**CSCI 360 6. Assist's X-Type Instructions**

**XDUMP**

Used to "dump" the GPRs or program storage.

Format 1: XDUMP comment

- produces a hexadecimal dump of the GPRs

Format 2: XDUMP D(X,B),length

- produces a hexadecimal dump of storage starting from D(X,B) for

length bytes

- a label can be substituted for D(X,B)

- an expression that resolves to an integer value can be

substituted for length

If the line **XDUMP NUM1,RESULT2+4-NUM1** was coded somewhere in the program, a hexadecimal dump of the entire storage area would be produced.

**XREAD**

Used to read an input record from the file indicated on FT05F001 DD card or from instream data.

Format: label XREAD D(X,B),length

- reads length bytes into the input buffer located at D(X,B)

Sets the Condition Code:

Code Meaning

0 Successful read

1 End of file reached

Example: XREAD BUFFER,80

Assuming that BUFFER DS CL80 is located in storage.

**XPRNT**

Used to print a print line of output.

Format: label XPRNT D(X,B),length

- prints length bytes of the print line located at **D(X,B)**

- Print lines must be explicitly defined in program storage

- usually 132 characters long

- 1st character is used for carriage control:

space single spacing

zero (0) double spacing

hypen (-) triple spacing

number 1 new page

**Example:**

XPRNT LINE1,132 Print the line of output named LINE1

>>> more code here <<<

LINE1 DC CL1' '

DC CL16'Num1 is equal to'

NUM1 DS CL12

DC CL5' '

DC CL16'Num2 is equal to'

NUM2 DS CL12

DC CL70' '

**XDECI**  
  
 Used to convert a number from its character representation to its   
 binary representation so that math can be performed.

Format: label XDECI R,D(X,B)

- converts the number at D(X,B) to binary and stores it in R

- Stops scanning when a space is reached

- 1st character may be a digit or a plus (+) or minus (-) sign

- Register 1 is set to the address of the next value to read

Sets the Condition Code:

Code Meaning  
 0 Converted number is 0  
 1 Converted number is less than 0  
 2 Converted number is greater than 0  
 3 Attempt to convert an invalid number

Example: XDECI 3,BUFFER Convert 1st number on an input record  
 XDECI 4,0(,1) Convert 2nd number on the input record

**XDECO**

Used to convert a number from its binary representation to its

character representation so it can be printed,

Format: label XDECO R,D(X,B)

- converts the binary number in register **R** to printable

characters and stores it at **D(X,B)**

- Number is converted to a 12 byte character representation

- If number is negative, a minus sign is printed to left of 1st

digit

Examples: XDECO 3,NUM1 Convert number in register 3 to printable  
 format and place it in NUM1, which is   
 defined as NUM1 DS CL12  
   
 XDECO 4,NUM2 Convert number in register 4 to printable  
 format and place it in NUM2, which is   
 defined as NUM2 DS CL12