Chapter 5 – Passing Values

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Directions:

Create a program that asks a user to enter a whole number between 20 and 100.  Send that number to a function that will validate the number, and if it is not a number between 20 and 100, use a while loop to keep asking the user for a valid number. Return the number to the main function.

hint good\_number = validate(num) - use a variable to store the returned value

In addition, create three functions that determine if the number is divisible by two, by three, and by five respectively.

Pass all of the results to a final function that displays output on the screen - identifying whether or not the number is divisible by two, three, and five.

**Data**:

Main():

* + Variables:
    - Number: integer variable to hold user’s input
    - Good\_number: validated number that’s between 20 and 100
  + User input:
    - Number: integer value to hold user’s input

Validate(number):

* Variables:
  + Num: value to hold user’s input. Will be returned if between 20 and 100
* User input
  + Num: value to hold user’s input. Will be returned if between 20 and 100

isDivisibleBy2(), isDivisibleBy3(), isDivisibleBy5()

* Variables:
  + None
* User input
  + None
* Returns
  + Boolean (true if divisible by 2, 3, 5 respectively)

displayResults(number, by2, by3, by5)

* Variables
  + The 4 input values from the function:
    - Number – user’s integer
    - By2 – Boolean, true if divisible by 2, otherwise false
    - By3 – Boolean, true if divisible by 3, otherwise false
    - By5 – Boolean, true if divisible by 5, otherwise false
* User input
  + None
* Displays the results

**Processing**:

1. Ask user for a number between 20 and 100
2. Validate number. If it’s not between 20 and 100, continue asking until they enter a valid number. Store validated number in good\_number
3. Send good\_number to the functions that check if they are divisible by 2, 3, or 5.
4. Send those Boolean values and the number to displayResults() to display whether they are divisible by 2, 3, or 5

**Output (Example):**

Will display whether the number is divisible by 2, 3, or 5. Example below.

Enter a while number between 20 and 100: -8

Error: That number is not valid. Your number was not between 20 and 100. Try again.

Enter a while number between 20 and 100: 45

45 is not divisible by 2

45 is divisible by 3

45 is divisible by 5

Process finished with exit code 0