

## EXPERIMENT – 3.1

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**Branch: CSE**

**Semester: 5th**

**Subject Name: Project Based Learning in Java**

**UID: 20BCS9286**

**Section/Group: 20BCS-WM-619 (B)**

**Subject Code: 20CSP - 321**

### PROBLEM STATEMENT :

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

### CODE :

```
package com.company.CU;

public class cu_unit3_1 {
    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, up);
    }

    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) {
        System.out.println("\nThis worksheet belongs to Anjali Singh\n");
        String str = "hackerrekcahba";
        System.out.println("The largest palindromic substring of the given input " + str + "
is "
            + LargestPalindromicSubstring(str, str.length() - 1));
    }
}
```

## OUTPUT :



```
32 }  
Run: cu_unit3_1 x  
"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ ID  
Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Hermione\IdeaProjects\1st  
This worksheet belongs to Anjali Singh  
The largest palindromic substring of the given input hackerrekcahba is hackerrekcah  
Process finished with exit code 0
```

## LEARNING OUTCOMES:

1. Learnt about different operations.
2. Learnt about Strings.

