Section H

Q1: Write a program which takes the interval values from user and display the prime numbers between those intervals.

Definition: A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself. The first few prime numbers are {2, 3, 5, 7, 11, ….}.

Sample Input:

Enter Lower Limit: 900

Enter Upper Limit: 1000

Sample Output:

Prime numbers between 900 and 1000 are:

907, 911, 919, 929, 937, 941, 947, 953, 967, 971, 977, 983, 991, 997

Q2: Write a Python program that takes an input from user for the number of values to be inserted pass this value to function called SUM(x)

Run a for loop to take those input values and store them in an array.

calculate the sum of an array and return the sum.

print this sum in main function as:

"My name is (YourName) My Roll Number is (21K0000) My calculated sum is (returned value from the function)"

Sample Input:

Number Of Values: 3

Enter Value 1

2

Enter Value 2

4

Enter Value 3

6

Sample Output:

My array is: [2,4,6]

My name is Taaha My Roll Number is 19K0000 My calculated sum is 12.

Q3: A ball is dropped from a tower of height h. It has initial velocity zero and accelerates downwards under gravity. The challenge is to write a program that asks the user to enter the height in meters of the tower and a time interval t in seconds, then prints on the screen the height of the ball above the ground at time t after it is dropped, ignoring air resistance. The steps involved are the following. First, we will use input statements to get the values of h and t from the user. Second, we will calculate how far the ball falls in the given time, using the standard kinematic formula:

where g = 9.81 is the acceleration due to gravity. Third, we print the height above the ground at time t, which is equal to the total height of the tower minus this value. Write a python function to calculate the height of a ball after the t seconds.

Hint: Height(h,t) ► return h-s

Instruction: Take input height as your roll number E.g. if your roll number is 19K1328 then take 1328 as height.

Sample Input:

Enter the height of the tower: 1328

Enter the time interval: 9

Sample Output

The height of the ball is 930.6949 meters