
CPT 111 – PRINCIPLES OF PROGRAMMING
WEEK 7: PROGRAMMING LAB
Repetition / Looping Control Structure II

For every questions from Week 5, use while loop: Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q10.

Identify the minor changes you need to do to convert from while loop to do-while loop.

How extensive to change from for loop to while loop?

Loop Part 2

1. Prime Number

Write a program that prompts the user to input a positive integer. It should then output a message indicating whether the number is a prime number.

Hints: An even number is prime if it is 2. An odd integer is prime if it is not divisible by any odd integer less than or equal to the square root of the number.

2. Prime Number

Write a program that prompts the user to input a positive integer less than 50. Let's call it n-th value. Using the n-th value, as the basis, find a series of the first n-th (positive) number series which is not a prime number.

Hints: An even number is prime if it is 2. An odd integer is prime if it is not divisible by any odd integer less than or equal to the square root of the number.

Hints 2: if the n-th value is 5, the answer should be: 1, 4, 6, 8, 9.

3. Pattern

Draw a pattern to look something like this:

Please enter a number: 7

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Pattern A                                Pattern B
-----
+                                         * * * * *
++                                        * * * * *
+++                                       * * * *
++++                                      * * *
+++++                                    * *
++++++                                  *
+++++++                                *
+++++++                                *
```

4. Pattern

Draw a pattern to look something like this:

Enter number of rows: 7

```

      *
    * *
  * * *
* * * *
* * * * *
* * * * * *
* * * * * *
  * * * * *
    * * * *
      * * *
        * *
          *
```

5. Count Positive and Negative Numbers

Write a program that ask the user for a positive integer n within 10 to 20. The program should loop till the user inputs a valid number. After receiving a valid input, it should prompt the user to enter n numbers within a loop and count the total number of positive and negative numbers separately.

6. break and continue Statement

Using a break statement, write a program to sum a list of ten negative numbers entered iteratively.

Change `break` to `continue`. What can you conclude `continue` doing?

Past Programming Assesment Part 2

1. Sum of Numbers

Write a program that reads a set of integers and then finds and prints the sum of the even numbers amongst them and odd integers amongst them only.

2. Sum of Numbers

Write a program that continue reading a set of integers and then finds and prints the sum of the odd integers only and count how many digits are odd out of the total input number.

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