

Experiment 24

Theory

Write the methods of Cookie.

- `public void setMaxAge(int expiry)` : Sets the maximum age of the cookie in seconds.
- `public String getName()` : Returns the name of the cookie. The name cannot be changed after creation.
- `public String getValue()` : Returns the value of the cookie.
- `public void setName(String name)` : changes the name of the cookie.
- `public void setValue(String value)` : changes the value of the cookie.

Write the advantages of Cookie over URL rewriting

- Sessions tracking using Cookies are more secure and fast. Session tracking using Cookies can also be used with other mechanism of Session Tracking like url rewriting.
- Cookies are stored at client side so some clients may disable cookies so we may not sure that the cookies may work or not.
- In url rewriting requites large data transfer from and to the server.
- So, it leads to network traffic and access may be become slow.

Write the steps to disable Cookie

- Go to the Browsers Settings.
- Click Show Advanced Settings or Advanced
- Click on Site Settings or Content Settings in the Privacy and Security section.
- Click on Cookies and site data.
- Click the toggle switch next to "Allow sites to save and read cookie data".
- Click the toggle switch next to "Block Third Party Cookies".

Programs

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Java

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.annotation.WebServlet;
@WebServlet("/Cookies")
public class Cookies extends HttpServlet {
    private static final long serialVersionUID = 1L;

    public Cookies() {
        super();
        // TODO Auto-generated constructor stub
    }

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

```

        response.setContentType("text/html");
        String name = request.getParameter("name");
        String orderedCookie = request.getParameter("orderedCookie");
        String quantity = request.getParameter("quantity");
        response.addCookie(new Cookie("name", name));
        response.addCookie(new Cookie("orderedCookie", orderedCookie));
        response.addCookie(new Cookie("quantity", quantity));
        PrintWriter pw = response.getWriter();
        pw.println(
            "<link rel='stylesheet'
href='https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css' integrity='sha384-
TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0JlfiDPvG6uqKI2xXr2'
crossorigin='anonymous' /> <script defer src='https://code.jquery.com/jquery-3.5.1.slim.min.js'
integrity='sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBN+IbbVYUew+OrCXaRkfj'
crossorigin='anonymous' ></script> <script defer
src='https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js'
integrity='sha384-ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDyx'
crossorigin='anonymous' ></script><div class='container'><h1 style='text-align:center'>Ordered
Cookie</h1><table class='table table-bordered'><thead class='thead-dark'><tr><th
scope='col'>Name</th><th scope='col'>Value</th></tr></thead><tbody>";
        Cookie[] cookies = request.getCookies();

        for (Cookie cookie : cookies) {
            String cookieName = cookie.getName();
            String cookieValue = cookie.getValue();
            pw.println("<tr><td scope='row'>" + cookieName + "</td><td>" +
cookieValue + "</td></tr>");
        }
        pw.println("</tbody></div></div>");
        for (Cookie cookie : cookies) {
            cookie.setValue("");
            cookie.setMaxAge(0);
            response.addCookie(cookie);
        }
    }

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        doGet(request, response);
    }
}

```

HTML

```

<!DOCTYPE html>
<html>
<head>
    <meta charset="ISO-8859-1" />
    <title>Cookies</title>
    <link
        rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
        integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0JlfiDPvG6uqKI2xXr2"

```

```

    crossorigin="anonymous"
  />
  <script defer
    src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
    integrity="sha384-
DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj"
    crossorigin="anonymous"
  ></script>
  <script defer
    src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js"
    integrity="sha384-
ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDyx"
    crossorigin="anonymous"
  ></script>
</head>
<style>
#main {
  width: 100vw;
  height: 100vh;
  display: flex;
  justify-content: center;
  align-items: center;
}
.card {
  box-shadow: 4px 4px 10px 3px rgba(0, 0, 0, 0.2);
  width: 500px;
}
</style>
<body>
  <div class="container" id="main">
    <form
      action="Cookies"
      method="get"
      class="card"
    >
      <h5 class="card-header">Order a Cookie</h5>
      <div class="card-body">
        <div class="form-group">
          <label for="name">Your Name</label>
          <input type="text" name="name" class="form-control" />
        </div>
        <div class="form-group">
          <label for="orderedCookie">Type of Cookie</label>
          <select class="form-control" id="orderedCookie" name="orderedCookie">
            <option
              value="ChocolateChipCookies"
            >
              Chocolate Chip Cookies
            </option>
            <option value="Snickerdoodles">Snickerdoodles</option>
            <option value="Gingersnaps">Gingersnaps</option>
          </select>
        </div>
      </div>
    </form>
  </div>
</body>

```

```
    <option value="PeanutButterCookies">
      Peanut Butter Cookies
    </option>
    <option value="Biscotti">Biscotti</option>
    <option value="ButterCookies">Butter Cookies</option>
  </select>
</div>
<div class="form-group">
  <label for="quantity">Quantity</label>
  <input
    type="text"
    name="quantity"
    id="quantity"
    class="form-control"
  />
</div>
<div class="form-group">
  <button id="submit-btn" type="submit" class="btn btn-primary">
    Order
  </button>
</div>
</div>
</form>
</div>
</body>
</html>
```

Outputs

Order a Cookie

Your Name

Deon

Type of Cookie

Chocolate Chip Cookies

Quantity

123

Order

Ordered Cookie

Name	Value
name	Deon
orderedCookie	ChocolateChipCookies
quantity	123

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Java

FirstServlet.java

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/FirstServlet")
public class FirstServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        try {
            response.setContentType("text/html");
            PrintWriter out = response.getWriter();
            String n = request.getParameter("userName");
            out.print("Welcome " + n);
            Cookie ck = new Cookie("uname", n);
            response.addCookie(ck);

            out.print("<form action='SecondServlet'>");
            out.print("<input type='submit' value='go'/>");
            out.print("</form>");
            out.close();
        } catch (Exception e) {
            System.out.println(e);
        }
    }
}
```

SecondServlet.java

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/SecondServlet")
public class SecondServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
```

```

        throws ServletException, IOException {
    response.setContentType("text/html");
    try {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        Cookie ck[] = request.getCookies();
        out.print("Hello " + ck[0].getValue());
        out.close();
    } catch (Exception e) {
        System.out.println(e);
    }
}
}

```

Html

```

<form action="FirstServlet" method="post">
    Name:<input type="text" name="userName" /><br/>
    <input type="submit" value="go">
</form>

```

Outputs

Name:

Hello Deon

Welcome Deon

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Java

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/Cookies")
public class Cookies extends HttpServlet {
    private static final long serialVersionUID = 1L;

    public Cookies() {
        super();
        // TODO Auto-generated constructor stub
    }

    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        String name = request.getParameter("name");
        String orderedCookie = request.getParameter("orderedCookie");
        String quantity = request.getParameter("quantity");
        response.addCookie(new Cookie("name", name));
        response.addCookie(new Cookie("orderedCookie", orderedCookie));
        response.addCookie(new Cookie("quantity", quantity));
        PrintWriter pw = response.getWriter();
        pw.println(
            "<link rel='stylesheet' "
            href='https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css' integrity='sha384-
            TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0JlfIDPvg6uqKI2xXr2'
            crossorigin='anonymous' /> <script defer src='https://code.jquery.com/jquery-3.5.1.slim.min.js'
            integrity='sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj'
            crossorigin='anonymous' ></script> <script defer
            src='https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js'
            integrity='sha384-ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDyx'
            crossorigin='anonymous' ></script><div class='container'><h1 style='text-align:center'>Ordered
            Cookie</h1><table class='table table-bordered'><thead class='thead-dark'><tr><th
            scope='col'>Name</th><th scope='col'>Value</th></tr></thead><tbody>");

        Cookie[] cookies = request.getCookies();

        for (Cookie cookie : cookies) {
            String cookieName = cookie.getName();
            String cookieValue = cookie.getValue();
```



```

                pw.println("<tr><td scope='row'>" + cookieName + "</td><td>" +
cookieValue + "</td></tr>");
            }
            pw.println("</tbody></div></div>");
            for (Cookie cookie : cookies) {
                cookie.setValue("");
                cookie.setMaxAge(0);
                response.addCookie(cookie);
            }
        }

        protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
            doGet(request, response);
        }
    }
}

```

Html

```

<!DOCTYPE html>
<html>
<head>
    <meta charset="ISO-8859-1" />
    <title>Cookies</title>
    <link
        rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
        integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0jlfIDPvg6uqKI2xXr2"
        crossorigin="anonymous"
    />
    <script defer
        src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
        integrity="sha384-
DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj"
        crossorigin="anonymous"
    ></script>
    <script defer
        src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js"
        integrity="sha384-
ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDyx"
        crossorigin="anonymous"
    ></script>
</head>
<style>
    #main {
        width: 100vw;
        height: 100vh;
        display: flex;
        justify-content: center;
        align-items: center;
    }

```

```

}
.card {
  box-shadow: 4px 4px 10px 3px rgba(0, 0, 0, 0.2);
  width: 500px;
}
</style>
<body>
  <div class="container" id="main">
    <form
      action="Cookies"
      method="get"
      class="card"
    >
      <h5 class="card-header">Order a Cookie</h5>
      <div class="card-body">
        <div class="form-group">
          <label for="name">Your Name</label>
          <input type="text" name="name" class="form-control" />
        </div>
        <div class="form-group">
          <label for="orderedCookie">Type of Cookie</label>
          <select class="form-control" id="orderedCookie" name="orderedCookie">
            <option
              value="ChocolateChipCookies"
            >
              Chocolate Chip Cookies
            </option>
            <option value="Snickerdoodles">Snickerdoodles</option>
            <option value="Gingersnaps">Gingersnaps</option>
            <option value="PeanutButterCookies">
              Peanut Butter Cookies
            </option>
            <option value="Biscotti">Biscotti</option>
            <option value="ButterCookies">Butter Cookies</option>
          </select>
        </div>
        <div class="form-group">
          <label for="quantity">Quantity</label>
          <input
            type="text"
            name="quantity"
            id="quantity"
            class="form-control"
          />
        </div>
        <div class="form-group">
          <button id="submit-btn" type="submit" class="btn btn-primary">
            Order
          </button>
        </div>
      </div>
    </div>
  </body>

```

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

Outputs

Order a Cookie

Your Name

Type of Cookie

Quantity

Ordered Cookie

Name	Value
name	Deon
orderedCookie	ChocolateChipCookies
quantity	123

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Java

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/ClientInfo")
public class ClientInfo extends HttpServlet {
    private static final long serialVersionUID = 1L;

    public ClientInfo() {
        super();
    }

    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html");

        PrintWriter pw = response.getWriter();
        pw.println(
            "<link rel='stylesheet' "
            href='https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css' integrity='sha384-
            TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0JlfiDPvg6uqKI2xXr2'
            crossorigin='anonymous' /> <script defer src='https://code.jquery.com/jquery-3.5.1.slim.min.js'
            integrity='sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj'
            crossorigin='anonymous' ></script> <script defer
            src='https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js'
            integrity='sha384-ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RswenRtN/tE3MoK7ZeZDyx'
            crossorigin='anonymous' ></script><style>.container{display:flex;align-item:center;justify-
            content:center;height:100vh;flex-direction:column}</style><div class='container'><h1 style='text-
            align:center'>Browser Info</h1><br><table class='table table-bordered'><thead class='thead-
            dark'><tr><th scope='col'>Name</th><th scope='col'>Value</th></tr></thead><tbody>";

        String[][] browserInfo = { { "User Agent", request.getHeader("User-Agent") },
            { "Client IP Address", request.getRemoteAddr() },
            { "Requested URL", new String(request.getRequestURL()) }, { "Client
            OS", getClientOS(request) } };

        for (String[] info : browserInfo) {
            pw.println("<tr><td scope='row'>" + info[0] + "</td><td>" + info[1] +
            "</td></tr>");
        }
        pw.println("</tbody></div>");
    }
}
```

```

    }

    public String getClientOS(HttpServletRequest request) {
        final String browserDetails = request.getHeader("User-Agent");

        final String lowerCaseBrowser = browserDetails.toLowerCase();
        if (lowerCaseBrowser.contains("windows")) {
            return "Windows";
        } else if (lowerCaseBrowser.contains("mac")) {
            return "Mac";
        } else if (lowerCaseBrowser.contains("x11")) {
            return "Unix";
        } else if (lowerCaseBrowser.contains("android")) {
            return "Android";
        } else if (lowerCaseBrowser.contains("iphone")) {
            return "iPhone";
        } else {
            return "UnKnown, More-Info: " + browserDetails;
        }
    }

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        doGet(request, response);
    }
}

```

Html

```

<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1" />
<title>Cookies</title>
<link
rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkglXeMed4M0jlfIDPvg6uqKI2xXr2"
crossorigin="anonymous"
/>
<script defer
src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
integrity="sha384-
DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj"
crossorigin="anonymous"
></script>
<script defer
src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDyx"
crossorigin="anonymous"

```

```
></script>
</head>
<style>
  #main {
    width: 100vw;
    height: 100vh;
    display: flex;
    padding: 15px;
    justify-content: center;
    align-items: center;
  }
  .btn{
    width: 100%;
    height: 100%
  }

</style>
<body>
<form
  action="ClientInfo"
  method="get"
  id="main"
  >
  <button id="submit-btn" type="submit" class="btn btn-danger btn-block">
    <h5>Get Browser Information</h5>
  </button>
</form>
</body>
</html>
```

Outputs



Get Browser Information

Browser Info

Name	Value
User Agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.198 Safari/537.36
Client IP Address	0:0:0:0:0:0:1
Requested URL	http://localhost:8080/Exp24/ClientInfo
Client OS	Windows