Python Assignment Report

Assignment Summary:

This Python project contains 11 questions designed to strengthen your programming skills through coding practice. Each question focuses on a specific skill, such as using basic arithmetic, formal reasoning, and string slicing. It covers concepts such as arithmetic, conditional expressions, Boolean logic, string functions, and function lists. The latter can include nested lists for complex data management. Completing these exercises will give you a solid foundation for solving more complex problems in Python and strengthen your programming skills.

Approach:

1.Operators –

1. QUESTION – Basic Arithmetic Operations:-

In this question, we have to write a code by taking inputs from the user to run basic operations like (Addition, Subtraction, Multiplication, Division, Modulus, Exponential, and Floor Division).

2.QUESTION - Conditional Statements:-

In this question, we have to write a code with the help of user input to check whether the first number is greater than, equal to, or less than the second number using if-else statements.

3.QUESTION - Boolean Logic

In this question, the user enters three boolean inputs, and the input is compared and printed using the following logical operators: AND, OR, and NOT.

2.STRINGS -

4.QUESTION - String Manipulation

In this code, we have to write a string and perform various tasks on that string, such as finding the length of the string, first and last letters, reversing it, and changing its case.

5.QUESTION - User Input and String Formatting

In this code, we take input from the user of their name and age, and we have to display them in one message.

6.QUESTION - Searching in Strings

In this code, with the help of user inputs, a sentence and a word are provided to find in the sentence. Using index and if-else statements, it will search and output whether the word is found or not.

3.LISTS -

7.QUESTION - List Operations with Numbers

In this question, the program allows the user to input three numbers, and then the program will do the sum of the numbers as well as show the maximum and minimum numbers in the list using a for loop and append.

8.QUESTION - List Operations with Strings

In this question, the same method is used as in Question 7 to take user input, but with fruit names as strings, and then the input is appended to the list, allowing adding and removing a fruit from the list.

9.QUESTION - Sorting Numbers

In this code, the program takes five numbers from the user, then stores them in a list, and using the sort() function, it sorts them in ascending and descending order.

10.QUESTION - Slicing Lists

In this code, it extracts the first five elements, the last five elements, and the middle section from the list using slicing syntax.

11.QUESTION - Student Marks and Average Calculation

In this code, the program collects the names and marks of three students and then calculates and prints the average marks of each student using the append and range functions.

Key Learning -

1.**String Manipulation:** By investigating various approaches to handling and processing string data, I enhanced my proficiency in manipulating strings using built-in Python functions.

2.**List Operations:** I became more familiar with list operations, such as how to create, edit, sort, and slice lists. I also learned how to work with nested structures, which are used to store more complex data.

3.**Operators:** I learned how to effectively carry out a variety of calculations and checks using arithmetic, comparison, and logical operators.