Experiment: 3

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Subject Name: Advanced Internet Programming   **Subject Code:** 23CAH-551

Aim:

Create a servlet that displays the current time and automatically refresh in every five seconds and send a request from one server to another.

A. The task is to:

Develop a web application that includes an HTML form with fields for values create a servlet set a refresher and then send a request to another servlet to perform a task.

B. Steps of Experiment:

- Open IDE(Integrated development environment) like NetBeans.

- Start by creating a new project file.

- Start by creating a new class file with the same name as the form action name.

- Structurally write your code taking care of indentation to maintain readability.

- Execute your code.

- Output in the browser window.

C. Practical Code:

(HTML CODE GET Method)

```html
<body>
    <form action="Refresher" method="get">
            <div class="inputBx">
                <input type="submit" value="Show current time">
            </div>
    </form>
    <form action="RequestingAnother" method="get">

        <div class="ring">
            <i style="--clr:#00ff0a;"></i>
            <i style="--clr:#ff0057;"></i>
            <i style="--clr:#fffd44;"></i>
            <div class="login">
                <h2>Login</h2>
                <div class="inputBx">
                    <input type="text" name="Fsvalue" placeholder="First Value">
                </div>
                <div class="inputBx">
                    <input type="text" name="Svalue" placeholder="Second Value">
                </div>
                <div class="inputBx">
                    <input type="submit" value="Submit">
                </div>

            </div>
        </div>
    </form>
</body>
```

(JAVA Refresher file)

```java
 * @author Nitish
 */
@WebServlet(urlPatterns = {"/Refresher"})
public class Refresher extends HttpServlet {

    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {

        response.setIntHeader("Refresh", 5);
//        response.setContentType("text/html");

        Calendar calendar = new GregorianCalendar();
        String am_pm;
        int hour = calendar.get(Calendar.HOUR);
        int minute = calendar.get(Calendar.MINUTE);
        int second = calendar.get(Calendar.SECOND);

        if (calendar.get(Calendar.AM_PM) == 0) {
            am_pm = "AM";
        } else {
            am_pm = "PM";
        }

        String CurrentTime = hour + ":" + minute + ":" + second + " " + am_pm;

        PrintWriter out = response.getWriter();

        out.println("<h1 align='center'>Welcome</h1>");
        out.println("<h2 align='center'>Current time: " + CurrentTime + "</h2>");

    }
```

(JAVA RequestingAnother file)

```java
 * @author Nitish
 */
@WebServlet(urlPatterns = {"/RequestingAnother"})
public class RequestingAnother extends HttpServlet {


    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
      int num1 = Integer.parseInt(request.getParameter("Fsvalue"));
       int num2 = Integer.parseInt(request.getParameter("Svalue"));

       // Perform addition operation on num1, num2
       // and save the result in add variable.
       int add = num1 + num2;

       // Set the add value in 'sum'
       // attribute of request object
       request.setAttribute("sum", add);

       // Get the Request Dispatcher object and pass  s
       // the argument to which servlet we need to call - AvgNum.java
       RequestDispatcher reqd = request.getRequestDispatcher("Multiply");

       // Forward the Request Dispatcher object.
       reqd.forward(request, response);

    }
```

(JAVA Multiply file)

```java
 * @author Nitish
 */
@WebServlet(urlPatterns = {"/Multiply"})
public class Multiply extends HttpServlet {

    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        int sum = (int) request.getAttribute("sum");

        // perform the average operation and
        // save the result in 'avg' variable.
        int mult = 5 * 10;

        // Get the PrintWriter object to write
        // the output in the response to the browser.
        PrintWriter out = response.getWriter();
        out.println("Sum is: " + sum);
        out.println("Multiplication is: " + mult);

    }

}
```
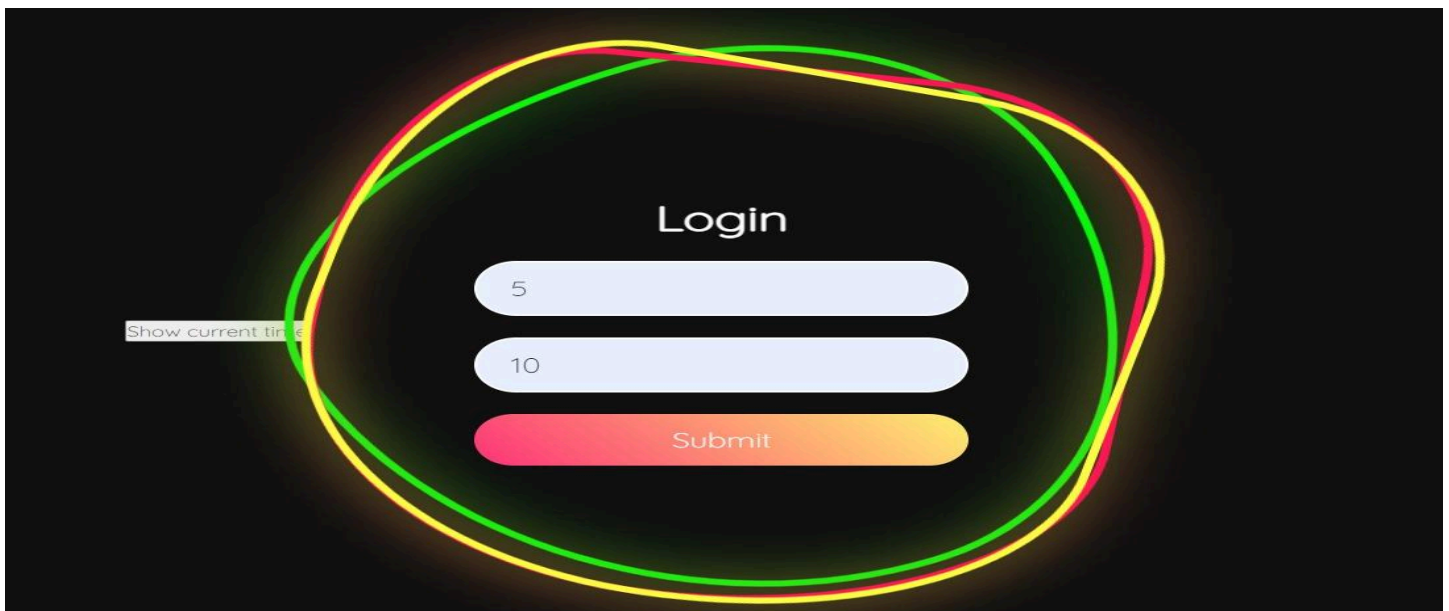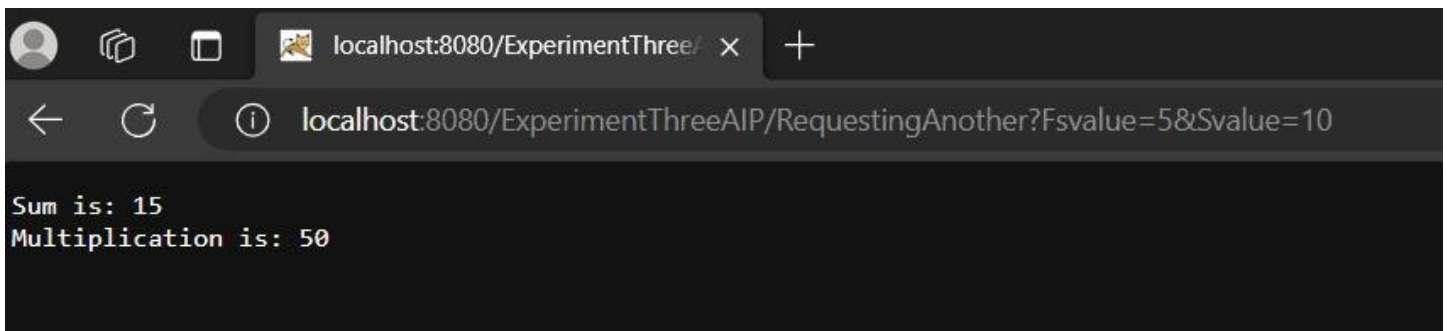
D. Output:

Output for the current time

Output for sending requests to another servlet

E. Learning outcomes:

- Understand how to do the setup of NetBeans and TomCat.

- Understand how to create an HTML page in NetBeans.

- Understand how to create a new package and class of Java.

- Understand concepts of GET and POST methods.

- Understand how to create a session and get creation time and last access time.

- Understand how to import libraries directly.

- Understand how to send and receive requests from different servlets.