practical No. 1

python program for pascal Triangle

pascal Triangle in python is a number pattern in the shape of a triangle. Each number in the triangle is the sum of the two numbers above it. This is called Pascal triangle.

There are many ways to implement the Pascal triangle in python. one of which is by using the nCr formula. n!=.

Pascal Triangle in different way's that Print this Program.

1) Print Pascal's triangle upto 5 rows
2) Print Pascal's triangle upto n rows
3) Print Pascal's triangle using function & formula.

Pascal's Triangle looks like an equilateral triangle where each row gets created in following way's

1) The value of second column is the addition result of first and second column of previous row.

2) Similarly, the value of third column is the addition result of second and third column of previous row and so on.

Practical No. 2

Find out Roots of Quadratic Equations

Quadratic equation are used in calculating areas, calculating a Product Profile, or estimating an object speed. A quadratic equation is a second degree equation. The standard form of the quadratic equation in Python is written as $ax^2+bx+c=0$. In this equation a, b, c are the coefficients and real numbers and, a is not equal to zero. If a=0, then it will not be a valid quadratic equation.

The roots of quadratic equation can be classified as-

- If b*b < 4*a*c, then roots are complex
- If b*b == 4*a*c, then roots are real, and both roots are the same.
- If b*b > 4*a*c, then roots are real & different

e.g a=1, b=2, c=1

o/p Roots are real and same

-1.0

Program Explanation :-

1) User must enter the coefficients of the equations and store it in three separate variables.

2) The value of the discriminant, d, is found out which determines the nature of roots of the equation.

3) If the value of the discriminant is lesser than 0, the roots are imaginary.

4) If the value of the discriminant is greater than 0, the roots aren't imaginary.

5) The value of the roots is found out using the quadratic formula.

6) The roots of the equation are printed.

Practical NO. 3

Program to display Fibonacci Series

The Fibonacci Sequence is a series of numbers formed by the addition of the Preceding two numbers in the series. This series of number named after Italian mathematician, known as Fibonacci. It is simply the series of numbers which starts from 0 and 1 and then continued by the addition of the preceding two numbers.. In this article, you will learn how to write a python Program to implement the Fibonacci series using multiple methods.

* The formula of the Fibonacci Series is -

$X_n = X_{n-1} + X_{n-2}$ (where 'n' is the term number)

* The logic of the Fibonacci Series is -
  - First term : 0
  - Second term : 1
  - Third term : (0+1) = 0
  - Fourth term : (1+1) = 2
  - Fifth term : (2+1) = 3

* Example of the Fibonacci Series : 0, 1, 1, 2, 3, 5

In the above example, 0 and 1 are the first two terms of the series. These two terms are Printed directly. The third term is calculated by adding the first two terms. In this case 0 and 1. So, we get 0+1 = 1.

Hence 1 is Printed as the third term. The next term is generated by using the second and third term and not using the first term. It is done until the number of terms you want or requested by the user. In the above example, we have used five terms.

Practical NO. 4

To check the given number is Palindrome or not.

A Palindrome is a word, phrase, number or another sequence of units that may be read the same way in either direction, generally it used comma-separated with general allowances for adjustment to punctuation & word dividers is called Palindrome number.

- Program Explanation :-

1) User must first enter the value of the integer and store it in a variable.

2) The value of the integer is then stored in another temporary variable.

3) The while loop is used and the last digit of the number is obtained by using the modulus operator.

4) the last digit is then stored at the one's place, second last at the ten's place & so on.

5) the last digit is then removed by truly dividing the number with 10

6) This loop terminates when the value of the number is 0.

7) The reverse of the number is then compared with

the integer value stored in the temporary variable

8) If both are equal, the number is a Palindrome.

9) If both aren't equal, the number isn't a Palindrome.

10) The final result is the Printed.

Practical No. 5

To find the sum of digits of given number.

Using Sum() method The Sum method is used to compute the sum of digit of a number in python in a list. Convert the number of a string using Str(), then Strip the string and convert it to a list of numbers with the strip() and map() method respectively, Then, compute the total using the sum method.

* Problem Solution :-

1) Take the value of the integer & store in a variable.
2) Using a while loop, get each digit of the number and adds the digit of variable.
3) Print the sum of the digits of the number
4) Exit

* Program Explanation :-

1) User must first enter the value & store it in variable.
2) The while loop is used and the last digit of the number is obtained by using the modulus operator.
3) The digit is added to another variable each time the loop is executed.
4) This loop terminates when the value of the number is 0.
5) The total sum of the number is then printend.

practical NO. 6

Python program to remove the Punctuations from a string

① One of the easiest and fastest methods through which Punctuation marks and special characters can be removed from a string is by using the translate() method. The built-in translate() functions is available in the string library of python.

② The method returns a string where some characters are replaced with other characters as provided in a mapping table or dictionary.

③ All the Punctions and special characters are defined in the string named Punc. User enters the string from which the punctuation marks & special characters can be removed.

④ The for loop iterates each character in the string. It clears it if the character is present in the Punc string as well. If not, then the character is Printed as is.

⑤ All the characters in the string are iterated and compared, the final string that does not contain any Punctuation marks or characters is Printed.

Practical No. 7

python program to implement the simple calculator.

1) In python, we can create a simple calculator for performing the different arithmetical operation such as addition, subtraction, multiplication and division.

2) We can choose the desired operation from the option of a, b, c and d.

3) We can take two numbers, and if... elif... else, branching is used for executing the particular operations.

4) We will use add(), subtract(), multiply() and divide() function for evaluation the respective operation in the calculator.

5) The result of the operation is displayed on the output using this program.

Practical No. 8

python program for reverse string

1) String Can be reversed using slicing. To reverse a string, we simply create a slice that start with the length of the string and ends at index 0. The slice statement means start at string length, end at position 0, & move the step backward

2) Program Explanation.

i) User must enter a string.

ii) The string is passed as an argument to a recursive function to reverse the string.

iii) In the function, the base condition is that if the length of the string is equal to 0, the string is returned.

iv) If not equal to 0, the reverse function is recursivly called to slice the Part of the string except the first character & concatenate the first character to the end of the sliced string.

v) The reversed string is Printed.

practical No. 9

python program implementation of the Anonymous function Lambda.

1) python Lambda functions are anonymous function means that the function is without a name. As we already know that the def keyword is used to defined a normal function in python.

2) Similarly, the Lambda keyword is used to define an anonymous function in python.

3) Syntax :- lambda arguments :
expression.

4) This function can have any number of arguments but only one expression, which is evaluated and returned.

5) One is free to use lambda functions whereve function objects are required.

6) You need to keep in your knowledge that lambda functions are syntatically restricted to a single expression.

7) It has various uses in particular fields of programming, besides other types of expressions in lambda functions,

Practical No. 11

Construct a GUI application to perform the Arithmetic Operations. Reads input values through window & display the result in message box.

1) python offers multiple options for developing a GUI. (Graphical User Interface). Out of all the GUI methods, Tkinter is the most commonly used method. python with Tkinter is the fastest and easiest way to create a GUI applications.

2) Creating a GUI using Tkinter is an easy task. In Python 3 Tkinter is come preinstalled. But we can also install it by using command.

3) This GUI Tkinter tutorial blog will help you start learning about the Tkinter library in python.

4) The number of applications of Tkinter is endless & it is a very Popular & easy library to learn.

5) In this GUI Tkinter application we will use the Some arithmatic operation.

6) The Tkinter library in python & give you an in-deep insight into GUI.