PYTHON

Assignment

1. Create a list of 10 random integers. Write a program to find the sum, average, and product of all the elements in the list using basic list operations and loops.

2. Given a list of strings, extract and print every second element using slicing. Also, print the list in reverse order.

3. Start with an empty list. Write a program that asks the user to enter 5 names and adds them to the list. Then, remove the first and last names from the list and print the updated list.

4. Write a program that takes a list of numbers from the user, sorts it in both ascending and descending order, and prints both sorted lists.

5. Create a list of 15 random numbers. Find and print the maximum and minimum values in the list without using the built-in max() and min() functions.

6. Given a list of strings, write a program that counts the number of occurrences of a particular word entered by the user.

7. Write a program using list comprehension to generate a list of squares of all even numbers from 1 to 50.

8. Write a program that filters out all odd numbers from a list of integers and returns a new list with only even numbers using list comprehension.

9. Given a nested list (a list of lists), write a program to flatten it into a single list containing all the elements.

10. Write a program that takes a list of numbers from the user and identifies any duplicate elements. Print the duplicates and their positions in the list.

11. Create a list of 5 colors. Insert a new color at the second position and then remove the last color from the list. Print the updated list.

12. Create two lists of fruits and vegetables. Concatenate the two lists into a single list, then replicate this combined list three times. Print the final list.

13. Create a list of 10 integers. First, sort the list in descending order, and then reverse the list. Print the final output.

14. Create a list and convert it to a tuple and apply for loop to print even numbers.

15. Write a program to create a list of tuples. Each tuple should contain a number and its square from 1 to 20, but only include tuples where the square is an even number.