Logic Chapter 5

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Short Answer:

1. ***Why should you use the statements in the body loops?***

By indenting the statements in the body of the loop you visually set them apart from the surrounding code.

1. ***Describe the difference between pretest loops and posttest loops.***

A pretest loop means it tests its condition before performing an iteration. A posttest loop performs its iteration before testing its condition.

10. ***Why must the value chosen for use as a sentinel be carefully selected?***

A sentinel is a special value that marks the end of a list of items. It must be unique enough that it does not get mistaken as a regular value in the list.

Algorithm Workbench:

***4. Design a loop that asks the user to enter a number. The loop should iterate 10 times and keep a running total of the numbers entered.***

Declare Real num = 0

Declare Real sum = 0

Declare Integer count = 0

For count = 1 To 10

Display “Enter a number”

Input num

sum = sum + num

End For

***8. Convert the Do-While loop in the following code to a while loop:***

***Declare String sure***

***Do***

***Display “Are you sure you want to quit?”***

***Input sure***

***While sure != “Y” AND sure != “y”***

Declare String sure = “”

While sure != “Y” AND sure != “y”

Display “Are you sure you want to quit”

Input sure

Debugging Exercises:  
***3. The programmer intended the following pseudocode to get five sets of two numbers each, calculate the sum of each set, and calculate the sum of all the numbers entered. It will not function as intended, however. Find the error***

***// This program calculates the sum of five sets of two numbers.***

***Declare Integer number, sum, total***

***Declare Integer sets, numbers***

***Constant Integer MAX\_SETS = 5***

***Constant Integer MAX\_NUMBERS = 2***

***Set sum = 0;***

***Set total = 0;***

***For sets = 1 To MAX\_NUMBERS***

***For numbers = 1 To MAX\_SETS***

***Display “Enter number”, numbers, “ of set ”, sets, “.”***

***Input number;***

***Set sum = sum + number***

***End For***

***Display “The sum of set”, sets, “ is “, sum, “.”***

***Set total = total + sum***

***Set sum = 0***

***End For***

***Display “The total of all the sets is ”, total, “.”***

The issue lies within the for loops in terms of the order in which MAX\_NUMBERS and MAX\_SETS was selected. It should be   
  
For sets = 1 To MAX\_SETS  
 For numbers = 1 To MAX\_NUMBERS