

Practice – 2

Overview

This practice session enables us to understand the different control structures of Python programming language like:

- *Selection Statement*
- *Iterative Statements*
- *Branch Statements*

We make use of control structures to write Python programs which make decisions and repetitions.

Hands On

1. Write a program to find the given number is Even or Odd.
2. Accept a year from the user and find whether it is a leap year or not.

HINT : A leap year is divisible by 4 and not by 100, or is divisible by 400

NOTE: Try the above program with nested selection statements and an selection statement with a compound condition.

3. Accept three positive integers from the user representing the three sides of a triangle. Determine whether they form a valid triangle or not.

HINT : In a triangle, the sum of any two sides must always be greater than the third side.

4. Write a program to generate a multiplication table for a given integer.

[a] Using **while** repetition construct

[b] Using **for** repetition construct

5. Write a program to find the factorial of any positive integer.
6. Write a program to reverse a given integer.
7. Write a program to check the given number is Prime or not.

8. Write a program to generate all Prime numbers between 1 to 999

NOTE : Make use of else clause with the iterative construct while generating Prime numbers.

9. Write a program to print all the reciprocals between -5 to +5
10. Print every number from 1 to 20 in base 8 and base 16 along with its decimal equivalent in tabular format.
11. Write a program to find the roots of a quadratic equation.
12. Write a program to get a count of vowels, consonants and other characters in a given string.
13. Check if the given string is a Palindrome or not.
14. Enhance the multiplication table generation (Question 4) program such that it helps us in repeatedly generating the table until the user wants.
15. Write a program to generate all **Amstrong** numbers between 1 to 999

NOTE : Amstrong numbers are those numbers where the sum of the cubes of the individual digits equals the number itself.