Scientific Computing – Lab Assignment-1

Python Programming – Basics and Loop

1. Write a python program to check whether a number is divisible by 7 or not.
2. Write a python program to check whether a number is even or odd.
3. Write a python program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:

   Percentage >= 90% : Grade A

   Percentage >= 80% : Grade B

   Percentage >= 70% : Grade C

   Percentage >= 60% : Grade D

   Percentage >= 40% : Grade E

   Percentage < 40% : Grade F

   NB:- Marks ranges from 0 – 100. Need to check for the invalid inputs.

4. Write a python program to input basic salary of an employee and calculate its Gross salary according to following:

   Basic Salary <= 10000 : HRA = 20%, DA = 10%

   Basic Salary <= 20000 : HRA = 25%, DA = 15%

   Basic Salary > 20000 : HRA = 30%, DA = 20%

5. Write a python program to input electricity unit charges and calculate total electricity bill according to the given condition:

   For first 50 units Rs. 0.50/unit

   For next 100 units Rs. 0.75/unit

   For next 100 units Rs. 1.20/unit

   For unit above 250 Rs. 1.50/unit

   An additional surcharge of 20% is added to the bill

6. Write a python program to print all natural numbers from 1 to n using while & for loop.

7. Write a python program to find sum of all even numbers between 1 to n.
8. Write a python program to check whether a number is palindrome or not.
9. Write a python program to print multiplication table of a given number.

   NB: If the given number is 5 then the output should be in the following format

   1 x 5 = 5
   2 x 5 = 10
   ……..
   ……..
   10 x 5 = 50

10. Write a python program to calculate factorial of a number.
11. Write a python program to check whether a number is Prime number or not.
12. Write a python program to print all Prime numbers between 1 to n.
13. Write a python program to check whether a number is Armstrong number or not.

    eg:- 153 is an Armstrong number. Because, $1^3 + 5^3 + 3^3 = 153$

14. Write a python program to print Fibonacci series up to n terms.
15. Write a python program to solve Quadratic Equation