Department of Computer Science & Engineering

UNIVERSITY INSTITUTE OF ENGINEERING

Department of Computer Science & Engineering

Subject Name: Project Based Learning in Java Lab

Subject Code: 20CSP321

Submitted to: Er.Parveen Tanwar Sir
Faculty name: Er. Parveen Tanwar Sir

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 Section: 607

 Group: B

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INDEX

Ex. No	List of Experiments	Conduct (MM: 12)	Viva (MM: 10)	Record (MM: 8)	Total (MM: 30)	Date	Remarks/Signature
1.1	Create an application to save the employee information using arrays.					03/09/22	
1.2	Design and implement a simple inventory control system for a small video rental store.					05/09/22	
1.3	Create a application to calculate interest for FDs, RDs based on certain conditions using inheritance.					10/09/22	
2.1	Create a program to set view of Keys from Java Hashtable.					29/09/22	
2.2	Create a program to show the usage of Sets of Collection interface.					07/10/22	
2.3	Write a Program to perform them basic operations like insert, delete, display, and search in list. List contains String object items where these operations are to be performed.					12/10/22	
2.4	Create a menu-based Java application with the following options. 1.Add an Employee 2.Display All 3.Exit If option 1 is selected, the application should gather details of the employee like employee name, employee id, designation and salary and store it in a file. If option 2 is selected, the application should display all the employee details. If option 3 is selected the application should exit.					13/10/22	
3.1	Create a palindrome creator application for making a longest possible palindrome out of given input string.					03/11/22	
3.2	Create a Servlet/ application with a facility to print any message on web browser.						
3.3	Create JSP application for addition, multiplication and division.						

Department of Computer Science & Engineering

Student Name: Pranjal Kumar   **UID: 20BS3504**

Branch: CSE   **Section/Group: 607-B**

Semester: 5th   **Date of Performance: 03/11/22**

Subject Name: PBLJ Lab   **Subject Code: 20CSP-321**

AIM:

Create a palindrome creator application for making a longest possible palindrome out of given input string.

OBJECTIVE:

Given a string, S, find its largest palindromic substring.

Input Format

A string, S.

Constraints

$1 \le |S| \le 1000000$
All the characters are lower-case English letters.

Output Format

Print the largest possible substring of S.

Sample Input

    hackerrekcahba

Sample Output

    hackerrekcah

Explanation

The longest palindromic substring of the the given input hackerrekcahbahh is hackerrekcah.

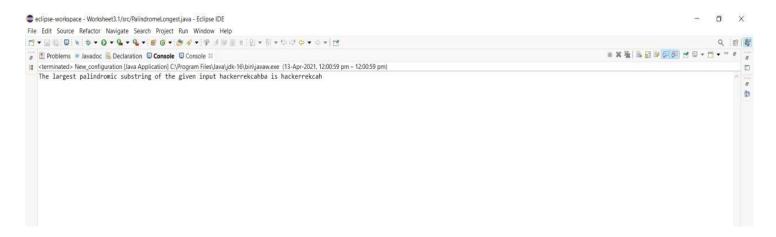**JAVA CODE/INPUT:**

```java
class PalindromeLongest
{
    public static String expand(String str, int down, int up)
    {
        int len = str.length();
        while (down >= 0 && up < len &&
            (str.charAt(down) == str.charAt(up))) {
            down--;
            up++;
        }

        return str.substring(down + 1, ip);
    }
    public static String LargestPalindromicSubstring(String str, int len)
    {
        String max_str = "", curr_str;
        int max_length = 0, curr_length;
        for (int i = 0; i < len; i++)
        {
            curr_str = expand(str, i, i);
            curr_length = curr_str.length();
            if (curr_length > max_length)
            {
                max_length = curr_length;
                max_str = curr_str;
            }
            curr_str = expand(str, i, i + 1);
            curr_length = curr_str.length();
            if (curr_length > max_length)
            {
                max_length = curr_length;
                max_str = curr_str;
            }
        }
        return max_str;
    }
    public static void main(String[] args)
    {
        String str = "hackerrekcahba";
        System.out.println("The largest palindromic substring of the given input "
```

```
        + str + " is "
        + LargestPalindromicSubstring(str, str.length() - 1));
    }
}
```

OUTPUT:

```
eclipse-workspace - Worksheet3.1/src/PalindromeLongest.java - Eclipse IDE                                                    —    □    ×
File  Edit  Source  Refactor  Navigate  Search  Project  Run  Window  Help
                                                                                                                              Q
  Problems   Javadoc   Declaration   Console   Console
  <terminated> New_configuration [Java Application] C:\Program Files\Java\jdk-16\bin\javaw.exe  (13-Apr-2021, 12:00:59 pm – 12:00:59 pm)
  The largest palindromic substring of the given input hackerrekcahba is hackerrekcah
```

Learning outcomes (What I have learnt):

1. Learned about palindrome.
2. Learned about String.
3. Learned about loop.