Experiment No: 9 - Title: Character Frequency and Classification Using Dictionary

Aim

To design and implement a Python program that:

- Counts the frequency of each character in a given string
- Categorizes characters into uppercase letters, lowercase letters, digits, and special characters
- Uses dictionary data structures for storing results

Problem Statement

Write a Python program that:

1. Accepts a string from the user
2. Creates a dictionary to store frequency of each character **(ignore the spaces if exits)**
3. Creates another dictionary to count:
    - Number of uppercase letters
    - Number of lowercase letters
    - Number of digits
    - Number of special characters
4. Displays all results clearly

Spaces may be ignored while counting.

Concepts Used

- Dictionaries
- Dictionary traversal (items())
- Membership operator (in)
- String methods:
    - isupper()
    - islower()
    - isdigit()
- Looping constructs
- Conditional statements

Result

Thus, a Python program to count the frequency of each character and categorize characters into uppercase, lowercase, digits, and special characters using dictionaries was successfully designed and executed.

Sample Input:

Enter String: **Believe in Yourself 2026!**

Sample Output:

Character Frequency Dictionary:

{'B': 1, 'e': 4, 'l': 3, 'i': 2, 'v': 1, 'n': 1, 'Y': 1, 'o': 1, 'u': 1, 'r': 1, 's': 1, 'f': 1, '2': 2, '0': 1, '6': 1, '!': 1}

Character Category Dictionary:

{'Uppercase': 2, 'Lowercase': 16, 'Digits': 4, 'Special Characters': 1}