Experiment - 3.1

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Branch: CSE
Section/Group: 616 'B'
Semester: 5th
Date of Performance: 03/11/22
Subject Name: PBLJ Lab
Subject Code: 20CSP-321

Aim - To create a code to find the longest palindromic subsequence.

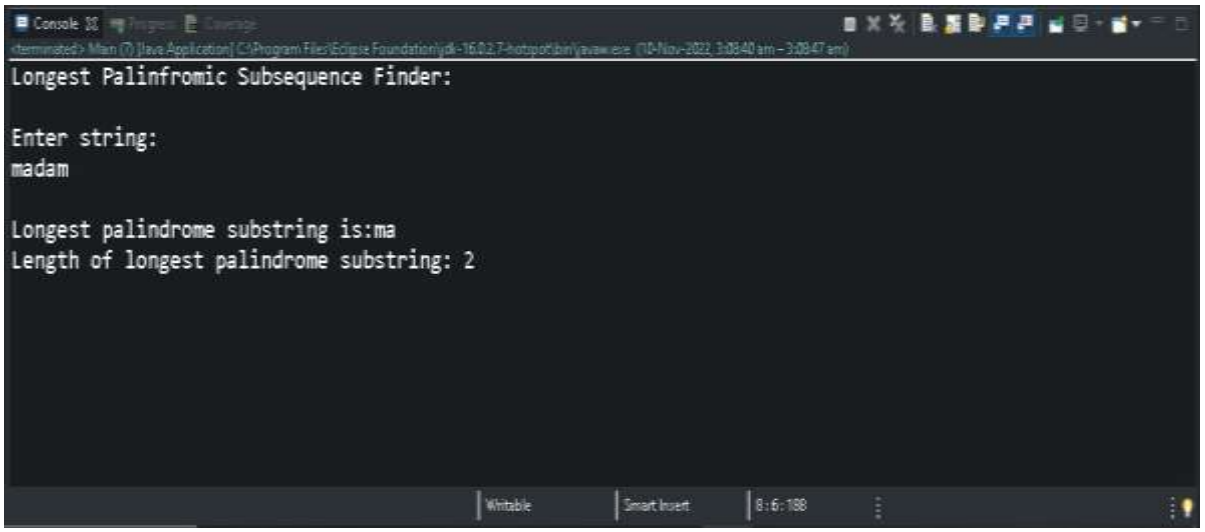
Software Requirements:
Eclipse IDE - (Java)

Code

```
package com.campany;

import java.util.Scanner;

public class Main {
	static void printSubStr(String str, int low, int high) {
		System.out.println(str.substring(low, high + 1));
	}

	static void longestPalSubstr(String str) {

		String s = "";
		int n = str.length();

		boolean table[][] = new boolean[n][n];
		int maxLength = 1;

		for (int i = 0; i < n; i++)
			table[i][i] = true;
		int start = 0;

		for (int i = 0; i < n - 1; i++) {
			if (str.charAt(i) == str.charAt(i + 1)) {
				table[i][i + 1] = true;
				start = i;
```

```
                        maxLength = 2;
                    }
                }

                for (int k = 3; k <= n; k++) {
                    for (int i = 0; i < n - k + 1; i++) {
                        int j = i + k - 1;
                        if (table[i + 1][j - 1] && str.charAt(i) == str.charAt(j)) {
                            table[i][j] = true;

                            s = str.charAt(i) + s;

                            if (k > maxLength) {

                                start = i;
                                maxLength = k;
                            }
                        }
                    }
                }

                System.out.print(
                        "\nLongest palindrome substring is:" + s + "\nLength of longest
palindrome substring: " + s.length());
        }

        public static void main(String[] args) {

                System.out.println("Longest Palinfromic Subsequence Finder:\n");
                Scanner sc = new Scanner(System.in);

                System.out.println("Enter string: ");

                String str = sc.nextLine();

                longestPalSubstr(str);
        }

}
```

Output:



Learning outcomes (What I have learnt):

1. Learnt the concept of palindrome.
2. Learnt the concept of StringBuilder ().
3. Learnt the concept of HashMap ().
4. Learnt the concept of StringBuilder Manipulation such as Reverse.
5. Successfully executed the code and completed the Worksheet.

Evaluation Grid (To be created per the faculty's SOP and Assessment guidelines):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To be submitted at the end of the day).		
2.	Post-Lab Quiz Result.		
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		
	Signature of Faculty (with Date):	Total Marks Obtained:	