

CSCD 240 Whirlwind C

PROGRAM SPECIFICATIONS:

Design a program called `intFun.c` which reads in a *non-negative* integer from the user. The user will then be prompted with a menu of choices (this menu should be repetitively displayed until the user chooses to quit):

Your menu will include these choices

1. Enter a new number
2. Print the number of odd digits, even digits and zeros in the integer
3. Print the prime numbers between 2 and the integer
4. Print the value of *e* up to the number specified
5. Quit the program

PROGRAM PARTICULARS:

- When the program starts up, ask the user for the positive integer. After the user enters the positive integer, display the above menu. Remember the user can choose to do #2, #3, and #4 on the same number. Meaning, once you have the number from the user do not make the user enter a new number each time. The user can keep the same number until the user selects option 1. I have added a sample output of what the program should execute like. (See Below)
- There must be error checking on the input integer: if it is negative, the program will print an error message and re-prompt. This process will continue until valid input is entered. You may assume an integer of some form will be entered by the user.
- There must be error checking on the menu choice entered: if the user enters a choice not on the menu, the program will print an error message, re-display the menu and re-prompt. This process will continue until valid input is entered.
- No string or array variables are allowed.
- No built-in methods for integer manipulation are allowed.
- You may assume that no integer entered will be greater than the maximum integer size for type **int**.
- No methods, everything will happen within `main`.

HINTS:

- First, solve the primary problems one at a time, testing each one separately. (Make sure that your algorithm works for single-digit numbers - including zero!).
- Solve the input and error checking problems once the others are solved and tested.

TURN IN:

A zip file containing

- IntFun.c
- IntFunout.txt – at least 4 sample runs of your program

Name your zip file your last name first letter of your first name lab5.zip (Example: steinerslab5.zip)

SAMPLE OUTPUT:

Welcome to Integer Fun.

Please enter a positive integer --> -12

I am sorry that is not a positive integer.

Please enter a positive integer --> 120

Please select from the following menu choices.

1. Enter a new number
2. Print the number of odd, even and zeros in the integer
3. Print the prime numbers between 2 and the integer
4. Print the value of e up to the number specified
5. Quit the program

Choice --> -6

I am sorry that is an invalid menu choice.

Please try again

Please select from the following menu choices.

1. Enter a new number
2. Print the number of odd, even and zeros in the integer
3. Print the prime numbers between 2 and the integer
4. Print the value of e up to the number specified
5. Quit the program

Choice --> 2

Your results are:

odd - 1

even - 1
zero(s) - 1

Please select from the following menu choices.

1. Enter a new number
2. Print the number of odd, even and zeros in the integer
3. Print the prime numbers between 2 and the integer
4. Print the value of e up to the number specified
5. Quit the program

Choice --> 1

Please enter a positive integer --> 10

Please select from the following menu choices.

1. Enter a new number
2. Print the number of odd, even and zeros in the integer
3. Print the prime numbers between 2 and the integer
4. Print the value of e up to the number specified
5. Quit the program

Choice --> 2

Your results are:

odd - 1
even - 0
zero(s) - 1

Please select from the following menu choices.

1. Enter a new number
2. Print the number of odd, even and zeros in the integer
3. Print the prime numbers between 2 and the integer
4. Print the value of e up to the number specified
5. Quit the program

Choice --> 5

Thank you and have a nice day