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CS Assignment 1- Pseudocode

Problem 1

Inputs: int1, int2, int3, int4, int5

Outputs: max (largest integer)

Error Conditions: when one of the inputs is a double and not and int value, or incorrect input

Algorithm:

READ int1

READ int2

READ int3

READ int4

READ int5

SET max to 0

IF int1 > int2 THEN

SET max equal to int1

ELSE

SET max equal to int2

END-IF

IF int3 > max THEN

SET max equal to int3

END-IF

IF int4 > max THEN

SET max equal to int4

END-IF

IF int5 > max THEN

SET max equal to int5

END-IF

DISPLAY max

Test Cases:

[input][output]

[1 2 3 4 5][5]

[-1 -2 -3 -4 -5] [-1]

[4 4 4 4 4][4]

[1.3 1.4 3.2 4.5 3.5][error]

[a b c d e][error]

Minimum number of operations: 6

Maximum number of operations: 10

Problem 2

Input: ISBN – a positive 9-digit integer

Output: Full ISBN with the checksum digit

Error Condition: Input cannot be negative; input cannot be more or less than 9 digits

Algorithm:

READ ISBN

SET sum to 0

SET numOfDigits to 0

SET num to ISBN

IF ISBN < 0

DISPLAY error

HALT

WHILE num is NOT equal to 0

COMPUTE num as num / 10

INCREMENT numOfDigits

IF numOfDigits < 9 OR numOfDigits > 9

DISPLAY error

HALT

FOR (counter = 2 to 10)

COMPUTE digit as ISBN MODULUS 10

COMPUTE sum as sum + (counter\*digit)

COMPUTE ISBN as ISBN/10

IF sum MODULUS 11 equals 1 THEN

DISPLAY ISBN + “X”

ELSE-IF sum MODULUS 11 equals 0 THEN

DISPLAY ISBN + “0”

ELSE

DISPLAY ISBN + (11 – (sum MODULUS 11))

END-IF

Test Cases:

[input][output]

[123456789][123456789X]

[000000000][0000000000]

[472067285][472067285X]

[-184293333][error]

[123][error]

[1234567892][error]

Minimum number of operations with errors: 3

Minimum number of operations without errors: 95

Maximum number of operations without errors: 97