10. Develop an application that will allow maximum 3 users to access the application. If number of users exceeds than limit then user will be redirected to the error page.

Index.jsp

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8" %>

<%@ page import="jakarta.servlet.http.*" %>

<%

    // Synchronize to avoid race conditions

    synchronized (application) {

        Integer userCount = (Integer) application.getAttribute("userCount");

        if (userCount == null) {

            userCount = 0;

        }


        if (userCount >= 3) {

            response.sendRedirect("error.jsp");

            return;

        }


        // Increment user count and store in application scope

        userCount++;

        application.setAttribute("userCount", userCount);


        // Store user session to track logout

        session.setAttribute("loggedIn", true);

    }

%>

<!DOCTYPE html>

<html>
```

```
<head>

    <title>JSP Application</title>

</head>

<body>

    <h2>Welcome to the JSP Application</h2>

    <p>You have successfully logged in.</p>

    <a href="logout.jsp">Logout</a>

</body>

</html>
```

Error.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"
%>

<!DOCTYPE html>

<html>

<head>

    <title>Access Denied</title>

</head>

<body>

    <h2>Access Denied</h2>

    <p>Sorry, the maximum number of users has been reached. Please try again later.</p>

</body>

</html>
```

Logout.java

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"
%>

<%

    synchronized (application) {
```

```jsp
    Integer userCount = (Integer) application.getAttribute("userCount");

    if (userCount != null && userCount > 0) {

        userCount--;

        application.setAttribute("userCount", userCount);

    }

}


session.invalidate();

response.sendRedirect("index.jsp");
%>
```