Revision of Python topics covered in Class XI

Programs that needs to be done:

Program-1: Input a welcome message and display it.

Program-2: Input two numbers and display the larger / smaller number.

Program-3: Input three numbers and display the largest / smallest number.

Program 4-6: Generate the following patterns using nested loop:

Pattern-1	Pattern-2	Pattern-3
*	1 2 3 4 5	A
**	1 2 3 4	AB
***	1 2 3	ABC
****	1 2	ABCD
*****	1	ABCDE

Programs that needs to be done:

Program-7-10: Write a program to input the value of x and n and print the sum of the following series:

$$1+x+x^2+x^3+x^4+. \ldots\ldots\ldots x^n$$

$$1-x+x^2-x^3+x^4 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots x^n$$

$$x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \ldots\ldots\ldots\ldots \frac{x^n}{n}$$

$$x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} \ldots\ldots\ldots\ldots\ldots\ldots\ldots \frac{x^n}{n!}$$

Programs that needs to be done:

Program-11: Determine whether a number is a perfect number, an Armstrong number or a palindrome.

Program-12: Input a number and check if the number is a prime or composite number.

Program-13: Display the terms of a Fibonacci series.

Program-14: Compute the greatest common divisor and least common multiple of two integers.

Program-15: Count and display the number of vowels, consonants, uppercase, lowercase characters in string.

Programs that needs to be done:

Program-16: Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.

Program-17: Find the largest/smallest number in a list/tuple.

Program-18: Input a list of numbers and swap elements at the even location with the elements at the odd location.

Program-19: Input a list/tuple of elements, search for a given element in the list/tuple.

Program-20: Input a list of numbers and find the smallest and largest number from the list.

Programs that needs to be done:

Program-21: Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have scored marks above 75.

What you need to do?

Do your best to arrive on time and be ready to learn each day.

Revise whatever has been taught in the class

Practice writing of codes on IDE as well as on notebook

Study in advance

Intro to problem solving

Basic steps to solve a program:


Problem definition

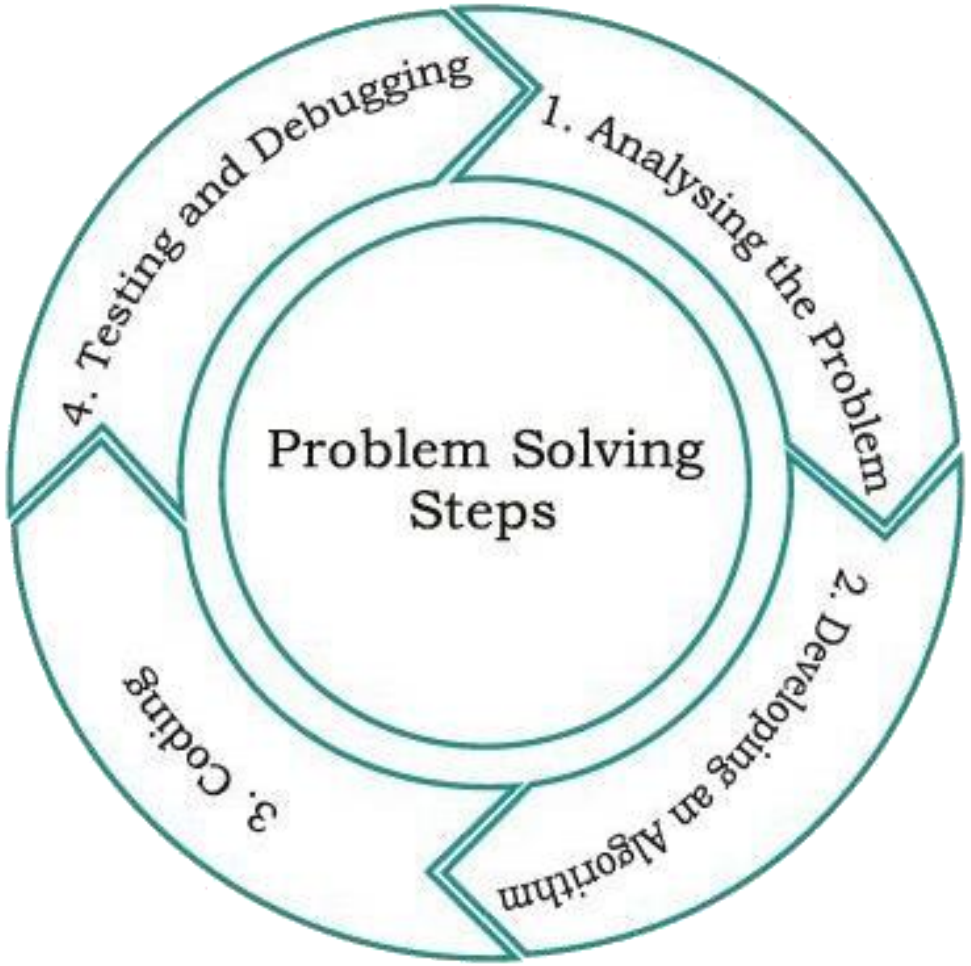

Designing a solution


Implement the solution


Test/debug the program


Optimize it

Basic steps to solve a program:



Introduction to Problem Solving

- start with a tentative solution plan and keep on refining the algorithm until the algorithm is able to capture all the aspects of the desired solution.

  e.g., Prime number,

- Before writing the program, prepare a roadmap of the program before actually coding it
  - Pseudocode
  - Flowchart
- To verify, we have to take different input values and go through all the steps of the algorithm to yield the desired output for each input value and may modify or improve as per the need.

Assignment -1:

- Read chapter number – 4 of class 11th NCERT book
- Download Pydroid/IDE on your phone/Computer
- Note down the summary points in your notebook