter 'TOT rdc f' on line 0
 - Fill in the mask

Line by Line Arithmetic

- Add, subtract, multiply, and divide fields (+, -, *, /)
- Left to right priority
- Result placed in separate field (=)
- Only one multiply or divide may be done on a line
- If result is decimal, result field is filled with trailing zeros

| Line# 1 | Roll# tot - | | | | | | | 1H20 |
|----------------------------|---------------|------------|---------------|---------------------|-------------|-------------|------------|------|
| .DATE 14 NOV 89 10:33:48 | | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | B0262 | | |
| *ORDER NUMBER | PRODUCT TYPE | .ORDER QTY | CUSTOMER NAME | .UNIT COST | .TOTAL COST | .ORDER DATE | DLURY DATE | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Example

- Multiply unit cost by order qty, placing result in total cost

| TOTALIZE | | | | | | | | |
|----------------------------|--------|----------|-------|---------------------|--------|-------|-------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDER | DLVRY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | |
| | | + | * | = | | | | |

| Line# | Roll# | DATE | TIME | RID | IN | DATE | TIME | RESULT |
|----------------------------|-------------|------------------|----------|---------------------|--------|-----------|------|----------|
| 1 | 1 | 14 NOV 89 | 10:33:48 | | | 13 NOV 89 | | MAPCOORD |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDER | DLVRY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | 250 | 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | 320 | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | 875 | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | 162.500000 | 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | 480 | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | 1500 | 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | 160 | 870629 | 870708 | | |
| END REPORT | | | | | | | | |

Rounding the Result

- Same as previous page except round to nearest one hundredth

- R option - R100000 through R.000000000000000001

| TOTALIZE | | | | | | | | |
|-----------------------------------|--------------|-----------|---------------|---------------------|------------|------------|------------|-------|
| r.01 MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLURY DATE | |
| ***** | | | | | | | | |
| | | + | | * | = | | | |

| Line# | Roll# | | | | | | | RESULT |
|---------------------------|--------------------|-----------|---------------|---------------------|------------|------------|------------|--------|
| .DATE | 14 NOV 89 10:33:48 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLURY DATE | |
| ***** | | | | | | | | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 250.00 | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 320.00 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 875.00 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 162.50 | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 480.00 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 1500.00 | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 160.00 | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Using a Constant

- Place an operator and a constant value in a field

| TOTALIZE | | | | | | | | |
|----------------------------|---------|-------|----------|---------------------|-------|-------|------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER | PRODUCT | ORDER | CUSTOMER | UNIT | TOTAL | ORDER | DLRY | |
| *NUMBER | TYPE | QTY | NAME | COST | COST | DATE | DATE | |
| *-----* | | | | | | | | |
| ***** | | | | | | | | |
| | | | | *1.1 | = | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

- Multiply unit cost by 1.1

| Line# | Roll# | | | | | | | RESULT |
|----------------------------|--------------------|-------|---------------|---------------------|-------------|--------|--------|--------|
| .DATE | 14 NOV 89 10:33:48 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER | PRODUCT | ORDER | CUSTOMER | UNIT | TOTAL | ORDER | DLRY | |
| *NUMBER | TYPE | QTY | NAME | COST | COST | DATE | DATE | |
| *-----* | | | | | | | | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 11.0000000 | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 17.6000000 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 27.5000000 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 17.8750000 | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 17.6000000 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 165.0000000 | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 17.6000000 | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Using a Constant

- Place rounded result in the same field being multiplied

| TOTALIZE | | | | | | | | |
|------------------------------------|--------------|-----------|---------------|---------------------|------------|------------|------------|-------|
| r. 01 MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLURY DATE | |
| *-----* | | | | | | | | |
| ***** | ***** | ***** | ***** | *1.1 | ***** | ***** | ***** | |
| | | | | = | | | | |

| Line# | Roll# | | | | | | | RESULT |
|---------------------------|--------------------|-----------|---------------|---------------------|------------|------------|------------|--------|
| .DATE | 14 NOV 89 10:33:48 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | B0262 |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLURY DATE | |
| *-----* | | | | | | | | |
| 700001 | HOE | 25 | SMITH, INC | 11.00 | | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 17.60 | | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 27.50 | | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 17.88 | | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 17.60 | | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 165.00 | | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 17.60 | | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Commas, Zeros, and Justification

- Place 'I' in field to receive commas
- Place 'D' in field to have commas deleted
- **J option** *above Mask (option line)*
 - Will affect result field (=) and grand totals (later)
 - J(x) where x is
 - c Insert commas, right-justify, suppress leading zeros
 - r Right-justify, suppress leading zeros
 - z Right-justify, leading zeros
 - l Left-justify
 - x Left-justify, fill with decimal zeros

} Below
Mask.

Justification Example

| Line# | Roll# | RESULT | | | | | | |
|---|-------|------------------------|---------|----------|------------|----------------|------------|-----------------|
| 1 | - | | | | | | | |
| .DATE 29 NOV 89 10:38:04 RID 3C 29 NOV 89 CCM | | | | | | | | |
| .Factors Base Report | | Corporate Factors Base | | | | C0004 | | |
| * Product | . Sub | . Produc. | . Whole | . Retail | . Sales | . Space | . Demo | |
| * Type | . Key | . Cost | . Sales | . \$\$\$ | . Commiss. | . Req | . Quantity | |
| | | | | | | . Demo Results | | |
| BLACKBOX1 | A | 13500 | 16,875 | 23625 | 2362.50 | 100 | 1 | 25,987.50000000 |
| BLACKBOX2 | A | 13600 | 17,000 | 23800 | 2380.00 | 110 | 2 | 26,180.00000000 |
| BLACKBOX3 | A | 13700 | 17,125 | 23975 | 2397.50 | 120 | 4 | 26,372.50000000 |
| BLACKBOX4 | B | 13800 | 17,250 | 24150 | 2415.00 | 130 | 10 | 26,565.00000000 |
| BLACKBOX5 | B | 13900 | 17,375 | 24325 | 2432.50 | 140 | 50 | 26,757.50000000 |
| BLACKBOX6 | C | 14000 | 17,500 | 24500 | 2450.00 | 150 | 100 | 26,950.00000000 |
| BLACKBOX7 | C | 14100 | 17,625 | 24675 | 2467.50 | 160 | 10 | 27,142.50000000 |
| BLACKBOX8 | D | 14200 | 17,750 | 24850 | 2485.00 | 170 | 20 | 27,335.00000000 |
| BLACKBOX9 | D | 14300 | 17,875 | 25025 | 2502.50 | 180 | 40 | 27,527.50000000 |
| END REPORT | | | | | | | | |

Horizontal Cumulation

- **Use the H option**
- **Enter '+' in fields to cumulate**
- **Each field to the right reflects the total of those added to the left**
- **Result field not needed**

Horizontal Cumulation Example

- Horizontally cumulate Space Req and Demo Quantity

| TOTALIZE | | | | | | | | | | |
|----------------------|-------|-----------|----------|----------|------------|---------|------------------------|----------------|--|-------|
| .Factors Base Report | | | | | | | Corporate Factors Base | | | C0004 |
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo | | | |
| * Type | . Key | . Cost | . Sale\$ | . \$\$\$ | . Commiss. | . Req | . Quantity | . Demo Results | | |
| ***** | | | | | | | | | | |
| | | | | | | + | + | | | |

| Line# | Roll# | | | | | | RESULT | | | |
|------------------------|-----------|-----------|----------|----------|------------|---------|------------------------|----------------|--|-------|
| .DATE | 29 NOV 89 | 10:38:04 | RID | 3C | 29 NOV 89 | CCM | | | | |
| .Factors Base Report | | | | | | | Corporate Factors Base | | | C0004 |
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo | | | |
| * Type | . Key | . Cost | . Sale\$ | . \$\$\$ | . Commiss. | . Req | . Quantity | . Demo Results | | |
| ***** | | | | | | | | | | |
| BLACKBOX1 | A | 13500 | 16875 | 23625 | 2362.50 | 100 | 101 | | | |
| BLACKBOX2 | A | 13600 | 17000 | 23800 | 2380.00 | 110 | 112 | | | |
| BLACKBOX3 | A | 13700 | 17125 | 23975 | 2397.50 | 120 | 124 | | | |
| BLACKBOX4 | B | 13800 | 17250 | 24150 | 2415.00 | 130 | 140 | | | |
| BLACKBOX5 | B | 13900 | 17375 | 24325 | 2432.50 | 140 | 190 | | | |
| BLACKBOX6 | C | 14000 | 17500 | 24500 | 2450.00 | 150 | 250 | | | |
| BLACKBOX7 | C | 14100 | 17625 | 24675 | 2467.50 | 160 | 170 | | | |
| BLACKBOX8 | D | 14200 | 17750 | 24850 | 2485.00 | 170 | 190 | | | |
| BLACKBOX9 | D | 14300 | 17875 | 25025 | 2502.50 | 180 | 220 | | | |
| END REPORT | | | | | | | | | | |

Copying Field Contents

- **Enter 'M' in field to be copied**
- **Enter '=' in receiving field**
- **Only one field may be copied**
- **Fields must be same size**

Copying Field Contents Example

- Copy product type to customer name

| TOTALIZE | | | | | | | | |
|----------------------------|--------|----------|-------|---------------------|----------|-------|-------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0276 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | |
| | M | = | | | | | | |

| Line# | Roll# | DATE | TIME | RID | 1H | 13 NOV 89 | CCM | RESULT |
|----------------------------|-------------|----------|-------------|---------------------|----------|-----------|-----|--------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0276 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 | HOE | 10.00 | 870622 | 870627 | | |
| 700002 | RAKE | 20 | RAKE | 16.00 | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 | SHOVEL | 25.00 | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 | HDC CLIPPER | 16.25 | 870626 | 870701 | | |
| 700005 | RAKE | 30 | RAKE | 16.00 | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 | LAWN MOWER | 150.00 | 870627 | 870705 | | |
| 700007 | RAKE | 10 | RAKE | 16.00 | 870629 | 870708 | | |
| END REPORT | | | | | | | | |

Filling Fields With Constant Values

- Enter '=' followed by constant to be placed in the field

| TOTALIZE | | | | | | | |
|----------------------------|---------|----------|-------|---------------------|----------|-------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0276 |
| *ORDER .PRODUCT | .ORDER. | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | . |
| *NUMBER. TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | . |
| ***** | | | | | | | |
| | =shovel | = 10 | | = 5.00 | | | |

- Note placement of constant values

| Line# 1 | Roll# - | | | | | | | RESULT | |
|----------------------------|--------------------|------------------|-------|---------------------|----------|--------|-------|--------|--|
| .DATE | 29 NOV 89 10:56:46 | RID | 1H | 13 NOV 89 | CCM | | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0276 | | |
| *ORDER .PRODUCT | .ORDER. | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | . | . | |
| *NUMBER. TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | . | . | |
| 700001 | shovel | 10 SMITH, INC | 5.00 | | 870622 | 870627 | | | |
| 700002 | shovel | 10 A&B SUPPLIES | 5.00 | | 870625 | 870701 | | | |
| 700003 | shovel | 10 GARDEN CTR | 5.00 | | 870625 | 870701 | | | |
| 700004 | shovel | 10 GARDEN STORE | 5.00 | | 870626 | 870701 | | | |
| 700005 | shovel | 10 HOME SUPPLIES | 5.00 | | 870626 | 870702 | | | |
| 700006 | shovel | 10 A&B SUPPLIES | 5.00 | | 870627 | 870705 | | | |
| 700007 | shovel | 10 SMITH, INC | 5.00 | | 870629 | 870708 | | | |
| END REPORT | | | | | | | | | |

Vertical Arithmetic

- **No receiving field (=) specified**
- **'+' in field to produce grand total**
- **'A' in field to produce field average**
- **If total is flagged (*), at least one item was alpha or blank**
- **Use '**' option to eliminate flag**

Vertical Arithmetic Example

- Grand total of order qty, average of unit cost

| TOTALIZE | | | | | | | | |
|----------------------------|--------|----------|-------|---------------------|----------|-------|--|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0276 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | | | | | | | | |
| | + | | a | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|----------------------------|-------------|------------------|----------------------------|---------------------|-----------|----------|--|--------|
| .DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | | 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | | 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | | 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | | 870629 | 870708 | | |
| . GRAND-TOTAL - | | | | | | | | |
| . UNIT COST | | | - AVERAGE = 35.60714285714 | | | | | |
| . ORDER QTY = | | | 140 | | | | | |
| END REPORT | | | | | | | | |

Subtotaling Example

| Line# 1 | Roll# | | | | | | | RESULT |
|--|-------|------------------------|----------|------------|------------|---------|------------|--------|
| .DATE 29 NOV 89 11:07:08 RID 3C 29 NOV 89 MAPCOORD | | | | | | | | |
| .Factors Base Report | | Corporate Factors Base | | | | | | C0244 |
| * Product | . Sub | . Produc. | . Whole | . Retail | . Sales | . Space | . Demo | |
| * Type | . Key | . Cost | . Sale\$ | . \$\$\$\$ | . Commiss. | . Req | . Quantity | |
| ----- | | | | | | | | |
| BLACKBOX1 | A | 13500 | 16875 | 23625 | 2362.50 | 100 | 1 | |
| BLACKBOX2 | A | 13600 | 17000 | 23800 | 2380.00 | 110 | 2 | |
| BLACKBOX3 | A | 13700 | 17125 | 23975 | 2397.50 | 120 | 4 | |
| .SUBTOTAL - | | Sub Key = | | | | A | | |
| Demo | | Quantity = | | | | 7 | | |
| BLACKBOX4 | B | 13800 | 17250 | 24150 | 2415.00 | 130 | 10 | |
| BLACKBOX5 | B | 13900 | 17375 | 24325 | 2432.50 | 140 | 50 | |
| .SUBTOTAL - | | Sub Key = | | | | B | | |
| Demo | | Quantity = | | | | 60 | | |
| BLACKBOX6 | C | 14000 | 17500 | 24500 | 2450.00 | 150 | 100 | |
| BLACKBOX7 | C | 14100 | 17625 | 24675 | 2467.50 | 160 | 10 | |
| .SUBTOTAL - | | Sub Key = | | | | C | | |
| Demo | | Quantity = | | | | 110 | | |
| BLACKBOX8 | D | 14200 | 17750 | 24850 | 2485.00 | 170 | 20 | |
| BLACKBOX9 | D | 14300 | 17875 | 25025 | 2502.50 | 180 | 40 | |
| .SUBTOTAL - | | Sub Key = | | | | D | | |
| Demo | | Quantity = | | | | 60 | | |

| Line# 23 | Roll# - | | | | | | | RESULT |
|------------------------|-----------|------------|--|--|--|-----|--|--------|
| .GRAND-TOTAL - | | | | | | | | |
| Demo | | Quantity = | | | | 237 | | |
| END REPORT | | | | | | | | |

Totaling Options

O - Display only the totals and subtotals, no data lines

S - Place totals and subtotals in line with their fields

N - Eliminate grand total from subtotal process

O Option Example

- Same as previous example except do not print data lines

TOTALIZE

0

| Factors Base Report | | | | Corporate Factors Base | | | | C0244 |
|---------------------|-------|---------|--------|------------------------|----------|-------|----------|--------------|
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sale\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| | S | | | | | | + | |

| Line# | Roll# | DATE | Time | RID | 3C | MAPCOORD | RESULT | |
|------------------------|----------|-----------|----------|------------------------|----------|----------|----------|-------|
| 1 | - | 29 NOV 89 | 11:07:08 | | | | | |
| Factors Base Report | | | | Corporate Factors Base | | | | C0244 |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sale\$ | \$\$\$\$ | Commiss. | Req | Quantity | |
| ----- | | | | | | | | |
| .SUBTOTAL | - | Sub | Key | = | A | | | |
| . Demo | Quantity | = | | | 7 | | | |
| .SUBTOTAL | - | Sub | Key | = | B | | | |
| . Demo | Quantity | = | | | 60 | | | |
| .SUBTOTAL | - | Sub | Key | = | C | | | |
| . Demo | Quantity | = | | | 110 | | | |
| .SUBTOTAL | - | Sub | Key | = | D | | | |
| . Demo | Quantity | = | | | 60 | | | |
| .GRAND-TOTAL | - | | | | | | | |
| . Demo | Quantity | = | | | 237 | | | |
| FND REPORT | | | | | | | | |

S Option Example

- Place subtotals under their respective fields

TOTALIZE

S
 . Factors Base Report Corporate Factors Base C0244
 * Product , Sub , Produc. Whole , Retail , Sales , Space , Demo
 * Type , Key , Cost , Sales\$, \$\$\$, Commiss. Req , Quantity , Demo Results

| Product | Sub | Prod. | Whole | Retail | Sales | Space | Demo |
|---------|-----|-------|-------|--------|-------|-------|------|
| | S | | | | | + | |

Line# | 1 Roll# | DATE 29 NOV 89 11:07:08 RID 3C 29 NOV 89 MAPCOORD RESULT
 . Factors Base Report Corporate Factors Base C0244
 * Product , Sub , Produc. Whole , Retail , Sales , Space , Demo
 * Type , Key , Cost , Sales\$, \$\$\$, Commiss. Req , Quantity , Demo Results

| | | | | | | | |
|-----------|---|-------|-------|-------|---------|-----|-----|
| BLACKBOX1 | A | 13500 | 16875 | 23625 | 2362.50 | 100 | 1 |
| BLACKBOX2 | A | 13600 | 17000 | 23800 | 2380.00 | 110 | 2 |
| BLACKBOX3 | A | 13700 | 17125 | 23975 | 2397.50 | 120 | 4 |
| * SUBTO | | | | | | 330 | |
| BLACKBOX4 | B | 13800 | 17250 | 24150 | 2415.00 | 130 | 10 |
| BLACKBOX5 | B | 13900 | 17375 | 24325 | 2432.50 | 140 | 50 |
| * SUBTO | | | | | | 270 | |
| BLACKBOX6 | C | 14000 | 17500 | 24500 | 2450.00 | 150 | 100 |
| BLACKBOX7 | C | 14100 | 17625 | 24675 | 2467.50 | 160 | 10 |
| * SUBTO | | | | | | 310 | |
| BLACKBOX8 | D | 14200 | 17750 | 24850 | 2485.00 | 170 | 20 |

S Option Example

| Line# | Roll# - | | | | | RESULT |
|------------------------|---------|-------|-------|-------|---------|--------|
| 23 | D | 14300 | 17875 | 25025 | 2502.50 | 180 |
| BLACKBOX9 | | | | | | 40 |
| * | | | | | | |
| * | | | | | | |
| | SUBTO | | | | | 350 |
| * | | | | | | |
| * | GRAND | | | | | 1260 |
| END REPORT | | | | | | |

Cumulation

- **Enter '+' in field to cumulate vertically**

- **Enter 'C' in field to receive result of cumulation**

- **The result of a horizontal process may be cumulated**
 - Enter operators in fields to be calculated

 - Enter 'C' in field to receive cumulated result of process

Cumulation Examples

- Multiply order qty by unit cost and cumulate vertically in total cost

| TOTALIZE | | | | | | | |
|----------------------------|---------------|------------|----------------|---------------------|-------------|-------------|-------------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | |
| *ORDER NUMBER | .PRODUCT TYPE | .ORDER QTY | .CUSTOMER NAME | .UNIT COST | .TOTAL COST | .ORDER DATE | .DLURY DATE |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| | | + | | * | c | | |

| Line# | Roll# | | | | | | | RESULT |
|------------------------|--------------------|------------|----------------|------------|-------------|-------------|-------------|--------|
| .DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| *ORDER NUMBER | .PRODUCT TYPE | .ORDER QTY | .CUSTOMER NAME | .UNIT COST | .TOTAL COST | .ORDER DATE | .DLURY DATE | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 250 | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 570 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 1445 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 1607.50000 | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 2087.50000 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 3587.50000 | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 3747.50000 | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Combined Operations

- Line by line and totaling operations may be combined

| TOTALIZE | | | | | | | | |
|----------------------------|--------|-----------|-------|---------------------|----------|-------|-------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER .PRODUCT | .ORDER | .CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | |
| | | + | | * | = | | | |
| | | | | | + | | | |

- Multiply order qty by unit cost for each line and receive grand total of unit cost

| Line# | Roll# | | | | | RESULT | |
|------------------------|-------------|------------------|--------|-----------------|-----------|----------|--|
| .DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | |
| *ORDER .PRODUCT | .ORDER | .CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | 250 | 870622 | 870627 | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | 320 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | 875 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | 162.500000 | 870626 | 870701 | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | 480 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | 1500 | 870627 | 870705 | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | 160 | 870629 | 870708 | |
| .GRAND-TOTAL | | - | | | | | |
| . TOTAL | | COST | = | 3747.5000000000 | | | |
| END REPORT | | | | | | | |

Exercise

Your supervisor requests the following using report 1C, rounding all totals to two decimal places:

1. Display a result containing the grand totals of the Product Cost, Retail \$\$\$\$ and Sales Commission. Do not display the data lines from the report. *+ + +*
2. Display a result containing the producer profit (wholesale price minus product cost) in the Demo Results field and include a grand total of this field. *down line sum + -*
3. *F* Display a result increasing the sales commission for our sales people by 10% in the Sales Commiss field.
4. Display a result showing the increased sales commission in the Demo Results field and averages of both the old and new sales commission. Left-justify the Demo Results field.
5. Display a result containing totals of Produc Cost and Demo Quantity once for all blackboxes and once for all greenboxes. Do not display the data lines from the report and place the totals under their respective fields.
6. Display a result containing the cumulative total of the Demo Quantity in the Demo Results field.

CHALLENGES USING ONLINE HELP

1. In Report 2B, find the total of each product type ordered by each customer. Have an entry count appear below the STATUS CODE FIELD.
2. Using Report 1C, create a subcumulation of the SPACE REQ field and place it in the DEMO QUANTITY field. Use the SUB KEY field as the subtotaling key. At the same time, create a grand cumulation and place it in the DEMO RESULTS field.

10

Calculate

Objectives

Upon completion of this module, you should be able to

Perform mathematic calculations of data within reports using the **CALCULATE (CAL)** function

Use options with the **CALCULATE** function

Use conditional statements with the **CALCULATE** function

Use strings in calculations

Learning Sequence

- **Calculate function**
- **Vertical operations**
- **Horizontal operations**
- **Combined operations**
- **Cumulation**
- **Options**
- **Value labels**
- **Functions**
- **Conditional statements**
- **Boolean operators**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

Calculate

- **More powerful than TOT**
 - Horizontal and vertical arithmetic
 - Create complex equations
 - Conditional statements (If, then, else)
 - Field labels
 - User defined value labels
 - System-defined constant labels
 - Character string manipulation
 - Date and time calculations (later)
 - Produces a result

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Perform math operations'
 - Select 'Calculate data'
 - Fill in the mask

- **Direct Access**
 - Enter 'CAL rdc f' on line 0
 - Fill in the mask

Vertical Operations

- **Enter the following in a field**
 - **+** to receive a grand total of that field
 - **/** to receive an average of that field
 - **<** to receive the minimum value in that field
 - **>** to receive the maximum value in that field
- **Total appears directly under the field specified**
- **Exponential notation used if result is too large**
- **Unlike TOT, result is NOT flagged if non-numeric values are used**
- **'**' option needed to receive flagged results**
- **'O' option used to omit data lines**

Vertical Operations Example

- Use this report throughout the module

| Line# 1 | Roll# cal - | | | | | | | 2C0 |
|---|---------------|------------------------|---------|----------|----------|--------------|----------|-------|
| .DATE 29 NOV 89 15:37:21 RID 2C 29 NOV 89 CCM | | | | | | | | |
| .Factors Base Report | | Corporate Factors Base | | | | | | C0004 |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | |
| | | | | | | Demo Results | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | |
| END REPORT | | | | | | | | |

- Grand total, average, minimum, maximum

| CALCULATE | | | | | | | | |
|---|-----|------------------------|---------|----------|----------|--------------|----------|-------|
| .Factors Base Report | | Corporate Factors Base | | | | | | C0004 |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | |
| | | | | | | Demo Results | | |
| ***** ***** ***** ***** ***** ***** ***** ***** ***** | | | | | | | | |
| | | | | + | / | < | > | |

Vertical Operations Example

| Line# 1 | Roll# - | | | | | | | RESULT |
|--------------------------|-----------|-----------|---------|------------------------|------------|---------|----------------|--------|
| .DATE 29 NOV 89 15:37:21 | | RID | 2C | 29 NOV 89 | | CCM | | |
| .Factors Base Report | | | | Corporate Factors Base | | | C0004 | |
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo | |
| * Type | . Key | . Cost | . Sales | . \$\$\$\$ | . Commiss. | . Req | . Quantity | |
| | | | | | | | . Demo Results | |
| ----- | | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | |
| ----- | | | | | | | | |
| | | | | 228375 | 2537.50 | 200 | 160 | |
| | | | | END REPORT | | | | |

Horizontal Operations

- **Equations are needed to produce calculations for every line**
- **Fields used in the equation are given labels by the user**
- **Single alpha character placed in each field to be used**
- **Equation written on line below field labels**
- **Equation format**
 - receiving-label=expression
- **Multiple equations separated by semi-colons**
- **Expression operators in priority order**
 - 1) - Negative sign
 - 2) ** Exponentiation
 - 3) *,/,// Multiply, divide, integer divide
 - 4) +,- Addition, subtraction
- **Use parentheses to override priority order**

Horizontal Calculation Example

- Retail profit placed in Demo Results

| CALCULATE | | | | | | | | | |
|----------------------|-----|---------|-------|----------|------------------------------|-------|----------|--------------|--|
| .Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sales | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| ***** | | | | | | | | | |
| | | | a | b | c | | | d | |
| d=b-a-c | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|------------------------|-----------|----------|-------|----------|------------------------------|-------|----------|-----------------|
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | |
| .Factors Base Report | | | | | Corporate Factors Base C0004 | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales | \$\$\$\$ | Commiss. | Req | Quantity | |
| ***** | | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | 4452.5000000000 |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | 4517.5000000000 |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | 4582.5000000000 |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | 4647.5000000000 |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | 4712.5000000000 |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | 4777.5000000000 |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | 4842.5000000000 |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | 4907.5000000000 |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | 4972.5000000000 |
| END REPORT | | | | | | | | |

Horizontal and Vertical Operations Combined

- Same as previous with grand totals

| CALCULATE | | | | | | | |
|---------------------|-----|---------|-------|------------------------------|----------|-------|----------|
| Factors Base Report | | | | Corporate Factors Base C0004 | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo |
| * Type | Key | Cost | Sales | \$\$\$\$ | Commiss. | Req | Quantity |
| ***** | | | | | | | |
| d=b-c-a | + | +a | b | c | | | d |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|------------------------|-----------|----------|--------|------------------------------|-----------|-------|----------|--------|
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | |
| Factors Base Report | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales | \$\$\$\$ | Commiss. | Req | Quantity | |
| ***** | | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | |
| * | | 130500 | 163125 | | | | | |
| END REPORT | | | | | | | | |

Horizontal Cumulation

- Cumulation using multiple equations

CALCULATE

| Factors Base Report | | | | Corporate Factors Base | | | | C0004 |
|---------------------|-----|---------|---------|------------------------|----------|-------|----------|--------------|
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results |
| b=b+a; c=c+b | | a | b | c | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|------------------------|-----------|----------|---------|------------------------|-----------|-------|----------|--------|
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | |
| Factors Base Report | | | | Corporate Factors Base | | | | C0004 |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | |
| Demo Results | | | | | | | | |
| GREENBOX1 | E | 13700 | 30825 | 54800 | 2397.50 | 200 | 80 | |
| GREENBOX2 | E | 13900 | 31275 | 55600 | 2432.50 | 210 | 160 | |
| GREENBOX3 | E | 14100 | 31725 | 56400 | 2467.50 | 220 | 5 | |
| GREENBOX4 | F | 14300 | 32175 | 57200 | 2502.50 | 230 | 15 | |
| GREENBOX5 | G | 14500 | 32625 | 58000 | 2537.50 | 240 | 25 | |
| GREENBOX6 | H | 14700 | 33075 | 58800 | 2572.50 | 250 | 1 | |
| GREENBOX7 | I | 14900 | 33525 | 59600 | 2607.50 | 260 | 2 | |
| GREENBOX8 | J | 15100 | 33975 | 60400 | 2642.50 | 270 | 3 | |
| GREENBOX9 | K | 15300 | 34425 | 61200 | 2677.50 | 280 | 4 | |
| END REPORT | | | | | | | | |

Calculate Options

- **May be entered above the mask or on each equation**
- **Those entered above the mask apply to all operations**
- **Those entered on an equation apply only to that equation**
- **If there is a conflict, the equation option is used**
- **Equation format**
 - receiving-label,options=expression

Options

| | |
|---------|--|
| J and R | Same as on TOT |
| * | Flag results calculated with non-numeric data |
| Nn | Use value n for non-numeric data (default is 0) |
| I | Produce integer results, truncate decimal places |
| E | Erase receiving field if value equals zero |

Calculate J(C) Option

- Right justify, insert commas and increase fields by 10%;
produce integer results in 'Sales Commiss'

| CALCULATE | | | | | | | | | |
|-----------------------------|-----|---------|--------|----------|------------------------------|-------|----------|--------------|--|
| j(c) Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sale\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| ***** | | | | | | | | | |
| | | | | a | b | | | | |
| a=a*1.1;b,i=b*1.1 | | | | | | | | | |
| | | | | | | | | | |

| | | | | | | | | RESULT | |
|------------------------|-----------|----------|--------|----------|------------------------------|-------|----------|--------------|--|
| Line# | Roll# | | | | | | | | |
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | | |
| Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sale\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| GREENBOX1 | E | 13700 | 17125 | 26,372.5 | 2,637 | 200 | 80 | | |
| GREENBOX2 | E | 13900 | 17375 | 26,757.5 | 2,675 | 210 | 160 | | |
| GREENBOX3 | E | 14100 | 17625 | 27,142.5 | 2,714 | 220 | 5 | | |
| GREENBOX4 | F | 14300 | 17875 | 27,527.5 | 2,752 | 230 | 15 | | |
| GREENBOX5 | G | 14500 | 18125 | 27,912.5 | 2,791 | 240 | 25 | | |
| GREENBOX6 | H | 14700 | 18375 | 28,297.5 | 2,829 | 250 | 1 | | |
| GREENBOX7 | I | 14900 | 18625 | 28,682.5 | 2,868 | 260 | 2 | | |
| GREENBOX8 | J | 15100 | 18875 | 29,067.5 | 2,906 | 270 | 3 | | |
| GREENBOX9 | K | 15300 | 19125 | 29,452.5 | 2,945 | 280 | 4 | | |
| END REPORT | | | | | | | | | |

Value Labels

- **User may place results of equation into a value label**
- **Value labels may be used in subsequent equations**
- **Contents of value labels may be viewed at end of report via 'L' option**
- **Max of six chars, first must be alpha**
- **Value label has initial value of zero**
- **'Kn' option initializes value labels to value 'n'**

Value Labels

- Grand total of production profit using value labels and the 'L' option

| CALCULATE | | | | | | | | | |
|---------------------------|-----|---------|---------|----------|------------------------------|-------|----------|--------------|--|
| L .Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| | | a | b | | | | | | |
| profit=profit+(b-a) | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| Line# | 1 | Roll# | RESULT | | | | | | |
|----------------------|-----------|----------|---------|------------------------|------------------------------|-------|----------|--------------|--|
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | | |
| .Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | | |
| . PROFIT = | | 32625 | | END REPORT | | | | | |

Built-in Functions

- **Predefined operation returning a value**
- **VAVG(x) Vertical average of field x**
- **VMAX(x) Vertical maximum of field x**
- **VMIN(x) Vertical minimum of field x**
- **VSUM(x) Vertical sum of field x**

Built-in Functions Example

- Maximum profit and average profit

| CALCULATE | | | | | | | | | |
|---|-----|---------|---------|----------|------------------------------|-------|----------|--------------|--|
| L .Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| ----- | | | | | | | | | |
| ***** | | | | | | | | | |
| | | a | b | | | | | | |
| maxpft=vmax(b)-vmax(a);avgpft=vavg(b)-vavg(a) | | | | | | | | | |
| | | | | | | | | | |

| Line# Roll# - | | | | | | | | RESULT | |
|---------------------------------|-----|---------|---------|---------------|------------------------------|-------|----------|--------------|--|
| .DATE 29 NOV 89 15:37:21 RID 2C | | | | 29 NOV 89 CCM | | | | | |
| .Factors Base Report | | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results | |
| ----- | | | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | | |
| . MAXPFT = | | 3825 | | | | | | | |
| . AUGPFT = | | 3625 | | | | | | | |
| END REPORT | | | | | | | | | |

Conditional Statements

- **Tests a relational expression**
- **Format**
 - IF:expression;THEN:equation;ELSE:equation
- **ELSE:equation is optional**
- **Relational operator**
 - First priority
 - 1) = Equals
 - 2) <> or >< Not equal
 - 3) > Greater
 - 4) < Less than
 - GE 5) >= or => Greater than or equal ○
 - LE 6) <= or =< Less than or equal
 - Second priority
 - & Logical AND
 - Third priority
 - , Logical OR

Conditional Example

- Multiple THEN equations for one IF condition

| CALCULATE | | | | | | | |
|---|-----|---------|---------|------------------------------|----------|-------|----------|
| .Factors Base Report | | | | Corporate Factors Base C0004 | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity |
| ***** ***** ***** ***** ***** ***** ***** ***** ***** | | | | | | | |
| | | a | b | | | c | d |
| if:b-a<3600;then:c=1;then:d=1;else:c=2 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|---|-----------|----------|---------|------------------------------|-----------|-------|----------|--------|
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | |
| .Factors Base Report | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | |
| ***** ***** ***** ***** ***** ***** ***** ***** ***** | | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 1 | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 1 | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | 1 | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 1 | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 2 | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 2 | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 2 | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 2 | |
| END REPORT | | | | | | | | |

AND Condition

- Logical AND condition

| CALCULATE | | | | | | | |
|--------------------------------|-----|---------|---------|------------------------------|----------|-------|----------|
| .Factors Base Report | | | | Corporate Factors Base C0004 | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity |
| ***** | | | | | | | |
| | a | | b | | | | c |
| if: a>14000&b>26000; then: c=1 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|------------------------|-------|-----------|----------|------------------------------|----------|-----------|----------|--------|
| 1 | - | | | | | | | |
| .DATE | | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | |
| .Factors Base Report | | | | Corporate Factors Base C0004 | | | | |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | |
| ***** | | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | |
| GREENBOX3 | F | 14100 | 17625 | 24675 | 2467.50 | 220 | 5 | |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | 15 | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | |
| END REPORT | | | | | | | | |

Conditional Display

- C option causes only those lines that satisfy the last IF condition to be displayed

CALCULATE

C

| .Factors Base Report | | | | Corporate Factors Base | | | | C0004 |
|-----------------------|-----|---------|---------|------------------------|----------|-------|----------|--------------|
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results |
| ***** | | | | | | | | |
| e=d+c; if: a < 14000, | a | b | c | d | | | | e |
| | | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|------------------------|-----------|----------|---------|------------------------|-----------|-------|----------|-----------------|
| .DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | | |
| .Factors Base Report | | | | Corporate Factors Base | | | | C0004 |
| * Product | Sub | Produc. | Whole | Retail | Sales | Space | Demo | |
| * Type | Key | Cost | Sales\$ | \$\$\$\$ | Commiss. | Req | Quantity | Demo Results |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | 80 | 26372.500000000 |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | 160 | 26757.500000000 |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | 25 | 27912.500000000 |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | 1 | 28297.500000000 |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | 2 | 28682.500000000 |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | 3 | 29067.500000000 |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | 4 | 29452.500000000 |
| END REPORT | | | | | | | | |

Comparing and Replacing Strings

- **Place quotes or apostrophes around string data**
- **To alter only part of the receiving field**
 - `receiving-field(startchar-numchars)=expression`
- **Use S(S) option for case sensitivity**

Conditional Field Replacement

- Partial field and entire field filled

CALCULATE

| .Factors Base Report | | | | | | | Corporate Factors Base | | C0004 |
|---|-------|-----------|----------|----------|------------|---------|------------------------|----------------|-------|
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo | | |
| * Type | . Key | . Cost | . Sale\$ | . \$\$\$ | . Commiss. | . Req | . Quantity | . Demo Results | |
| ***** | | | | | | | ***** | | ***** |
| | | | | | | | a | b | |
| if:a<10;then:a(1-1)="!";then:b="Order more" | | | | | | | | | |
| | | | | | | | | | |

| Line# | Roll# | | | | | | | | RESULT |
|------------------------|-------|-----------|-----------|----------|------------|---------|------------------------|----------------|------------|
| 1 | - | DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | |
| .Factors Base Report | | | | | | | Corporate Factors Base | | C0004 |
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo | | |
| * Type | . Key | . Cost | . Sale\$ | . \$\$\$ | . Commiss. | . Req | . Quantity | . Demo Results | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | | 80 | |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | | 160 | |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | ! | 5 | Order more |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | | 15 | |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | | 25 | |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | ! | 1 | Order more |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | ! | 2 | Order more |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | ! | 3 | Order more |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | ! | 4 | Order more |
| END REPORT | | | | | | | | | |

Partial Fields in Expressions

- Use the LIT function to refer to all or some of the string characters of a field used in the expression part of the equation

| CALCULATE | | | | | | | |
|------------------------|-------|-----------|-----------|------------------------------|------------|---------|------------|
| .Factors Base Report | | | | Corporate Factors Base C0004 | | | |
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo |
| * Type | . Key | . Cost | . Sales\$ | . \$\$\$ | . Commiss. | . Req | . Quantity |
| ***** | | | | | | | |
| a | b | | | | | c | d |
| c=lit(b(5-1));d=lit(a) | | | | | | | |
| | | | | | | | |

- label=LIT(field-label) or label=LIT(field-label(sc-nc))

| Line# | 1 | Roll# | - | RESULT | | | |
|------------------------|-----------|-----------|-----------|------------------------------|------------|---------|------------|
| . DATE | 29 NOV 89 | 15:37:21 | RID | 2C | 29 NOV 89 | CCM | |
| .Factors Base Report | | | | Corporate Factors Base C0004 | | | |
| * Product | . Sub | . Produc. | Whole | . Retail | . Sales | . Space | . Demo |
| * Type | . Key | . Cost | . Sales\$ | . \$\$\$ | . Commiss. | . Req | . Quantity |
| ***** | | | | | | | |
| GREENBOX1 | E | 13700 | 17125 | 23975 | 2397.50 | 200 | E |
| GREENBOX2 | E | 13900 | 17375 | 24325 | 2432.50 | 210 | E |
| GREENBOX3 | E | 14100 | 17625 | 24675 | 2467.50 | 220 | E |
| GREENBOX4 | F | 14300 | 17875 | 25025 | 2502.50 | 230 | F |
| GREENBOX5 | G | 14500 | 18125 | 25375 | 2537.50 | 240 | G |
| GREENBOX6 | H | 14700 | 18375 | 25725 | 2572.50 | 250 | H |
| GREENBOX7 | I | 14900 | 18625 | 26075 | 2607.50 | 260 | I |
| GREENBOX8 | J | 15100 | 18875 | 26425 | 2642.50 | 270 | J |
| GREENBOX9 | K | 15300 | 19125 | 26775 | 2677.50 | 280 | K |
| END REPORT | | | | | | | |

AND Condition and Partial Fields

- To compare LIT values to constant values, you must first load them into value labels. LIT values may not be used in IF statements.

```

                                CALCULATE

,@      Factors Base Report                                Corporate Factors Base  C000004
* Product . Sub .Produc. Whole . Retail . Sales .Space. Demo .
* Type    . Key . Cost . Sale$ . $$$$.Commiss. Req .Quantity. Demo Results .
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
*****  *****  *****  *****  *****  *****  *****  *****  *****
a          b                                          c
al=lit(a(1-8));b1=lit(b(5-1));
if:a="greenbox"&b1="e";then:c="TRUE"
    
```

| Line# | Roll# | Result |
|--|---------------------------------|--------------------------------|
| 1 | - | |
| DATE 28 JUN 90 | 10:48:49 RID | 2C 28 JUN 90 CCM |
| @ | Factors Base Report | Corporate Factors Base C000004 |
| * Product . Sub .Produc. Whole . Retail . Sales .Space. Demo . | | |
| * Type . Key . Cost . Sale\$. \$\$\$\$.Commiss. Req .Quantity. Demo Results . | | |
| ***** | ***** | ***** |
| GREENBOX1 | E 13700 17125 23975 2397.50 200 | 80 TRUE |
| GREENBOX2 | E 13900 17375 24325 2432.50 210 | 160 TRUE |
| GREENBOX3 | E 14100 17625 24675 2467.50 220 | 5 TRUE |
| GREENBOX4 | F 14300 17875 25025 2502.50 230 | 15 |
| GREENBOX5 | G 14500 18125 25375 2537.50 240 | 25 |
| GREENBOX6 | H 14700 18375 25725 2572.50 250 | 1 |
| GREENBOX7 | I 14900 18625 26075 2607.50 260 | 2 |
| GREENBOX8 | J 15100 18875 26425 2642.50 270 | 3 |
| GREENBOX9 | K 15300 19125 26775 2677.50 280 | 4 |
| END REPORT | | |

Exercise

xk 1c

Your supervisor requests the following using report 1C; rounding all monetary results to two decimal places:

- ✓1. Display a result containing the retail profit (retail \$\$\$\$ minus wholesale cost and sales commission) for each product type in the Demo Results field and an average retail profit for all items.
- ✓2. Display a result showing which items are overstocked by checking the Demo Quantity field. If the quantity is greater than 25, enter 'EXCESS' in the Demo Results field.
- ✓3. Display a result containing 'HIGH COST' in the Demo Results field if the product cost is greater than 14000 and the Demo Quantity is greater than 20. Show only those lines that satisfy this condition.
- ✓4. Display a result reducing the wholesale price (Whole Sale\$) of any item greater than 17500 by 100, placing the result in Demo Results. Place appropriate commas in this field. Indicate those items changed by placing an asterisk in the first column this field.
- ✓5. Display a result showing our lowest production cost for an item and our total demo quantity for all items.
6. Display a result showing a grand total of the retail profit using the same calculation performed in step 1. This total should not appear under any particular field.

11

Communication

Objectives

Upon completion of this module, you should be able to

Send reports to other stations and users

Obtain auxiliary device information

Print reports on auxiliary printers

Learning Sequence

- **Send a report to a station**
- **Receive a sent report**
- **Send a report to a user id**
- **Send a message to a station**
- **Display auxiliary device information**
- **Print on an auxiliary device**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

Sending A Report (SEND)

- **Sends a report or result from one station to another**
- **Report/result to send must be on display**
- **'Sender' can request acknowledgment of receiver**
- **Data will appear on receiver's screen as a result**
- **Received result resides in drawer and cabinet of the report sent**
- **Menu Access**
 - Press F6 (Tasks) with report to send on display
 - Select 'Send and receive'
 - Select 'Send a report to a station'
 - Fill in function menu
- **Direct Access**
 - Enter 'SEND, stn, site, ack?' with report to send on display, where
 - stn = station number
 - site = site identifier if other than current
 - ack? = do you want acknowledgement from receiver Y or N

SEND Example

- Select 'Send a report to a station'

```

Line▶ 1      Roll▶ -      2C0
.DATE 28 JUN 90 10:48:49 RID      2C  28 JUN 90 CCM      2C0
.@ Factors Base Report Corporate Factors Base C000004
* Product . Sub . Produc. Whole . Retail . Sales . Space . Demo .
* Type . Key . Cost . Sales . $$$$.Commis. Req .Quantity. Demo Results .
*==----- Select Task -----
GR |
GR | Create a report          Move data
GR | Compare data            Send and Receive
GR | Delete a report
GR | Display a report
GR | Find data
GR | Modify a report
GR |
GR | ..... EN
GR |
GR | Communicate interactively (CALL)
GR | Receive a message (MSG)
GR | Reset an alarm message (SNOOZE)
GR | Respond to a message (OK)
GR |
GR | Send a delayed alarm message (AL)
GR | Send a report to a station (SEND)
GR | Send a report to a user (SNU)
GR | Send a message to a station (SS)
    
```

- Receive 'Send Report' menu

```

SEND

Send Report

Send report to station
Request acknowledgment? N
    
```

Receiving A Sent Report

- **When report is sent, receiving terminal**
 - Beeps
 - Message notification appears on screen

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Receive a message'
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Respond to message'
 - Result/message can now be replaced, printed, etc.

- **Direct Access**
 - To receive the report or message press the message wait key (or equivalent) or enter 'MSG' on line 0
 - Enter 'OK' in line zero to release the message from your queue
 - Result/message can now be replaced, printed, etc.

Receiving a Sent Report

- Receiver selects 'Receive a message'

```

Unisys MAPPER System
EA10  M A P P E R  35R1
Select Task

Create a report
Compare reports
Delete a report
Display a report
Find data
Modify a report

Move data
Send and Receive

Communicate interactively (CALL)
Receive a message (MSG)
Reset an alarm message (SNOOZE)
Respond to a message (OK)

Send a delayed alarm message (AL)
Send a report to a station (SEND)
Send a report to a user (SNU)
Send a message to a station (SS)
    
```

- Message is displayed

- This is a Station-to-Station message. -

DATE 29 NOV 89 14:56:39 FROM STATION 10A Mary MSG

EMPLOYEE MASTER FILE EMPLOYEE MASTER FILE F0272

| ID | BIRTH DATE | HIRE DATE | LAST NAME | FIRST NAME MI. | DEPT. | GD. | SALARY |
|-------------|------------|-----------|----------------|----------------|-------|-----|----------|
| 571-36-5664 | 521225 | 790210 | HAYMAN | DAVID I. | 0551 | 06 | 15428.20 |
| 276-36-3654 | 600416 | 780222 | YANKERS | HANK B. | 0554 | 08 | 18230.16 |
| 578-46-4566 | 451230 | 780404 | JOHNSON | JOHN I. | 0551 | 10 | 20130.08 |
| 269-77-6442 | 550630 | 830720 | AZEVEDO | CARLOS J. | 0556 | 06 | 15332.12 |
| 235-73-5006 | 380428 | 640917 | BRAMWELL | JAMES P. | 0551 | 15 | 35540.50 |
| 021-77-4301 | 450715 | 670113 | BANKWITZ | ROBERT J. | 0554 | 10 | 23410.34 |
| 369-97-4550 | 510821 | 791205 | BORGGREN | LOREN R. | 0555 | 12 | 30987.32 |
| 245-90-8776 | 401225 | 810918 | BIGGIE | DAVID P. | 0551 | 10 | 24130.20 |
| 272-32-4559 | 511017 | 840606 | WEATHERHEAD | KILROY J. | 0556 | 08 | 19230.00 |
| 562-90-8776 | 401225 | 810918 | PICASSO | PALOMA | 0552 | 16 | 40580.65 |
| 476-89-4733 | 261225 | 470401 | CHILLINGSWORTH | JOANNE C. | 0554 | 05 | 12590.00 |
| 271-46-4007 | 440905 | 770625 | CHONG | GUAR C. | 0556 | 06 | 14520.45 |
| 418-55-4631 | 460813 | 791230 | CLUBERTON | WALTER A. | 0552 | 08 | 18650.13 |
| 570-56-7833 | 540630 | 830718 | GANGULY | FATIMA M. | 0554 | 06 | 13950.21 |
| 456-98-9002 | 501225 | 850404 | BREGOZZO | ROSKEL D. | 0552 | 11 | 26399.19 |
| 561-90-8776 | 340829 | 821015 | JOHANSON | WADE T. | 0556 | 15 | 37923.00 |
| 214-66-0012 | 421219 | 821015 | WORTHINGTON | CAL B. | 0554 | 12 | 28200.00 |

Sending A Report To A User (SNU)

- **Sends a report or result to another user**
- **Report/result to send must be on display**
- **Can request acknowledgment of receiver**
- **Data will appear on receiving screen as a result**
- **Station number of receiving user does not need to be supplied**
- **Receiving user's department number should be supplied**
- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Send a report to a user'
 - Fill in function menu
- **Direct Access**
 - Enter 'SNU,user,dept,site,ack?' on line zero with report on display, where
 - user = user-id
 - dept = department number of user-id

SNU Receiving Procedures

- **Receivers terminal beeps and message notification appears on screen**

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Receive a message'
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Respond to message'
 - Message (report) can now be replaced, printed, etc.

- **Direct Access**
 - Display message via message wait key (or equivalent) or enter 'MSG' on line 0
 - Enter 'OK' on line zero
 - Message (report) can now be replaced, printed, etc.

Sending A Message to a Station (SS)

- **Sends data or a message to another station**
- **Maximum of one screen of data can be initially sent**
- **Must know receiving station number**
- **Can request acknowledgment of the receiver**
- **Message is received as a result**
- **C option (clear screen) used for direct access method**

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Send a message to a station'
 - Fill in menu on line zero
 - Enter message below line zero

- **Direct Access**
 - Enter 'SS,C' on line zero where
 - C = C option required to clear the screen
 - Fill in menu on line zero
 - Enter message below line zero

SS Message Sending Example

- Sender selects 'Send a message to a station'

```

Unisys MAPPER System
EA10  M A P P E R  35R1
Select Task
-----
Create a report
Compare reports
Delete a report
Display a report
Find data
Modify a report

Move data
Send and Receive
-----
Communicate interactively      (CALL)
Receive a message              (MSG)
Reset an alarm message         (SNOOZE)
Respond to a message           (OK)

Send a delayed alarm message   (AL)
Send a report to a station     (SEND)
Send a report to a user        (SNU)
Send a message to a station    (SS)
  
```

- Sender fills in menu and enters message

```

Message to station:|10  , Request message acknowledge?:|y,

Fred,

A meeting has been scheduled for all group members.
It will take place Tuesday, November 27, in room C.
Can you attend?

Mary
  
```

SS Receiving Procedure

- **Receiver's terminal beeps and 'MSG' appears in upper right**

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Send and receive'
 - Select 'Receive Message'
 - Enter 'OK' and optional one-line response on line zero

- **Direct Access**
 - Display message via message wait key or enter 'MSG' on line 0
 - Enter 'OK' and optional one-line response on line zero

SS Message Receiving Example

- Receiver selects 'Receive a message' upon beep

```

Unisys MAPPER System
EA10 M A P P E R 35R1
Select Task
-----
Create a report
Compare reports
Delete a report
Display a report
Find data
Modify a report

Move data
Send and Receive
-----
Communicate interactively (CALL)
Receive a message (MSG)
Reset an alarm message (SNOOZE)
Respond to a message (OK)

Send a delayed alarm message (AL)
Send a report to a station (SEND)
Send a report to a user (SNU)
Send a message to a station (SS)

```

- Message is received and receiver is prompted for return message

```

- Station-to-station message: Enter any return message after OK. - msg
.DATE 20 NOV 89 15:10:08 FROM STATION 9A MARY

Fred,

A meeting has been scheduled for all group members.
It will take place Tuesday, November 27, in Room C at 2:00
Can you attend?

Mary

..... END REPORT .....

```

SS Example

- Receiver responds with 'OK' followed by optional message

```
ok I can attend. Thank you Mary.
.DATE 20 NOV 89 15:10:08 FROM STATION 9A MARY MSG

Fred,

A meeting has been scheduled for all group members.
It will take place Tuesday, November 27, in Room C at 2:00
Can you attend?

..... END REPORT ..... Mary
```

- Sender receives response from receiver

```
ok I can attend. Thank you Mary
.DATE 29 NOV 89 15:14:16 OK FROM STATION 10A FRED MSG

Fred,

A meeting has been scheduled for all group members.
It will take place Tuesday, November 27, in Room C at 2:00
Can you attend?

..... END REPORT ..... Mary
```

Displaying Auxiliary Device Information (DEV)

- **Lists any auxiliary devices and status for a station**

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Print'
 - Select 'List aux devices on a station'
 - Fill in function menu

- **Direct Access**
 - Enter 'DEV,st' on line zero where
 - st = station number

Printing On An Auxiliary Device (AUX)

- **Directs output to an auxiliary device connected to a terminal**
- **Queues a report/result to be printed**
- **Station to print must have the sign-on screen displayed**
- **Prints one copy of output per function request**
- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Print'
 - Select 'Print on an auxiliary printer'
 - Fill in function menu
- **Direct Access**
 - Enter 'AUX' on line zero
 - Fill in function menu

Aux Menu

- Enter 'AUX' on line 0 and receive menu

```
AUX  
  
Auxiliary Device Request  
-----  
Station number 11409          Device name COP  
  Search-id                    Tab codes? N  
  Transparent? N              Delete headings? N  
  Line spacing 1              Delete first character? N  
Delete line numbers? Y      Format number  
  Control character ~         Report -
```

- Fields that appear on menu are MAPPER platform-dependent

Auxiliary Function Field Definitions

| FIELD | DEFINITION |
|--------------------------------|--|
| Station number | Receiving station number |
| Search-Id | Not used with printers |
| Transparent? | 'Y' to print reports wider than 132 characters |
| Line spacing | 1-3 |
| Delete line numbers? | Do you want line sequence numbers (nine extra characters)? |
| Control character | Identify the print control character |
| Device name | Three-character name (COP) |
| Tab codes? | Y = Include tabs in output<R> N = Change tabs to spaces |
| Delete headings? | Delete headings and End Report line, Y or N? |
| Delete first character? | Delete line type indicator, Y or N? |
| Format number | 1-6 |
| Report | Report to send to device |

Printing With The Copy Run (COP)

- **Prints a report/result on an auxiliary device**
- **Useful for printing multiple copies**
- **Queues the report to be printed**
- **Report to COP must be on display**
- **Receiving station must have sign-on screen displayed**
- **Fast access method is available**
- **Menu Access**
 - Press F6 (Tasks) with report on display
 - Select 'Print'
 - Select 'Use the COP run'
 - Fill in the function menu
- **Direct Access**
 - Enter 'COP,sn,cys,f,lsp' on line 0 where
 - sn = station number
 - cys = number of copies
 - f = format
 - lsp = line spacing (1-3)

Exercise

Your supervisor requests the following:

1. Send me report 1C at station __.
2. Send report 2B to my user-id _____ in department __.
3. Send a message to me when completing the above exercise.
4. Determine the devices attached to station __.
5. Print report 1D on the onsite printer attached to station __.

12

Update and Iterative Functions

Objectives

Upon completion of this module, you should be able to

Update reports and save function masks via extensions to previously discussed functions

Perform the following update functions:

Search Update

Match Update

Locate Update

Change Update

Calculate Update

Perform the following iterative functions:

Iterative Binary Find

Iterative Calculate

Iterative Count

Iterative Date

Iterative Find

Iterative Sort

Iterative Search

Iterative Totalize

Learning Sequence

- **Update functions**
- **DEL**
- **EXT**
- **UPD**
- **Iterative Functions**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

Update Functions

- **S, CAL, MA, LOC, CHG may be used to change the originating report without using REP**
- **SU, CALU, MAU functions**
- **O and U options used with LOC and CHG functions**
- **Will produce an 'Update Result'**
- **Allows user to**
 - DEL - Delete lines in result from original report
 - EXT - Same as DEL except keeps update result on display for further processing
 - UPD - With result on display, make changes, then enter 'UPD' in line 0 to make those changes to the original report
- **May 'Undo' (F9) DEL or UPD changes**
- **MAU defaults to using the M option, displaying only matched lines**

Update Examples

- Request a search update on 3B

```

Line▶ 1          Roll▶ SU 3B                      3B0
. DATE 29 JUN 90 08:38:55 RID      3B  29 JUN 90 CCM
. @      Production Status Report                Corporate Production      B000002
*St. Status. By. Product . Serial. Produc. Order. Cust. Produc. Produc. Ship . Ship . Spc.
*Cd. Date . In. Type . Number. Cost . Numbr. Code. Plan . Actual. Date . Order. Cod.
*-----*-----*-----*-----*-----*-----*-----*-----*-----*-----*
IP 831224 LS BLACKBOX1 436767          84389 AMCO 831223 831224
IP 831225 LS BLACKBOX1 436768          84390 AMCO 831223 831225
IP 831219 LS BLACKBOX2 637071          84353 INTR 831218 831219
OR 840110 LS BLACKBOX4                94754 ARCO
OR 831210 LS GREENBOX1                96751 FEDS
IP 831227 LS GREENBOX1 605126          84385 FEDS 831225 831227
OR 831211 LS GREENBOX4                96652 ARCO
IP 831216 LS GREENBOX4 436295          85381 USSC 831215 831216
          ..... END REPORT .....

```

- Search for all greenboxes

SEARCH UPD

```

. @      Production Status Report                Corporate Production      B000002
*St. Status. By. Product . Serial. Produc. Order. Cust. Produc. Produc. Ship . Ship . Spc.
*Cd. Date . In. Type . Number. Cost . Numbr. Code. Plan . Actual. Date . Order. Cod.
*-----*-----*-----*-----*-----*-----*-----*-----*-----*-----*
** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** **
          green/

```


EXT Example

- Same process as DEL except enter 'EXT'

```

Line▶ 1          Roll▶ EXT                      UPD RSLT
:
: 4 LINE(S) FOUND OUT OF 8 LINES
:
*** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** ***
*                green/
:
:DATE 29 JUN 90 08:41:00 RID      3B  29 JUN 90 CCM
:  @      Production Status Report          Corporate Production      B000002
*St. Status. By. Product .Serial. Produc. Order. Cust. Produc. Produc. Ship .Ship .Spc.
*Cd. Date .In. Type .Number. Cost .Numbr. Code. Plan .Actual. Date .Order. Cod.
*-----,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----
OR 831210 LS GREENBOX1          96751 FEDS
IP 831227 LS GREENBOX1 605126   84385 FEDS 831225 831227
OR 831211 LS GREENBOX4          96652 ARCO
IP 831216 LS GREENBOX4 436295   85381 USSC 831215 831216
:
:                ..... END REPORT .....

```

- Result remains on display; original report has lines deleted

```

Line▶ 1          Roll▶ -                      RESULT
:
: 4 LINE(S) FOUND OUT OF 8 LINES
:
*** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** ***
*                green/
:
:DATE 29 JUN 90 08:41:00 RID      3B  29 JUN 90 CCM
:  @      Production Status Report          Corporate Production      B000002
*St. Status. By. Product .Serial. Produc. Order. Cust. Produc. Produc. Ship .Ship .Spc.
*Cd. Date .In. Type .Number. Cost .Numbr. Code. Plan .Actual. Date .Order. Cod.
*-----,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----
OR 831210 LS GREENBOX1          96751 FEDS
IP 831227 LS GREENBOX1 605126   84385 FEDS 831225 831227
OR 831211 LS GREENBOX4          96652 ARCO
IP 831216 LS GREENBOX4 436295   85381 USSC 831215 831216
:
:                ..... END REPORT .....

```

UPD Example

- Search for all ordered greenboxes

```

SEARCH UPD

.@      Production Status Report          Corporate Production      B000002
*St. Status. By. Product .Serial. Produc. Order. Cust. Produc. Produc. Ship .Ship .Spc.
*Cd. Date .In. Type .Number. Cost .Numbr. Code. Plan .Actual. Date .Order. Cod.
*-----,--,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----
** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** ***** **
or
      green/

```

- Change greenboxes to whiteboxes in the result

```

Line▶ 1          Roll▶ CHG ;/GREEN/WHITE/          UPD RSLT
:
:      2 LINE(S) FOUND OUT OF 8 LINES
:
*** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** ***** **
*or
      green/
:
: DATE 29 JUN 90 08:43:53 RID      3B  29 JUN 90 CCM
.@      Production Status Report          Corporate Production      B000002
*St. Status. By. Product .Serial. Produc. Order. Cust. Produc. Produc. Ship .Ship .Spc.
*Cd. Date .In. Type .Number. Cost .Numbr. Code. Plan .Actual. Date .Order. Cod.
*-----,--,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----,-----
OR 831210 LS GREENBOX1          96751 FEDS
OR 831211 LS GREENBOX4          96652 ARCO
:
:      ..... END REPORT .....

```

UPD Example

- Update them in 3B also

```

Line▶ 1          Roll▶ UPD                               UPD RSLT
.
.  2 LINE(S) FOUND OUT OF 8 LINES
.
*** ***** ** ***** ***** ***** ***** ***** ***** ***** ***
*or          green/
.
. DATE 29 JUN 90 08:43:53 RID      3B  29 JUN 90 CCM
. @      Production Status Report          Corporate Production      B000002
*St. Status. By. Product . Serial. Produc. Order. Cust. Produc. Produc. Ship . Ship . Spc.
*Cd. Date . In. Type . Number. Cost . Numbr. Code. Plan . Actual. Date . Order. Cod.
*== =====
OR 831210 LS WHITEBOX1          96751 FEDS
OR 831211 LS WHITEBOX4          96652 ARCO
          ..... END REPORT .....

```

```

          UPD complete
. DATE 29 JUN 90 08:46:25 RID      3B  29 JUN 90 CCM
. @      Production Status Report          Corporate Production      B000002
*St. Status. By. Product . Serial. Produc. Order. Cust. Produc. Produc. Ship . Ship . Spc.
*Cd. Date . In. Type . Number. Cost . Numbr. Code. Plan . Actual. Date . Order. Cod.
*== =====
IP 831224 LS BLACKBOX1 436767          84389 AMCO 831223 831224
IP 831225 LS BLACKBOX1 436768          84390 AMCO 831223 831225
IP 831219 LS BLACKBOX2 637071          84353 INTR 831218 831219
OR 840110 LS BLACKBOX4          94754 ARCO
OR 831210 LS WHITEBOX1          96751 FEDS
IP 831227 LS GREENBOX1 605126          84385 FEDS 831225 831227
OR 831211 LS WHITEBOX4          96652 ARCO
IP 831216 LS GREENBOX4 436295          85381 USSC 831215 831216
          ..... END REPORT .....

```

Iterative Functions

- **IBFN, ICAL, IDAT, IFND, ISOR,ISRH, ITOT**
- **Save function mask options and parameters for future use**
- **Use or alter previously saved masks in future data manipulation**
- **Mask may be saved in report being manipulated or another report**
- **Saved mask appears at end of report as a set of asterisk lines**
- **Several masks may be saved in the same report**
- **Saved masks are identified by name and report location**
- **Maximum of six parameter lines may be used with a saved mask**
- **Use with complex and/or repeated functions**
- **Enter 'lxxx' on line 0 with the report to be manipulated on display**

Iterative Function Example

- Transmit to see result of sort and press F4 (Save) to save the mask

| Line# | 1 | Roll# | - | DATE | 30 OCT 91 | 13:20:52 | RID | 7B | 30 OCT 91 | MAPCOORD | RESULT |
|------------------------|---------|---------|-----------|--------|-----------|----------|--------|--------|-----------|----------|--------|
| *St. Status | By | Product | Serial | Produc | Order | Cust | Produc | Produc | Ship | Ship | Spc |
| *Cd. Date | In | Type | Number | Cost | Numbr | Code | Plan | Actual | Date | Order | Cod |
| IP | 831225 | LS | BLACKBOX1 | 436768 | | 84390 | AMCO | 831223 | 831225 | | |
| IP | 831224 | LS | BLACKBOX1 | 436767 | | 84389 | AMCO | 831223 | 831224 | | |
| IP | 831219 | LS | BLACKBOX2 | 637071 | | 84353 | INTR | 831218 | 831219 | | |
| OR | 840110 | LS | BLACKBOX4 | | | 94754 | ARCO | | | | |
| SC | 840110 | LS | BLACKBOX5 | 675281 | | 97441 | FEDS | 840131 | | | |
| END REPORT | | | | | | | | | | | |
| 1Mask | 2Report | 3BackUp | 4Save | 5 | 6@SOR | 7 | 8Help | 9 | 10Quit | | |

- Enter name (sort1) and location (7B) for saved mask

| |
|----------------------|
| Save Sort Mask |
| Sort mask name sort1 |
| Sort mask report 7B |

Iterative Function Example

- Receive mask again, press F2 (Report) to view the report with the saved mask

```

                                ISOR
*St.Status.By. Product .Serial.Produc.Order.Cust.Produc.Produc. Ship .Ship .Spec.
*Cd. Date .In. Type .Number. Cost .Numbr.Code. Plan .Actual. Date .Order.Cod.
*-----*-----*-----*-----*-----*-----*-----*-----*-----*-----*
** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** **
   1                2dn

1Mask  2Report 3Backup 4Save  5          6SOR  7          8Help  9          10Quit
    
```

- Receive report (not result) with mask added to bottom

```

Line▶ 1      Roll▶ -
.DATE 31 OCT 91 10:38:42 RID          7B  31 OCT 91  MAPCOORD          7B0
*St.Status.By. Product .Serial.Produc.Order.Cust.Produc.Produc. Ship .Ship .Spec.
*Cd. Date .In. Type .Number. Cost .Numbr.Code. Plan .Actual. Date .Order.Cod.
*-----*-----*-----*-----*-----*-----*-----*-----*-----*-----*
OR 840110 LS BLACKBOX4          94754 ARCO
IP 831224 LS BLACKBOX1 436767    84389 AMCO 831223 831224
IP 831225 LS BLACKBOX1 436768    84390 AMCO 831223 831225
IP 831219 LS BLACKBOX2 637071    84353 INTR 831218 831219
OR 840110 LS BLACKBOX5 675281    97441 FEDS 840131
.ISOR PARAMETERS sort1:
*
*XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
*
*
*St.Status.By. Product .Serial.Produc.Order.Cust.Produc.Produc. Ship .Ship .Spec.
*Cd. Date .In. Type .Number. Cost .Numbr.Code. Plan .Actual. Date .Order.Cod.
*-----*-----*-----*-----*-----*-----*-----*-----*-----*-----*
** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** **
   1                2dn
*END
                                END REPORT
1Mask  2Report 3Backup 4Save  5          6SOR  7          8Help  9          10Quit
    
```

Iterative Function Example

- **Iterative function menu bar choices**
 - Press F1 (Mask) to view and alter the mask at any time
 - Press F2 (Report) to view the report being manipulated
 - Press F3 (BackUp) to view previously saved masks
 - Press F4 (Save) to save the function mask
 - Press F6 (@xxx) to view the run statement equivalent of this function mask

Using a Saved Function Mask

lxxx rd,[f],maskname[,maskrep]

rd,f Report and optional format to be manipulated by the **lxxx** function
maskname Named function mask to be used
maskrep Optional named mask report location. Def=report being manipulated

- Specify the report to be manipulated (7B) and the saved mask name (sort1). 7B is also used as the saved mask report location.

```
ISOR 7B,,sort1
```

```
          Unisys MAPPER System
*      E36MAP EA10      *
Station: 10723 System: 3
User-id: MAPCOORD
Cabinet: 0
```

- Mask appears with saved parameters already entered. Use function keys as required.

```
ISOR
```

```
*St. Status. By. Product . Serial. Produc. Order. Cust. Produc. Produc. Ship . Ship . Spc.
*Cd. Date . In. Type . Number. Cost . Numbr. Code. Plan . Actual. Date . Order. Cod.
*-, ----, --, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----, ----,
** ***** ** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** **
          1          2dn
```

Exercise

Your supervisor requests the following using a copy of report 2B:

- 1. The status code for odd numbered boxes ordered has changed from OR to ZZ, please reflect this in your report.
- 2. Delete the remaining lines with status codes of OR.
- 3. Delete the customer AMCO from your report but retain them in the result. Duplicate the result and verify that the two reports are different.
- 4. Make a copy of 1C and save all equations done in Module 10 in this report.

✓ Su 11, 13, 15, 17, 19
CHG; /OR/ZZ
UPD

2/ SU - OR - DEL

3/ SU - Amco - W/T - compare

13

Date Processing

Objectives

Upon completion of this module, you should be able to

Manipulate date column data using the DATE and CAL functions

Compare dates between columns of a report and compute the difference in days

Compare dates within a report to the current date and compute the difference in days

Add or subtract a constant number of days from dates in a report

Have MAPPER determine the day of the week on which dates in a report occurred

Describe the different date formats available in MAPPER and convert dates in a report to another date format

View an online calendar while in MAPPER

Learning Sequence

- **Date function**
- **Compare to today's date**
- **Compare two dates**
- **Constant computations**
- **Format conversion**
- **Day of the week**
- **Calculate function**
- **Time**
- **Calendar display**
- **Clock display**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

DATE Function

- Compare two dates and put the difference in a receiving field
- Compare to today's date
- Add or subtract a constant number of days
- Find the day name
- Change the format of the date
- Works on dates from 1964-2063
- Must identify field's date format before processing
- Use a single letter identifier preceding the operator under the mask

| | |
|-------------------|-------------------|
| A = YMMDD | 91231 |
| B = YYMMDD | 891231 |
| C = DD MMM YY | 31 DEC 89 |
| D = YDDD | 9365 |
| E = YYDDD | 89365 |
| F = DDMMYY | 311289 |
| G = MM/DD/YY | 12/31/89 |
| H = Month DD,YYYY | DECEMBER 31, 1989 |
| I = MMDDYY | 123189 |

Note: *Default identifier format is B*

DATE Function

- **Menu Access**

- Press F6 (Tasks)
- Select 'Perform math operations'
- Asterisks in receiving field if no date to compare

- **Direct Access**

- Enter 'DATE rdc f' on line 0
- Fill in mask

- **Compare to today's date**

- '+' in field to compare
- '=' in field to receive difference in days
- Negative result if prior to today's date
- Asterisks in receiving field if no date to compare

Compare to Today's Date

- Perform the DATE function on 1H

| Line# | Roll# | date | lh | | | 1H20 | | |
|----------------------------|-------------|------------------|--------|--------|-----------|---------------------|-------|--|
| .DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | H0256 | |
| .MASTER ORDER ENTRY REPORT | | | | | | ORDER ENTRY REPORTS | | |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | | 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | | 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | | 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | | 870629 | 870708 | | |
| END REPORT | | | | | | | | |

- Compare order date to today's date, result in total cost

| DATE | | | | | | | | |
|----------------------------|--------|----------|-------|--------|----------|---------------------|-------|--|
| .MASTER ORDER ENTRY REPORT | | | | | | ORDER ENTRY REPORTS | | |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | H0256 | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | | | | | | | | |
| | | | | = | | b+ | | |

- Compared dates were prior to today's date

| Line# | Roll# | date | lh | | | RESULT | | |
|----------------------------|-------------|------------------|--------|--------|-----------|---------------------|-------|--|
| .DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | H0256 | |
| .MASTER ORDER ENTRY REPORT | | | | | | ORDER ENTRY REPORTS | | |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | -892 | 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | -889 | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | -889 | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | -888 | 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | -888 | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | -887 | 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | -885 | 870629 | 870708 | | |
| END REPORT | | | | | | | | |

Compare Two Dates

- ' + ' in one compare field, ' - ' in the other
- ' = ' in field to receive difference

| DATE | | | | | | | |
|-----------------------------|--------------------|--------|---------|---------------------------|---|--|--|
| . MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS H0256 | | | |
| *ORDER . PRODUCT | . ORDER . CUSTOMER | . UNIT | . TOTAL | . ORDER . DLURY | | | |
| *NUMBER . TYPE | . QTY . NAME | . COST | . COST | . DATE . DATE | | | |
| ***** | | | | ***** | | | |
| | | | = | - | + | | |

| Line# | Roll# | | | | | RESULT | |
|-----------------------------|--------------------|------------------|---------|---------------------------|----------|--------|--|
| . DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | |
| . MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS H0256 | | | |
| *ORDER . PRODUCT | . ORDER . CUSTOMER | . UNIT | . TOTAL | . ORDER . DLURY | | | |
| *NUMBER . TYPE | . QTY . NAME | . COST | . COST | . DATE . DATE | | | |
| ***** | | | | ***** | | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | 5 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | 6 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | 6 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | 5 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | 6 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | 8 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | 9 870629 | 870708 | | |
| END REPORT | | | | | | | |

Add or Subtract a Constant

- 'Identifier Operator Constant' in one field
- ' = ' in field to receive result of computation

| DATE | | | | | | | | |
|----------------------------|----------------|-------------|-----------------|---------------------|--------------|---------------|--------------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER .NUMBER | .PRODUCT .TYPE | .ORDER .QTY | .CUSTOMER .NAME | .UNIT .COST | .TOTAL .COST | .ORDERD .DATE | .DLURY .DATE | |
| ***** | | | | | | | | |
| | | | | | = | | b+5 | |

| Line# | Roll# | | | | | RESULT | | |
|----------------------------|--------------------|-------------|-----------------|---------------------|--------------|---------------|--------------|-------|
| .DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER .NUMBER | .PRODUCT .TYPE | .ORDER .QTY | .CUSTOMER .NAME | .UNIT .COST | .TOTAL .COST | .ORDERD .DATE | .DLURY .DATE | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 870702 | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 870706 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 870706 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 870706 | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 870707 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 870710 | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 870713 | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Add or Subtract a Constant

- 'n' option may be used to specify number of days in a week

| DATE | | | | | | | |
|--------------------------------|--------------|-----------|---------------|---------------------|------------|------------|------------|
| 5 MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0256 |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLVRY DATE |
| ***** | | | | | | | |
| | | | | | = | | b+5 |

| Line# | Roll# | | | | | | | RESULT |
|---------------------------|--------------|-----------|---------------|---------------------|------------|------------|------------|--------|
| .DATE | | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | |
| MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0256 | |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLVRY DATE | |
| ***** | | | | | | | | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 870703 | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 870708 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 870708 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 870708 | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 870709 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 870710 | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 870715 | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Format Conversion

- Original format letter in field to convert
- New format letter and '=' in receiving field

| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
|----------------------------|---------|---------|----------|---------------------|--------|----------|-------|-------|
| *ORDER . | PRODUCT | .ORDER. | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | |
| *NUMBER. | TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| | | | | | e= | | b | |

| Line# | Roll# | DATE | TIME | RID | 1H | DATE | TIME | MAPCOORD | RESULT |
|----------------------------|-------------|-----------|---------------|---------------------|--------|-----------|----------|----------|--------|
| 1 | - | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | 11:10:09 | MAPCOORD | RESULT |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 | |
| *ORDER . | PRODUCT | .ORDER. | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER. | TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 87178 | 870622 | 870627 | | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 87182 | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 87182 | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 87182 | 870626 | 870701 | | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 87183 | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 87186 | 870627 | 870705 | | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 87189 | 870629 | 870708 | | |
| END REPORT | | | | | | | | | |

Determine the Day of the Week

- W option must be used. Format letter in field containing date. '=' in any other field. ':' in field to receive day of the week abbreviation

| | | | | DATE | | | | |
|-----------------------------|---------|------------|--------|---------------------|---------|---------|-------|-------|
| . MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER . PRODUCT | . ORDER | . CUSTOMER | . UNIT | . TOTAL | . ORDER | . DLURY | | |
| *NUMBER . TYPE | . QTY | . NAME | . COST | . COST | . DATE | . DATE | | |
| *-----* | | | | | | | | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | |
| | | | | : | = | b | | |

| | | | | | | | | |
|-----------------------------|-------------|------------------|--------|---------------------|-----------|----------|--------|-------|
| Line# 1 | Roll# - | | | | | | RESULT | |
| . DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | |
| . MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER . PRODUCT | . ORDER | . CUSTOMER | . UNIT | . TOTAL | . ORDER | . DLURY | | |
| *NUMBER . TYPE | . QTY | . NAME | . COST | . COST | . DATE | . DATE | | |
| *-----* | | | | | | | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | SAT | 870627 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | WED | 870701 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | WED | 870701 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | WED | 870701 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | THU | 870702 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | SUN | 870705 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | WED | 870708 | 870708 | | |
| END REPORT | | | | | | | | |

CAL and Dates

- Use equations
- Must specify format of dates input to and output from equation

Format Identifiers

| Input ID | Output ID | Format |
|----------|-----------|----------------|
| D0(x) | D(0) | YMMDD |
| D1(x) | D(1) | YYMMDD |
| D2(x) | D(2) | DD MMM YY |
| D3(x) | D(3) | YDDD |
| D4(x) | D(4) | YYDDD |
| D5(x) | D(5) | DDMMYY |
| D6(x) | D(6) | MM/DD/YY |
| D7(x) | D(7) | Month DD, YYYY |
| D8(x) | D(8) | MMDDYY |

Compare to Today's Date

- Use the system constant 'today' to use today's date in an equation

| Line# | Roll# | cal | 1h | | | 1H20 | |
|----------------------------|-------------|----------|---------------|---------------------|-----------|----------|--------|
| .DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | |
| *ORDER | PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY |
| *NUMBER. | TYPE | .QTY | NAME | .COST | .COST | .DATE | DATE |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | | 870622 | 870627 |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | | 870625 | 870701 |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | | 870625 | 870701 |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | | 870626 | 870701 |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | | 870626 | 870702 |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | | 870627 | 870705 |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | | 870629 | 870708 |
| END REPORT | | | | | | | |

| CALCULATE | | | | | | | |
|----------------------------|---------|--------|----------|---------------------|--------|----------|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | |
| *ORDER | PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY |
| *NUMBER. | TYPE | .QTY | NAME | .COST | .COST | .DATE | DATE |
| ***** | | | | | | | |
| a=d1(b)-today | | | | | a | | b |
| | | | | | | | |
| | | | | | | | |

| Line# | Roll# | | | | | RESULT | |
|----------------------------|-------------|----------|---------------|---------------------|-----------|----------|--------|
| .DATE | 29 NOV 89 | 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | |
| *ORDER | PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY |
| *NUMBER. | TYPE | .QTY | NAME | .COST | .COST | .DATE | DATE |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | -887 | 870622 | 870627 |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | -883 | 870625 | 870701 |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | -883 | 870625 | 870701 |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | -883 | 870626 | 870701 |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | -882 | 870626 | 870702 |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | -879 | 870627 | 870705 |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | -876 | 870629 | 870708 |
| END REPORT | | | | | | | |

Compare Two Dates

- Subtract one date field from another

CALCULATE

| . MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
|-----------------------------|--------------------|--------|---------|---------------------|---|--|--|-------|
| *ORDER . PRODUCT | . ORDER . CUSTOMER | . UNIT | . TOTAL | . ORDERD . DLURY | | | | |
| *NUMBER . TYPE | . QTY . NAME | . COST | . COST | . DATE . DATE | | | | |
| ***** | | | | | | | | |
| | | | a | b | c | | | |
| a=dl(c)-dl(b) | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Line# | Roll# | | | | | | | RESULT |
|-----------------------------|--------------------|--------|---------------|---------------------|----------|--------|--------|--------|
| . DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| . MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER . PRODUCT | . ORDER . CUSTOMER | . UNIT | . TOTAL | . ORDERD . DLURY | | | | |
| *NUMBER . TYPE | . QTY . NAME | . COST | . COST | . DATE . DATE | | | | |
| ***** | | | | | | | | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | 5 | 870622 | 870627 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | 6 | 870625 | 870701 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | 6 | 870625 | 870701 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | 5 | 870626 | 870701 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | 6 | 870626 | 870702 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | 8 | 870627 | 870705 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | 9 | 870629 | 870708 | |
| END REPORT | | | | | | | | |

Using a Constant

- Add or subtract any constant to a date field

CALCULATE

| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
|----------------------------|---------|--------|----------|---------------------|--------|--------|-------|-------|
| *ORDER | PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDER | DLURY | |
| *NUMBER | .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | |
| ***** | | | | | | | | |
| a, d(1)=d1(a)+5 | | | | | | | a | |

| Line# | Roll# | RESULT | | | | | | |
|----------------------------|--------------------|--------|---------------|---------------------|----------|--------|--------|-------|
| .DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER | PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDER | DLURY | |
| *NUMBER | .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | | 870622 | 870702 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | | 870625 | 870706 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | | 870625 | 870706 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | | 870626 | 870706 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | | 870626 | 870707 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | | 870627 | 870710 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | | 870629 | 870713 | |
| END REPORT | | | | | | | | |

Using a Constant

- Use the 'Wn' option to specify number of days in the week

| CALCULATE | | | | | | | |
|---------------------------------|--------------|-----------|---------------|---------------------|------------|------------|------------|
| W5 MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0256 |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLURY DATE |
| ***** | | | | | | | |
| a,d(1)=d1(a)+5 | | | | | | | a |

| Line# | Roll# | DATE | TIME | RID | 1H | 13 NOV 89 | MAPCOORD | RESULT |
|---------------------------|--------------|-----------|---------------|---------------------|------------|------------|------------|--------|
| MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0256 | |
| *ORDER NUMBER | PRODUCT TYPE | ORDER QTY | CUSTOMER NAME | UNIT COST | TOTAL COST | ORDER DATE | DLURY DATE | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | | 870622 | 870703 | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | | 870625 | 870708 | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | | 870625 | 870708 | |
| 700004 | HDC CLIPPER | 10 | GARDEN STORE | 16.25 | | 870626 | 870708 | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | | 870626 | 870709 | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | | 870627 | 870710 | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | | 870629 | 870715 | |
| END REPORT | | | | | | | | |

Format Conversion

- Use the output format id as an option in the receiving field of the equation

| CALCULATE | | | | | | | |
|----------------------------|-----------------|-------|--------|---------------------|-------|---|-------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0256 |
| *ORDER .PRODUCT | .ORDER.CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER.TYPE | .QTY .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | | | | | | | |
| a,d(8)=d1(a) | | | | | | a | |

| Line# | Roll# | | | | | | | RESULT |
|----------------------------|--------------------|------------------|--------|---------------------|----------|--|-------|--------|
| .DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | H0256 | |
| *ORDER .PRODUCT | .ORDER.CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | | |
| *NUMBER.TYPE | .QTY .NAME | .COST | .COST | .DATE | .DATE | | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | 870622 | 062787 | | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | 870625 | 070187 | | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | 870625 | 070187 | | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | 870626 | 070187 | | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | 870626 | 070287 | | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | 870627 | 070587 | | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | 870629 | 070887 | | | |
| END REPORT | | | | | | | | |

Other Date Formats

- **Used with receiving fields only**

D(C) = Month name

D(D) = Day number in month (1-31)

D(J) = Day number in year (1-365)

D(N) = Day number in week (1-7)

D(W) = Day name

D(M) = Month number (1-12)

D(Y) = Two-digit year number

Day of the Week

- Use the D(W) format in the receiving field of the equation

CALCULATE

| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
|----------------------------|-----------------|-------|--------|---------------------|-------|---|--|-------|
| *ORDER .PRODUCT | .ORDER.CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | | |
| *NUMBER.TYPE | .QTY .NAME | .COST | .COST | .DATE | .DATE | | | |
| ***** | | | | | | | | |
| a, d(w)=d1(b) | | | | a | | b | | |

| Line# 1 | Roll# - | | | | | | | RESULT |
|----------------------------|--------------------|------------------|--------|---------------------|----------|--------|--|--------|
| .DATE | 29 NOV 89 11:10:09 | RID | 1H | 13 NOV 89 | MAPCOORD | | | |
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER .PRODUCT | .ORDER.CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | | |
| *NUMBER.TYPE | .QTY .NAME | .COST | .COST | .DATE | .DATE | | | |
| ***** | | | | | | | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | SATURDAY | 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | WEDNESDAY | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | WEDNESDAY | 870625 | 870701 | | |
| 700004 | HDC CLIPPER | 10 GARDEN STORE | 16.25 | WEDNESDAY | 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | THURSDAY | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | SUNDAY | 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | WEDNESDAY | 870629 | 870708 | | |
| END REPORT | | | | | | | | |

CAL and Time

- **Time Format Identifiers**

| Input ID | Output ID | Format |
|-----------------|------------------|----------------------|
| T0(x) | T(0) | HH:MM:SS |
| T0(1) | T(1) | HH:MM |
| T0(2) | T(2) | HHMMSS |
| T0(3) | T(3) | HHMM |
| | T(H) | Hour number |
| | T(M) | Minute number |
| | T(S) | Second number |

CAL and Time

- Use the system constant 'TIME' to get the current time

CALCULATE

| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
|----------------------------|--------|----------|-------|---------------------|----------|-------|--|-------|
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| ***** | | | | | | | | |
| a,t(0)=time | | | | | a | | | |

| Line# | Roll# | DATE | TIME | RID | 1H | 13 NOV 89 | MAPCOORD | RESULT |
|----------------------------|-------------|------------------|--------|---------------------|----------|-----------|----------|--------|
| .MASTER ORDER ENTRY REPORT | | | | ORDER ENTRY REPORTS | | | | H0256 |
| *ORDER .PRODUCT | .ORDER | CUSTOMER | .UNIT | .TOTAL | .ORDERD. | DLURY | | |
| *NUMBER .TYPE | .QTY | .NAME | .COST | .COST | .DATE | .DATE | | |
| 700001 | HOE | 25 SMITH, INC | 10.00 | 10:44:40 | 870622 | 870627 | | |
| 700002 | RAKE | 20 A&B SUPPLIES | 16.00 | 10:44:40 | 870625 | 870701 | | |
| 700003 | SHOVEL | 35 GARDEN CTR | 25.00 | 10:44:40 | 870625 | 870701 | | |
| 700004 | HDG CLIPPER | 10 GARDEN STORE | 16.25 | 10:44:40 | 870626 | 870701 | | |
| 700005 | RAKE | 30 HOME SUPPLIES | 16.00 | 10:44:40 | 870626 | 870702 | | |
| 700006 | LAWN MOWER | 10 A&B SUPPLIES | 150.00 | 10:44:40 | 870627 | 870705 | | |
| 700007 | RAKE | 10 SMITH, INC | 16.00 | 10:44:40 | 870629 | 870708 | | |
| END REPORT | | | | | | | | |

Displaying a Calendar

- **CALENDAR run**
- **Displays two- or six-month calendar**
 - If a report was on display a two-month calendar appears above the report
 - If no report was on display a six-month calendar appears
- **Current date blinks**
- **Remove calendar by entering 'H0' on line 0**
- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Use utilities'
 - Select 'Display calendar'
- **Direct Access**
 - Enter 'CALENDAR,mmm,yyyy' on line 0 where
 - mmm=First three letters of starting month. Default is current month.
 - yyyy=Year. Default is current year. Two digits needed for years in this century
- **With six- month calendar on display**
 - Press F1 (Ahead), F2 (Back), F3 (Yr_Ahd), or F4 (Yr_Bk) to see six months ahead, six months back, one year ahead or one year back of current calendar

CALENDAR Example

- 'CALENDAR' entered on line 0 with a report on display

| Line# | Roll# | 1H20 | | | | | | | | | | | | | | |
|---|-------------|-------|---------------|--------|-------|--------|--------|----------|-----|-----|-----|-----|-----|-----|-----|--|
| DEC 1989 | SUN | MON | TUE | WED | THU | FRI | SAT | JAN 1990 | SUN | MON | TUE | WED | THU | FRI | SAT | |
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1990 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| | 17 | 18 | 19 | 20 | 21 | 22 | 23 | | 21 | 22 | 23 | 24 | 25 | 26 | 27 | |
| | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | 28 | 29 | 30 | 31 | | | | |
| | 31 | | | | | | | | | | | | | | | |
| . DATE 29 NOV 89 11:10:09 RID 1H 13 NOV 89 MAPCOORD | | | | | | | | | | | | | | | | |
| . MASTER ORDER ENTRY REPORT ORDER ENTRY REPORTS H0256 | | | | | | | | | | | | | | | | |
| *ORDER | PRODUCT | ORDER | CUSTOMER | UNIT | TOTAL | ORDER | DLVRY | | | | | | | | | |
| *NUMBER | TYPE | QTY | NAME | COST | COST | DATE | DATE | | | | | | | | | |
| 700001 | HOE | 25 | SMITH, INC | 10.00 | | 870622 | 870627 | | | | | | | | | |
| 700002 | RAKE | 20 | A&B SUPPLIES | 16.00 | | 870625 | 870701 | | | | | | | | | |
| 700003 | SHOVEL | 35 | GARDEN CTR | 25.00 | | 870625 | 870701 | | | | | | | | | |
| 700004 | HDG CLIPPER | 10 | GARDEN STORE | 16.25 | | 870626 | 870701 | | | | | | | | | |
| 700005 | RAKE | 30 | HOME SUPPLIES | 16.00 | | 870626 | 870702 | | | | | | | | | |
| 700006 | LAWN MOWER | 10 | A&B SUPPLIES | 150.00 | | 870627 | 870705 | | | | | | | | | |
| 700007 | RAKE | 10 | SMITH, INC | 16.00 | | 870629 | 870708 | | | | | | | | | |
| END REPORT | | | | | | | | | | | | | | | | |

- 'CALENDAR' entered on line 0 with no report on display

| | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|----------|-----|-----|-----|-----|-----|-----|-----|--|
| JUL 1991 | SUN | MON | TUE | WED | THU | FRI | SAT | AUG 1991 | SUN | MON | TUE | WED | THU | FRI | SAT | |
| | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | |
| | 21 | 22 | 23 | 24 | 25 | 26 | 27 | | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
| | 28 | 29 | 30 | 31 | | | | | 25 | 26 | 27 | 28 | 29 | 30 | 31 | |
| SEP 1991 | SUN | MON | TUE | WED | THU | FRI | SAT | OCT 1991 | SUN | MON | TUE | WED | THU | FRI | SAT | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
| | 15 | 16 | 17 | 18 | 19 | 20 | 21 | | 20 | 21 | 22 | 23 | 24 | 25 | 26 | |
| | 22 | 23 | 24 | 25 | 26 | 27 | 28 | | 27 | 28 | 29 | 30 | 31 | | | |
| NOV 1991 | SUN | MON | TUE | WED | THU | FRI | SAT | DEC 1991 | SUN | MON | TUE | WED | THU | FRI | SAT | |
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| | 17 | 18 | 19 | 20 | 21 | 22 | 23 | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | |
| | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | 22 | 23 | 24 | 25 | 26 | 27 | 28 | |
| | | | | | | | | | 29 | 30 | 31 | | | | | |
| 1Ahead 2Back 3Yr Ahd 4Yr Bk 5 6 7 8Help 9 10Quit | | | | | | | | | | | | | | | | |

Displaying a Clock

- **CLOCK run**
 - Displays time and current month calendar
 - Current date blinks on calendar
 - Time updated approximately every 5 seconds
- **Enter 'CLOCK' on line zero to display clock and calendar**

```

000      99999      111      000      5555555      111
0 0      99 99    [] 11111      0 0    [] 55      11111
00 00     99 99     11      00 00     55      11
00 00     999999    11      00 00     555555    11
0 0      99      11      00 00     55 55      11
0 0      99      11      0 0    [] 55 55      11
000      99      1111111 000      55555      1111111

                SUN MON TUE WED THU FRI SAT
                1  2  3  4  5  6  7
                8  9 10 11 12 13 14
                15 16 17 18 19 20 21
                22 23 24 25 26 27 28
                29 30 31

Today is FRIDAY
JULY 20th, 1990

```

- **Press F4 (Stop) to stop time updating**
- **Press F1 (Resume) on stopped display to continue**
- **Press F10 (Quit) on stopped display to receive logo**

Exercise

Your supervisor requests the following using report 2B:

1. Show the number of days between the planned and actual production dates in the Spc Cod field. $a = d1(b) - d1(c)$
2. Show the number of days from the ship date and today's date in the Product Cost field. $a = d1(b) - \text{today}$
3. Show the days of the week on which the products were shipped in the Spc Cod field. $b, d(w) = d1(a)$
4. The production schedule has slipped; add two days to the planned date and place the result in the same field. $a, d1 + 2 = d1(a)$ $a, d1 = d1(a) + 2$
5. I would like a more readable shipping date. Convert the shipping dates to format DD MMM YY and place the result in the Product Type field. $b, d(1) = d2(a)$ $a, d(2) = d1(b)$
6. Display a two-month calendar starting in the month of your birth above report 2B.

14

Analyzing Data

Objectives

Upon completion of this module, you should be able to

Use the COUNT function to analyze data in a field based upon a changing key field

Produce, for each unique item in a key field, one output line containing:

Entry counts

Subtotals

Percentages

Averages

Minimums and maximums

Use COUNT function options

Produce multiple analyses with one COUNT function

Specify intervals on which to base the production of output lines

Learning Sequence

- **Count function**
- **Parameters and options**
- **Basic analysis**
- **Totals and rounding**
- **Cumulation**
- **Field labels**
- **Multiple analyses**
- **Scaling**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

COUNT Function

- **For analyzing and summarizing data**
- **Based on key field(s) similar to subtotalling**
- **Key field need not be sorted**
- **Produces results similar to TOT and CAL but allows greater depth of analysis**
- **Allows**
 - Entry counting and entry count percentage
 - Subtotals and percentage of grand total
 - Average, minimum, maximum
 - Rounding of each field individually
 - Perform calculations only on data within a certain numeric, date, or time interval (scaling)
 - Space fill unused fields in the result
 - Optionally display only specified fields in the result
 - Perform calculations across many reports
 - Performs as many analyses as specified with only one pass of the data

Parameters and Options

- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Perform math operations'
 - Select 'Count and analyze data'
 - Fill in mask
- **Fast Access**
 - Enter 'CNT rdc f' on line zero
- **Parameters**
 - 1-9 Specifies key field(s). Must have one, need not be sorted.
 - Key field will be internally grouped (in ASCII sort sequence) so that all other parameters will produce an output line for each unique item in the key field.
 - N, Df, or Tf added to the key field number specifies that the key field contains numeric, date, or time data for internal sorting purposes (1N, 1Df or 1Tf). 'f' specifies date or time format number. Format numbers discussed later.
 - = Produces an entry count for each unique key field item in the field containing this parameter
 - % Percentage of total entry count for each unique key field item
 - + Subtotal for each unique key field item
 - / Average for each unique key field item
 - < Minimum for each unique key field item
 - > Maximum for each unique key field item
- **Options**
 - A All line types
 - H Display only one set of headings when more than one analysis is done
 - O Omit output lines and headings, provide totals only
 - P Remove all nonreferenced fields from the result
 - R Process a range of reports (Round)
 - * Flag invalid results
 - Other options discussed with examples

COUNT Examples

- Enter 'CNT 5F' to receive count mask (5F will be used in all examples)

```

Line▶ cnt 5f      Roll▶ -
.DATE 24 JUL 90  13:49:58  RID      5F  24 JUL 90  CCM      5F0
*
*Location: Date : Time :Down: Cause : Value : Cost :Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
Chicago 890221 05:00:32 2.2 Code1      550
Boston 890424 03:00:45 .5 Code3      40
Chicago 890607 09:00:23 1.3 Code2     2900
New York 890607 11:47:47 1.0 Code2      10
Boston 890708 14:31:02 0.5 Code1      55
Boston 890708 08:24:01 0.1 Code2       9
Chicago 890930 18:45:02 4.0 Code3     7500
Chicago 891130 23:24:00 0.7 Code2      20
Boston 891202 03:05:09 .1 Code2     900
          ..... END REPORT .....
    
```

- Enter '1' in the key field (need not be sorted), '=' in the field to receive an entry count for each unique key field item, '%' in the field to receive a percentage of total entries for each unique key field item, '+' in the field to receive a subtotal of that field for each unique key field item, and '/' in the field to receive an average of that field for each unique key item.

```

                                COUNT
*
*Location: Date : Time :Down: Cause : Value : Cost :Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
*****          *****          *****          *****          *****          *****          *****          *****
=                %                +                1                /
    
```

- Receive the result, all unreferenced fields are space filled

```

Line▶ 1          Roll▶ -
.DATE 24 JUL 90  13:49:58  RID      5F  24 JUL 90  CCM      RESULT
*
*Location: Date : Time :Down: Cause : Value : Cost :Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
  2  22.22      2.70 CODE1      302.50000
  5  55.56      4.10 CODE2      767.80000
  2  22.22      4.50 CODE3      3770
          ..... END REPORT .....
    
```

T Option and Rounding

- T option displays a total for each field. Using the previous example with the T option displays the entry count total, percentage total, grand total, and grand average.

```

Line▶ 1      Roll▶ -
.DATE 24 JUL 90 13:49:58 RID      5F  24 JUL 90 CCM      RESULT
*
*Location: Date : Time .Down. Cause : Value : Cost : Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
      2  22.22      2.70 CODE1      302.50000
      5  55.56      4.10 CODE2      767.80000
      2  22.22      4.50 CODE3           3770
*-----*-----*-----*-----*-----*-----*
      9 100.00           11.3           1331.5556
*
: OUTPUT LINES = 3
      ..... END REPORT .....
    
```

- Rounding of fields may be done by entering 'R' in column one on the line below the parameters and the rounding value below each field to be rounded.

```

                                COUNT
*
*Location: Date : Time .Down. Cause : Value : Cost : Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
***** ***** ***** **** ***** ***** ***** ***** *****
=      %      +      1      /
R      .1      .01
    
```

- Receive result with rounded values

```

Line▶ 1      Roll▶ -
.DATE 24 JUL 90 13:49:58 RID      5F  24 JUL 90 CCM      RESULT
*
*Location: Date : Time .Down. Cause : Value : Cost : Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
      2  22.22      2.7 CODE1      302.50
      5  55.56      4.1 CODE2      767.80
      2  22.22      4.5 CODE3      3770.00
      ..... END REPORT .....
    
```

Using a Date Field as a Key

- To use a field containing dates as a key, enter '1D' and a date format number
- 1 = key number, D = date type field, 1 = date format YYMMDD

```

*
*Location, Date, Time, Down, Cause, Value, Cost, Count, %
*-----,-----,-----,-----,-----,-----,-----,-----,-----
***** ***** ***** **** ***** ***** ***** ***** *****
          1D1                                     +

```

- '+' provides a subtotal cost for each unique date

```

Line# 1      Roll# -      RESULT
.DATE 24 JUL 90 13:49:58 RID      5F  24 JUL 90 CCM
*
*Location, Date, Time, Down, Cause, Value, Cost, Count, %
*-----,-----,-----,-----,-----,-----,-----,-----,-----
          890221                      550
          890424                      40
          890607                     2910
          890708                      64
          890930                     7500
          891130                      20
          891202                      900
          ..... END REPORT .....

```

Vertical Cumulation

- Enter '+' following a parameter to receive vertical cumulation of that field
- Enter '=+' to receive vertical cumulation of the entry count.
Enter '%+' to receive vertical cumulation of the percentages.

COUNT

```

*
*Location, Date, Time, Down, Cause, Value, Cost, Count, %
*-----,-----,-----,-----,-----,-----,-----,-----,-----
***** ***** ***** **** ***** ***** ***** *****
1      =    =+    %    %+
    
```

```

Line# 1 Roll# - RESULT
DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM
*
*Location, Date, Time, Down, Cause, Value, Cost, Count, %
*-----,-----,-----,-----,-----,-----,-----,-----,-----
BOSTON      4      4 44. 44.44
CHICAGO     4      8 44. 88.89
NEW YORK    1      9 11. 100.00
          ..... END REPORT .....
    
```

Parameter Positioning

- When multiple parameters are placed in a field, their positioning can lead to different results
- Enter '%+' to receive vertical cumulation of the percentages
- Enter '+%' to receive the subtotal cost for each key item expressed as a percentage of the total cost.

COUNT

```

*
*Location: Date : Time : Down. : Cause : Value : Cost : Count : % :
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
***** ***** ***** **** ***** ***** ***** ***** *****
1      %      %+      +      % as cumulative
                        % as cumulative
                        total
                        +%
                        Subtotal as %
    
```

```

Line# 1      Roll# -
.DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM RESULT
*
*Location: Date : Time : Down. : Cause : Value : Cost : Count : % :
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
BOSTON 44.44 44.4444 2.10      8.37784
CHICAGO 44.44 88.8889 8.20      91.53872
NEW YORK 11.11 100.0000 1          0.08344
..... END REPORT .....
    
```

Field Labels

- Label fields with a single letter when you want the result of a computation on this field to appear in another field
- A = Labels field for future computation. +A = Subtotal the field labeled 'A' but place the result here.

COUNT

```

*
*Location: Date : Time :Down:
*Time: Cause : Value : Cost :Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
***** ***** ***** **** ***** ***** ***** ***** *****
1                a          +a
    
```

- Note the 'Down Time' field contains the value from the first key field line
- Use the 'E' option to receive the value from the last key field line
- Enter '-' following the field label to space fill this field in the result

```

Line# 1      Roll# -
.DATE 24 JUL 90 13:49:58 RID      5F  24 JUL 90 CCM      RESULT
*
*Location: Date : Time :Down:
*Time: Cause : Value : Cost :Count: % :
*-----*-----*-----*-----*-----*-----*-----*-----*
BOSTON                .5      2.10000000
CHICAGO               2.2      8.20000000
NEW YORK              1.0          1
          ..... END REPORT .....
    
```

Using the Field Label Field

- A+ = Identify the field and subtotal the field. /A = Average the field labeled 'A' and place the result here.

COUNT

```

*
*Location Date Time Down
*Time Cause Value Cost Count %
*-----
*****
1 a+ /a
    
```

```

Line 1 Roll - RESULT
DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM
*
*Location Date Time Down
*Time Cause Value Cost Count %
*-----
BOSTON 2.10 0.52500000
CHICAGO 8.20 2.05000000
NEW YORK 1 1
..... END REPORT .....
    
```

- The 'P' option eliminates any unused field from the result
- The following result shows the previous example with the 'P' option used

```

Line 1 Roll - RESULT
DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM
*
*Location Time Value
*-----
BOSTON 2.10 0.52500000
CHICAGO 8.20 2.05000000
NEW YORK 1 1
..... END REPORT .....
    
```

Multiple Analyses

- Specify more than one analysis by using more than one line in the mask
- Only one pass of the data is done

COUNT

```

*
*Location: Date : Time : Down. : Cause : Value : Cost : Count: % :
*-----:-----:-----:-----:-----:-----:-----:-----:-----:
***** ***** ***** **** ***** ***** ***** ***** *****
1
=
a/
1
+a
    
```

- Note the headers preceding each analysis and the page eject between them

```

Line▶ 1 Roll▶ - RESULT
.DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM
*
*Location: Date : Time : Down. : Cause : Value : Cost : Count: % :
*-----:-----:-----:-----:-----:-----:-----:-----:-----:
BOSTON 0.53 2.1000000
CHICAGO 2.05 8.2000000
NEW YORK 1 1
EJECT
.DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM
*
*Location: Date : Time : Down. : Cause : Value : Cost : Count: % :
*-----:-----:-----:-----:-----:-----:-----:-----:-----:
2 CODE1
5 CODE2
2 CODE3
..... END REPORT .....
    
```

- Use the 'H' option to eliminate the extra headers and page eject

```

Line▶ 1 Roll▶ - RESULT
.DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM
*
*Location: Date : Time : Down. : Cause : Value : Cost : Count: % :
*-----:-----:-----:-----:-----:-----:-----:-----:-----:
BOSTON 0.53 2.1000000
CHICAGO 2.05 8.2000000
NEW YORK 1 1
2 CODE1
5 CODE2
2 CODE3
..... END REPORT .....
    
```

Scaling

- Specifying an interval in which to analyze
- Provide one output line for each interval encountered
- Numeric, date, or time intervals
- S option
 - Sn(intv/min/max) for numeric scaling
 - SnDf(intv/min/max/strt) for date scaling
 - SnTf(intv/min/max) for time scaling
 - n = Key field number to use for scaling
 - D = Date scaling indicator
 - T = Time scaling indicator
 - f = Date or time format number of the key field
 - Date formats: 0 = YMMDD 1 = YYMMDD 2 = DD MMM YY 3 = YDDD
4 = YYDDD 5 = DDMMYY 6 = MM/DD/YY 7 = MONTH DD,YYYY
8 = MMDDYY
 - Time formats: 0 = HH:MM:SS 1 = HH:MM 2 = HHMMSS 3 = HHMM
 - intv = Interval size specifying when to provide an output line
 - Numeric interval of 10 outputs a line for every 10 units of the key field
 - Date intervals expressed in days, weeks, months or years. 5D = 5 days
5W = 5 weeks 5M = 5 months 5Y = 5 years
 - Time intervals expressed in seconds, minutes or hours. 5S = 5 seconds
5M = 5 minutes 5H = 5 hours
 - min and max = Any values in the key field outside the min and max are ignored
 - strt = Start date. Optional. Works in conjunction with the intv field. If intv is a number of days or weeks, specify the three-character day on which this interval is to start (does not have to be the same day as min). If intv is a number of months, specify the three-character month on which the interval is to begin. If intv is a number of years, specify the two- or four-number year on which the interval is to begin.

Numeric Scaling Example

- S1 = Intervals analyzed from key field 1. (.5) = Interval size of one half.

| COUNT | | | | | | | | |
|-----------|-------|-------|---------------|-------|-------|-------|-------|-------|
| S1(.5) | | | | | | | | |
| *Location | Date | Time | Down. Time | Cause | Value | Cost | Count | % |
| ***** | ***** | ***** | *** | ***** | ***** | ***** | ***** | ***** |
| | | | 1 | | / | | | |

- Intervals with no values are not expressed (1.5, 2.5, etc.)

| Line# | 1 | Roll# | - | RESULT | | | | |
|------------------------|-----------|----------|---------------|--------|-----------|-----------|-------|---|
| .DATE | 24 JUL 90 | 13:49:58 | RID | 5F | 24 JUL 90 | CCM | | |
| *Location | Date | Time | Down. Time | Cause | Value | Cost | Count | % |
| | | | 0.0 | | | | 9 | |
| | | | 0.5 | | | 38.333333 | | |
| | | | 1.0 | | | | 1270 | |
| | | | 2.0 | | | | 550 | |
| | | | 4.0 | | | | 7500 | |
| END REPORT | | | | | | | | |

- Z option will display all intervals beginning with the first interval with a value through the last interval with a value
- B option will display all intervals within the boundaries of the minimum and maximum whether they have values or not
- Note the lower limit of the interval is expressed in the key field. U option displays the upper limit of the interval in the key field

Date Scaling Example

- S1 = Intervals analyzed from key field 1. D1 = Dates in key field are in format 1 (YYMMDD). 2W = Two-week intervals. 890520 = Ignore dates previous to this. 891201 = Ignore dates following this. SAT = Begin each two-week interval on a Saturday.**

| COUNT | | | | | | | | | |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| S1D1(2W/890520/891201/SAT) | | | | | | | | | |
| * | | | | | | | | | |
| *Location | Date | Time | Down. | Time | Cause | Value | Cost | Count | % |
| *----- | ----- | ----- | ---- | ----- | ----- | ----- | ----- | ----- | ----- |
| ***** | ***** | ***** | **** | ***** | ***** | ***** | ***** | ***** | ***** |
| | 1 | | | | | | / | | |

- Values from outside the min and max were not included in the result**

| | | | | | | | RESULT | | |
|------------------------|----------|-------|-------|-----------|-------|-------|--------|-------|-------|
| Line▶ 1 | Roll▶ - | | | | | | | | |
| .DATE 24 JUL 90 | 13:49:58 | RID | 5F | 24 JUL 90 | CCM | | | | |
| * | | | | | | | | | |
| *Location | Date | Time | Down. | Time | Cause | Value | Cost | Count | % |
| *----- | ----- | ----- | ---- | ----- | ----- | ----- | ----- | ----- | ----- |
| | 890603 | | | | | | 1455 | | |
| | 890701 | | | | | | 32 | | |
| | 890923 | | | | | | 7500 | | |
| | 891118 | | | | | | 20 | | |
| END REPORT | | | | | | | | | |

- I option will include out of range key values. Any value below the minimum will be included in the first interval. Any value above the maximum will be included in the last interval.**

Time Scaling Example

- S1 = Intervals analyzed from key field 1. T0 = Times in key field are in format 0 (HH:MM:SS). 6H = Six-hour intervals.

COUNT

S1T0(6H/06:00:00)

```

*
*Location, Date, Time, Down, Cause, Value, Cost, Count, %
*-----,-----,-----,-----,-----,-----,-----,-----,-----
***** ***** ***** **** ***** ***** ***** ***** *****
          1          +
    
```

Line 1 Roll - RESULT

.DATE 24 JUL 90 13:49:58 RID 5F 24 JUL 90 CCM

```

*
*Location, Date, Time, Down, Cause, Value, Cost, Count, %
*-----,-----,-----,-----,-----,-----,-----,-----,-----
          06:00:00 2.40
          12:00:00 0.50
          18:00:00 4.70
          ..... END REPORT .....
    
```

Exercise

Your supervisor requests the following using report 1D and rounding all decimal amounts to two places:

1. Display a result showing how many entries we have for each customer. Display only the customer code and the number of entries.
 (1) =
2. Display a result showing the total quantity ordered and average quantity ordered for each product type.
 (1) a + a/
3. Display a result showing the percentage of the entire quantity ordered that is used by each product type.
 (1) 1 at 1a +%
4. In report 1C, display a result showing the average sales commission for every \$200 product cost interval between \$14,000 and \$15,000.
 (1)

Scaling

options

SI (200/14000/15,000)

1 P-option Customer Code (1) =

2/ (1) a + 1a

Prod Cost

3/ (1) Qty ORD +%

15

Drawer Creation

Objectives

Upon completion of this module, you should be able to

Create an experimental report to be used in generating a new drawer

Specify the editing MAPPER is to do during report updates

Establish formats in which report data can be displayed

Use FORMG to prepare an experimental report or to modify an existing experimental report

Define lines which may be added to reports with predefined data automatically entered

Describe the requirements for an experimental report to be used in generating a new drawer

Learning Sequence

- **Free form reporting**
- **Drawer design**
- **Experimental report creation**
- **FORMG run**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

Free Form Reporting

- **Drawers may be created with no structure**

- **Each report in the drawer may be different**
 - May contain all text
 - May contain a unique formatted report

- **Report 0 contains**
 - No headers
 - No mask
 - No edit lines
 - No formats

- **Use 'T' function to find free form drawer within a cabinet**

- **Drawer A is free form**

Designing a Drawer

- **Create an experimental report**
- **A free form report**
- **Contains information similar to report 0**
- **Created manually or with the FORMG run**
- **Duplicate the experimental report for test purposes**
- **Try manual functions with the test report**
- **Coordinator creates report 0 from the experimental report**

Manual Creation of Experimental Report

- **Add a free form report (usually drawer 1 of cabinet 0) and create the following**

- **Headers**
 - Title line on a period type line
 - Field headers on asterisk type lines
 - Divider line (*==) using periods to separate fields
 - Max of eight header lines (Usually four; title, two headers, divider)
 - Date line is generated automatically
 - Mask created automatically from the headers

Manual Creation of Experimental Report

- **Optional predefined lines**

- First line should contain tabs and blanks
- Enter constant data or reserved words
- May be added after creation of report 0
- Headers + Predefined = Max of 14
- Blanks with tabs are the default

- **Edit code line**

- Code digit or blank for each character position

- **Format lines**

- Up to 25 lines (MAPPER 1100 up to six)
- 'X' in each character position to be included in a format (must have an 'X' in column one)

Experimental Report Example

- Request drawer titles for this cabinet (T)

I

Unisys MAPPER System
 UNISYS CORPORATION
 Station: 9 System: A
 User-id: COM
 Cabinet: 0

- Add a report in an experimental report drawer

AR I, EXP REPORT

| Locate: | Drawer Select |
|----------------------------|---------------|
| Corporate Factors Base | C0 W |
| Corporate Order Status | D0 W |
| Corporate Production | B0 W |
| Demonstration Runs | E0 W |
| Freeform Experimental Rpts | F0 W |
| Freeform Experimental Rpts | I0 W |
| WP Example Reports | H0 W |

Experimental Report Example

- Receive a blank report

```

Line#| 1           Roll#|-                210
.DATE  30 NOV 89 10:53:00 RID  21  30 NOV 89 CCM
.EXP REPORT                               Freeform Experimental Rpts 10020
*-----*
                                     ..... END REPORT .....
    
```

- Fill in the report as needed

```

Line#| 1           Roll#|-                210
.DATE  30 NOV 89 11:27:29 RID  21  30 NOV 89 MAPCOORD
.EXP REPORT                               TITLE LINE                               Freeform Experimental Rpts 10020
*field.field.
*one .two .
*-----*
|pre  |one  |
|pre  |two  |
0111110333330
XXXXXXXXX
X      XXXXXXXX
X
X
X
X
X
                                     ..... END REPORT .....
    
```


FORMG

- **A run that builds an experimental report**
- **May also change an existing experimental report**
- **Run execution**
 - Enter 'FORMG' on line 0
 - Function menu appears
 - If report was on display, FORMG will use those headers to fill portions of the menu
 - If no report was on display, menu will be blank

FORMG Example

- Enter 'FORMG' on line 0. Receive and fill in menu.
- Press F4 (Show) to view experimental report contents

```

FORMG Worksheet
  FN  SIZ  Format  E  Identifier  Application
  1   1   1      1  field_one
  2   2   2      3  field_two
  3   3   3      3
  4   4   4      3
  5   5   5      3
  6   6   6      3
  7   7   7      3
  8   8   8      3
  9   9   9      3
 10  10  10     3
 11  11  11     3
 12  12  12     3
 13  13  13     3
 14  14  14     3
 15  15  15     3
 16  16  16     3
 17  17  17     3
 18  18  18     3
 19  19  19     3
 20  20  20     3
 21  21  21     3
 22  22  22     3
 23  23  23     3
 24  24  24     3
 25  25  25     3
 26  26  26     3
 27  27  27     3
 28  28  28     3
 29  29  29     3
 30  30  30     3
 31  31  31     3
 32  32  32     3
 33  33  33     3
 34  34  34     3
 35  35  35     3
 36  36  36     3
 37  37  37     3
 38  38  38     3
 39  39  39     3
 40  40  40     3
 41  41  41     3
 42  42  42     3
 43  43  43     3
 44  44  44     3
 45  45  45     3
 46  46  46     3
 47  47  47     3
 48  48  48     3
 49  49  49     3
 50  50  50     3
 51  51  51     3
 52  52  52     3
 53  53  53     3
 54  54  54     3
 55  55  55     3
 56  56  56     3
 57  57  57     3
 58  58  58     3
 59  59  59     3
 60  60  60     3
 61  61  61     3
 62  62  62     3
 63  63  63     3
 64  64  64     3
 65  65  65     3
 66  66  66     3
 67  67  67     3
 68  68  68     3
 69  69  69     3
 70  70  70     3
 71  71  71     3
 72  72  72     3
 73  73  73     3
 74  74  74     3
 75  75  75     3
 76  76  76     3
 77  77  77     3
 78  78  78     3
 79  79  79     3
 80  80  80     3
 81  81  81     3
 82  82  82     3
 83  83  83     3
 84  84  84     3
 85  85  85     3
 86  86  86     3
 87  87  87     3
 88  88  88     3
 89  89  89     3
 90  90  90     3
 91  91  91     3
 92  92  92     3
 93  93  93     3
 94  94  94     3
 95  95  95     3
 96  96  96     3
 97  97  97     3
 98  98  98     3
 99  99  99     3
100 100 100     3
Line Length 13
1      2RollFw 3RollBk 4Show  5      6      7APT  8Help  9      10Quit
    
```

- Press F4 (Return) to re-display the menu and make changes as needed or
- Press F1 (Create) to create exp report and receive notice of its location

```

Line▶ 1      Roll▶ -
.DATE 19 JUL 90 11:53:24  REPORT GENERATION  CCM  RESULT
*field.field.
* one . two .
*=====  

0111110333330
XXXXXXXXX
X          XXXXXXX
X
X
X
X
X
..... END REPORT .....
1Create 2      3      4Return 5      6      7      8Help  9      10
    
```

FORMG Menu Fields

- **Formgen field heading definitions**
 - **'FN'** = Field number in left to right order. Preset, may be changed. Specifies left to right order of fields created.
 - **'SIZ'** = Number of characters for this field.
 - **'Format'** = Specify formats of which this field will be a part. Erase those not wanted. All fields will be included in the basic format.
 - **'E'** = Edit code character to be used for ALL characters in the field.
 - **'Identifier'** = Heading to be placed above field. Use an underscore to separate on two lines. Excess characters are truncated.
 - **'Application'** = Discussed in APT course.
 - **'Line Length'** = Number of characters per line used by the fields defined. Not entered by the user.

- **Press F4 (Show) at any time to view contents of experimental report to be created**

- **Press F1 (Create) to create the experimental report**

- **Run will respond with location of experimental report created**

FORMG Example

- Experimental report location created by FORMG

```

                                FORMG
    Your experimental report has been placed in
                                Cabinet - 0
                                Drawer - f
                                Report - 4
                                Transmit to display report
    
```

- Experimental report created by FORMG

```

Line# 1           Roll# -           4F0
.DATE           11:53:57 RID       4F  19 JUL 90 CCM

*field.field.
* one , two ,
*-----,-----,
0111110333330
XXXXXXXXX
X         XXXXXX
X
X
X
X
X
..... END REPORT .....
    
```

Design Suggestions

- **Place most frequently used fields on left side of report**
- **Keep dates in format B (YYMMDD) for sorting and range searching purposes**
- **Include one common field in drawers to be matched**
- **Use edit codes, when possible, to prevent some typing errors**
- **Document design in report 1**
 - Define each field and possible entries
 - Examples of valid data lines
 - Any special use rules for report in this drawer
- **Data entry suggestions**
 - Reports should be kept under 500 lines for efficiency purposes
 - Left-justify data in alphabetic fields
 - Right-justify data in numeric fields
 - Align decimal points in numeric fields

Exercise

15F 0

Your supervisor requests the following:

1. Manually create an experimental report with the following:

- a. Title: **Employee Information**
- b. Header, column size, and edit requirements as follows:

| Column Header | Column Size | Edit requirements |
|---------------|-------------|----------------------------|
| LAST NAME | 14 | None |
| FIRST NAME | 12 | None |
| ADDRESS | 17 | None |
| CITY | 16 | May be alphabetic or blank |
| STATE | 2 | Must not be blank |
| ZIP | 5 | Must be a number (0-9) |
| DATE | 6 | Must be a number (0-9) |

- c. Tab characters must appear at the beginning of the line, end of the line, and between each field.
- d. Create a predefined line that will insert a date in the format DDMMYY in the DATE column.
- e. Define two formats with the first format containing data from the columns: LAST NAME, FIRST NAME, and DATE. Have the second format contain data from the columns: LAST NAME, FIRST NAME, CITY, and STATE.
- f. If you have permission, create a drawer from this experimental report and add a report in the new drawer. Create data lines (include your name among those you enter and enter about 10 names). Sort the report in ascending order by last name. Perform a search for your last name. Add a predefined line to your report. Display the report in the two formats created.

2. With the original experimental report on display, use FORMG to modify it as follows:

- a. Eliminate the DATE column.
- b. Expand the FIRST NAME column by two characters.
- c. Expand the ADDRESS column by five characters.
- d. Add another format to include: LAST NAME, FIRST NAME, ADDRESS.

16

Miscellaneous Topic Overview

Objectives

Upon completion of this module, you should be able to

Describe MAPPER runs, the role of the coordinator, MAPPER networking and MRI, and the designer workbench

Learning Sequence

- **Describe a run**
- **Explain run statements**
- **Run example**
- **Coordinator responsibilities**
- **MAPPER connectivity**
- **Designer Workbench**

Reference

Documentation referenced in this module:

MAPPER System for level 4R2/36R1 Manual Functions reference (7831 9647-000)

What is a Run?

- **A series of manual functions written as run statements**
- **Other run statements are available for**
 - Conditional branching
 - Variable usage
 - Screen creation
 - Capturing user input
 - Reading from and writing to reports

Why Use Runs?

- **Increase productivity**
- **Increase accuracy**
- **Avoid repetitive manual functions**
- **Accomplish more complex tasks**
- **Interact with users via screens**

Creating and Executing a Run

- **Register run name and report location with coordinator**
- **Enter statements in a free form report**
 - Usually within a designated run report drawer
- **Test and debug run statements**
- **Submit run to coordinator for final analysis**
- **Execute run by entering run name on line zero**
- **Run stops whenever a report is displayed**
 - Press F1 to continue
- **Press F4 to abort the run**

Run Statements

- **All manual functions have equivalent run statements**
- **Run statement must supply same information as a manual function**
- **Comparing a manual and run statement search**
 - Enter the function and report identifier
 - S 2B0 - manually
 - @SRH,0,B,2 - in a run statement (@ must be in column one)
 - Enter options
 - Above the mask - manually
 - @SRH,0,B,2 'DH' - in a run statement (apostrophes not required)
 - Identify the fields used
 - Move cursor to fields used under mask to be searched - manually
 - @SRH,0,B,2 'DH' 2-2,'CUST CODE' - in a run statement (use either column positions or header name)
 - Identify line type and field parameters
 - Enter line type to be used in column one and data to be found in appropriate fields under the mask - manually
 - @SRH,0,B,2 'DH' 2-2,'CUST CODE' [,SH,FEDS - in a run statement (use tab set key (shown as left bracket here) for a tab char)

Run Example

- Search for customer AMCO
- Sort on status code
- Figure the difference between planned and actual production dates
- Display final result
- Run exists in report 8E and is executed by entering DIFF on line 0

```

Line#|1          Roll#|-          8E0
.DATE 31 JAN 90 07:54:53 RID 8E 30 JAN 90 CCM
.Run Control Report Example Named Diff          Demonstration Runs          E0010
*-----*
@SRH,0,b,2 D 'Cust Code' |,AMCO . Produces result, does not display it
@SOR,0,b,-0 '' 2-2 |,1 . Previous result referred to as report -0
@DAT,0,b,-0 '' 'produc pl', 'produc act', 'spc cod' |,+,-,= .
@DSP,0,b,-0 . Must use DSP to display a report or result
          ..... END REPORT .....

```

Run Example

- Enter run name on line 0

```
DIFF

Unisys MAPPER System
UNISYS CORPORATION
Station: 9 System: A
User-id: CCM
Cabinet: 0
```

- Receive result when @DSP command is encountered

```
Line#|1      Roll#|-
.DATE 25 OCT 89 12:25:49 RID 2B 01 AUG 86 MAPCOORD
.Production Status Report Corporate Production B0002
*St. Status. By. Product .Serial. Produc. Order. Cust. Produc. Produc. Ship .Ship .Spc.
*Cd. Date .In. Type .Number. Cost .Numbr. Code. Plan .Actual. Date .Order. Cod.
*-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
IP 831227 LS BLACKBOX7 733597 84351 AMCO 831227 831227 0
IP 831222 LS BLACKBOX5 737582 84040 AMCO 831222 831222 0
IP 831224 LS BLACKBOX1 436767 84389 AMCO 831223 831224 -1
IP 831225 LS BLACKBOX1 436768 84390 AMCO 831223 831225 -2
OR 830310 LS GREENBOX9 99951 AMCO ***
OR 831217 LS BLACKBOX9 98755 AMCO ***
SC 840110 LS GREENBOX8 975481 99943 AMCO 840110 ***
SH 831206 LS GREENBOX7 669624 54682 AMCO 831201 831205 831206 S8553 -4
SH 831204 LS BLACKBOX9 714577 64231 AMCO 831201 831203 831204 S8531 -2
..... END REPORT .....
```

Coordinator Responsibilities

- **System security**
- **Database usage**
- **Consultant for new applications**
- **Control system resources**

System Security

- **Register terminals**
 - Terminal configuration

- **Register users**
 - Assign user-id
 - Initial password
 - Which manual functions and runs users are allowed to execute
 - What drawers are available
 - Initial cabinet placement

- **Register runs**
 - Run name and report location
 - Users, departments, and terminals which may execute it
 - Time run may execute
 - Cabinets a run may access
 - System impact allowed

Database Usage

- **Knowledge of entire database is necessary**
- **Avoid data duplication**
- **Delete inactive data**
- **Create drawers for users**

Consultant for New Applications

- **Assist in planning new applications and runs**
- **Avoid data duplication**
- **Evaluate run efficiency**
- **Recommend report configurations**
- **Reformat existing applications when necessary**

Control System Resources

- **Plan and monitor hardware requirements**
- **Add and update software as necessary**
- **Schedule users and runs for optimal system usage**
- **Control passing of information between MAPPER and other system software**
- **Control passing of information between MAPPER sites**

MAPPER Connectivity Overview

- **File Transfer**
- **Remote Run Link**
- **Remote DDP Usage**
- **Net Statements**
- **Host Statements**
- **MAPPER Relational Interface/Relational Data Interface**

File Transfer

- **Copy MAPPER reports to host system files**
- **Copy host system files to MAPPER as results**
- **Start a host job stream from a MAPPER report**
- **Start a MAPPER run from a host system file**
- **Internal MAPPER to host environment, no remote hosts**

Remote Run Link

- **Copy 1100 files from one host to another**
- **Start a MAPPER run on a remote 1100 host**
- **1100 to 1100 only**
- **Must have MAPPER on both hosts**

Remote DDP Usage

- **Create, copy, and delete files on a remote host**
- **Action must originate from 1100 host**
- **MAPPER is required only on the originating 1100 host**
- **1100 to 1100**
- **1100 to UNIX**
- **1100 to IBM**

Net Statements

- **Local MAPPER to remote MAPPER system access**
- **1100, UNIX, A Series, CTOS, and PC MAPPER systems**
- **Copy reports between systems**
- **Execute manual functions, run statements, and runs on a remote system**

Host Statements

- **U Series and CTOS MAPPER to 1100 MAPPER remote system access**
- **Sign on and off 1100 MAPPER**
- **Copy reports from U Series or CTOS MAPPER to 1100 MAPPER**
- **Retrieve 1100 MAPPER reports into U Series or CTOS MAPPER**
- **Execute run statements on 1100 MAPPER submitted from U Series or CTOS MAPPER**

MRI/RDI

- **MAPPER access to local or remote relational databases**
- **Menu driven user interface or run statements perform a full range of relational operations**
- **Many data managers allowed**
- **Many architectures supported**

Designer Workbench

- **PC software enhancement for use with MAPPER, LINC, and ALLY**
- **Simplifies user operations**
- **Provides a visually consistent user interface across products**
- **Run MAPPER from Microsoft Windows graphical user interface**
- **Forms Designer**
 - Creates screens (forms) using color, fonts, list boxes, buttons, menus, etc.
- **MAPPER run statements for use with DW**
- **Repository**
 - Keeps track of and distributes forms to applications

A

File Transfer

MAPPER File Transfer

- **MAPPER report to native system file and vice versa**
- **Knowledge of native system file naming syntax is necessary**
- **Native system file must exist prior to transfer**

FILE Function

- **Copies MAPPER report to native system file**
- **File must not be protected**
- **You must be in cabinet of report being copied**
- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Move data'
 - Select 'Create a native file'
 - Fill in menu
- **Direct Access**
 - Enter 'File' on line zero
 - Fill in menu

FILE Function Menu Fields

```

FILE
-----
Create File
-----
File name
-----
MAPPER format? N
Include headings? N
Character set F
Report -
-----
$INCL$ access: Cabinet Password
                Cabinet Password
                Cabinet Password
                Cabinet Password
  
```

| FIELD | EXPLANATION |
|-------------------|---|
| File Name | The name of the native system file to create. |
| MAPPER format | N creates a file in native system format. Y creates a file in MAPPER format, which includes control characters that cannot be processed by native system editors. |
| Include Headings? | N omits report headers in data. Y includes report headers in data. |
| Character set | L=Limited (Field data) F=Full (ASCII) U=Full, uppercase only Default= Character set of report |
| Report | Report/drawer/cabinet to send. '?' sends report or result on display. |
| \$INCL\$ access | Not discussed |

- Menu fields are MAPPER platform dependent

FILE Example

- Select 'Create a native file'

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---------------------|--|----------------------|--------|--------------------|------|-------------------|------|------------------|-------|------------------|-------|-------------------|------|---------------|--------|------------------|---------|-----------------------|-------|--|--|----------------------------|--------|-------------------------|-------|----------------------|--------|------------------------|-------|
| Unisys UNISYS Station Select T | Move Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Create a report Compare reports Delete a report Display a report Find data Modify a report | <table border="1"> <tr><td>Combine two reports</td><td></td></tr> <tr><td>Create a result copy</td><td>(RSLT)</td></tr> <tr><td>Duplicate a report</td><td>(XR)</td></tr> <tr><td>Match two reports</td><td>(MA)</td></tr> <tr><td>Match and update</td><td>(MAU)</td></tr> <tr><td>Replace a report</td><td>(REP)</td></tr> <tr><td>Reformat a report</td><td>(RF)</td></tr> <tr><td>Sort a report</td><td>(SORT)</td></tr> <tr><td>Sort and replace</td><td>(SORTR)</td></tr> <tr><td>Extract from a report</td><td>(EXT)</td></tr> <tr><td colspan="2"> </td></tr> <tr><td>Send a report to a station</td><td>(SEND)</td></tr> <tr><td>Send a report to a user</td><td>(SNU)</td></tr> <tr><td>Create a native file</td><td>(FILE)</td></tr> <tr><td>Retrieve a native file</td><td>(RET)</td></tr> </table> | Combine two reports | | Create a result copy | (RSLT) | Duplicate a report | (XR) | Match two reports | (MA) | Match and update | (MAU) | Replace a report | (REP) | Reformat a report | (RF) | Sort a report | (SORT) | Sort and replace | (SORTR) | Extract from a report | (EXT) | | | Send a report to a station | (SEND) | Send a report to a user | (SNU) | Create a native file | (FILE) | Retrieve a native file | (RET) |
| Combine two reports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Create a result copy | (RSLT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duplicate a report | (XR) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Match two reports | (MA) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Match and update | (MAU) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Replace a report | (REP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reformat a report | (RF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sort a report | (SORT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sort and replace | (SORTR) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extract from a report | (EXT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Send a report to a station | (SEND) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Send a report to a user | (SNU) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Create a native file | (FILE) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Retrieve a native file | (RET) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- Fill in menu

| |
|--|
| FILE |
| Create File |
| File name |
| <pre> ccm*maptest1. MAPPER format? y Include headings? y Character set F Report id \$INCL\$ access: Cabinet Password Cabinet Password Cabinet Password Cabinet Password </pre> |

RET Function

- **Copies a native system file to a MAPPER report**
- **Data is displayed as a result**
- **Menu Access**
 - Press F6 (Tasks)
 - Select 'Move data'
 - Select 'Retrieve a native file'
 - Fill in menu
- **Direct Access**
 - Enter 'RET' on line zero
 - Fill in menu

RET Function Menu Fields

```

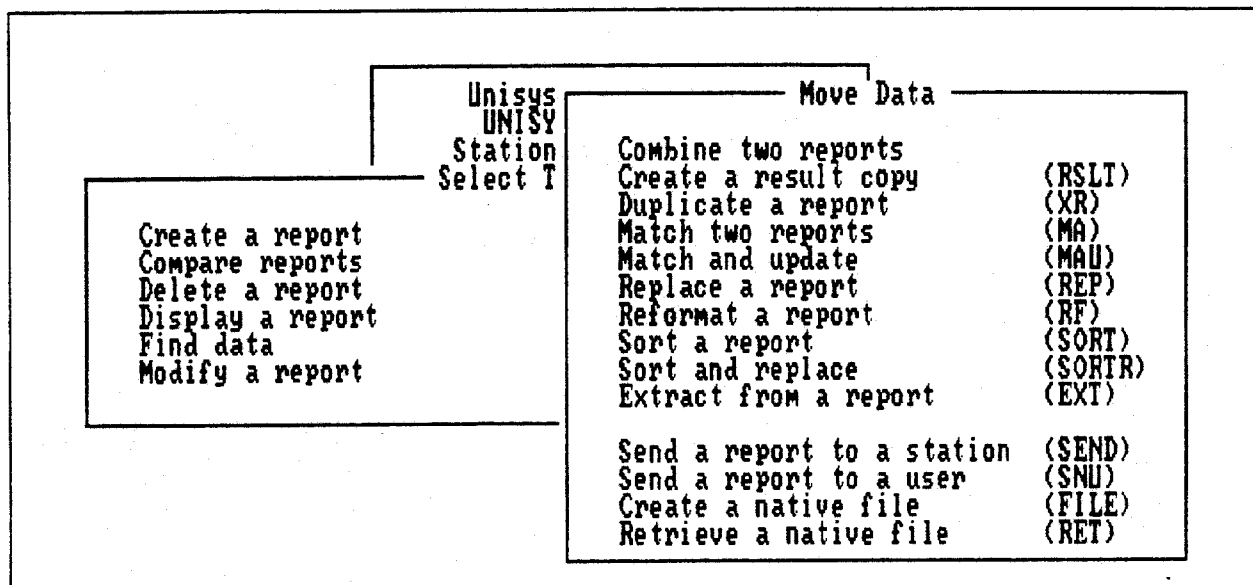
                                     RET
                                Retrieve File
                                _____
                                File name
                                _____
                                Start line
                                Locate string
                                Number of lines
                                MAPPER format? N
                                Include headings? N
                                Drawer
  
```

| Field | Explanation |
|------------------|--|
| File Name | Name of file to retrieve. |
| Start line | Line number in file at which to start retrieval or, if locate string is specified, at which to begin search. |
| Locate string | String (max of 12 chars) to search for and start retrieval when found. |
| Number of lines | How many lines to retrieve if partial retrieval. Also recommended when retrieving greater than 500 lines. |
| MAPPER Format | If MAPPER format, enter Y. If standard 1100 file, enter N. |
| Include Headers? | Append headers to front of retrieved data. Y or N. |
| Drawer | Drawer in which to store data. |

- **Menu fields are MAPPER platform dependent**

RET Function Example

- Select 'Retrieve a native file'



- Fill in menu

RET

Retrieve File

File name

ccm*maptest1.

Start line

Locate string

Number of lines

MAPPER format? y

Include headings? y

Drawer d0

RET Function Example

- Result

| Line# | Roll# | - | | RESULT | | | |
|------------------------|---------------|------------|--------|----------|--------------|------------------------|---------|
| .DATE | 10 JUL 90 | 12:27:11 | RID | 1D | 27 SEP 89 | ACAS | |
| .@991231 | Status Report | | | | | Corporate Order Status | D000006 |
| *St. Order | Product | Ord. Cust. | Unit | Extended | Req'd | Sale | |
| *Cd. Number | Type | Qty. Code | Retail | Retail | Delivr. Rep. | Customer | |
| OR 99951S | GREENBOX9 | 2 | AMCO | | 840312 DJR | AMERICAN OIL CO. | 73 |
| OR 99951S | BLACKBOX9 | 1 | AMCO | | 840312 DJR | AMERICAN OIL CO. | 73 |
| OR 99951S | GREENBOX7 | 1 | AMCO | | 840312 DJR | AMERICAN OIL CO. | 73 |
| OR 96652S | BLACKBOX4 | 1 | ARCO | | 840412 LSJ | ARGENTINE CORP | 23 |
| OR 96652S | GREENBOX4 | 2 | ARCO | | 840412 LSJ | ARGENTINE CORP | 23 |
| OR 96652S | GREENBOX5 | 1 | ARCO | | 840412 LSJ | ARGENTINE CORP | 23 |
| OR 99753S | GREENBOX5 | 1 | DICO | | 840312 LSJ | DIGITAL CORP | 17 |
| OR 99842S | BLACKBOX8 | 1 | FEDS | | 840312 PLR | FED SYSTEMS CORP | 15 |
| OR 99842S | BLACKBOX0 | 1 | FEDS | | 840312 PLR | FED SYSTEMS CORP | 15 |
| OR 96751S | GREENBOX1 | 1 | FEDS | | 840312 PLR | FED SYSTEMS CORP | 15 |
| OR 94525S | GREENBOX8 | 1 | FEDS | | 840312 PLR | FED SYSTEMS CORP | 15 |
| OR 99725S | BLACKBOX4 | 1 | INTR | | 840312 LTR | INTERNATIONAL CO | 33 |
| OR 98782S | BLACKBOX9 | 1 | USSC | | 840312 SSF | UNION STEEL/SULFR | 54 |
| OR 96755S | GREENBOX9 | 1 | USSC | | 840312 SSF | UNION STEEL/SULFR | 54 |
| END REPORT | | | | | | | |

B

Binary Find

Binary Find Function (BF)

- **Finds first occurrence of a character string in a large report; result, many reports or an entire drawer**
- **Displays the report starting at the line number containing the target**
- **More efficient than a Search or Find function**
- **Assumes data is Sorted in ascending order**
- **Function mask asterisk line can be altered**
- **Optionally builds an index for further efficiency**
- **Opens report for data insertion on no-find situations**

Binary Find (BF) Procedures

- **Menu Access**

- Press F6 (Tasks)
- Select 'Find data'
- Select 'Perform a binary find'
- Fill in menu

- **Direct Access**

- Enter 'BF rdc' on line zero

OPTIONS:

| | |
|-------------------|--|
| A , C , R , @ , / | discussed earlier |
| B | build an index |
| I(n) | use index located in report n |
| N | creates a result with a separate line for each item in the sorted field and tells how many times each item appears |
| U | set update lock on report in which find was made (or would have been made) |

PARAMETERS:

| | |
|---|--|
| K | index built on this sorted field |
| = | field containing report number for index |

Binary Find Example

- Find first occurrence of dept 0625 in reports 14F22 - 16F22.
- Select 'Perform a binary find'

```

* Unisys MAPPER System *
  E36MAP EA10
Select Task
-----
Create a report
Compare reports
Delete a report
Display a report
Find data
Modify a report

Find Data
-----
Find (F)
Locate (LOC)
Perform a binary find (BF)
Search (S)
Search and update (SU)
Use the IBFN run (IBFN)
Use the IFND run (IFND)
Use the ISRH run (ISRH)

Display drawer index (I)
Display drawer index by user (IU)
  
```

- Use drawer F in cabinet 22

```

BF

Binary Find Report Data
-----
Report on drawer f22
Format number
  
```

Binary Find Example

- Select only reports 14-16 of drawer F

BINARY-FIND

r14-16

| * ID | BIRTH DATE | HIRE DATE | LAST NAME | FIRST NAME MI. | DEPT. | GD. | SALARY |
|------|------------|-----------|-----------|----------------|-------|-----|--------|
| | | | | | 0625 | | |

- Report containing first occurrence of 0625 is displayed

| Line# | 23 | Roll# | - | | | 15F22 | |
|-------------|--------|--------|--------|-----------|------|-------|----------|
| 101-05-4413 | 531118 | 520824 | PAXTON | REGGIE O. | 0625 | 11 | 26995.90 |
| 022-34-5446 | 301123 | 91212 | SAPPAN | SARA Y. | 0625 | 08 | 17995.35 |
| 432-78-5008 | 550814 | 850808 | TRENT | TUCKER K | 0625 | 06 | 13090.32 |
| 852-96-7423 | 420329 | 850519 | TWEYT | YOJO L. | 0625 | 07 | 15821.95 |
| 554-34-1299 | 471023 | 870230 | WINKIE | WILLI W. | 0625 | 06 | 14001.40 |

..... END REPORT

N Option

- Find number of entries for each department in reports 14F22 - 16F22

| BINARY-FIND | | | | | | | |
|-------------|------|-------|------|-----------|----------------|-------|--------|
| NR14-16 | * | BIRTH | HIRE | LAST NAME | FIRST NAME MI. | DEPT. | SALARY |
| * ID | DATE | DATE | DATE | DATE | DATE | DATE | DATE |
| ***** ** | | | | | | | |
| | | | | | | K | = |

- Number of entries for each department are placed in the Salary field

| Line# | Roll# | | | | | | | RESULT |
|-------------|----------|--------|-------------|----------------|----------|------|--------|--------|
| .DATE | 10:56:06 | RID | 13F | 05 DEC 89 | MAPCOORD | | | |
| * | BIRTH | HIRE | LAST NAME | FIRST NAME MI. | DEPT. | GD. | SALARY | |
| * ID | DATE | DATE | DATE | DATE | DATE | DATE | DATE | |
| 578-46-4566 | 451230 | 780404 | JOHNSON | JOHN I. | | 0551 | 10 | 5 |
| 562-90-8776 | 401225 | 810918 | PICASSO | PALOMA | | 0552 | 16 | 3 |
| 276-36-3654 | 600416 | 780222 | YANKERS | HANK B. | | 0554 | 08 | 7 |
| 022-34-5446 | 301123 | 91212 | DEMONTUERDE | RUTH S. | | 0555 | 08 | 2 |
| 272-32-4559 | 511017 | 840606 | WEATHERHEAD | KILROY J. | | 0556 | 08 | 5 |
| 269-77-6442 | 550630 | 830720 | WHITE | BETTY M. | | 0600 | 06 | 4 |
| 021-77-4301 | 450715 | 670113 | NELSON | PETER K. | | 0602 | 10 | 3 |
| 271-46-4007 | 440905 | 770625 | TICKER | TAMMY Q. | | 0610 | 06 | 5 |
| 418-55-4631 | 460813 | 791230 | WHITT | GREG K. | | 0612 | 08 | 1 |
| 456-98-9002 | 501225 | 850404 | QUISERT | LAURA L. | | 0620 | 11 | 4 |
| 554-34-1299 | 471023 | 870230 | WINKIE | WILLI W. | | 0625 | 06 | 5 |
| 269-77-6442 | 550630 | 830720 | STEVENS | SAMANTHA W. | | 0700 | 06 | 4 |
| 021-77-4301 | 450715 | 670113 | SKIPPER | GILLIGAN J. | | 0702 | 10 | 3 |
| 245-90-8776 | 401225 | 810918 | JERSY | RAPLH M. | | 0800 | 10 | 2 |
| 562-90-8776 | 401225 | 810918 | RANDER | RUDY G. | | 0802 | 16 | 1 |
| 476-89-4733 | 261225 | 470401 | SNOMEN | FROSTICE N. | | 0806 | 05 | 2 |
| 418-55-4631 | 460813 | 791230 | FRANKS | FRANK F. | | 0900 | 08 | 1 |

U Option

- Add Roger P. Emmerson to the Employee Roster
- Attempt to find Roger P. Emmerson

| BINARY-FIND | | | | | | | |
|-------------|-------|-------|-----------|----------------|-------|-------|--------|
| R11-13U | BIRTH | HIRE | LAST NAME | FIRST NAME MI. | DEPT. | GD. | SALARY |
| * | DATE | DATE | | | | | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| | | | EMMERSON | ROGER P. | | | |

- Line preceding where he should be found is brought to top of screen

| - The data was not found. - | | | | | | | |
|-----------------------------|--------|--------|----------|-----------|------|----|----------|
| 022-34-5446 | 301123 | 91212 | DENNISON | BARRY I | 0907 | 08 | 17995.35 |
| 432-78-5008 | 550814 | 850808 | FRANK | WILLI L. | 0906 | 06 | 13090.32 |
| 418-55-4631 | 460813 | 791230 | FRANKS | FRANK F. | 0900 | 08 | 18650.13 |
| 570-56-7833 | 540630 | 830718 | GANGULY | FATIMA M. | 0554 | 06 | 13950.21 |
| 271-46-4007 | 440905 | 770625 | GERHWIN | ROY T. | 0806 | 06 | 14520.45 |
| 570-56-7833 | 540630 | 830718 | GREEN | BETH L. | 0620 | 06 | 13950.21 |
| END REPORT | | | | | | | |

U Option

- Add him to the report via the Add Line function and

- The data was not found. -

| | | | | | | | | |
|------------------------|-------------|--------|--------|---------|-----------|------|----|----------|
| ◆11+ | 432-78-5008 | 550814 | 850808 | FRANK | WILLI L. | 0906 | 06 | 13090.32 |
| | 418-55-4631 | 460813 | 791230 | FRANKS | FRANK F. | 0900 | 08 | 18650.13 |
| | 570-56-7833 | 540630 | 830718 | GANGULY | FATIMA M. | 0554 | 06 | 13950.21 |
| | 271-46-4007 | 440905 | 770625 | GERHWIN | ROY T. | 0806 | 06 | 14520.45 |
| | 570-56-7833 | 540630 | 830718 | GREEN | BETH L. | 0620 | 06 | 13950.21 |
| END REPORT | | | | | | | | |

- SOE update

| | | | | | | | | |
|------------------------|-------------|--------|--------|-----------|-----------|------|-------|----------|
| Line# | 20 | Roll# | - | | | | 11F22 | |
| | 022-34-5446 | 301123 | 91212 | DENNISON | BARRY I | 0907 | 08 | 17995.35 |
| | | | | ◆EMMERSON | ROGER P. | | | |
| | 432-78-5008 | 550814 | 850808 | FRANK | WILLI L. | 0906 | 06 | 13090.32 |
| | 418-55-4631 | 460813 | 791230 | FRANKS | FRANK F. | 0900 | 08 | 18650.13 |
| | 570-56-7833 | 540630 | 830718 | GANGULY | FATIMA M. | 0554 | 06 | 13950.21 |
| | 271-46-4007 | 440905 | 770625 | GERHWIN | ROY T. | 0806 | 06 | 14520.45 |
| | 570-56-7833 | 540630 | 830718 | GREEN | BETH L. | 0620 | 06 | 13950.21 |
| END REPORT | | | | | | | | |

Binary Find Index Report

- **Used to accelerate the find process**
- **Only efficient when searching a range of many reports**
- **Built by utilizing B option**
- **Report preceding range must be available**
- **This report will be used as an index**
- **It will contain the first data line from each report in the range**
- **Use I option to utilize index report**

Building an Index Report

- Build an index for reports 11F22 through 13F22
- Select BF function

```

      Unisys MAPPER System
      * E36MAP EA10 *
      Select Task
  
```

| | |
|---|---|
| <pre> Create a report Compare reports Delete a report Display a report Find data Modify a report </pre> | <pre> Find Data Find (F) Locate (LOC) Perform a binary find (BF) Search (S) Search and update (SU) Use the IBFN run (IBFN) Use the IFND run (IFND) Use the ISRH run (ISRH) Display drawer index (I) Display drawer index by user (IU) </pre> |
|---|---|

- Select drawer F in cabinet 22

```

BF
Binary Find Report Data
Report or drawer f22
Format number
  
```

Building an Index Report

- B option builds index result

BINARY-FIND

BR11-13

| * ID | . BIRTH . . DATE . | . HIRE . . DATE . | . LAST NAME | . FIRST NAME MI. | . DEPT. | . GD. | . SALARY |
|-------|-----------------------|----------------------|-------------|------------------|---------|-------|----------|
| ***** | | | | | | | |
| | | = | K | | | | |

- Report 11 first data line contains Azevedo, report 12 first data line contains Hardy, report 13 first data line contains Parks

| Line# | Roll# | RESULT |
|------------------------|-----------------------|--|
| 1 | - | |
| . DATE | 11:00:05 | RID 10F 05 DEC 89 MAPCOORD EMPLOYEE MASTER FILE F0272 |
| * ID | . BIRTH . . DATE . | . HIRE . . DATE . |
| | . LAST NAME | . FIRST NAME MI. DEPT. GD. SALARY |
| | 11 AZEVEDO | |
| | 12 HARDY | |
| | 13 PARKS | |
| END REPORT | | |

Building an Index Example

- Replace result into index report immediately preceding report range

| Line# | ID | BIRTH DATE | HIRE DATE | LAST NAME | FIRST NAME MI. | DEPT. | GD. | SALARY |
|---------------------|----|------------------|-------------------------|-----------|----------------|----------------------|----------------------|--------|
| 1 | | | | | | | | |
| | | Roll# - 11:00:05 | | RID 10F | 05 DEC 89 | MAPCOORD | RESULT | |
| | | | | | | | EMPLOYEE MASTER FILE | F0272 |
| * Select Task ----- | | | | | | | | |
| Create a report | | | Move data | | | | | |
| Compare data | | | Perform math operations | | | | | |
| Delete a report | | | Print | | | | | |
| Display a report | | | Send and receive | | | | | |
| Find data | | | Create a Report | | | | | |
| Modify a report | | | | | | | | |
| | | | | | | Add a report | (AR) | |
| | | | | | | Create a result copy | (RSLI) | |
| | | | | | | Duplicate a report | (XR) | |
| | | | | | | Replace a report | (REP) | |
| | | | | | | Use the FORMGEN run | (FORMGEN) | |

- Replace report 10f22 with index result

| REP |
|-----------------------------|
| Replace Report |
| Report 10f22 |
| Title INDEX FOR BINARY FIND |

Building an Index Example

- Index report is displayed

```
Line# 1          Roll# -          10F22
.DATE          11:02:28  RID  10F  05 DEC 89  MAPCOORD
.INDEX FOR BINARY FIND          EMPLOYEE MASTER FILE          F0272
*
*   BIRTH . HIRE .
*   ID   . DATE . DATE .  LAST NAME  . FIRST NAME MI. DEPT. GD.  SALARY  .
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
11 | AZEVEDO
12 | HARDY
13 | PARKS
    ..... END REPORT .....
```

Using an Index Report

- Find employee Sue H. Posten using the I option
- Select BF on drawer F, cabinet 2B2

BF

Binary Find Report Data

Report or drawer f22
Format number

- Use the index in report 10

BINARY-FIND

I10

| * ID | BIRTH DATE | HIRE DATE | LAST NAME | FIRST NAME MI. | DEPT. | GD. | SALARY |
|-------|------------|-----------|-----------|----------------|-------|-----|--------|
| ***** | ***** | ***** | ***** | ***** | **** | ** | ***** |
| | | | POSTEN | SUE H. | | | |

Using an Index Report

- Line containing data is found in reports 11-13 using the index in report 10

| Line# 10 | Roll# - | | | 13F22 | |
|------------------------|-----------|--------|-------------|-------------|------------------|
| 214-66-0012 | 421219 | 821015 | POSTEN | SUE H. | 0620 12 28200.00 |
| 456-98-9002 | 501225 | 850404 | QUISERT | LAURA L. | 0620 11 26399.19 |
| 562-90-8776 | 401225 | 810918 | RANDER | RUDY G. | 0802 16 40580.65 |
| 571-36-5664 | 521225 | 790210 | RESTER | ROB N. | 0700 06 15428.20 |
| 022-34-5446 | 301123 | 91212 | SAPPMAN | SARA Y. | 0625 08 17995.35 |
| 852-96-7423 | 420329 | 850519 | SHOVEN | TERRY L. | 0906 07 15821.95 |
| 021-77-4301 | 450715 | 670113 | SKIPPER | GILLIGAN J. | 0702 10 23410.34 |
| 555-99-6666 | 600416 | 780222 | SMOTHERS | TOM T. | 0600 08 18230.16 |
| 476-89-4733 | 261225 | 470401 | SNOMEN | FROSTICE N. | 0806 05 12590.00 |
| 269-77-6442 | 550630 | 830720 | STEVENS | SAMANTHA W. | 0700 06 15332.12 |
| 562-90-8776 | 401225 | 810918 | TARKINGTON | FRED K. | 0610 16 40580.65 |
| 271-46-4007 | 440905 | 770625 | TICKER | TAMMY Q. | 0610 06 14520.45 |
| 432-78-5008 | 550814 | 850808 | TRENT | TUCKER K | 0625 06 13090.32 |
| 852-96-7423 | 420329 | 850519 | TWEYT | YOJO L. | 0625 07 15821.95 |
| 272-32-4559 | 511017 | 840606 | WEATHERHEAD | KILROY J. | 0556 08 19230.00 |
| 269-77-6442 | 550630 | 830720 | WHITE | BETTY M. | 0600 06 15332.12 |
| 418-55-4631 | 460813 | 791230 | WHITT | GREG K. | 0612 08 18650.13 |
| 101-05-4413 | 531118 | 520824 | WILLIAMS | RONDA K | 0907 11 26995.90 |
| 554-34-1299 | 471023 | 870230 | WINKIE | WILLI W. | 0625 06 14001.40 |
| 214-66-0012 | 421219 | 821015 | WORTHINGTON | CAL B. | 0554 12 28200.00 |
| 276-36-3654 | 600416 | 780222 | YANKERS | HANK B. | 0554 08 18230.16 |
| END REPORT | | | | | |

C

Report Writer

Report Writer

- **RPW run**
- **Used to format reports for printing**
- **Specify**
 - Page headers and footers
 - Page sizes and page numbers
 - Date and time within headers
 - Fields to include in report
 - New fields to create
 - Field sequence
 - Change field headings
 - Calculations to perform to create new field
 - Sort report
 - Subtotals and grand totals
 - Print breaks

RPW Example

- Sample report - with report on display enter 'RPW' on line zero

```

Line▶ rpw          Roll▶ -
.DATE 21 OCT 91  10:05:53  RID          4C  21 OCT 91  MAPCOORD  4C0
@          Factors Base Report
* Product . Sub . Produc. Whole . Retail . Sales . Space. Demo
* Type . Key . Cost . Sales . $$$$ . Commiss. Req . Quantity. Demo Results
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
BLACKBOX1     A  13500   16875   23625  2362.50   100         1
BLACKBOX2     A  13600   17000   23800  2380.00   110         2
BLACKBOX3     A  13700   17125   23975  2397.50   120         4
BLACKBOX4     B  13800   17250   24150  2415.00   130         10
BLACKBOX5     B  13900   17375   24325  2432.50   140         50
BLACKBOX6     C  14000   17500   24500  2450.00   150        100
BLACKBOX7     C  14100   17625   24675  2467.50   160         10
BLACKBOX8     D  14200   17750   24850  2485.00   170         20
BLACKBOX9     D  14300   17875   25025  2502.50   180         40
          ..... END REPORT .....

```

- Receive RPW main menu
- Select 'Use default template' to include all fields of the report on display
- Select 'Create new template' to begin creating a report to print (we will use this selection)
- APT template not discussed in this course
- Select 'Use template report' if a template has been previously created

```

                                     RPW/Report Writer
                                RPW Main Menu
The MAPPER Report Writer creates or uses a template
containing the specifications for a formal report.
Select an action below.

Use default template > 80 chars.  or > 132 chars.
Create new template >
    Use APT template >RPW-
        in application >
Use template report >

                                Level 2R1

```

Page Specifications

RPW/Report Writer

Page Specifications

Enter values applying to all pages in the report.

Page length >60

Page width >80

Line spacing >1

Row headers? >n

Transmit >

Menu Selections

Page length

Page width

Line spacing

Row headers?

Number of lines per page (11-88)

Number of characters per line (60-256)

1, 2, or 3 (Headers and footers always single spaced)

Enter Y or N if you want leading text on each row of data

Page Headers and Footers

```

                                     RPW/Report Writer
                               Report Header
Enter a header for all pages in the report.

                               Header Text
-----
-1st Hdr Line                    -
-2nd Hdr Line                    -
-3rd Hdr Line                    -

Underline? >y                    Position >c
Date line? >y                    Report Footer? >n

                               Transmit >
```

Menu Selections

| | |
|----------------|--|
| Header Text | Up to three lines of up to 51 characters of text to appear at the top of each page |
| Underline? | Do you want the last header line underlined? |
| Position | Enter L, C, or R to position header at left, center, or right of page |
| Date line? | Enter Y to receive date, time, and/or page numbers |
| Report Footer? | Do you want a report footer with text, date, time, and/or page numbers |

Report Header Date Line

- If Y was entered to 'Date line?' prompt, receive the Report Header Date Line menu

| | |
|----------------------------------|-------------------------|
| RPW/Report Writer | |
| Report Header Date Line | |
| Select features for all headers. | |
| Page numbers? >y | Page number position >r |
| Date? >y | Date format >8 |
| Date position >l | Time? >n |
| Transmit > | |

Menu Selections

| | |
|----------------------|--|
| Page numbers? | Do you want page numbers printed? |
| Page number position | Enter L, C, or R |
| Date? | Do you want the date printed? |
| Date format | Indicate the format desired. Press F8 (Help) to receive list |
| Date position | Enter L, C, or R. Must not be the same as page number position. |
| Time? | Do you want the time printed? Prints in format HH:MM using a 24-hour clock |

Field Selection

- Enter 'Y' next to all fields to be included in the report

| RPW/Report Writer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------|------------|-------|-------|---|--------------|---|-------------|--|-----------------|--|-----------|--|--------------|---|-----|------------|-------|-------|---|---------|--|--------------|--|---------------|--|---------------|
| Field Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Enter a y before fields to be included in the report. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Yes</th> <th style="text-align: left;">Field Name</th> </tr> <tr> <th style="text-align: left;">-----</th> <th style="text-align: left;">-----</th> </tr> </thead> <tbody> <tr> <td>y</td> <td>Product Type</td> </tr> <tr> <td>y</td> <td>Produc Cost</td> </tr> <tr> <td></td> <td>Retail \$\$\$\$</td> </tr> <tr> <td></td> <td>Space Req</td> </tr> <tr> <td></td> <td>Demo Results</td> </tr> </tbody> </table> | Yes | Field Name | ----- | ----- | y | Product Type | y | Produc Cost | | Retail \$\$\$\$ | | Space Req | | Demo Results | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Yes</th> <th style="text-align: left;">Field Name</th> </tr> <tr> <th style="text-align: left;">-----</th> <th style="text-align: left;">-----</th> </tr> </thead> <tbody> <tr> <td>y</td> <td>Sub Key</td> </tr> <tr> <td></td> <td>Whole Sale\$</td> </tr> <tr> <td></td> <td>Sales Commiss</td> </tr> <tr> <td></td> <td>Demo Quantity</td> </tr> </tbody> </table> | Yes | Field Name | ----- | ----- | y | Sub Key | | Whole Sale\$ | | Sales Commiss | | Demo Quantity |
| Yes | Field Name | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ----- | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | |
| y | Product Type | | | | | | | | | | | | | | | | | | | | | | | | | | |
| y | Produc Cost | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Retail \$\$\$\$ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Space Req | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Demo Results | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yes | Field Name | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ----- | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | |
| y | Sub Key | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Whole Sale\$ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Sales Commiss | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Demo Quantity | | | | | | | | | | | | | | | | | | | | | | | | | | |

- Receive field addition menu
- Enter field names and sizes (max of 18 characters) to be added to report
- New fields are usually created to contain the results of computations on existing fields

| RPW/Report Writer | | | | | | | | | | | | | |
|---|------------------------|------|-------|-------|------------------|----|---|------------------|-----|------------------------|----|---------------------------|-----|
| Field Addition | | | | | | | | | | | | | |
| Enter name and size for each field you want to add to the report. | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Additional Field Names</th> <th style="text-align: left;">Size</th> </tr> <tr> <th style="text-align: left;">-----</th> <th style="text-align: left;">-----</th> </tr> </thead> <tbody> <tr> <td>New Product Cost</td> <td>10</td> </tr> </tbody> </table> | Additional Field Names | Size | ----- | ----- | New Product Cost | 10 | <p>Total characters in the report cannot exceed the page width value.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td>Page Width</td> <td style="text-align: right;">132</td> </tr> <tr> <td>Total characters</td> <td style="text-align: right;">23</td> </tr> <tr> <td>Available characters</td> <td style="text-align: right;">109</td> </tr> </table> | Page Width | 132 | Total characters | 23 | Available characters | 109 |
| Additional Field Names | Size | | | | | | | | | | | | |
| ----- | ----- | | | | | | | | | | | | |
| New Product Cost | 10 | | | | | | | | | | | | |
| Page Width | 132 | | | | | | | | | | | | |
| Total characters | 23 | | | | | | | | | | | | |
| Available characters | 109 | | | | | | | | | | | | |

Field Sequencing

- If desired, change left to right field sequence via numbers starting at 1
- If Y is entered in 'Auto-positioning?', RPW will choose the exact field positioning. If N is entered, a screen will follow request starting character positions for each field.

| Field Sequence | | RPW/Report Writer | |
|-------------------------------------|-----|-------------------|-----|
| Change sequence numbers as desired. | | | |
| Field Name | Seq | Field Name | Seq |
| Product Type | 1 | Sub Key | 4 |
| Produc Cost | 3 | New Product Cost | 2 |

Auto-positioning? >y Transmit >

Field Heading Layout

```
RPW/Report Writer
Field Headers Layout
Enter features of headings.
Lines in headers >2
Text position >c
Next line indicator >_
Underline field headers? >y
Underline character >=
Underline start position >h
Use field footers? >n
```

Menu Selections

| | |
|--------------------------|---|
| Lines in headers | Up to four lines may be specified for field header text |
| Text Position | Enter L, C, or R for position of field header text above data |
| Next line indicator | Enter character to be used on the next screen to specify when to break header text to next line |
| Underline field headers? | Do you want field header underlined? |
| Underline character | What character is to be used to underline field headers |
| Underline start position | Enter H to start underlining at the header position and D to start at the data position |
| Use field footers? | Do you want field footers? |

Field Heading Text

- Receive field heading text menu with headings from the report used as default values
- Change headings as needed
- Put new line indicator from previous menu within text as necessary
- 'Chars/line' indicates how many characters may be placed on each line of the heading (heading size does not usually match data field size)
- 'Lines' indicates how many header lines are available

RPW/Report Writer

Field Headers Text

Enter text changes here. Next Line character is "_".

| Chars/Line | Lines | Field Header Text |
|------------|-------|-----------------------|
| --- | - | ----- |
| 031 | 2 | Product Type |
| 032 | 2 | New Product Cost |
| 028 | 2 | Original Product Cost |
| 027 | 2 | Subtotal_Key Field |

New Field Calculation

- Enter a field code letter (indicated in the menu) to be used in a computation to produce a value in the new field created (horizontal arithmetic)
- Enter an arithmetic operator (+,-,*,/)
- Enter a second field code letter or a constant to be used in the computation
- Enter justification and rounding factors for the result value (press F8 for explanation)
- Enter a currency symbol, if desired, for the new field
- Result is placed in the new field created
- If more than one new field is created, this screen will appear once for each new field
- Menu indicates which new field is being created

| New Field Calculation | | | | RPW/Report Writer |
|---|----------------|------------------------|------|-------------------|
| Enter a formula to calculate > New Product Cost | | | | |
| Field Code | Operation Code | Field Code 2 | or | Constant |
| c | * | | | 1.1 |
| Justification | >r (c/l/r/x/z) | Rounding | >.01 | |
| Currency Symbol | >\$ | Transmit | > | |
| a=Product Type | | c=Original_Product Cos | | |
| d=Sub Key | | | | |

Sorting the Report

- Specify sort parameters as you would with the SORT function (1-5,D,N)

| RPW/Report Writer | | | |
|--|------|--------------------|------|
| Sort Sequence | | | |
| Enter a sort order number and parameter where desired. | | | |
| Field Name | Sort | Field Name | Sort |
| Product Type | | New Product Cost | |
| Original_Product Cost | | Subtotal_Key Field | 1 |

Subtotals

- Specify justification and rounding factors for subtotals
- Specify a currency symbol if desired
- Enter the code 'K' in the sorted key field
- Enter the code 'V' in all numeric fields where a subtotal is desired
- Press F8 (Help) twice to receive a list of all possible code functions
- Enter 'Y' in 'Repeat this function?' to do up to nine subtotals

| RPW/Report Writer | | | | | |
|---|-----|----------------|--------------------|---------------|------|
| Subtotals | | | | | |
| Identify at least one key field and one process field. See Help for codes | | | | | |
| Justification > r | | Rounding > .01 | | Currency > \$ | |
| Field Name | Key | Code | Field Name | Key | Code |
| Product Type | | | New Product Cost | | v |
| Original_Product Cost | | v | Subtotal_Key Field | 1 | k |
| Repeat this function? >n | | | Transmit > | | |

Grand Totals

- Same as subtotals
- Enter 'G' to receive grand total, 'A' for average, 'L' for lowest value, and 'H' for highest value in a field
- Enter 'Y' in 'Line count' to receive a count of all data lines

| Field Name | | Code | Field Name | | Code |
|-----------------------|--|------|--------------------|--|------|
| Product Type | | | New Product Cost | | g |
| Original_Product Cost | | g | Subtotal_Key Field | | |

Grand Totals
 Common codes: g = grand total, a = average, l = lowest, h = highest.
 Justification > r Rounding > .01 Currency > \$

Line count? >n Repeat this function? >n Transmit >

Print Breaks

- Specify when page or line breaks are to occur
- Should break on a sorted field
- Enter 'B' to receive a blank line after a field break
- Enter 'F' to print the break field value only on the first data line of each new data set
- Enter 'P' to receive a page eject after each field break
- Enter 'S' to receive a page eject and to receive the break field value above the headings and suppress printing of the break field value in the data lines

| Print Breaks | | RPW/Report Writer | |
|---|------|--------------------|------|
| Enter break codes for each field as wanted. (b/f/p/s) | | | |
| Field Name | Code | Field Name | Code |
| Product Type | | New Product Cost | |
| Original_Product Cost | | Subtotal_Key Field | b |

Template Control

- Select 'Generate the formal report' to display a result which may be printed or saved
- Select 'Change the report definitions' to make modifications
- Select 'Save the template' to save these specifications in a report for future use
- In this case we have chosen 'Generate the formal report'

RPW/Report Writer

Template Control
Tab to action and transmit.

Generate the formal report >
Change the report definitions >
Save the template >
Register the template in APT >
Return to Main Menu >

Final Report

- Press F6 (PrtSys) or F7 (PrtAux) to print report, or save report via XR
- Press F4 (Return) to receive template control menu again
- Note page headers, field headers, subtotals and grand totals

| L | This is the formal report. Use a function key to print it. | | | Page 1 |
|--|--|-----------------------|--------------------|--------|
| October 22, 1991 | | | | |
| | 1st Hdr Line | | | |
| | 2nd Hdr Line | | | |
| | 3rd Hdr Line | | | |
| | ----- | | | |
| Product Type | New Product Cost | Original Product Cost | Subtotal Key Field | |
| ===== | ===== | ===== | ===== | |
| BLACKBOX1 | \$14850 | 13500 | A | |
| BLACKBOX2 | \$14960 | 13600 | A | |
| BLACKBOX3 | \$15070 | 13700 | A | |
| | ----- | ----- | | |
| Subtotal | \$44880 | \$40800 | | |
| | | | | |
| BLACKBOX4 | \$15180 | 13800 | B | |
| BLACKBOX5 | \$15290 | 13900 | B | |
| | ----- | ----- | | |
| Subtotal | \$30470 | \$27700 | | |
| 1Report 2Paint 3ChgDef 4Return 5 6PrtSys 7PrtAux 8Help 9SavTpl10Quit | | | | |

Final Report

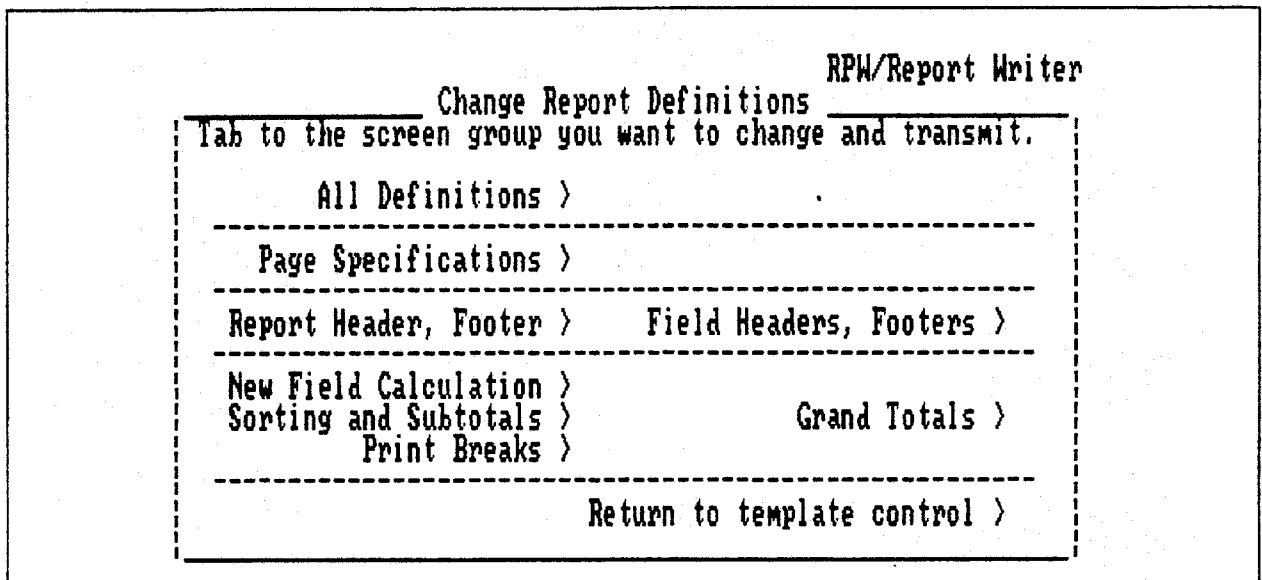
- Final RPW report (continued)

| Line▶ | Roll▶ | | | RESULT |
|---|-----------|---------|---------|--------|
| 28 | - | | | |
| | BLACKBOX6 | \$15400 | 14000 | C |
| | BLACKBOX7 | \$15510 | 14100 | C |
| | Subtotal | \$30910 | \$28100 | |
| | BLACKBOX8 | \$15620 | 14200 | D |
| | BLACKBOX9 | \$15730 | 14300 | D |
| | Subtotal | \$31350 | \$28500 | |
| 1Report 2Paint 3ChgDef 4Return 5 6PrtSys 7PrtAux 8Help 9SavTpl10Quit | | | | |

| Line▶ | Roll▶ | | RESULT |
|---|-----------------------|--------------|----------|
| 65 | - | | |
| eject page | | | |
| October 22, 1991 | | | Page 2 |
| | | 1st Hdr Line | |
| | | 2nd Hdr Line | |
| | | 3rd Hdr Line | |
| <u>GRAND TOTALS</u> | | | |
| | New Product Cost | | \$137610 |
| | Original Product Cost | | \$125100 |
| 1Report 2Paint 3ChgDef 4Return 5 6PrtSys 7PrtAux 8Help 9SavTpl10Quit | | | |

Change Report Definitions

- Had 'Change the report definitions' been selected from the template control menu, the following menu would appear
- Allows changing of any previous menu value



Template Report

- Had 'Save the template' been selected, a menu requesting the destination drawer of the template would appear
- Receiving drawer must be 132 characters wide and use the full character set
- Report number may also be specified

```
RPW/Report Writer
Save Template
Enter a report or drawer below.
Report >f0
Title >RPW-
Transmit >
```

- Receive message specifying template report location
- This report may be used by RPW by specifying it in the 'Use template report' line of the RPW main menu

```
RPW/Report Writer
RPW Message
The template has been saved in report 8f0
Press Resume to continue.
```


RPW Manual Function

- Report must be on display or a screen requesting the report identifier will be displayed following the function

RPW,cmd[,rd[c],cpsw,sn .

- cmd One of the following: CRE - creates a template. DFL - Generates a 132 report using the default format. D80 - Generates an 80-character report in the default format. GEN - Generates a report using the template defined in rdc. UPD - Update the template defined in rdc.
- rdc Location of the template to be used if cmd=GEN or UPD
- cpsw Cabinet password for rdc if different from your current cabinet
- sn Station number of destination of generated report. Default=your station number.

- Enter RPW,GEN function with report on display

```

Line▶ 1          Roll▶ RPW, GEN, 8F          4C  21 OCT 91  MAPCOORD  4C0
.DATE 21 OCT 91  10:05:53  RID          4C  21 OCT 91  MAPCOORD  4C0
.C          Factors Base Report          Corporate Factors Base  C000004
* Product . Sub . Produc. Whole . Retail . Sales . Space. Demo
* Type . Key . Cost . Sales . $$$$.Commis. Req .Quantity. Demo Results .
*-----*-----*-----*-----*-----*-----*-----*-----*-----*
BLACKBOX1      A  13500   16875   23625  2362.50   100           1
BLACKBOX2      A  13600   17000   23800  2380.00   110           2
BLACKBOX3      A  13700   17125   23975  2397.50   120           4
BLACKBOX4      B  13800   17250   24150  2415.00   130           10
BLACKBOX5      B  13900   17375   24325  2432.50   140           50
BLACKBOX6      C  14000   17500   24500  2450.00   150           100
BLACKBOX7      C  14100   17625   24675  2467.50   160           10
BLACKBOX8      D  14200   17750   24850  2485.00   170           20
BLACKBOX9      D  14300   17875   25025  2502.50   180           40
          ..... END REPORT .....

```

RPW Manual Function

- Receive generated report from template specified

L This is the formal report. Use a function key to print it. Page 1
 October 22, 1991

1st Hdr Line
 2nd Hdr Line
 3rd Hdr Line

| Product Type | New Product Cost | Original Product Cost | Subtotal Key Field |
|--------------|------------------|-----------------------|--------------------|
| ===== | ===== | ===== | ===== |
| BLACKBOX1 | \$14850 | 13500 | A |
| BLACKBOX2 | \$14960 | 13600 | A |
| BLACKBOX3 | \$15070 | 13700 | A |
| Subtotal | \$44880 | \$40800 | |
| | | | |
| BLACKBOX4 | \$15180 | 13800 | B |
| BLACKBOX5 | \$15290 | 13900 | B |
| Subtotal | \$30470 | \$27700 | |

1Report 2Paint 3ChgDef 4Return 5 6PrtSys 7PrtAux 8Help 9SavTpl10Quit

- Enter RPW,UPD function with template specified

Line▶ 1 Roll▶ RPW,UPD,8F 4C0

.DATE 21 OCT 91 10:05:53 RID 4C 21 OCT 91 MAPCOORD

.@ Factors Base Report Corporate Factors Base C000004

| * Product | Sub | Produc | Whole | Retail | Sales | Space | Demo | Demo Results |
|-----------|-------|--------|-------|----------|---------|-------|----------|--------------|
| * Type | Key | Cost | Sales | \$\$\$\$ | Commiss | Req | Quantity | |
| ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| BLACKBOX1 | A | 13500 | 16875 | 23625 | 2362.50 | 100 | 1 | |
| BLACKBOX2 | A | 13600 | 17000 | 23800 | 2380.00 | 110 | 2 | |
| BLACKBOX3 | A | 13700 | 17125 | 23975 | 2397.50 | 120 | 4 | |
| BLACKBOX4 | B | 13800 | 17250 | 24150 | 2415.00 | 130 | 10 | |
| BLACKBOX5 | B | 13900 | 17375 | 24325 | 2432.50 | 140 | 50 | |
| BLACKBOX6 | C | 14000 | 17500 | 24500 | 2450.00 | 150 | 100 | |
| BLACKBOX7 | C | 14100 | 17625 | 24675 | 2467.50 | 160 | 10 | |
| BLACKBOX8 | D | 14200 | 17750 | 24850 | 2485.00 | 170 | 20 | |
| BLACKBOX9 | D | 14300 | 17875 | 25025 | 2502.50 | 180 | 40 | |

..... END REPORT

RPW Update Result

- Receive the 'Change Report Definition' screen from which you may change any or all specifications in the template

| Change Report Definitions | | RPW/Report Writer |
|--|--------------------------|-------------------|
| Tab to the screen group you want to change and transmit. | | |
| All Definitions > | | |
| ----- | | |
| Page Specifications > | | |
| ----- | | |
| Report Header, Footer > | Field Headers, Footers > | |
| ----- | | |
| New Field Calculation > | Grand Totals > | |
| Sorting and Subtotals > | | |
| Print Breaks > | | |
| ----- | | |
| Return to template control > | | |

D

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