PRINTING OUTPUT

Features of Printed   Output

The following characteristics must be considered when   designing and preparing REPORTS. ***Remember that the   following is not applicable   for TAPE of   DISK.***

1) Use of Edit Symbols : Edited symbols are used to   make data field clearer, neater, and more   readable. For example   00450 could be written as $450.00.

2) Spacing of   Forms. The line   that is printed must   be properly spaced   for ease of reading. Example such as   single   space, double space,   new page.

3) Alignment of Information. Printed   output   is more easily interpreted   when fields   are spaced   evenly across the page.

4) Headings.   Report Name, Page   Number, Date,   Time.

The Editing Functions

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                    EDITING FUNCTIONS

    1.  Printing of decimal points where decimal  alignment  is
        implied.
    2.  Suppressing of leading zeros.
    3.  Printing of dollar signs and commas.
    4.  Printing  of asterisks for  check protection.
    5.  Printing of plus or minus  signs
    6.  Printing of debit or credit symbols for  account applications.
    7.  Printing of spaces or zeros as separators within fields.
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Printing Decimal Points

A sending field with *PICTURE* 99v99 takes *FOUR* storage positions, since implied decimal points do not use storage, where as the corresponding report-item   takes *FIVE* positions since a real decimal point does. Example, 12.34 takes five positions when it is printed.

Suppressing of Leading Zeros

Nonsignificant or leading zeros are zeros appearing in the leftmost positions of a field and having no significant   value. For example, the 00367 should be printed as 367. This is called **suppressing of leading zeros.**

The edit symbol | Z | is used to suppress leading zeros and to replace them

with blanks or spaces.
Examples :   0378   will be printed as   b378
             0006   will be printed as   bbb6
             0000   will be printed as   bbbb

What   about   108   ???

When suppressing leading zeros, the sending field must be defined as numeric. The receiving field should accept *the same number of integers*   as are in the sending field. PICTURE ZZZ   is a three-position storage area that may accept three integers and will suppress all leading zeros.

Examples of Zero Suppression				
Sending Field			Report-Item	
Picture	Contents		Picture	Edited Results
9(3)	109		ZZZ	109
9(3)	007		Z(3)	Bb7
9(3)	000		ZZZ	Bbb
9(3)	007		Z99	B07
9(4)	0082		Z999	B082
99v99	02^38		ZZ.99	B2.38
99v99	00^03		ZZ.99	bb.03
99v99	00^05		Z9.99	B0.05
9(3)v99	008^27		Z(3)	b8
9(3)	027		Z(3).99	B27.00
9(3)	018		Z(3).ZZ	B18.00
9(3)	000		Z(3).ZZ	Bbbbbb

Note : B   and b in the above table indicates   Blank positions.

Printing Dollar and Commas

Dollar signs and commas   are editing symbols frequently used in conjunction
with the suppression of leading zeros and the printing of decimal points, since many
numeric quantities often   appear on printed reports as dollars and cents figures.

Examples of Dollar Signs and Comma Insertion			
Sending Field		Report Item	
PICTURE	Contents	PICTURE	Edited Results
9(4)v99	3812^34	$9,999.99	$3,812.34
99v99	05^00	$ZZ.99	$b5.00
999v99	000^05	$ZZZ.99	$bbb.05
9(4)v99	0003^82	$Z,ZZZ.99	$bbbb3.82

Note :   b   Denotes Blank position.

*Printing Asterisks (*) for Check Protection*

Use ***check protection symbol,*** the asterisks (*) in place of blanks when leading
zeros are to be suppressed. For example writing $***.05 instead of $ .05.
To print an asterisk instead of a blank symbol when zero suppression is to be

performed, use ⎡ * ⎤ instead of ⎡ Z ⎤ in each   position.

Asterisks are zero suppression characters that replace each nonsignificant zero and
comma with * instead of a   space.

Examples of zero Suppression with Asterisk Insertion			
Sending Field		Report Item	
PICTURE	Contents	PICTURE	Contents
9(3)v99	123^45	$***.99	$123.45
9(3)v99	012^34	$***.99	$*12.34
9(5)v99	00234^56	$**,***.99	$***234.56

Printing Plus or Minus Signs

A PIC of 9's is used to define an unsigned numeric field that will contain positive numbers. A PIC clause with a leading S defines a field that is signed. PIC   S99, for example, defines a two-digit signed field. To Store -120 in a numeric field the PIC clause should be   S9(3).

To print a minus sign for a negative sending, use the symbol

-

This minus may be placed *either* to the right *or* to the left of the report item. A minus sign will be printed in corresponding position   *only* if the sending field is negative.

Examples of Minus Sign Insertion			
Sending Filed		Report Item	
PICTURE	Contents	PICTURE	Contents
S999	-123	-999	-123
S999	-123	999-	123-
999	123	-999	B123
S999	+123	-999	B123
S99v99	-02^34	ZZ.99-	B2.34-

Note: B indicates Blank position.

Printing Either a Minus or Plus Sign

To print either a plus sign or a minus sign for all values, the edit symbol $\boxed{+}$

Is used. A + sign will   be generated for   positive or unsigned quantities, and a - sign will be generated for negative quantities. Once a gain, the sending field should have an S in   its PIC clause for it to be interpreted as a signed number.

Examples of Plus or Minus Sign Insertion				
Sending Field			Report Item	
PICTURE	Contents		PICTURE	Contents
S999	+123		+999	+123
S999	+123		999+	123+
S999	-123		+999	-123
S999v99	-0387^25		+Z,ZZZ.99	-bb387.25

Note: b Indicates Blank Position

Printing Debit and Credit Symbols For Accounting Applications

The edit   symbol | DB | for debit   or | CR | for credit is used in place

Of minus sign.

IF the   amount   is to be *debited* to the   account   when   it is *negative*, DB will
be used.

IF the quantity to   be *credited* to an account when it is *negative*, CR will be
used.

Again, The sending field should have an   S   in its PIC   clause for it to be
interpreted as   a signed number.

Note: The DB,   and CR symbols *MUST* always be specified to the *RIGHT* of
the report item.

Examples of CR or DB Insertion					
Sending Field			Report Item		
PICTURE	Contents		PICTURE	Contents	
S999	-123		999CR	123CR	
S999	-123		999DB	123DB	
S999	+123		999CR	123bb	
S999	+123		999DB	123bb	

Note: b denotes   Blank positions

Printing   Spaces or Zeros   as Separators within   Fields

Any field, whether nonnumeric or numeric,   may be edited by placing blanks as

separators within the field. The Edited symbol | B | in a PICTURE clause

 of a report item will cause a space to be inserted in a corresponding position.

Zeros   may   also be inserted into fields for editing   purpose. The   edit symbol | 0 |

In the PICTURE clause of a report item will cause a 0 to be inserted in a
corresponding position of the receiving field   without loss of   characters from
the sending field

Examples of Blanks and Zeros as Separators				
Sending Field			Report Item	
Identifier	PICTURE	Contents	PICTURE	Contents
SSNO	9(9)	012232345	999BB99BB999	012 23 2345
NAME	X(10)	PASMITHbbb	XBXBX(8)	P A SMITH
QTY-IN	999	153	99900	15300

In Summary,   Editing may   be performed   in 2 ways

1.   By moving a sending field to a report item.

2.   By performing an arithmetic operation and placing the result in report item.

    ADD   ……. Giving report-item

Invalid Operation   ADD WS-TOTAL   TO TOTAL-OUT.

More Examples in the book pages 208 – 209   (Self Test)

                        243 - 245   (Chapter Self test)

REVIEW of EDITED Operations				
Sending Field			Report Item	
PICTURE	Contents		PICTURE	Contents
9(6)	123456		$ZZZ,ZZZ.99	$123,456.00
9999v99	0012^34		$Z,ZZZ.99	$ 12.34
9(5)v99	00001^23		$**,***.99	$*****1.23
S9(6)	- 012345		+Z(6)	- 12345
S9(6)	+ 123456		-Z(6)	123456
S9999v99	+ 1234^56		+Z(4).99	+1234.56
S999	- 123		ZZZ-	123-
9(6)	123456		99BBBB9999	12 3456
S99	- 05		$ZZ.99DB	$ 5.00DB
999	123		999000	123000
S99v99	- 12^34		$ZZ.99CR	$12.34CR