Assignment 3: Problem Solving in Computer Lab

Course : Python programming – Module I

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Note : Write the Python code for the following problems in a notebook file named R.No_Assignment3.ipynb and save it on your machine in the Computer Lab.

Problem 1: String Operations

Find the length of the string "Hello". Then find the index of the character "e" in the string. Finally, replace the character 'o' with 'a' in the string.

Problem 2: Append Even Numbers to List

Using a loop, append all even numbers between 1 and 20 to a list, then print the list.

Problem 3: List Filtering with Continue

From the list ["apple", "banana", "cherry", "date"], print each item except "banana".

Problem 4: Count Occurrences in a Tuple

Write Python code to count the number of times the number 2 appears in the tuple (1, 2, 2, 3, 2, 4, 2).

Problem 5: Print Unique Tuple Elements

Write Python code to print the unique numbers from the tuple (1, 2, 2, 3, 2, 4, 2). The output should be (1, 2, 3, 4).

Problem 6: User Input with While Loop

Create a program that repeatedly asks the user to input numbers until they enter 0, which stops the program. Use a while loop to control the repetition.

Problem 7: Loop with Continue and Break

Write a program that loops through numbers 1 to 30.

- If the number is divisible by 3, skip it using continue.
- If the number is divisible by 7, stop the loop using break.
- Otherwise, add the number to a list. At the end, print the list.

Problem 8: While Loop with Continue

Write a while loop that prints all even numbers between 2 and 20. Use continue to skip odd numbers.

Problem 9: For Loop with Negative Numbers

Display numbers from -10 to -1 using a for loop.

Expected output:

```
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
```

Problem 10: Fibonacci Series

Display the Fibonacci series up to 10 terms.

- It's a series of numbers in which the next number is found by adding up the two numbers before it. The first two numbers are 0 and 1.
- For example, 0, 1, 1, 2, 3, 5, 8, 13, 21. The next number in this series is 13 + 21 = 34.

Expected output:

```
Fibonacci sequence:
0  1  1  2  3  5  8  13  21  34
```