**PYTHON LAB FILE**

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Roll No: R2142231074

Batch No: 32

**EXPERIMENT: 2**

1. **Declare these variables (x, y and z) as integers. Assign a value of 9 to x, Assign a value of 7 to y, perform addition, multiplication, division and subtraction on these two variables and Print out the result.**

**Output**

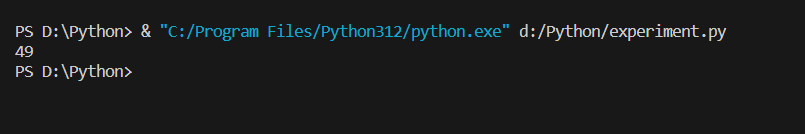
1. **Write a Program where the radius is taken as input to compute the area of a circle.**

Output

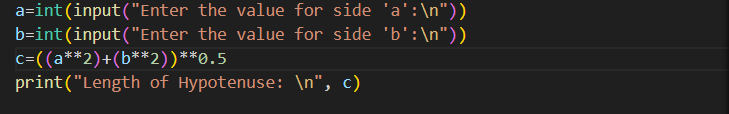
1. **Write a Python program to solve (x+y)\*(x+y) Test data : x = 4 , y = 3 Expected output: 49**



Output



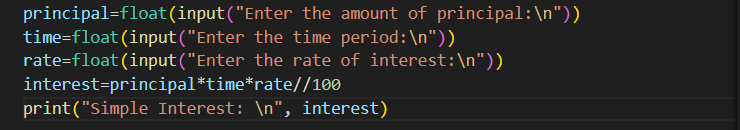
1. **Write a program to compute the length of the hypotenuse (c) of a right triangle using Pythagoras theorem**.



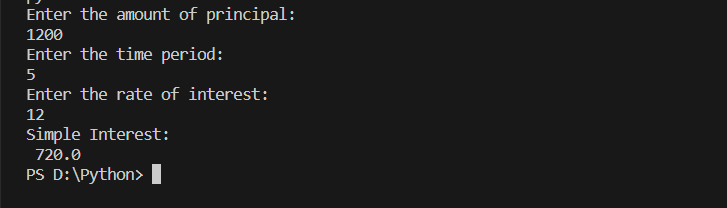
**Output**



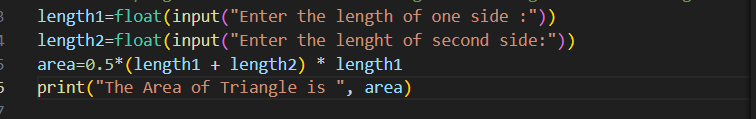
1. **Write a program to find simple interest.**



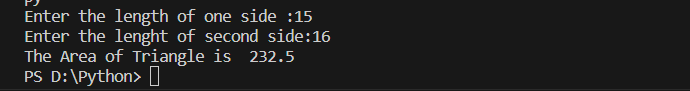
**Output**



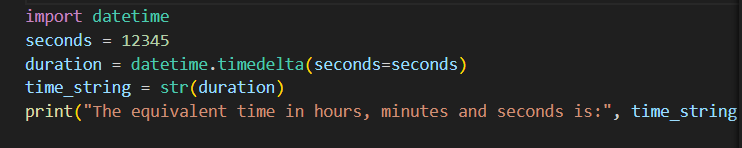
1. **Write a program to find area of triangle when length of sides are given.**



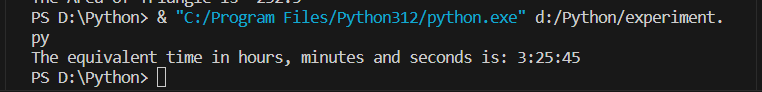
Output

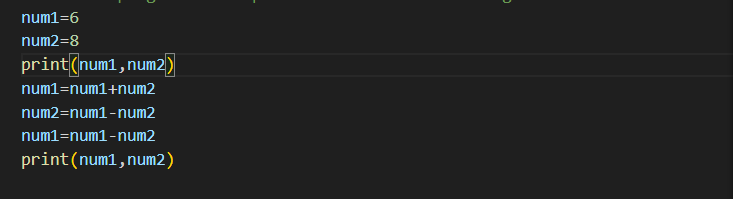


1. **Write a program to convert given seconds into hours, minutes and remaining seconds.**

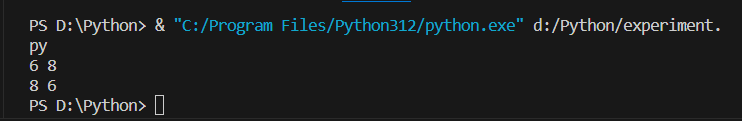


**Output**

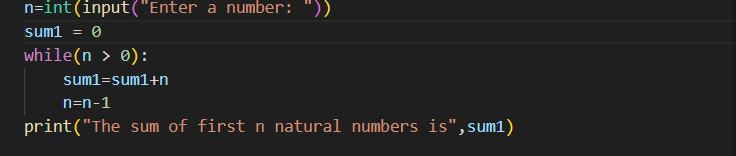


1. **Write a program to swap two numbers without taking additional variable.**

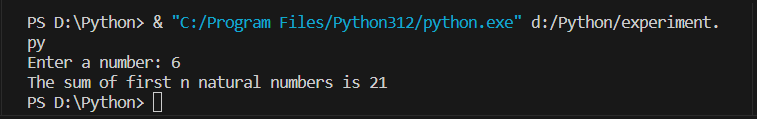
**Output**



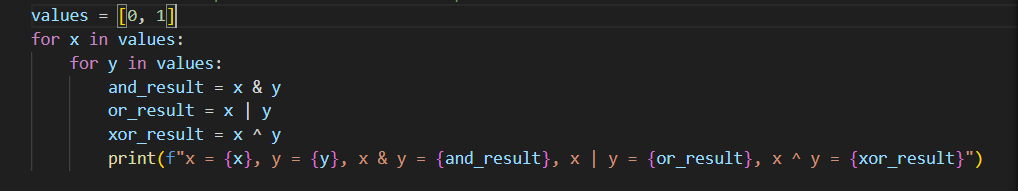
1. **Write a program to find sum of first n natural numbers.**



**Output**



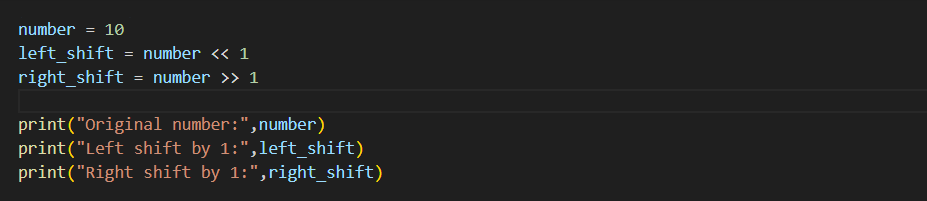
1. **. Write a program to print truth table for bitwise operators( & , | and ^ operators)**



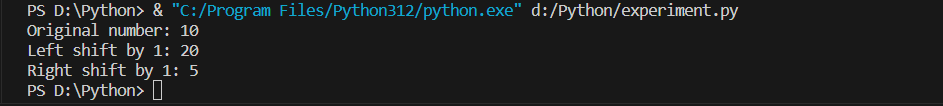
**Output**



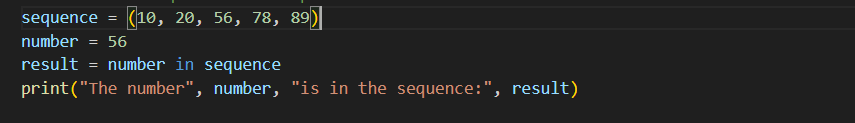
**11 Write a program to find left shift and right shift values of a given number.**



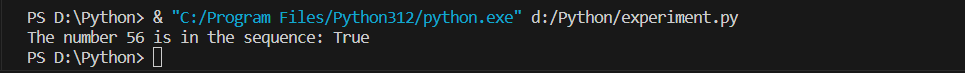
**Output**



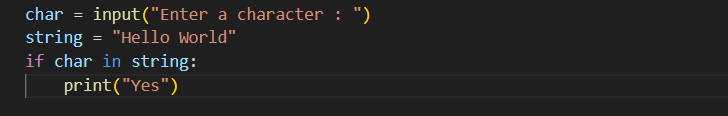
**12. Using membership operator find whether a given number is in sequence (10,20,56,78,89)**



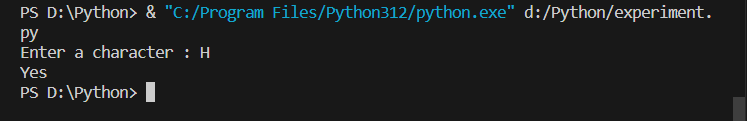
**Output**



1. **Using membership operator find whether a given character is in a string.**

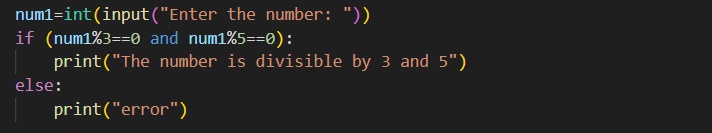


**Output**

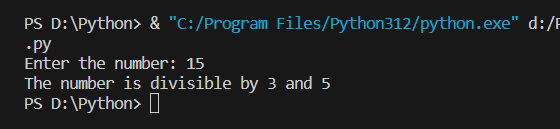


**EXPERIMENT 3**

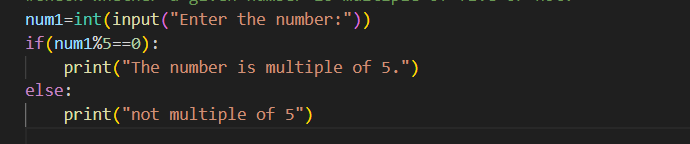
1. **Check whether given number is divisible by 3 and 5 both.**



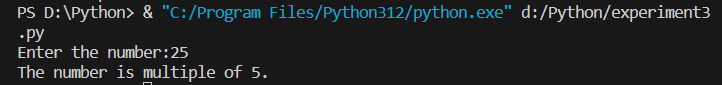
**Output**



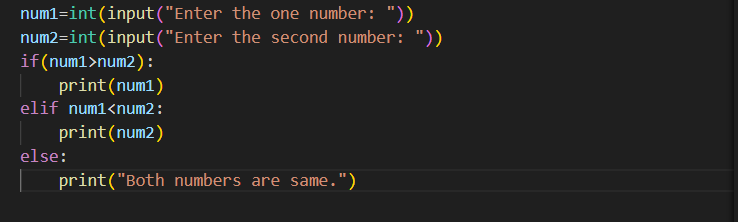
1. **Check whether a given number is multiple of five or not.**



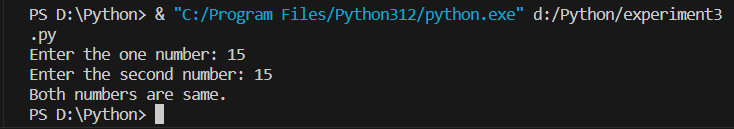
**Output**

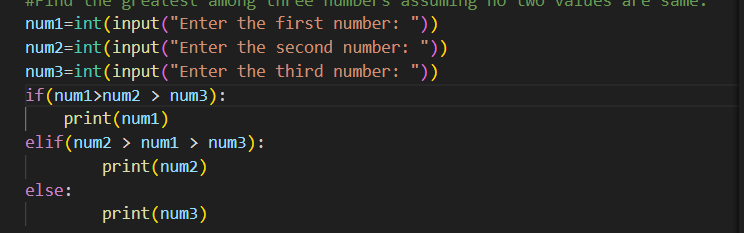


1. **Find the greatest among two numbers. If numbers are equal than print “numbers are equal”.**

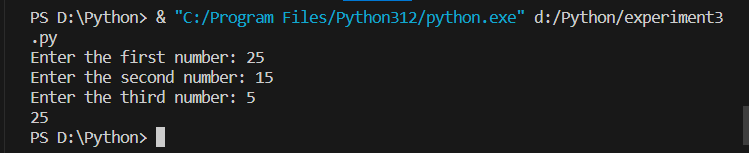


**Output**

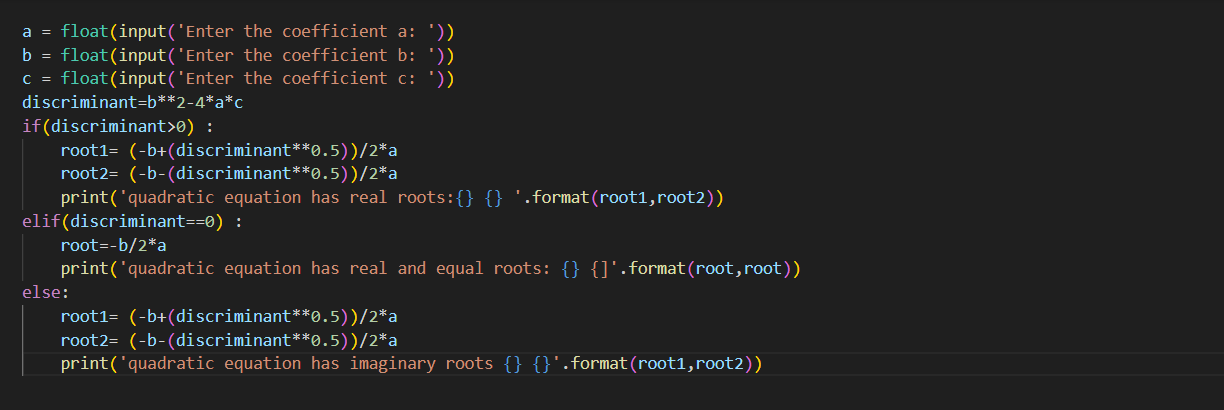


1. **Find the greatest among three numbers assuming no two values are same.** 

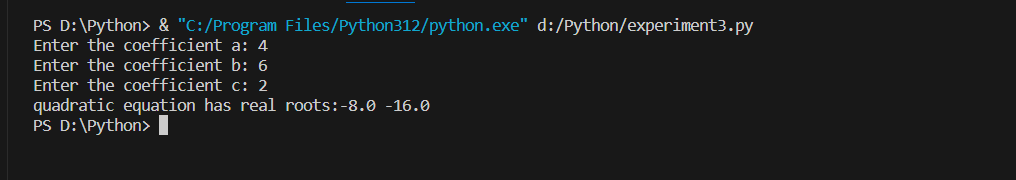
**Output**



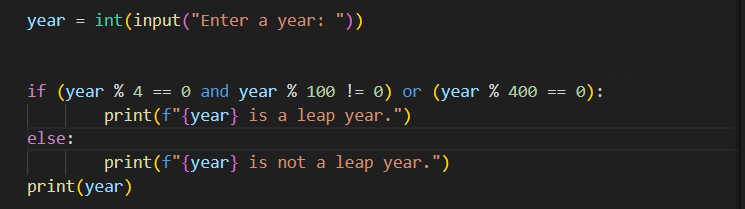
1. **Check whether the quadratic equation has real roots or imaginary roots. Display the roots.**



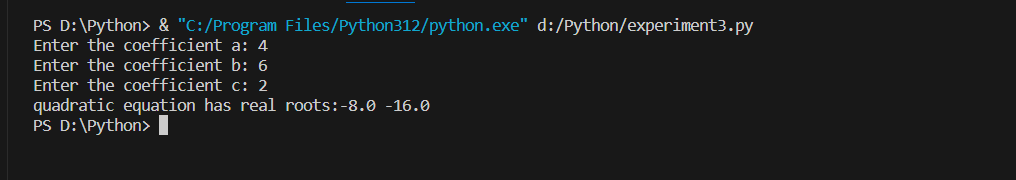
**Output**



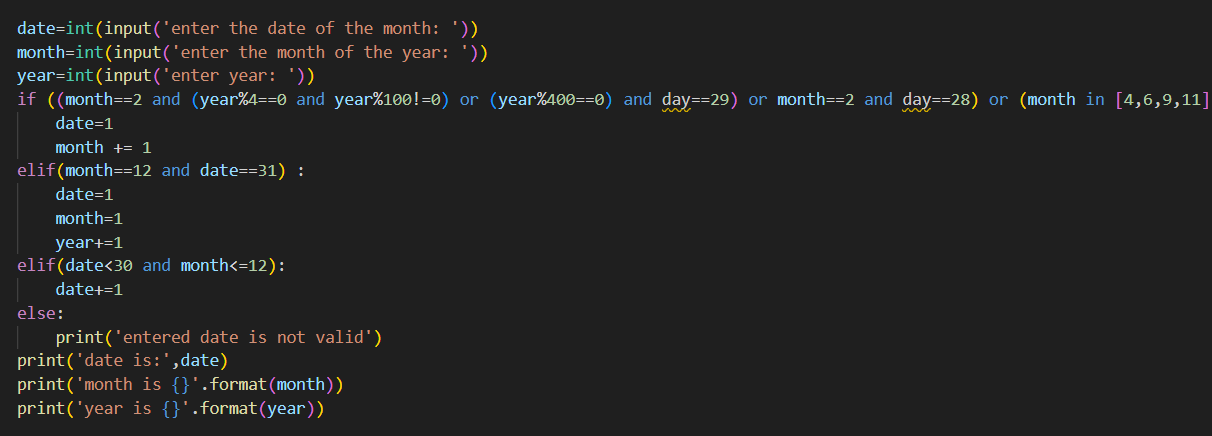
1. **Find whether a given year is a leap year or not.**

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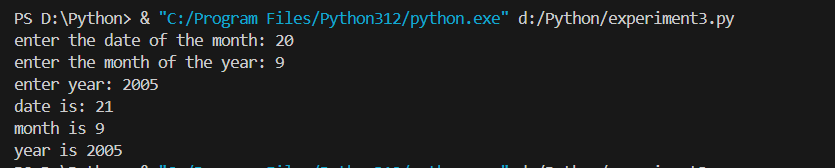
**Output**



1. **Write a program which takes any date as input and display next date of the calendar**

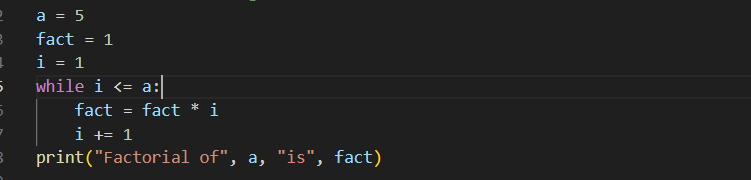


**Output**

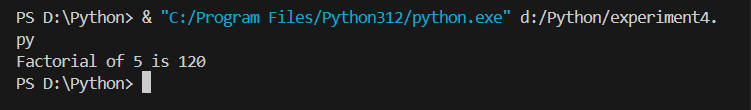


**Experiment 4**

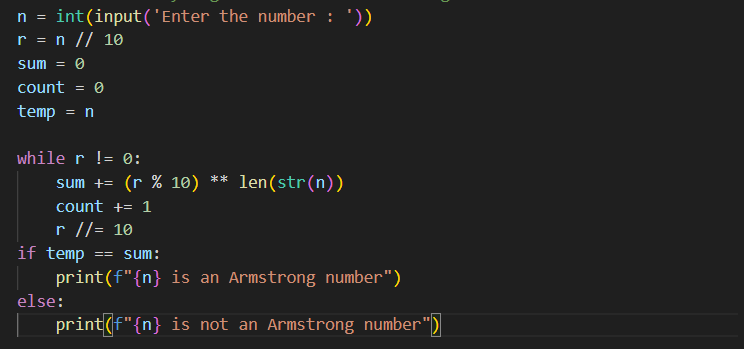
1. **Find a factorial of given number.**



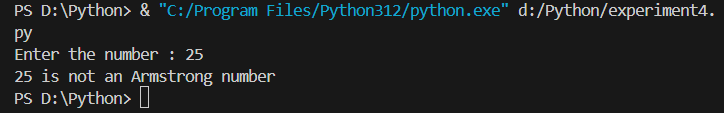
**Output**



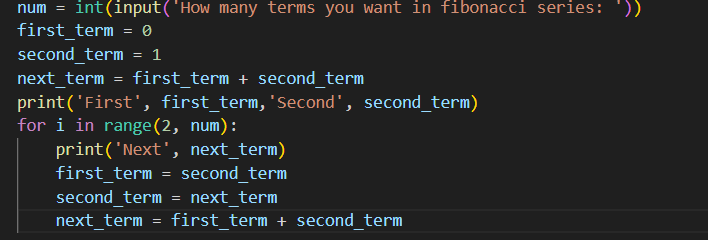
1. **Find whether the given number is Armstrong number.**



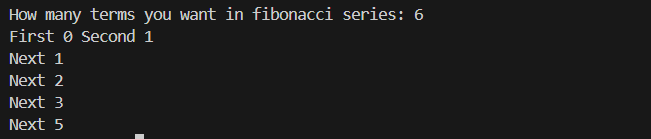
**Output**



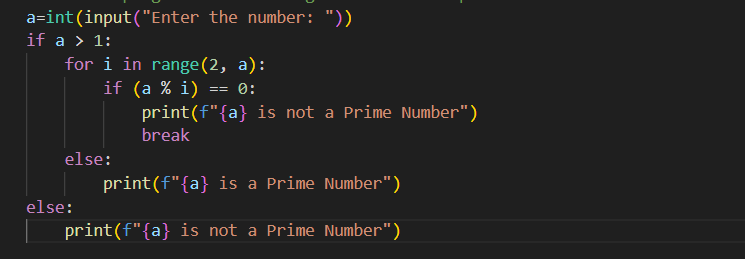
1. **Print Fibonacci series up to given term.**



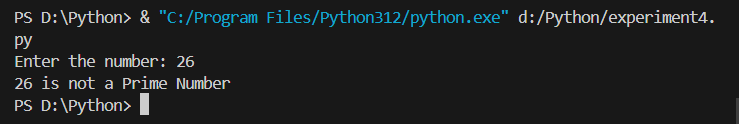
**Output**



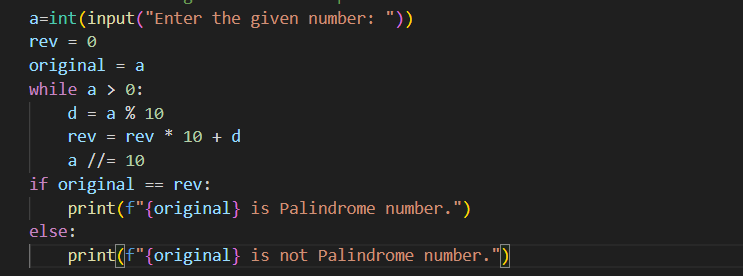
1. **Write a program to find if given number is prime number or not.**



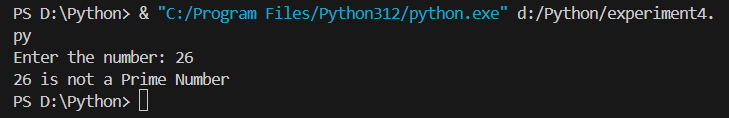
**Output**



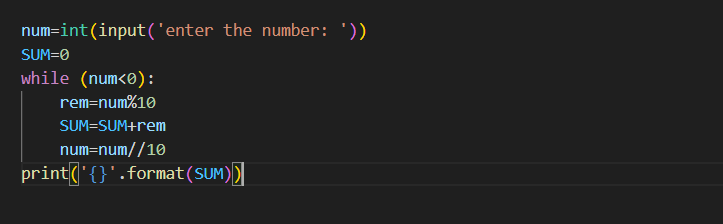
1. **Check whether given number is palindrome or not.**



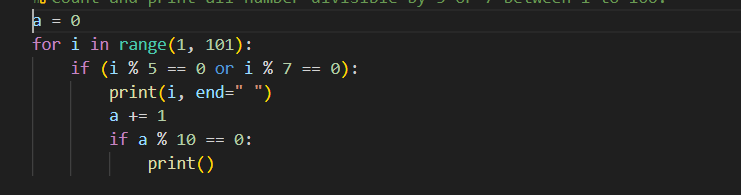
**Output**



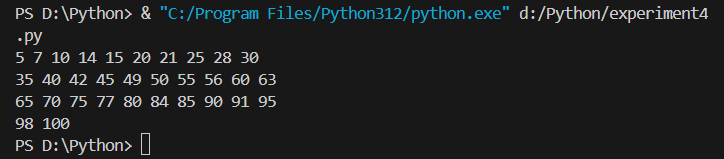
1. **Write a program to print sum of digits.**

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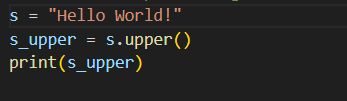
1. **Count and print all numbers divisible by 5 or 7 between 1 to 100.**



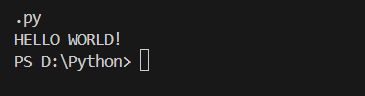
**Output**



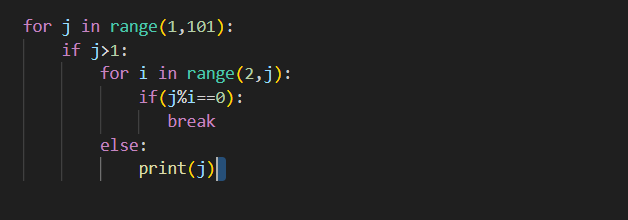
1. **Convert all lower cases to upper case in a string**.



**Output**



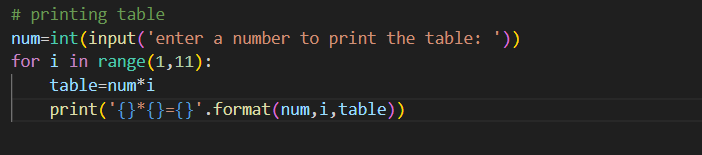
1. **Print all prime numbers between 1 and 100.**

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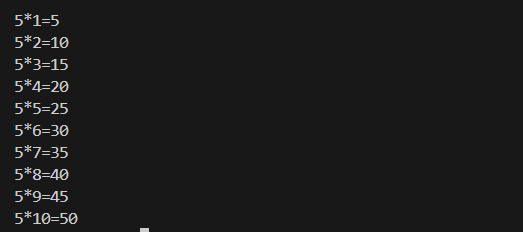
**Output**



1. **. Print the table for a given number: 5 \* 1 = 5 5 \* 2 = 10………..**

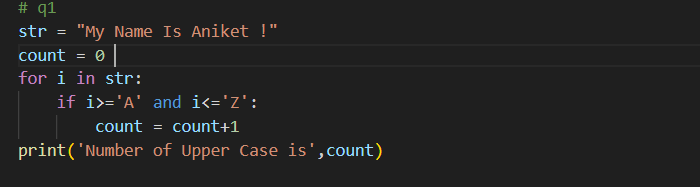
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**Output**

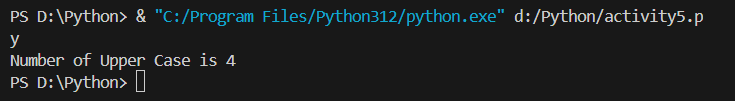
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**Experiment 5**

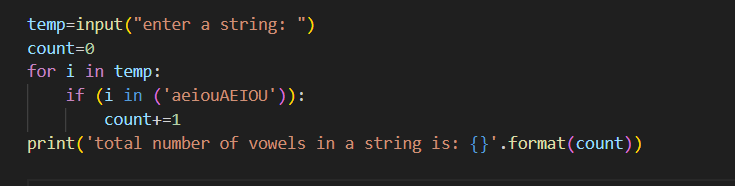
1. **Write a program to count and display the number of capital letters in a given string**



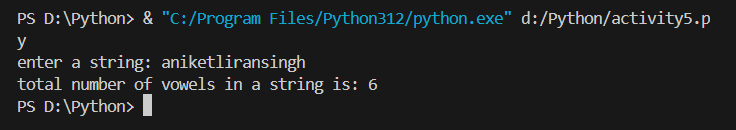
**Output**

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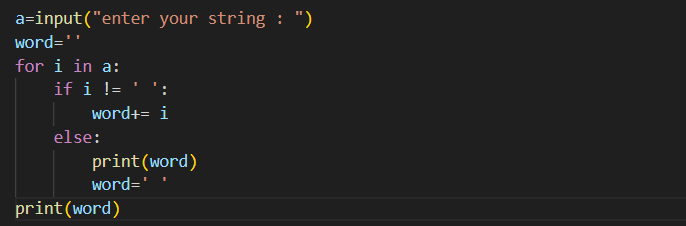
1. **Count total number of vowels in a given string.**



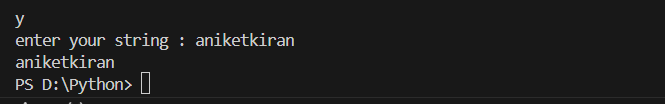
**Output**

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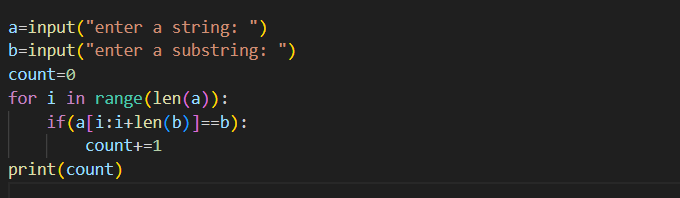
1. **Input a sentence and print words in separate lines.**



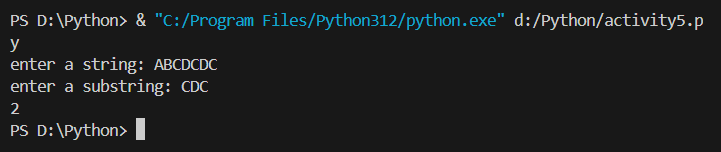
**Output**

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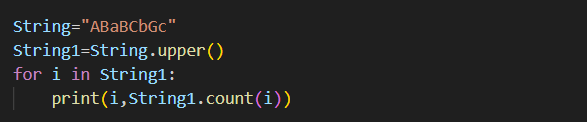
1. **WAP to enter a string and a substring. You have to print the number of times that the substring occurs in the given string. String traversal will take place from left to right, not from right to left.**



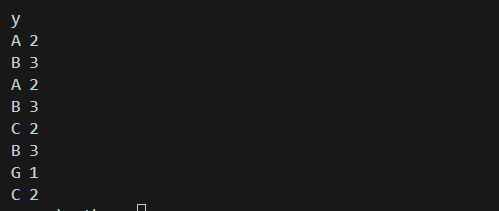
**Output**

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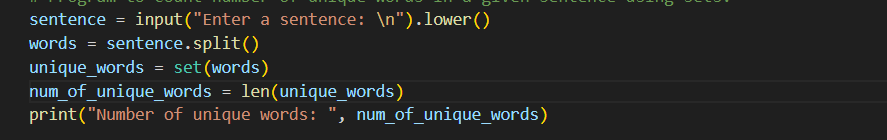
1. **Given a string containing both upper and lower case alphabets. Write a Python program to count the number of occurrences of each alphabet (case insensitive) and display the same.**



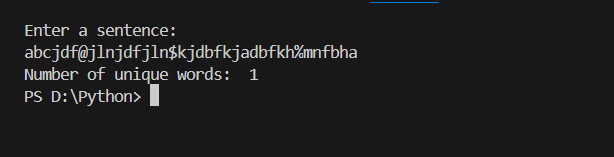
**Output**

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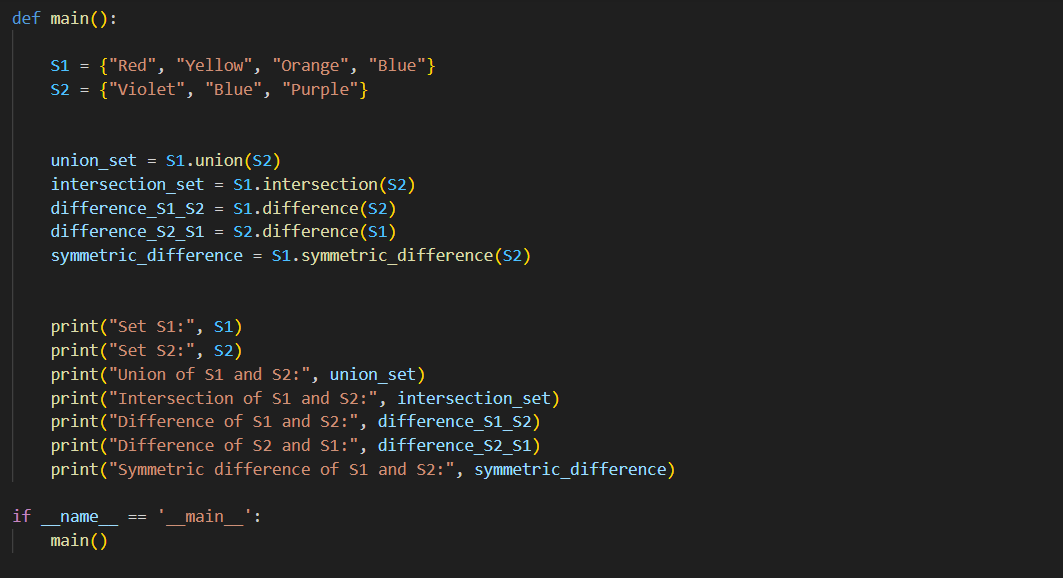
1. **Program to count number of unique words in a given sentence using sets.**

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**Output**

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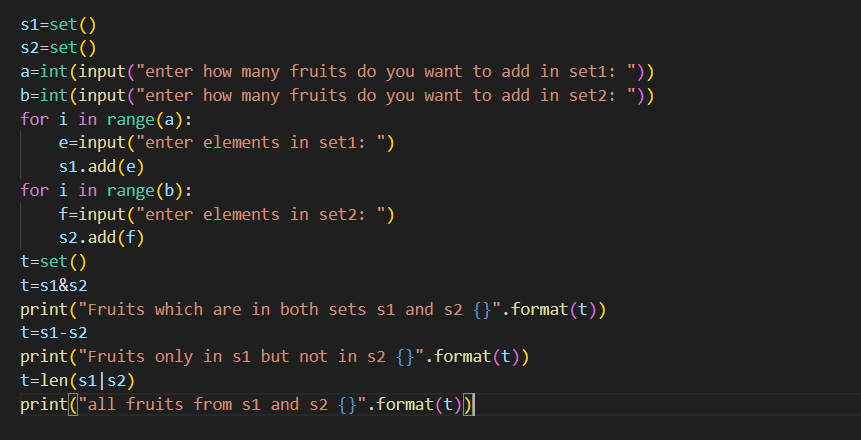
1. **Take two sets and apply various set operations on them : S1 = {Red ,yellow, orange , blue } S2 = {violet, blue , purple}**



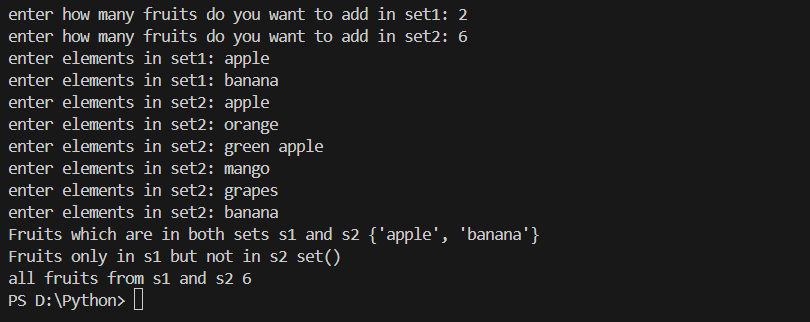
**Output**

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1. **Create 2 sets s1 and s2 of n fruits each by taking input from user and find: a) Fruits which are in both sets s1 and s2 b) Fruits only in s1 but not in s2 c) Count of all fruits from s1 and s2**

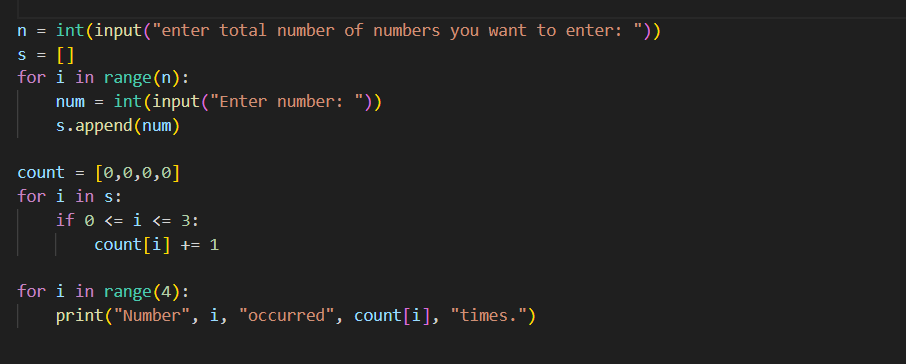


**Output**

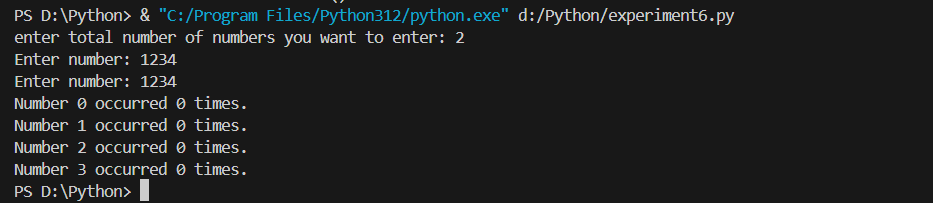


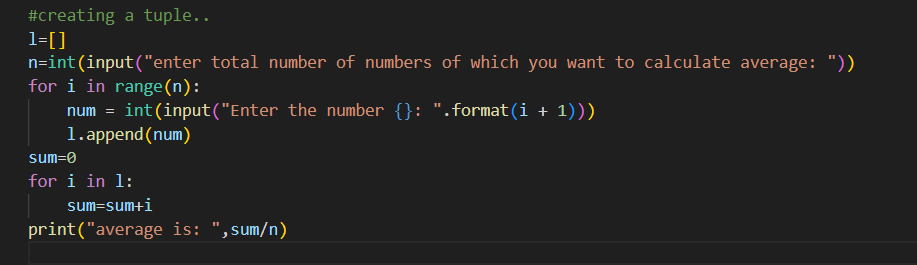
**Experiment 6**

1. **Scan n values in range 0-3 and print the number of times each value has occurred.**

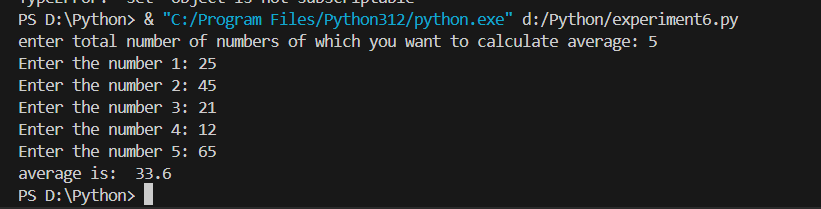


**Output**

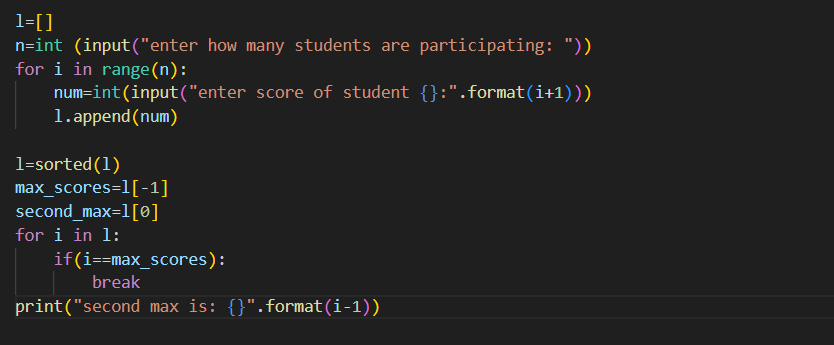


1. **Create a tuple to store n numeric values and find average of all values. **

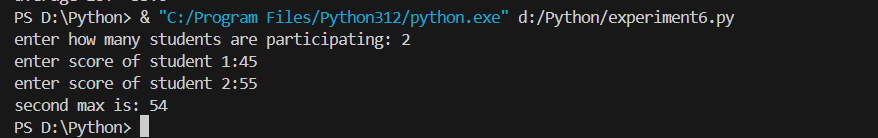
**Output**



**3.WAP to input a list of scores for N students in a list data type. Find the score of the runner-up and print the output.**

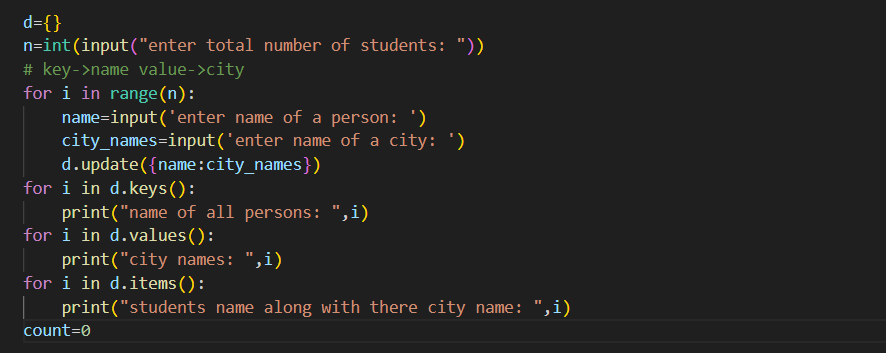
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**Output**

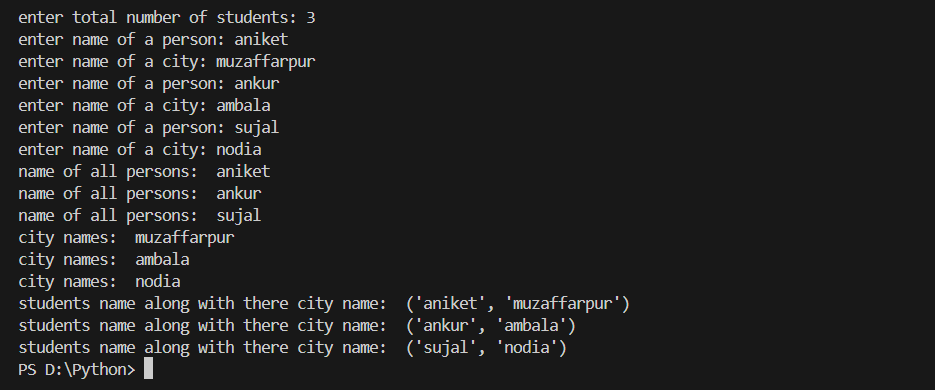


**4.Create a dictionary of n persons where key is name and value is city.**

* 1. **Display all names**
  2. **Display all city names**
  3. **Display student name and city of all students.**
  4. **Count number of students in each city.**

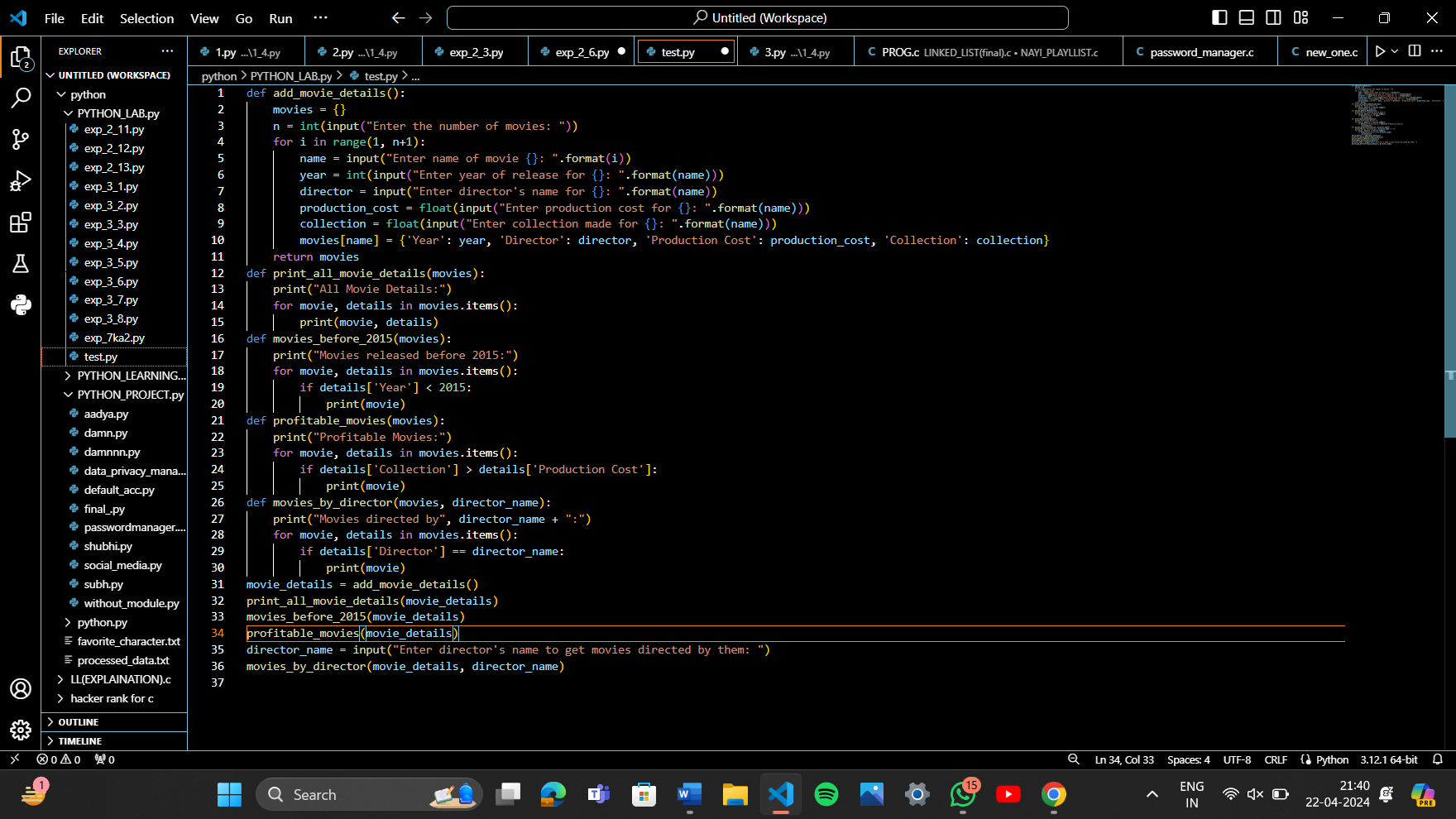
****

**Output**



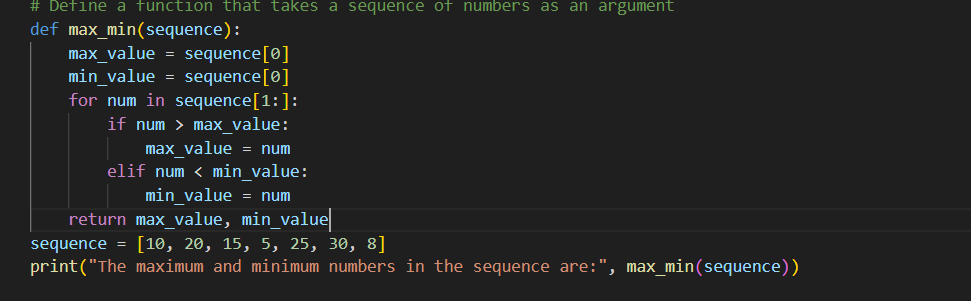
**5.Store details of n movies in a dictionary by taking input from the user. Each movie must store details like name, year, director name,production cost, collection made (earning) & perform the following:- a) print all movie details**

* 1. **display name of movies released before 2015**
  2. **print movies that made a profit.**
  3. **print movies directed by a particular director.**

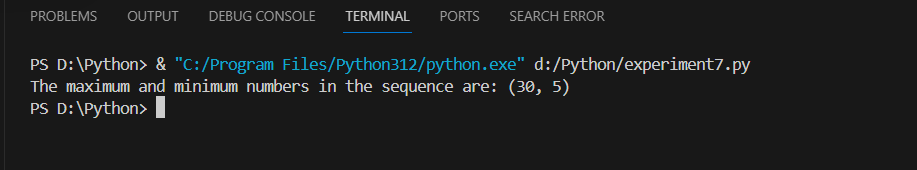


**Experiment 7**

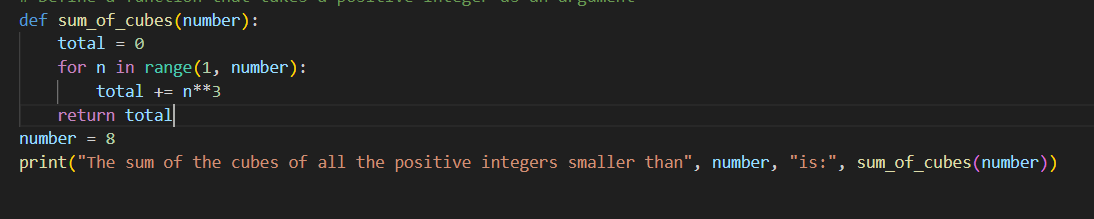
1. **Write a Python function to find the maximum and minimum numbers from a sequence of numbers. (Note: Do not use built-in functions.)**

****

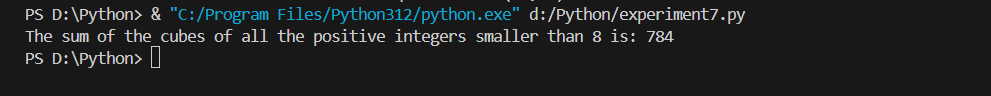
**Output**

****

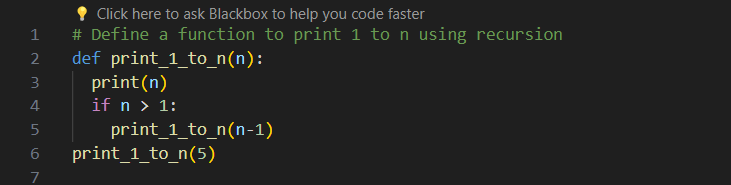
1. **Write a Python function that takes a positive integer and returns the sum of the cube of all the positive integers smaller than the specified number.**

****

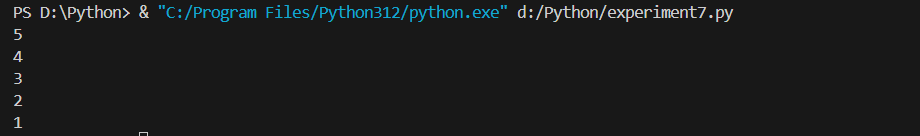
**Output**

****

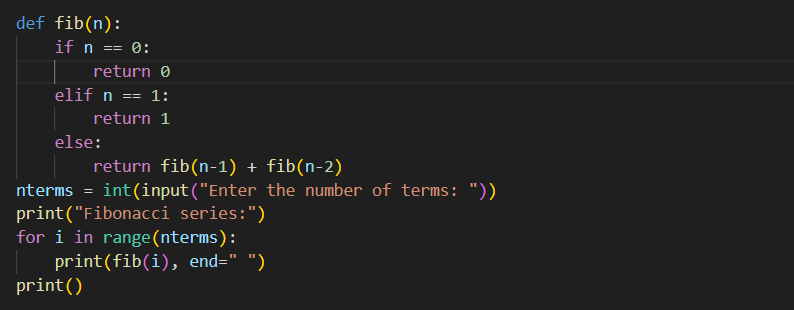
1. **Write a Python function to print 1 to n using recursion. (Note: Do not use loop)**

****

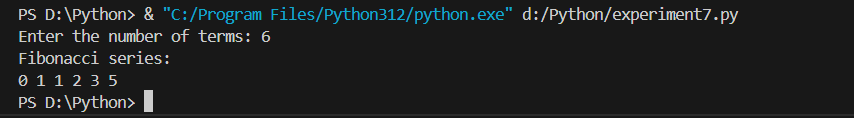
**Output**



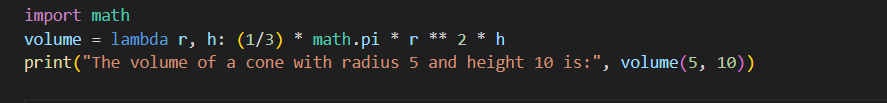
1. **Write a recursive function to print Fibonacci series upto n terms.**

****

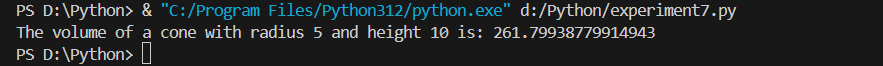
**Output**

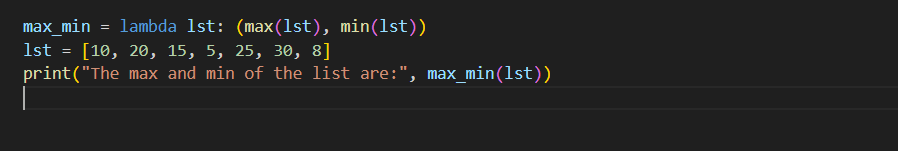
****

1. **Write a lambda function to find volume of cone.**

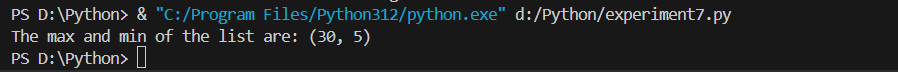
****

**Output**

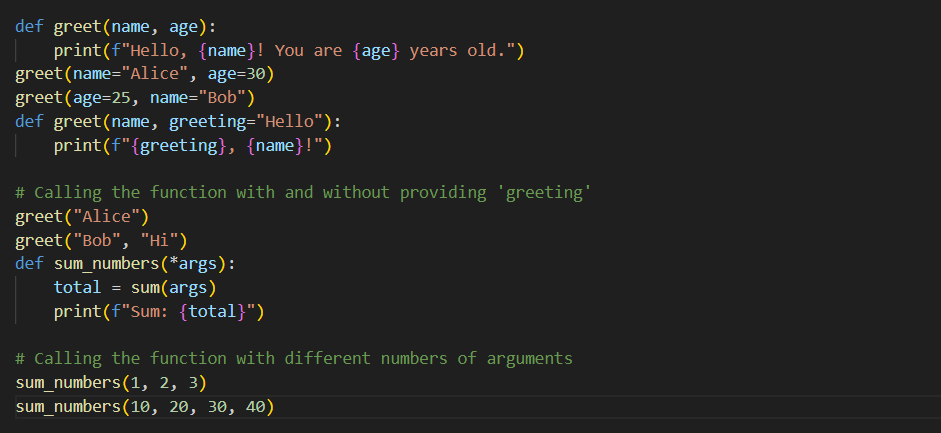
****

1. **Write a lambda function which gives tuple of max and min from a list.**

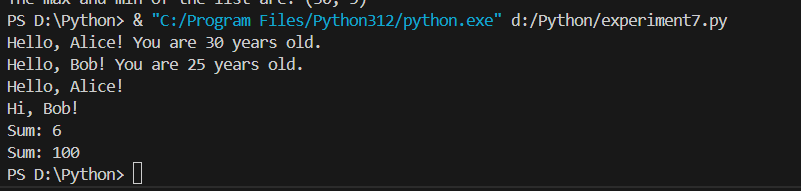
**Output**

****

1. **Write functions to explain mentioned concepts: a. Keyword argument b. Default argument c. Variable length argument**

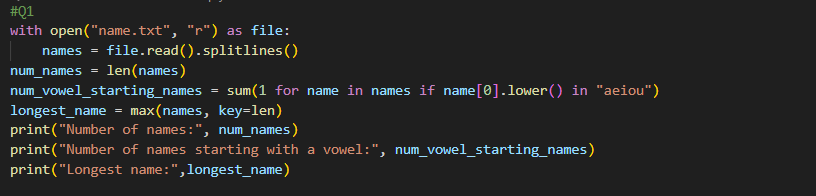
****

**Output**

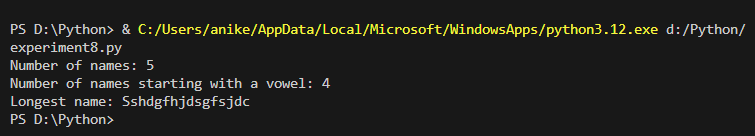
****

**Experiment: 8**

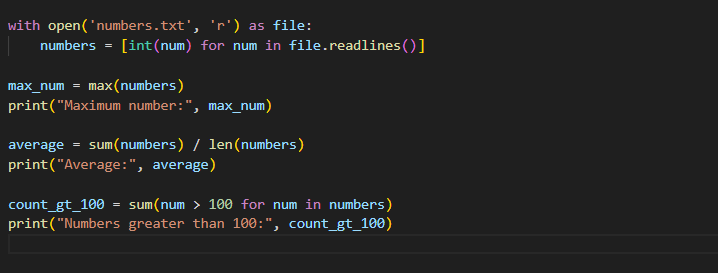
1. **Add few names, one name in each row, in “name.txt file”. a. Count no of names b. Count all names starting with vowel c. Find longest name**



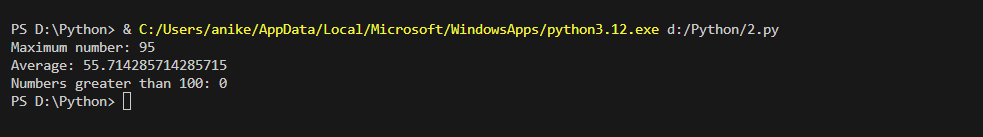
**Output**

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1. **Store integers in a file. a. Find the max number b. Find average of all numbers c. Count number of numbers greater than 100**

****

**Output**

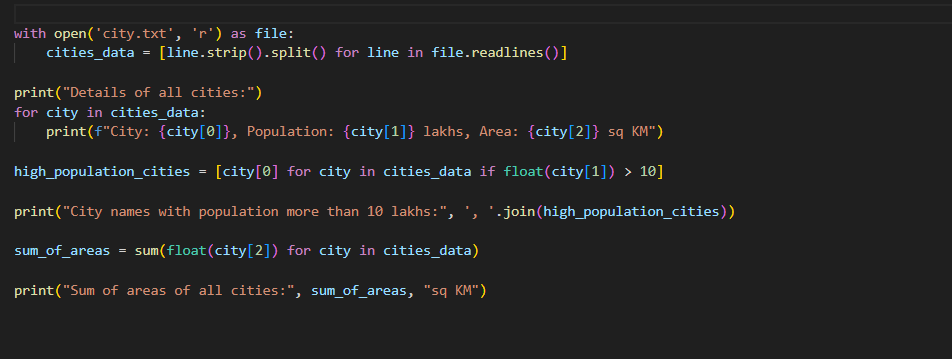
****

1. **Assume a file city.txt with details of 5 cities in given format (cityname population(in lakhs) area(in sq KM) ): Example: Dehradun 5.78 308.20 Delhi 190 1484 …………… Open file city.txt and read to:**

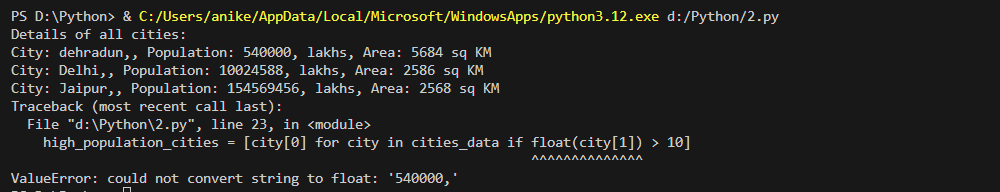
**a. Display details of all cities**

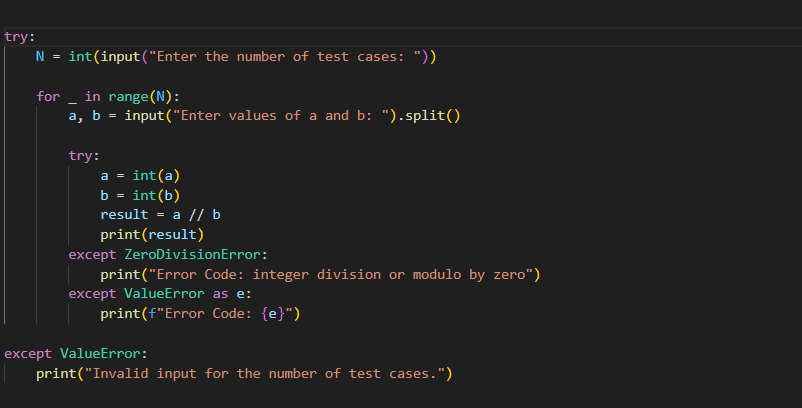
**b. Display city names with population more than 10Lakhs**

**c. Display sum of areas of all cities**

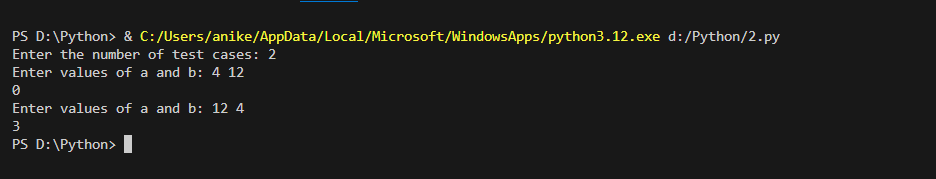
****

**Output**

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1. **Input two values from user where the first line contains N, the number of test cases. The next N lines contain the space separated values of a and b. Perform integer division and print a/b. Handle exception in case of ZeroDivisionError or ValueError. Sample input 1 0 2 $ 3 1 Sample Output : Error Code: integer division or modulo by zero Error Code: invalid literal for int() with base 10: '$' 3**

**Output**

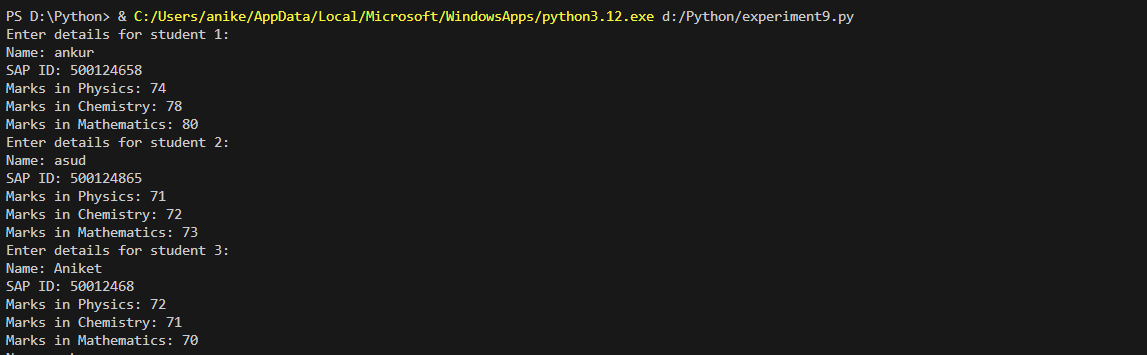
****

**Experiment 9**

1. **Create a class of student (name, sap id, marks[phy,chem,maths] ). Create 3 objects by taking inputs from the user and display details of all students.**

****

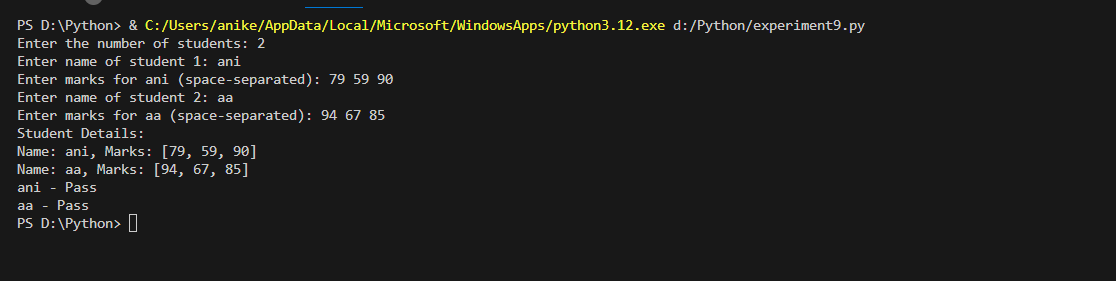
**Output**

****

1. **Add constructor in the above class to initialize student details of n students and implement following methods: a) Display() student details b) Find Marks\_percentage() of each student c) Display result() [Note: if marks in each subject >40% than Pass else Fail]**

****

**Output**



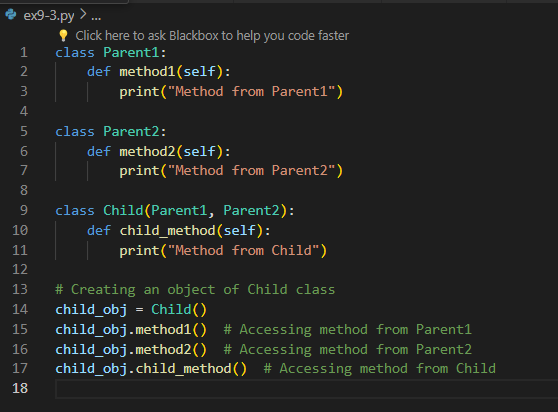
1. **Create programs to implement different types of inheritances.**

**Single inheritance**

**A screen shot of a computer program

Description automatically generated**

**Multiple inheritance**

****

**Hierarchal inheritance**

**A screen shot of a computer program

Description automatically generated**

**Multilevel inheritance**

**A screen shot of a computer program

Description automatically generated**

1. **Create a class to implement method Overriding.**

**A screen shot of a computer program

Description automatically generated**

**OUTPUT**

**A screenshot of a computer

Description automatically generated**

**5 . Create a class for operator overloading which adds two Point Objects where Point has x & y values e.g. if P1(x=10,y=20) P2(x=12,y=15) P3=P1+P2 => P3(x=22,y=35)**

**A screen shot of a computer program

Description automatically generated**

Output

**A black screen with white text

Description automatically generated**