**Homework 7** (**Max Points:100) Due Date: October 29 by 11:59 pm EST**

**Instructions:**

1. **Each response should be in a .py file. Submit all your code to** [**https://submitty.cs.rpi.edu**](https://submitty.cs.rpi.edu)
2. **For every question it is specified when the user input must be taken.**
3. **For all output: Print using a print() statement**

**Answer the following questions:**

1. **Fibonacci series:** Write a Python program using ‘While Loop’ to get the Fibonacci series between 0 to a user provided value. User input is the maximum value up to which the series must be printed.  
   Note : The Fibonacci Sequence is the series of numbers :  
   0, 1, 1, 2, 3, 5, 8, 13, 21, ....   
   Every next number is found by adding up the two numbers before it.

For example, if user provided value=50 then:  
Expected Output : 1 1 2 3 5 8 13 21 34. (**20 points**)

1. **Data computation:** Write a program that takes a user input ‘n’ and prints all numbers that are multiples of 5 up to n. (**20 points**)
2. **Print Data:** Write a function that takes two user inputs: an integer N, a Boolean.

If Boolean is True, then return all even integers up to N (less than or equal to) else return all odd integers up to N (less than or equal to). (**20** **points**)

**Test Cases:**

odd\_even\_print(10,False): 1,3,5,7,9

odd\_even\_print(10,True): 2,4,6,8,10

odd\_even\_print(13,False): 1,3,5,7,9,11,13

1. **Test Numbers:** Write python program that prints all odd numbers in a given range (both inclusive). For the range, read user provided input for the minimum value and the maximum value. (**20 points)**

**Test cases:**

Range is 11-25; Output: 11,13,15,17,19,21,23

Range is 2-13; Output: 3,5,7,9,11,13

1. **Armstrong Number:** A positive integer is called an Armstrong number of order *n* if

abcd... = an + bn + cn + dn + ...

We are interested in Armstrong numbers of order 3 only. To write this program we can use the following property: In case of an Armstrong number of 3 digits, the sum of cubes of each digits is equal to the number itself. For example:

153 = 1\*1\*1 + 5\*5\*5 + 3\*3\*3 // 153 is an Armstrong number.

Write a Python program to check if a user provided three-digit number is an Armstrong number or not. (**20 points)**

Hint: Separate each digit by dividing the number with 10 to get the remainder.