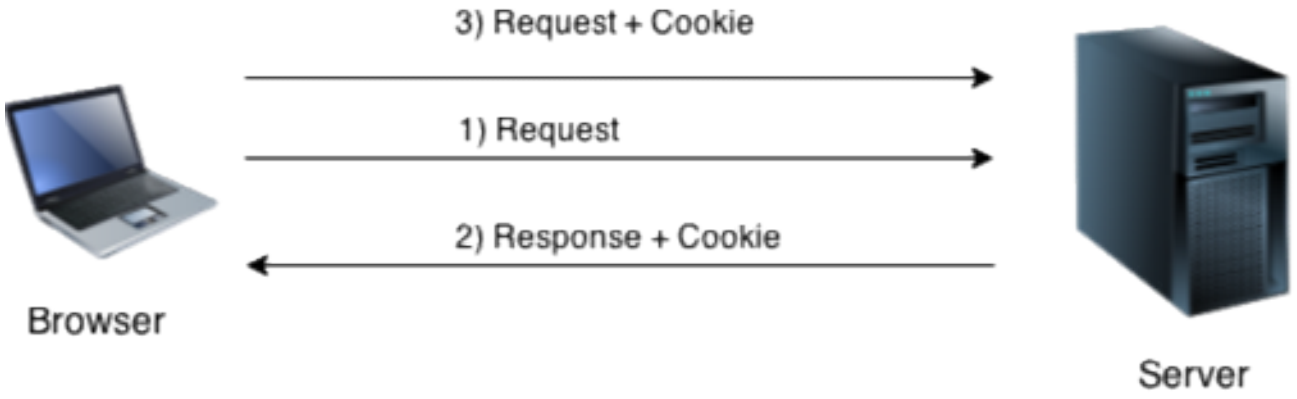
Cookies

Introduction

- A **cookie** is a small piece of information that is persisted between the multiple client requests.
- A cookie has a name, a single value, and optional attributes such as a comment, path and domain qualifiers, a maximum age, and a version number.
- By default, each request is considered as a new request.
- In cookies technique, we add cookie with response from the servlet.
- So cookie is stored in the cache of the browser.
- After that if request is sent by the user, cookie is added with request by default. Thus, we recognize the user as the old user.



Types of Cookie

- There are 2 types of cookies in servlets.
  - Non-persistent cookie
  - Persistent cookie
- **Non-persistent cookie**
  - It is **valid for single session** only. It is removed each time when user closes the browser.
- **Persistent cookie**
  - It is **valid for multiple session** . It is not removed each time when user closes the browser. It is removed only if user logout or signout.

Advantages & Disadvantages

- Advantage of Cookies
  - Simplest technique of maintaining the state.
  - Cookies are maintained at client side.
- Disadvantage of Cookies
  - It will not work if cookie is disabled from the browser.
  - Only textual information can be set in Cookie object.

Cookie class

- **javax.servlet.http.Cookie** class provides the functionality of using cookies.

Constructor	Description
Cookie()	constructs a cookie.
Cookie(String name, String value)	constructs a cookie with a specified name and value.

Method	Description
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.

HelloForm- cookies

```
// Import required java libraries
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

// Extend HttpServlet class
public class HelloForm extends HttpServlet {

  public void doGet(HttpServletRequest request,
                    HttpServletResponse response)
            throws ServletException, IOException
  {
     // Create cookies for first and last names.
     Cookie firstName = new Cookie("first_name",
                        request.getParameter("first_name"));
     Cookie lastName = new Cookie("last_name",
                        request.getParameter("last_name"));

     // Set expiry date after 24 Hrs for both the cookies.
     firstName.setMaxAge(60*60*24);
     lastName.setMaxAge(60*60*24);

     // Add both the cookies in the response header.
     response.addCookie( firstName );
     response.addCookie( lastName );
```

```
 // Set response content type
     response.setContentType("text/html");

     PrintWriter out = response.getWriter();
     String title = "Setting Cookies Example";
     out.println("<html>");
     out.println("<head>");
     out.println("<title>This a response page</title>");
     out.println("</head>");
     out.println("<body>");
     out.println("<ul>");
      out.println("<li>");
     out.println("First Name:"+request.getParameter("first_name"));
     out.println("<li>");
     out.println("Last Name:"+request.getParameter("last_name"));
     out.println("</ul>");
     out.println("</body>");
     out.println("</html>");

  }
}
```

ReadCookies

```
// Import required java libraries
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

// Extend HttpServlet class
public class ReadCookies extends HttpServlet {

  public void doGet(HttpServletRequest request,
                    HttpServletResponse response)
            throws ServletException, IOException
  {
     Cookie cookie = null;
                    Cookie[] cookies = null;
     // Get an array of Cookies associated with this domain
     cookies = request.getCookies();

                    // Set response content type
     response.setContentType("text/html");
```

```
   PrintWriter out = response.getWriter();
    String title = "Reading Cookies Example";
    String docType =
    "<!doctype html public \"-//w3c//dtd html 4.0 " +
    "transitional//en\">\n";
    out.println(docType +
            "<html>\n" +
            "<head><title>" + title + "</title></head>\n" +
            "<body bgcolor=\"#f0f0f0\">\n" );
    if( cookies != null ){
      out.println("<h2> Found Cookies Name and Value</h2>");
      for (int i = 0; i < cookies.length; i++){
        cookie = cookies[i];
        out.print("Name : " + cookie.getName( ) + ",  ");
        out.print("Value: " + cookie.getValue( )+" <br/>");
      }
    }else{
       out.println(
        "<h2>No cookies founds</h2>");
    }     out.println("</body>");
    out.println("</html>");
  }
}
```

DeleteCookies

```
// Import required java libraries
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

// Extend HttpServlet class
public class DeleteCookies extends HttpServlet {

  public void doGet(HttpServletRequest request,
                    HttpServletResponse response)
            throws ServletException, IOException
  {
     Cookie cookie = null;
                    Cookie[] cookies = null;
     // Get an array of Cookies associated with this domain
     cookies = request.getCookies();

                    // Set response content type
     response.setContentType("text/html");

     PrintWriter out = response.getWriter();
     String title = "Delete Cookies Example";
```

```
String docType =
    "<!doctype html public \"-//w3c//dtd html 4.0 " +
    "transitional//en\">\n";
    out.println(docType +
            "<html>\n" +
            "<head><title>" + title + "</title></head>\n" +
            "<body bgcolor=\"#f0f0f0\">\n" );
     if( cookies != null ){
       out.println("<h2> Cookies Name and Value</h2>");
       for (int i = 0; i < cookies.length; i++){
          cookie = cookies[i];
          if((cookie.getName( )).compareTo("first_name") == 0 ){
              cookie.setMaxAge(0);
              response.addCookie(cookie);
              out.print("Deleted cookie : " +
                        cookie.getName( ) + "<br/>");
          }
          out.print("Name : " + cookie.getName( ) + ",  ");
          out.print("Value: " + cookie.getValue( )+" <br/>");
       }
    }else{
        out.println(
         "<h2>No cookies founds</h2>");
    }
    out.println("</body>");
    out.println("</html>");
  }
}
```

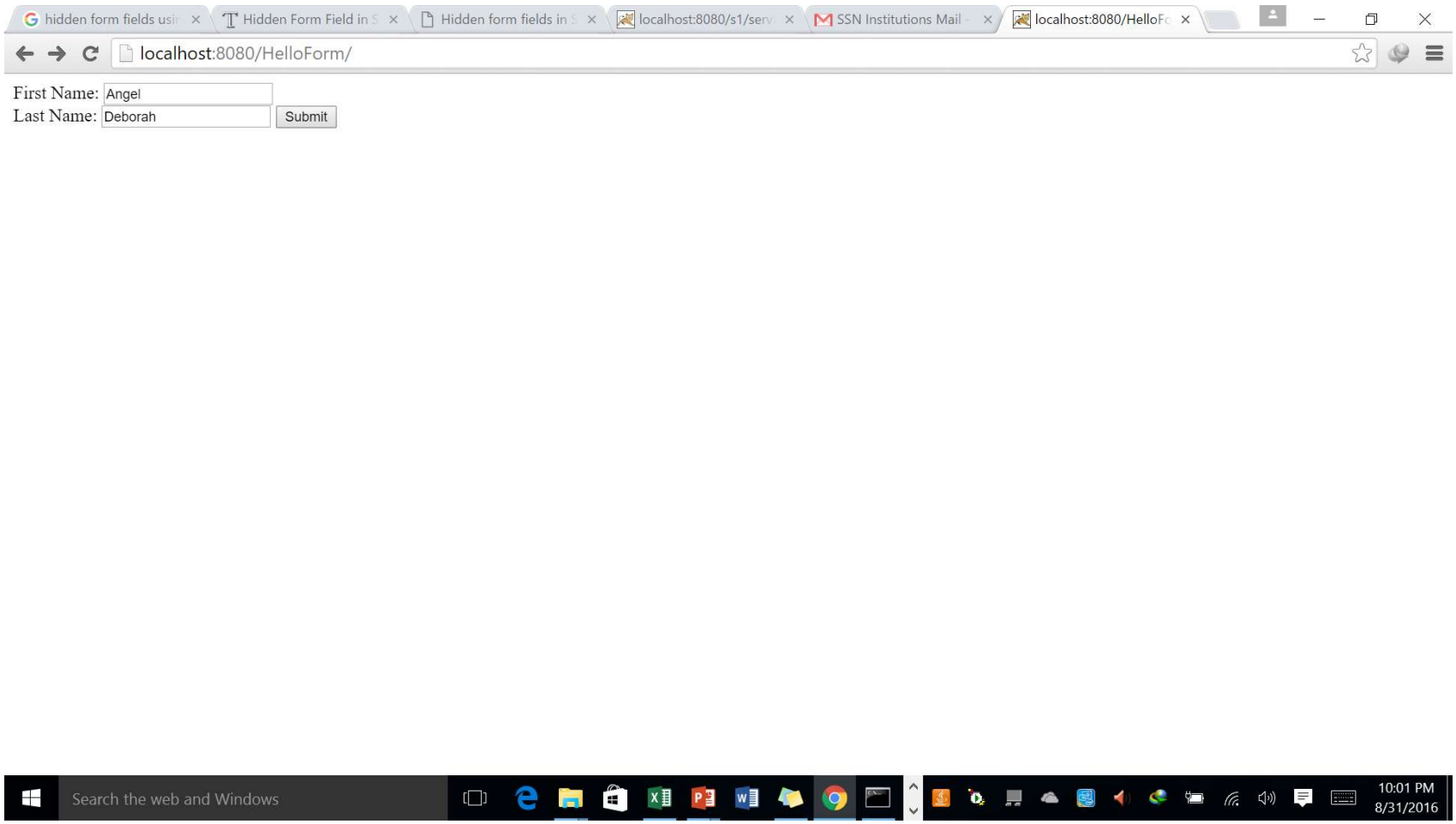
web.xml

```
<web-app>
 <servlet>
   <servlet-name>HelloForm</servlet-name>
   <servlet-class>HelloForm</servlet-class>
 </servlet>
 <servlet-mapping>
   <servlet-name>HelloForm</servlet-name>
   <url-pattern>/servlet6</url-pattern>
 </servlet-mapping>
 <servlet>
   <servlet-name>ReadCookies</servlet-name>
   <servlet-class>ReadCookies</servlet-class>
 </servlet>
 <servlet-mapping>
   <servlet-name>ReadCookies</servlet-name>
   <url-pattern>/ReadCookies</url-pattern>
 </servlet-mapping>
 <servlet>
   <servlet-name>DeleteCookies</servlet-name>
   <servlet-class>DeleteCookies</servlet-class>
 </servlet>
 <servlet-mapping>
   <servlet-name>DeleteCookies</servlet-name>
   <url-pattern>/DeleteCookies</url-pattern>
 </servlet-mapping>
</web-app>
```

index.html

```
<html>
<body>
<form action="servlet6" method="GET">
First Name: <input type="text" name="first_name">
<br />
Last Name: <input type="text" name="last_name" />
<input type="submit" value="Submit" />
</form>
</body>
</html>
```

Output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Hidden Form Field in S
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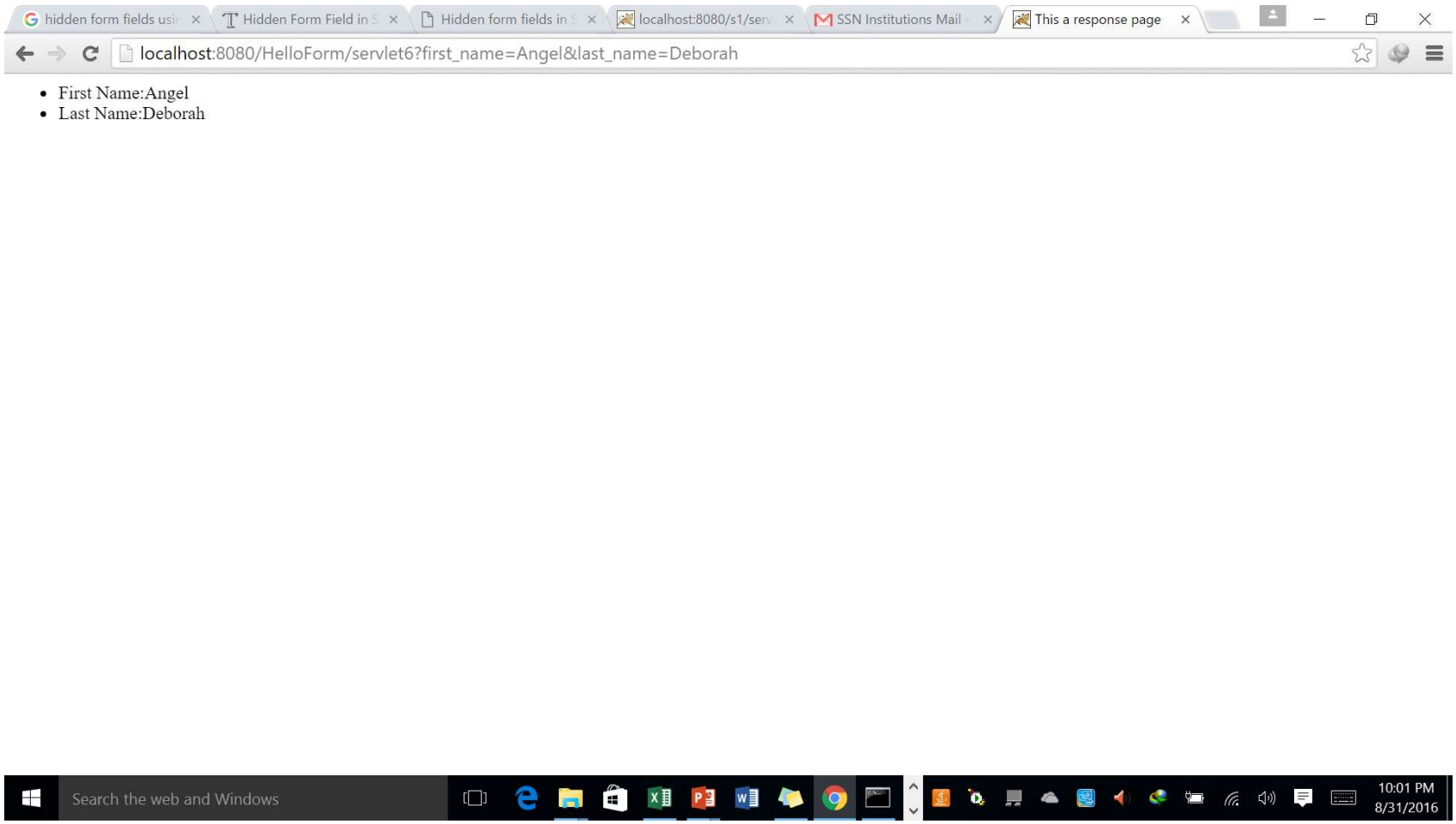
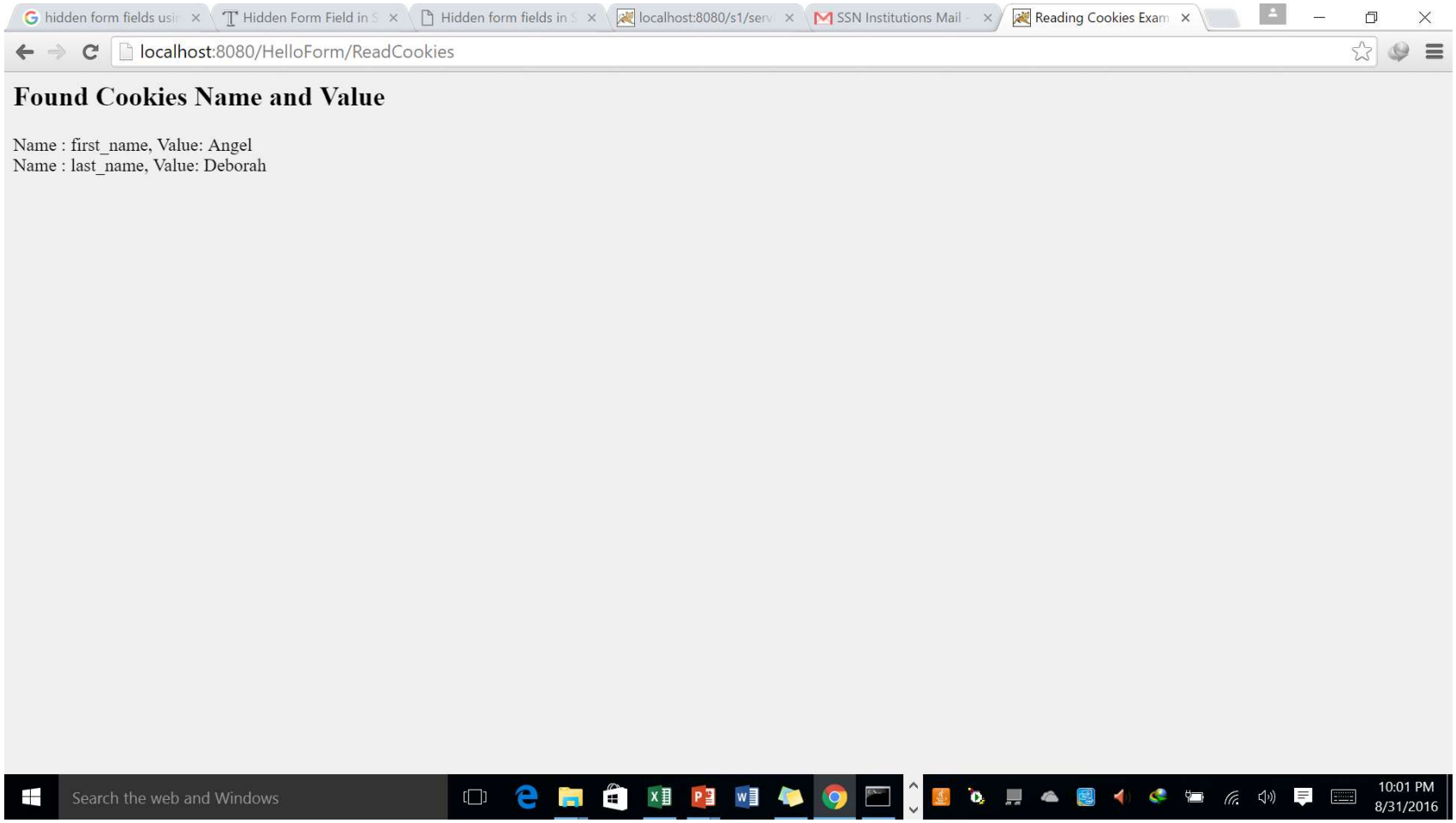
localhost:8080/s1/serv
SSN Institutions Mail -
localhost:8080/HelloFo
localhost:8080/HelloForm/
First Name: Angel
Last Name: Deborah
Submit
Search the web and Windows
10:01 PM
8/31/2016

Output


hidden form fields usi
Hidden Form Field in S
Hidden form fields in S
localhost:8080/s1/serv
SSN Institutions Mail -
This a response page
localhost:8080/HelloForm/servlet6?first_name=Angel&last_name=Deborah
First Name:Angel
Last Name:Deborah
Search the web and Windows
10:01 PM
8/31/2016

Output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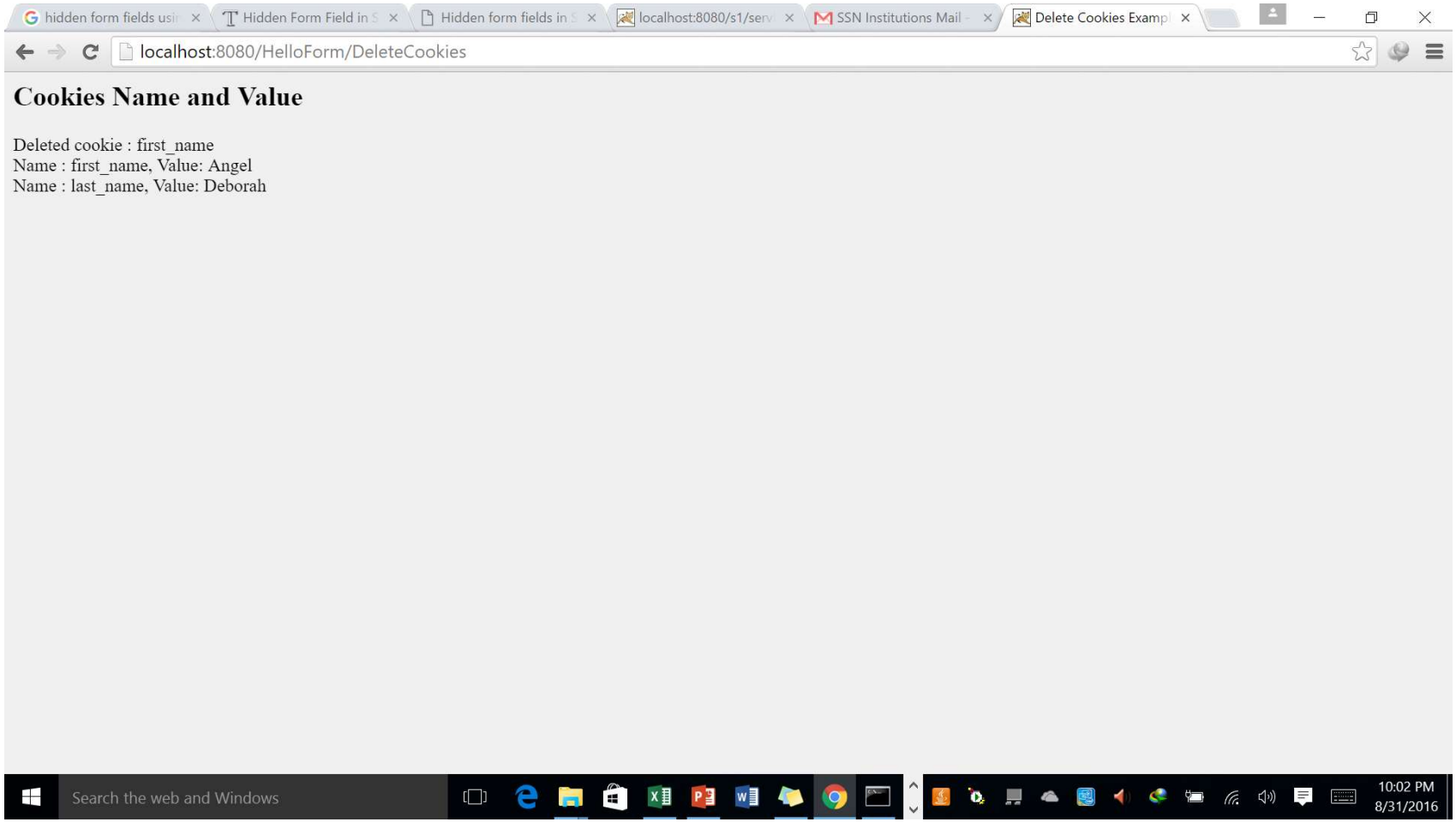
Hidden Form Field in S
Hidden form fields in S
localhost:8080/s1/serv
SSN Institutions Mail -
Reading Cookies Exam
localhost:8080/HelloForm/ReadCookies
Found Cookies Name and Value
Name : first_name, Value: Angel
Name : last_name, Value: Deborah
Search the web and Windows
10:01 PM
8/31/2016

Output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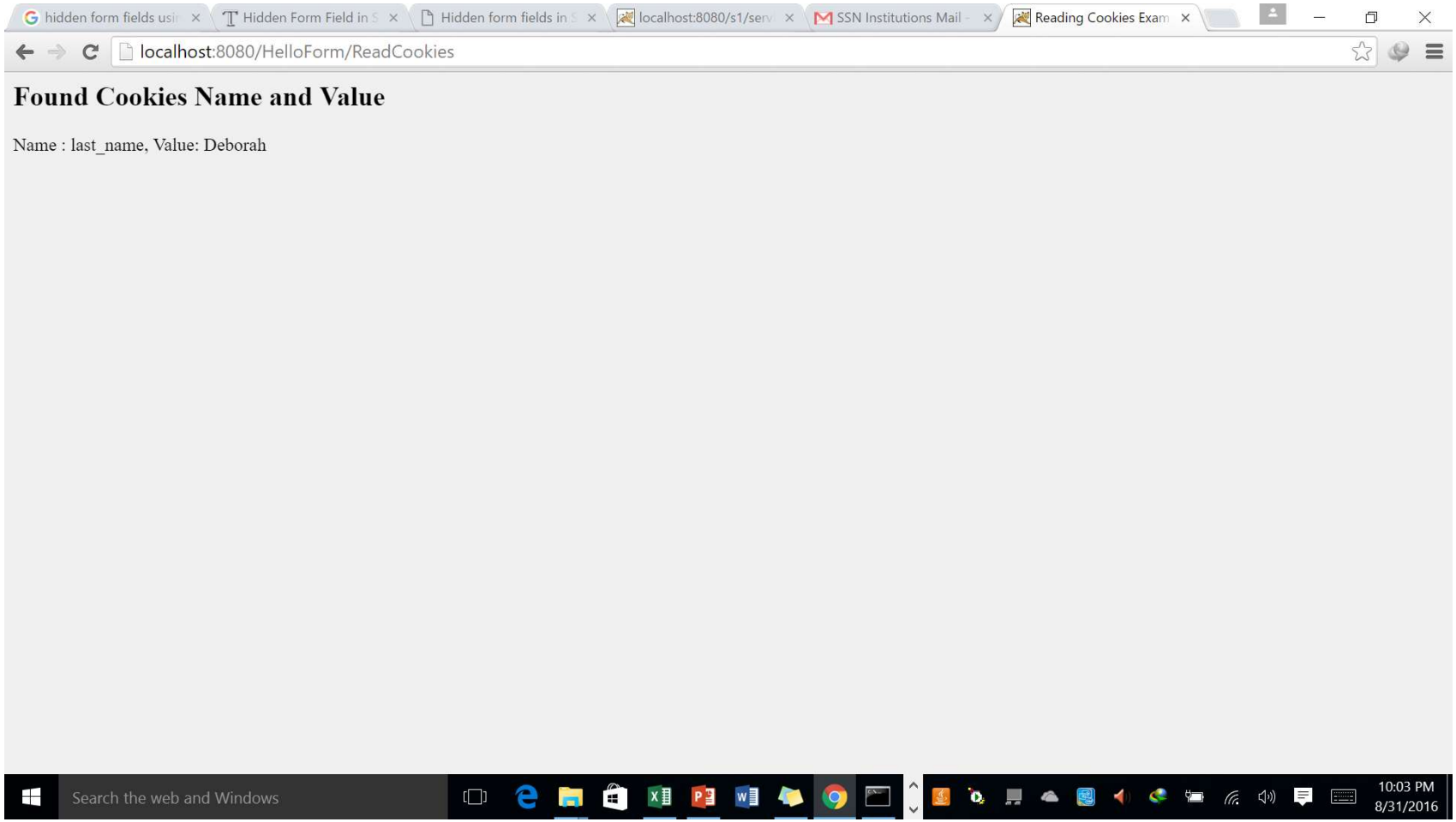
Hidden Form Field in S
Hidden form fields in S
localhost:8080/s1/serv
SSN Institutions Mail -
Delete Cookies Exampl
localhost:8080/HelloForm/DeleteCookies
Cookies Name and Value
Deleted cookie : first_name
Name : first_name, Value: Angel
Name : last_name, Value: Deborah
Search the web and Windows
10:02 PM
8/31/2016

Output


hidden form fields usi
Hidden Form Field in S
Hidden form fields in S
localhost:8080/s1/serv
SSN Institutions Mail -
Reading Cookies Exam
localhost:8080/HelloForm/ReadCookies
Found Cookies Name and Value
Name : last_name, Value: Deborah
Search the web and Windows
10:03 PM
8/31/2016