



Experiment Title – 3.1

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Branch: BE-CSE

Section/Group: 20BCS-WM-906/B

Semester: 5th

Subject Code: 21 CSP-321

Subject Name: PBLJ LAB

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

2. Software/Hardware Requirements: VS Code or Eclipse

3. Algorithm/ PsuedoCode:

STEP 1: Create a index.jsp file in a webapp directory.

STEP 2: Create a package named as fun and create a java file named as functions.java.

STEP 3: functions.java file contains the logic for checking the palindromic substring.

STEP 4: At Last start the server and display the output on the web browser.

STEP 5: EXIT.



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CODE:

Index.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
<style>
    body{
        background: linear-gradient(45deg, red, blue);
        background-size: cover;
        color: white;
        align-items: center;
    }
    h1{
        text-align:center;
    }
    .fall{
        border: 2px solid orange;background: blue;
        padding: 5px;
        max-width: 500px;
        height: 100px;
        margin: auto;
        font-size: 19px;
    }
    input{
        width: 250px;
    }
    button{
        position: relative;
        left: 170px;
        margin: 10px; width: 60px;height:30px;
        cursor:pointer;border-radius:5px;
    }
    button:hover{
        color:white;
        background: black;
    }
</style>
</head>
<body>
    <h1>find the Longest Palindromic Substring</h1>
    <form class="fall" name="funcitons"
action="<%=request.getContextPath()%>/functions" method="post">
        Enter the Palindromic String: <input class="check" type="text" name="pal"
size="50"><br>
        <button type="submit">Submit</button>
```



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```
        <button type="reset">Reset</button>
    </form>
    <h1> longest Palindromic SubString <br/> <%=request.getAttribute("ans")
%></h1>
</body>
</html>
```

Functions.java

```
package fun;
```

```
import java.io.IOException;
```

```
import javax.servlet.ServletException;
```

```
import javax.servlet.annotation.WebServlet;
```

```
import javax.servlet.http.HttpServlet;
```

```
import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
```

```
/**
```

```
 * Servlet implementation class functions
```

```
 */
```

```
@WebServlet(name="functions",urlPatterns={"/functions"})
```

```
public class functions extends HttpServlet {
```

```
    protected void doPost(HttpServletRequest request, HttpServletResponse  
response) throws ServletException, IOException {
```

```
        String a=request.getParameter("pal");
```

```
//        String fun=request.getParameter("fun");
```

```
        try {
```

```
//            System.out.println(a+fun);
```

```
            int n=a.length();
```

```
            String ans;
```



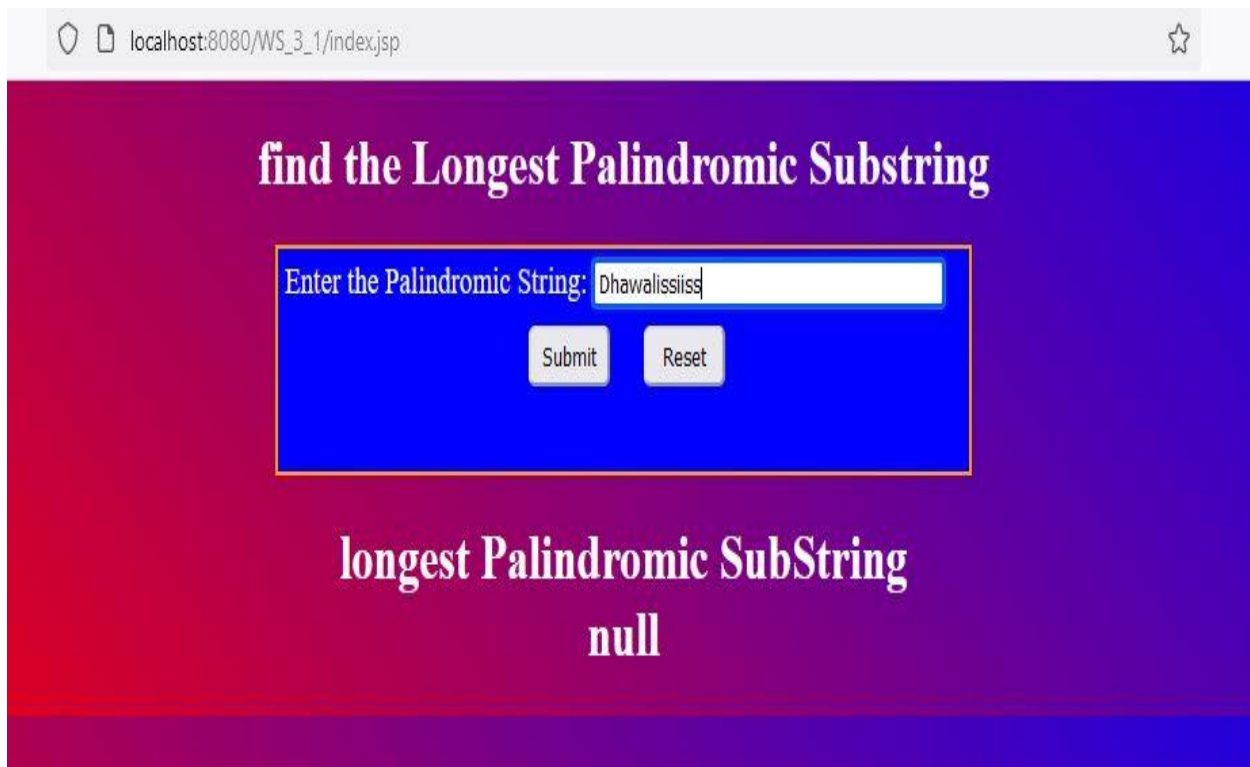
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```
        if(n<=1) {  
            ans=a;  
            request.setAttribute("ans",ans);  
  
request.getRequestDispatcher("index.jsp").forward(request,response);  
        }  
        else {  
            int len=1,s=0;  
            int low,high;  
            for(int i=1;i<n;i++) {  
                low=i-1;  
                high=i+1;  
                while(high<n&& a.charAt(high)==a.charAt(i)) {  
                    high++;  
                }  
                while(high<n&& a.charAt(low)==a.charAt(i)) {  
                    low++;  
                }  
                while(low>=0 && high<n &&  
a.charAt(low)==a.charAt(high)) {  
                    low--;  
                    high++;  
                }  
                int length=high-low-1;  
                if(len<length) {  
                    len=length;  
                    s=low+1;  
                }  
            }  
        }  
    }  
}
```

```
        }  
    }  
    ans=a.substring(s,s+len);  
    request.setAttribute("ans",ans);  
    request.getRequestDispatcher("index.jsp").forward(request,response);  
}  
}catch(Exception e) {  
    System.out.println(e);  
}  
}  
}
```

OUTPUT:



localhost:8080/WS_3_1/index.jsp

find the Longest Palindromic Substring

Enter the Palindromic String:

longest Palindromic SubString

null

localhost:8080/WS_3_1/functions

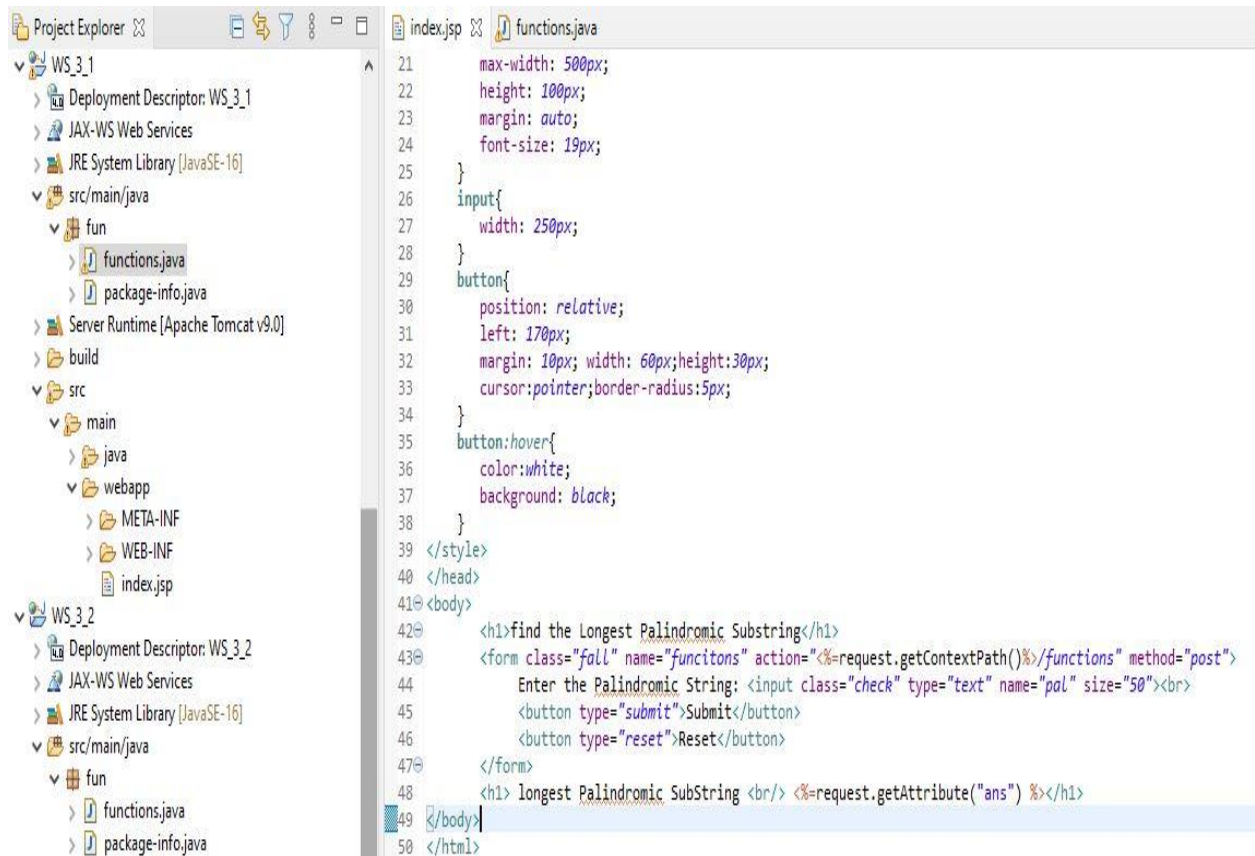
find the Longest Palindromic Substring

Enter the Palindromic String:

Submit

Reset

longest Palindromic SubString
sssiiss



The screenshot shows an IDE with the following components:

- Project Explorer:**
 - WS_3_1
 - Deployment Descriptor: WS_3_1
 - JAX-WS Web Services
 - JRE System Library [JavaSE-16]
 - src/main/java
 - fun
 - functions.java
 - package-info.java
 - Server Runtime [Apache Tomcat v9.0]
 - build
 - src
 - main
 - java
 - webapp
 - META-INF
 - WEB-INF
 - index.jsp
 - WS_3_2
 - Deployment Descriptor: WS_3_2
 - JAX-WS Web Services
 - JRE System Library [JavaSE-16]
 - src/main/java
 - fun
 - functions.java
 - package-info.java

- Code Editor:**
- index.jsp**

```

21 max-width: 500px;
22 height: 100px;
23 margin: auto;
24 font-size: 19px;
25 }
26 input{
27     width: 250px;
28 }
29 button{
30     position: relative;
31     left: 170px;
32     margin: 10px; width: 60px;height:30px;
33     cursor:pointer;border-radius:5px;
34 }
35 button:hover{
36     color:white;
37     background: black;
38 }
39 </style>
40 </head>
41 <body>
42 <h1>find the Longest Palindromic SubString</h1>
43 <form class="fall" name="funcitons" action="%=request.getContextPath()%/functions" method="post">
44     Enter the Palindromic String: <input class="check" type="text" name="pal" size="50"><br>
45     <button type="submit">Submit</button>
46     <button type="reset">Reset</button>
47 </form>
48 <h1> longest Palindromic SubString <br/> <%=request.getAttribute("ans") %></h1>
49 </body>
50 </html>
```
- functions.java**

```

21 max-width: 500px;
22 height: 100px;
23 margin: auto;
24 font-size: 19px;
25 }
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27     width: 250px;
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48 <h1> longest Palindromic SubString <br/> <%=request.getAttribute("ans") %></h1>
49 </body>
50 </html>
```

```
index.jsp  functions.java
1 package fun;
2
3 import java.io.IOException;
4
5
6
7
8
9
10 /**
11  * Servlet implementation class functions
12  */
13 @WebServlet(name="functions",urlPatterns={"/functions"})
14 public class functions extends HttpServlet {
15     protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
16         String a=request.getParameter("pal");
17         // String fun=request.getParameter("fun");
18         try {
19             // System.out.println(a+fun);
20             int n=a.length();
21             String ans;
22             if(n<=1) {
23                 ans=a;
24                 request.setAttribute("ans",ans);
25                 request.getRequestDispatcher("index.jsp").forward(request,response);
26             }
27             else {
28                 int len=1,s=0;
29                 int low,high;
30                 for(int i=1;i<n;i++) {
31                     low=i-1;
32                     high=i+1;
33                     while(high<n&&a.charAt(high)==a.charAt(i)) {
34                         high++;
35                     }
36                 }
37             }
38         }
39     }
40 }
```

Learning outcomes (What I have learnt):

1. Learn About the servlet.
2. Learn about jsp and dynamic web project.
3. Learn about the tomcat server and its integrations with the java.