JAVA SERVLET PROGRAMMING

Learning Goals

Understand Servlet

Can use Servlet to develop web application

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- ◊ RequestDispatcher
- ◊ Servlet Context
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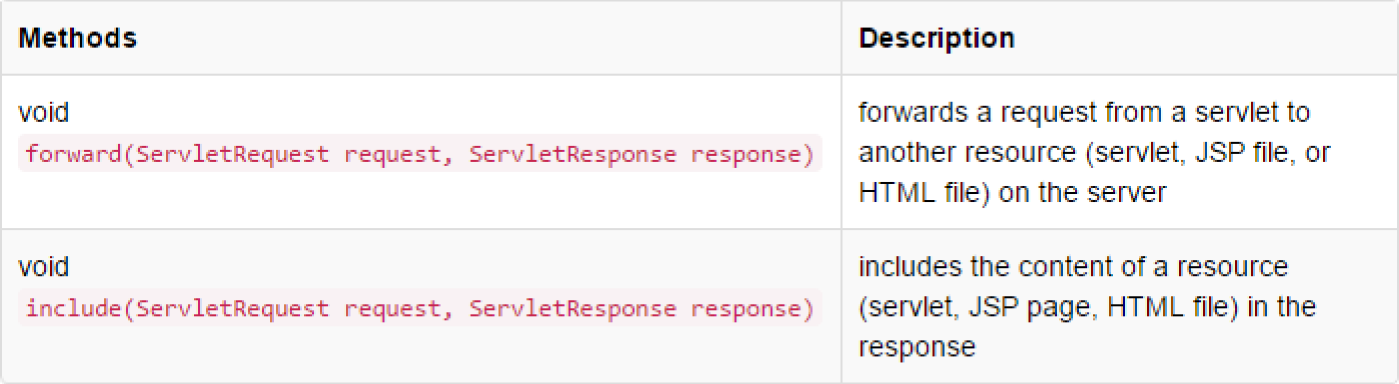
Section 1

REQUESTDISPATCHER AND SERVLETCONTEXT

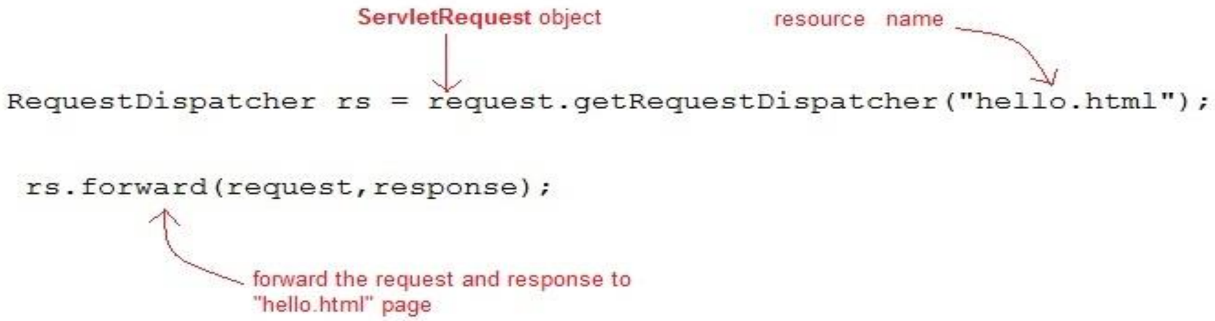
RequestDispatcher

- **RequestDispatcher** is an interface, implementation of which defines an object which can dispatch request to any resources(such as HTML, Image, JSP, Servlet) on the server.
- **Methods:**



Methods	Description
void `forward(ServletRequest request, ServletResponse response)`	forwards a request from a servlet to another resource (servlet, JSP file, or HTML file) on the server
void `include(ServletRequest request, ServletResponse response)`	includes the content of a resource (servlet, JSP page, HTML file) in the response

- **Example:**



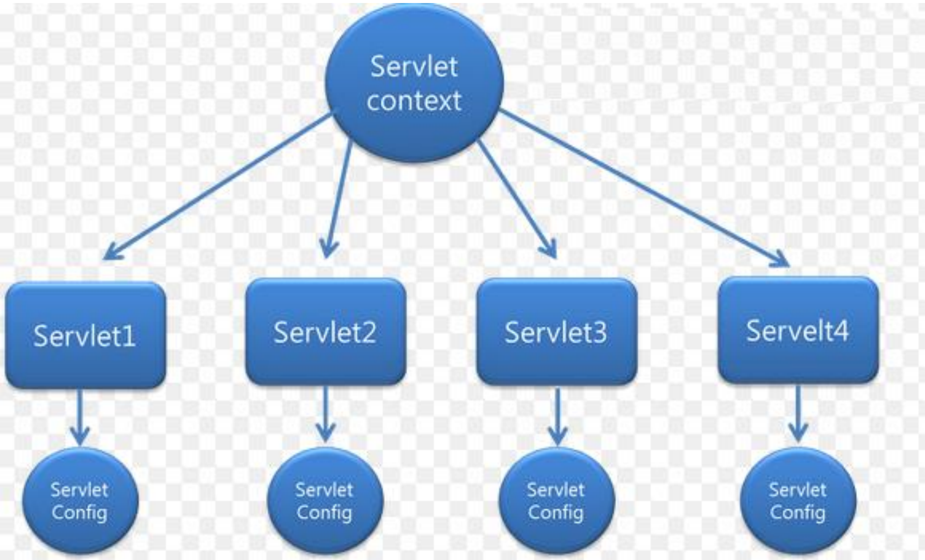
```
RequestDispatcher rs = request.getRequestDispatcher("hello.html");

rs.forward(request,response);
```

RequestDispatcher

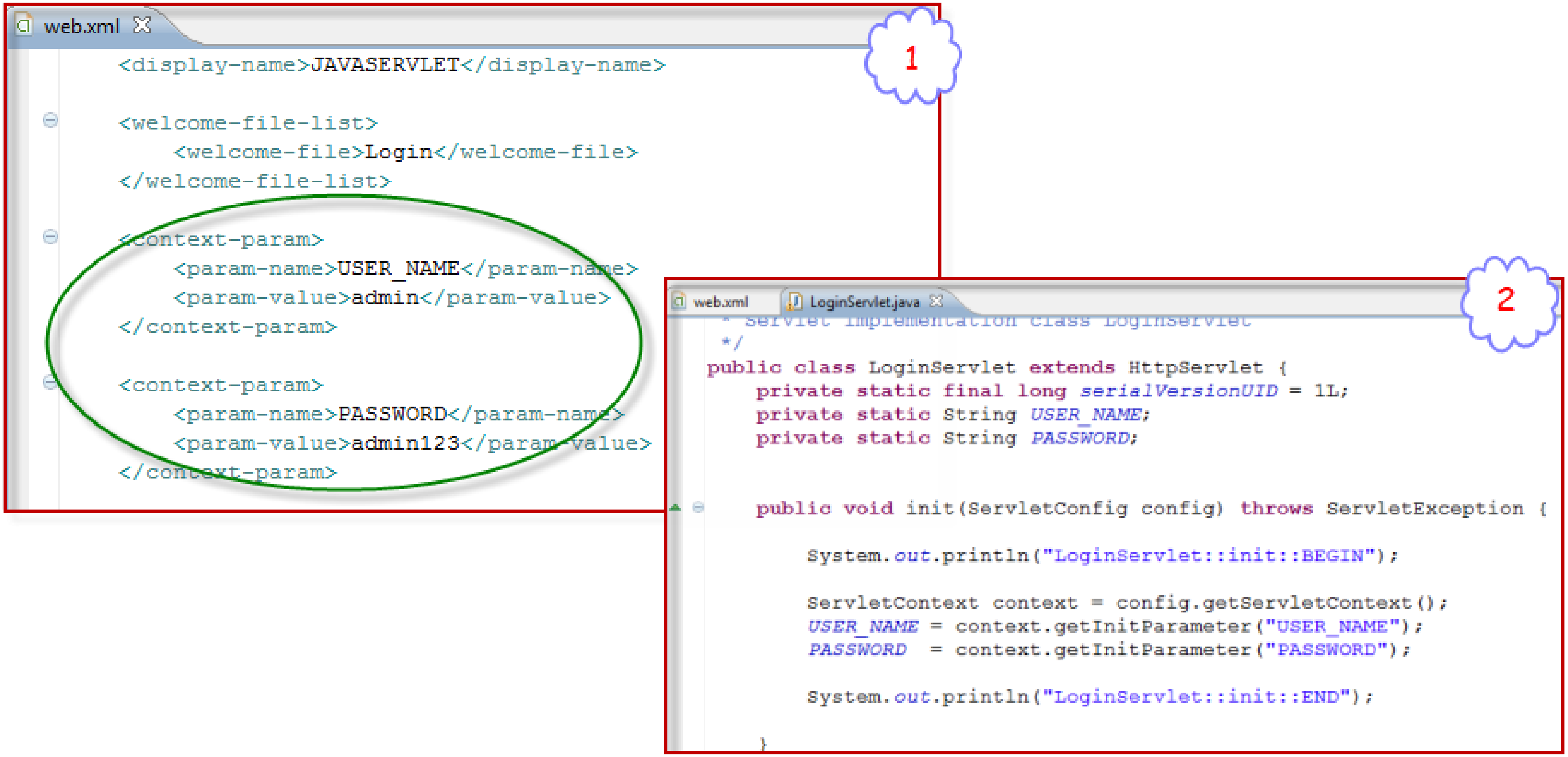
- **redirection vs request dispatching**
- The main difference between a **redirection** and a **request dispatching:**
  - ✓ redirection makes the client(browser) create a new request to get to the resource, the user can see the new URL;
  - ✓ request dispatch get the resource in same request and URL does not changes.

ServletContext

- An object of ServletContext is created by the web container at time of deploying the project. This object can be used to **get configuration information from web.xml file**.
- Servlet Context has 3 main methods:
  - ✓ GetAttribute ()
  - ✓ SetAttribute ()
  - ✓ RemoveAttribute ()
- Servlet Context help provides communication between the servlet
- Servlet Context can also be used to obtain configuration information web.xml.



ServletContext Example



web.xml

```
    <display-name>JAVASERVLET</display-name>

    <welcome-file-list>
        <welcome-file>Login</welcome-file>
    </welcome-file-list>

    <context-param>
        <param-name>USER_NAME</param-name>
        <param-value>admin</param-value>
    </context-param>

    <context-param>
        <param-name>PASSWORD</param-name>
        <param-value>admin123</param-value>
    </context-param>
```

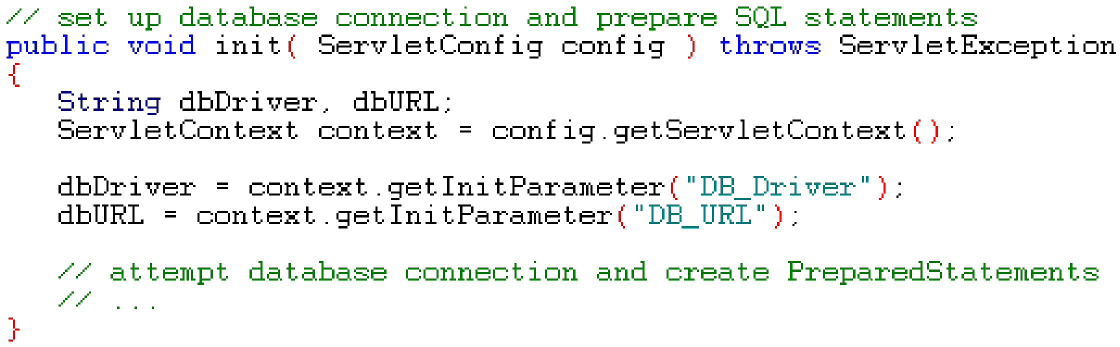
web.xml LoginServlet.java

```
 * Servlet implementation class LoginServlet
 */
public class LoginServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;
    private static String USER_NAME;
    private static String PASSWORD;


    public void init(ServletConfig config) throws ServletException {

        System.out.println("LoginServlet::init::BEGIN");

        ServletContext context = config.getServletContext();
        USER_NAME = context.getInitParameter("USER_NAME");
        PASSWORD  = context.getInitParameter("PASSWORD");

        System.out.println("LoginServlet::init::END");

    }
```

Servlet Context

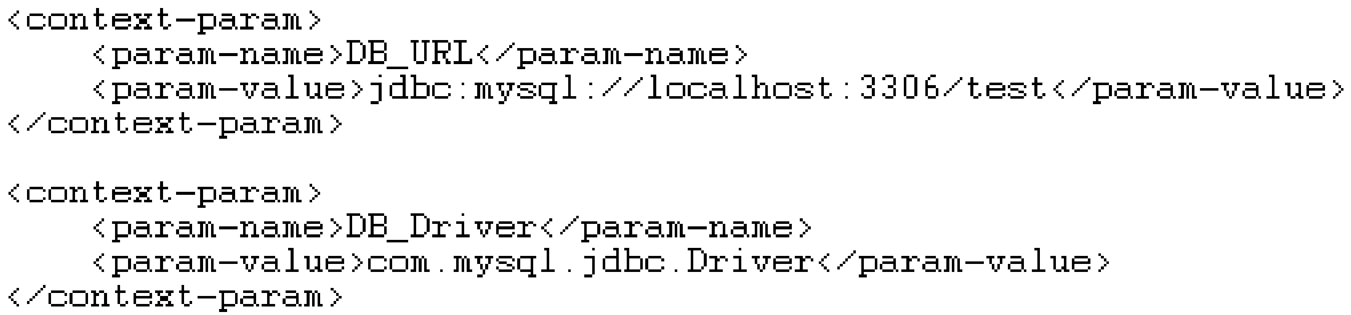
Sample

- We can change the init() method of the SurveyServlet as below:



```
// set up database connection and prepare SQL statements
public void init( ServletConfig config ) throws ServletException
{
   String dbDriver, dbURL;
   ServletContext context = config.getServletContext();

   dbDriver = context.getInitParameter("DB_Driver");
   dbURL = context.getInitParameter("DB_URL");

   // attempt database connection and create PreparedStatements
   // ...
}
```

- Then we need to amend the web.xml file to specify the initial context parameters:



```
<context-param>
    <param-name>DB_URL</param-name>
    <param-value>jdbc:mysql://localhost:3306/test</param-value>
</context-param>

<context-param>
    <param-name>DB_Driver</param-name>
    <param-value>com.mysql.jdbc.Driver</param-value>
</context-param>
```

Section 2

DEMO

Summary

- Introduction to Servlet
- Servlet API
- Servlet Request and Response
- Servlet Context
- Create servlet in Eclipse IDE

Thank you