

Experiment-5

Demonstrating String Manipulation in Java

Write a Java program that demonstrates various string manipulation techniques. The program should include string concatenation, conversion to uppercase/lowercase, and extraction of a substring. It should then display the results of these operations.

Aim:

To demonstrate various string manipulation techniques in Java, such as concatenation, conversion to uppercase/lowercase, and substring extraction.

Objective:

To understand basic string operations and how to manipulate strings efficiently in Java.

Program:

```
public class StringManipulationExample {
    public static void main(String[] args) {
        String str = "Hello, Java Programming!";

        // Concatenation
        String concatenated = str + " Welcome to Java!";

        // Length of the string
        int length = str.length();

        // Uppercase and Lowercase
        String upperCase = str.toUpperCase();
        String lowerCase = str.toLowerCase();

        // Substring
        String subString = str.substring(7, 12); // Extracting "Java"

        System.out.println("Concatenated String: " + concatenated);
        System.out.println("Length of the string: " + length);
        System.out.println("Uppercase: " + upperCase);
        System.out.println("Lowercase: " + lowerCase);
        System.out.println("Substring (7, 12): " + subString);
    }
}
```

Test Cases:

Test Case 1:

- **Test Name:** String Concatenation
- **Input:** "Hello, Java Programming!"

- **Expected Result:** "Hello, Java Programming! Welcome to Java!"
- **Actual Result:** "Hello, Java Programming! Welcome to Java!"
- **Pass/Fail:** Pass

Test Case 2:

- **Test Name:** Uppercase Conversion
- **Input:** "Hello, Java Programming!"
- **Expected Result:** "HELLO, JAVA PROGRAMMING!"
- **Actual Result:** "HELLO, JAVA PROGRAMMING!"
- **Pass/Fail:** Pass

Test Case 3:

- **Test Name:** Substring Extraction
- **Input:** "Hello, Java Programming!"
- **Expected Result:** "Java"
- **Actual Result:** "Java"
- **Pass/Fail:** Pass

Conclusion:

This program demonstrates basic string operations in Java, including string concatenation, conversion to uppercase and lowercase, and substring extraction. It helps in understanding how to perform common string manipulations effectively.