Logic Chapter 7

William Elizondo

Short answer  
  
***2. Give a general description of the input validation process.***

When an input is given to a program , it should be inspected before it is processed. If the input is invalid, the program should discard it and prompt the user to enter the correct data.

***3. What is the purpose of the priming read?***

The purpose is to get the first input value that will be tested by the validation loop.

***4. In this chapter you saw how a posttest loop can be used in input validation, as an alternative to the priming read followed by a pretest loop. Why is it typically not best to use a posttest loop approach?***It does not display an error message when the user enters an invalid value, it repeats the original prompt each time the loop iterates.

Algorithm Workbench

***2. Design an algorithm that prompts the user to enter a number in the range of 1 through 100 and validates the input.***

Display ”Enter a number between 1 through 100”

Input number

While number < 1 OR number > 100

Display “The number must be between 100 and 1”  
Display “Try again”

Input number

End While

**3. Design an algorithm that prompts the user to enter “yes” or “no” and validates the input. (Use a case-insensitive comparison).**

Display “Enter yes or no”

Input answer

While toLower(answer) != yes AND toLower(answer) != “no”

Display “Please answer yes or no.”

Input answer

End While

Debugging Exercise

**2. Why does the following pseudocode not perform as indicated in the comments?**

***// This program gets a dollar amount from the user***

***// and validates the input.***

***Declare Real amount***

***// Get the amount from the user.***

***Display “Enter a dollar amount”***

***Input amount***

***// Make sure the amount is not less than zero. If it is,***

***// get a new amount from the user.***

***While amount < 0***

***Display “ERROR: The dollar amount cannot be less than 0.”***

***Display “Enter a dollar amount.”***

***End While***

The problem with the code as it is, is because when validating the amount it doesn’t ask for the input again like it’s supposed to.

***3. The following pseudocode works, but it performs a case-sensitive validation of the user’s input. How could the algorithm be improved so the user does not have to pay attention to capitalization when entering a name?***

***//This program ask the user to enter a string***

***// and validates the input.***

***Declare String choice***

***// Get the user’s reponse.***

***Display “Cast your vote for Chess Team Captain.”***

***Display “Would you like to nominate Lisa or Tim?”***

***Input choice***

***// Validate the input.***

***While choice != “Lisa” AND choice != “Tim”***

***Display “Please enter Lisa or Tim.”***

***Display “Cast your vote for Chess Team Captain.”***

***Display “Would you like to nominate Lisa or Tim?”***

***Input response***

***End While***

If you make the users input to lowercase it would fix the need to pay attention to case sensitivity.  
  
We would have to add

choice = toLower(choice) after both inputs but also

The input inside of the validation doesn’t go back to the choice input like it’s supposed to for a validation.