PYTHON ASSIGNMENT REPORT

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Assignment 1: Exercises on Operators, Strings, and Lists

Exercise 1: Arithmetic Operators:

Explanation : This Exercise basic arithmetic operations in python, which allows to perform mathematical operation on numbers. Division with / always returns a floating-point number. The round() function can be used to control the precision of the result. This is used for calculating powers, such as squaring a number (num1 ** 2) or cube roots (num1 ** (1/3)).

Exercise 2: Comparison Operators:

Explanation : This exercise introduces comparison operators in Python. Comparison operators are used to compare two values and return a Boolean (True or False) based on the result of the comparison. These operators are often used in conditional statements (if, elif, else) to control the flow of the program.

Exercise 3: Logical Operators:

Explanation : This exercise explores the logical operators in Python (and, or, and not), which are used to combine or negate Boolean values (True or False). Here's a breakdown of how the program works and what you will learn from this exercise.

Exercise 4: String Manipulation:

Explanation : This exercise measures the length of the string len(str), prints first character str[0], prints last character str[-1], prints reverse string str[::-1], prints string in uppercase str.upper(), prints string in lowercase str.lower().

Exercise 5: String Formatting:

Explanation : This simple Python program demonstrates how to use the input() function to take user input, how to process that input, and how to output it back to the user using the print() function.

Exercise 6: Substring Search:

Explanation : This simple Python program asks user to enter a sentence and a word, it checks if the word entered by the user is available in the sentence entered by the user.

Exercise 7: List Operations:

Explanation : This Python program demonstrates basic list operations such as creating a list, appending user input, calculating the sum of list elements, and finding the largest and smallest values from the list.

Exercise 8: List Manipulation:

Explanation : This Python program demonstrate that the list is being created with 5 elements and used append() to add a element. And pop() is used to remove a element, specified by index[1].

Exercise 9: Sorting List:

Explanation : This Python program demonstrate that a empty list has been created to store a data entered by the user and sorting the elements by ascending and descending order.

Exercise 10: List Slicing:

Explanation : This Python program demonstrate that the list has been already given and we have to print first 5 elements from the list, last 5 elements from the list and elements from index 2 to index 7.

Exercise 11: Nested List:

Explanation : This program collects the names and scores of three students and stores them in a nested list. It uses a for loop to get each student's name and their scores for three subjects. The scores are stored in a sub list within the main 'students' list. After collecting the data, the program calculates the average score for each student by summing their scores and dividing by 3. Finally, it prints each student's name and their average score, formatted to two decimal places.