Python Programming (B.Tech CSE - Sem 2)
Experiment 04 – Exercise Sheet
Strings and Sets

Tofik Ali

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Repository: `https://github.com/tali7c/Python-Programming`

Note: This document contains only problem statements (no solutions).

Instructions

- Write a separate program for each exercise.
- For string tasks, handle case carefully and print clear output.
- For set tasks, use set operations (`| & - ^`) where appropriate.

Exercises

Exercise 01: Count Capital Letters

Write a program to count and display the number of capital letters in a given string.

Exercise 02: Count Vowels

Count total number of vowels in a given string.

Exercise 03: Words in Separate Lines

Input a sentence and print words in separate lines.

Exercise 04: Substring Occurrence Count

Enter a string and a substring. Print the number of times that the substring occurs in the given string. Traversal will take place from left to right.

Sample Input:

```
ABCDCDC
CDC
```

Sample Output:

```
2
```

Exercise 05: Alphabet Frequency (Case-Insensitive)

Given a string containing both upper and lower case alphabets, count the number of occurrences of each alphabet (case insensitive) and display the same.

Sample Input:

```
ABaBCbGc
```

Sample Output (one per line):

```
2A
3B
2C
1G
```

Exercise 06: Unique Words Using Sets

Count number of unique words in a given sentence using sets.

Exercise 07: Two Fruit Sets

Create two sets `s1` and `s2` of `n` fruits each by taking input from user and find:

- Fruits which are in both sets `s1` and `s2`
- Fruits only in `s1` but not in `s2`
- Count of all unique fruits from `s1` and `s2`

Exercise 08: Set Operations (Sample Sets)

Take two sets and apply various set operations on them:

```
S1 = {Red, yellow, orange, blue}
S2 = {violet, blue, purple}
```

Apply union, intersection, difference, and symmetric difference.