SANYAM AGRAWAL – SE21UCSE192 – CSE3

OOPS Lab Assignment 11

1) Concatenation and Substring (String):

```java
import java.util.Scanner;


public class StringManipulation {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);


        System.out.print("Enter the first string: ");
        String str1 = scanner.nextLine();


        System.out.print("Enter the second string: ");
        String str2 = scanner.nextLine();


        String concatenatedString = str1.concat(str2);
        System.out.println("Concatenated String: " + concatenatedString);


        System.out.print("Enter the starting index for substring: ");
        int startIndex = scanner.nextInt();


        System.out.print("Enter the ending index for substring: ");
        int endIndex = scanner.nextInt();


        if (startIndex >= 0 && endIndex <= concatenatedString.length() &&
startIndex <= endIndex) {
            String substring = concatenatedString.substring(startIndex, endIndex
+ 1);
```

```java
            System.out.println("Substring: " + substring);
        } else {
            System.out.println("Invalid indices. Please make sure the indices are
within bounds.");
        }

        scanner.close();

    }

}
```
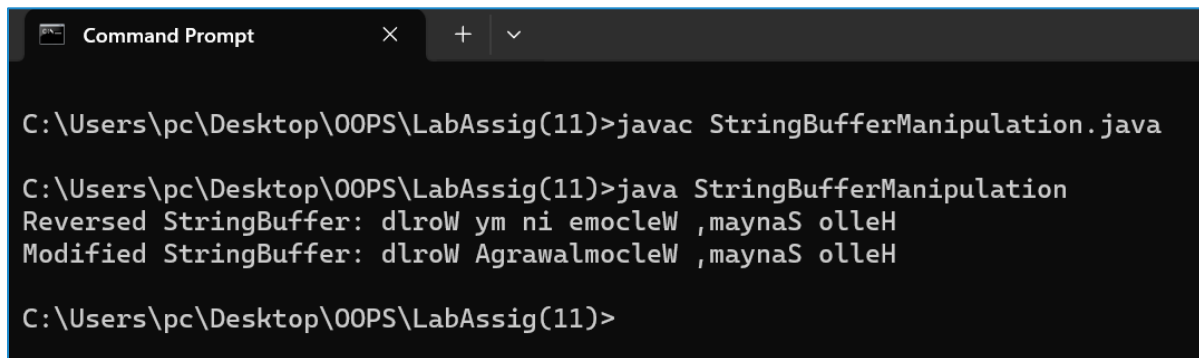
```
Command Prompt                    ×    +   ∨

C:\Users\pc\Desktop\OOPS\LabAssig(11)>javac StringManipulation.java

C:\Users\pc\Desktop\OOPS\LabAssig(11)>java StringManipulation
Enter the first string: Sanyam
Enter the second string: Agrawal
Concatenated String: SanyamAgrawal
Enter the starting index for substring: 2
Enter the ending index for substring: 5
Substring: nyam
```

2) Reverse and Replace (StringBuffer):

```java
public class StringBufferManipulation {

    public static void main(String[] args) {

            StringBuffer stringBuffer = new StringBuffer("Hello Sanyam, Welcome
in my World");


        stringBuffer.reverse() ;

        System.out.println("Reversed StringBuffer: " + stringBuffer) ;


        stringBuffer.replace (6, 13, "Agrawal") ;

        System.out.println("Modified StringBuffer: " + stringBuffer) ;

    }
```

}

```
Command Prompt          ×    +   ∨

C:\Users\pc\Desktop\OOPS\LabAssig(11)>javac StringBufferManipulation.java

C:\Users\pc\Desktop\OOPS\LabAssig(11)>java StringBufferManipulation
Reversed StringBuffer: dlroW ym ni emocleW ,maynaS olleH
Modified StringBuffer: dlroW AgrawalmocleW ,maynaS olleH

C:\Users\pc\Desktop\OOPS\LabAssig(11)>
```
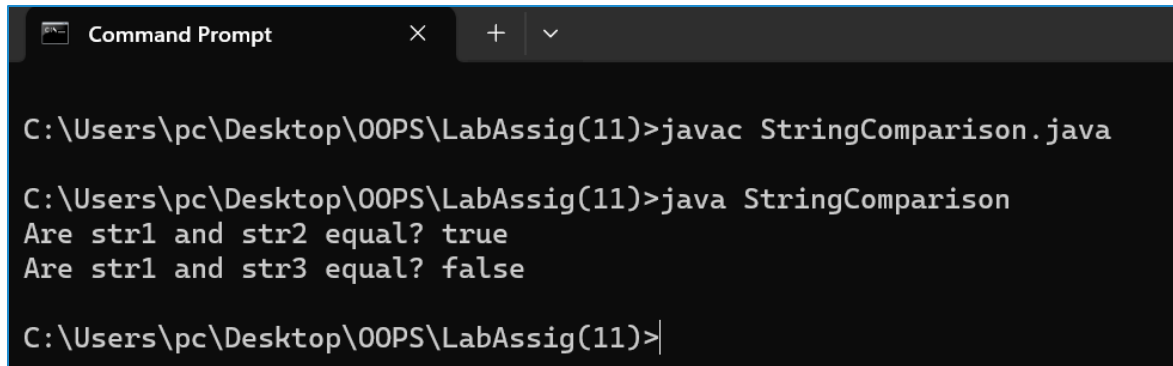
3) String Comparison:

```java
public class StringComparison {

    public static void main(String[] args) {

        String str1 = "Hello";

        String str2 = "Hello";

        String str3 = "World";


        System.out.println("Are str1 and str2 equal? " + compareStrings(str1,
str2));

        System.out.println("Are str1 and str3 equal? " + compareStrings(str1,
str3));

    }

    private static boolean compareStrings(String s1, String s2) {

        if (s1.length() != s2.length()) {

            return false;

        }

        for (int i = 0; i < s1.length(); i++) {

            if (s1.charAt(i) != s2.charAt(i)) {

                return false;

            }

        }

        return true;
```

```
        }
}
```

```
Command Prompt                    ×    +    ∨

C:\Users\pc\Desktop\OOPS\LabAssig(11)>javac StringComparison.java

C:\Users\pc\Desktop\OOPS\LabAssig(11)>java StringComparison
Are str1 and str2 equal? true
Are str1 and str3 equal? false

C:\Users\pc\Desktop\OOPS\LabAssig(11)>
```

4) StringBuffer Append and Insert:

```java
import java.util.Scanner;


public class StringBufferAppendInsert {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);


        StringBuffer stringBuffer1 = new StringBuffer("Hello");
        StringBuffer stringBuffer2 = new StringBuffer("World");


        stringBuffer1.append(stringBuffer2);


        System.out.println("Appended StringBuffer: " + stringBuffer1);


        System.out.print("Enter the index at which to insert the new substring:
");
        int insertIndex = scanner.nextInt();


        scanner.nextLine();
```
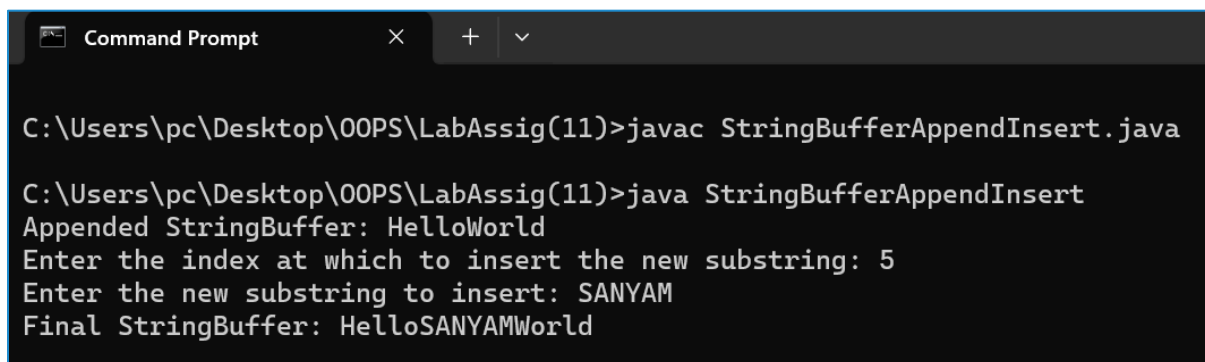
```java
        System.out.print("Enter the new substring to insert: ");

        String newSubstring = scanner.nextLine();


        stringBuffer1.insert(insertIndex, newSubstring);


        System.out.println("Final StringBuffer: " + stringBuffer1);


        scanner.close();

    }

}
```

```
Command Prompt                    ×      +    ∨

C:\Users\pc\Desktop\OOPS\LabAssig(11)>javac StringBufferAppendInsert.java

C:\Users\pc\Desktop\OOPS\LabAssig(11)>java StringBufferAppendInsert
Appended StringBuffer: HelloWorld
Enter the index at which to insert the new substring: 5
Enter the new substring to insert: SANYAM
Final StringBuffer: HelloSANYAMWorld
```

5) Palindrome Check:

```java
import java.util.Scanner;


public class PalindromeCheck {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);


        System.out.print("Enter a string: ");

        String inputString = scanner.nextLine();


        boolean isPalindromeString = isPalindromeWithString(inputString);
```

```java
        System.out.println("Using String approach: " + (isPalindromeString ?
"Palindrome" : "Not a palindrome"));


        boolean isPalindromeStringBuffer =
isPalindromeWithStringBuffer(inputString);
        System.out.println("Using StringBuffer approach: " +
(isPalindromeStringBuffer ? "Palindrome" : "Not a palindrome"));


        scanner.close();

    }

    private static boolean isPalindromeWithString(String str) {

        String reversedString = "";

        for (int i = str.length() - 1; i >= 0; i--) {

            reversedString += str.charAt(i);

        }

        return str.equals(reversedString);

    }

    private static boolean isPalindromeWithStringBuffer(String str) {

        StringBuffer stringBuffer = new StringBuffer(str);

        return str.equals(stringBuffer.reverse().toString());

    }

}
```
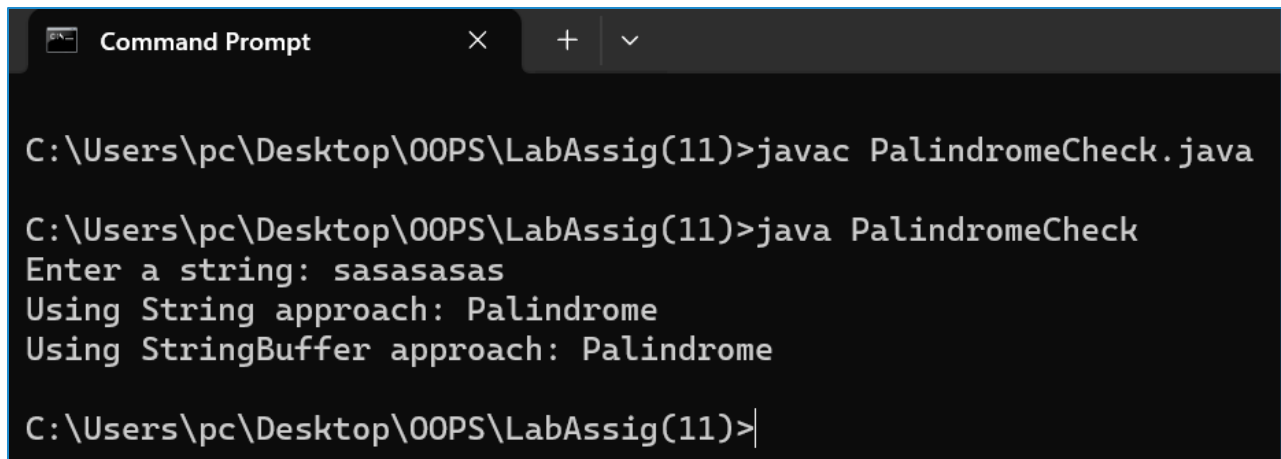
```
Command Prompt                    ×      +    ∨

C:\Users\pc\Desktop\OOPS\LabAssig(11)>javac PalindromeCheck.java

C:\Users\pc\Desktop\OOPS\LabAssig(11)>java PalindromeCheck
Enter a string: sasasasas
Using String approach: Palindrome
Using StringBuffer approach: Palindrome

C:\Users\pc\Desktop\OOPS\LabAssig(11)>
```