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// 1. Basic Servlet Example (Handling GET and POST Requests)
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("/hello")
public class HelloServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<h1>Welcome to Java Servlets!</h1>");
    }
}

// 2. Session Management - Using HttpSession
@WebServlet("/session")
public class SessionServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        HttpSession session = request.getSession();
        session.setAttribute("username", "JohnDoe");
        response.getWriter().println("Session created with username: JohnDoe");
    }
}

// 3. RequestDispatcher Example (Login System)
@WebServlet("/login")
public class LoginServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        String username = request.getParameter("username");
        String password = request.getParameter("password");

        if ("admin".equals(username) && "password".equals(password)) {
            request.getRequestDispatcher("/welcome").forward(request, response);
        } else {
            response.sendRedirect("login.html?error=Invalid Credentials");
        }
    }
}

@WebServlet("/welcome")
public class WelcomeServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        response.getWriter().println("Welcome, " + request.getParameter("username"));
    }
}

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// 4. Servlet Filter (Logging)
import javax.servlet.*;
import java.io.IOException;

public class LoggingFilter implements Filter {
    public void doFilter(ServletRequest request, ServletResponse response, FilterChain
chain) throws IOException, ServletException {
        System.out.println("Request received at: " + new java.util.Date());
        chain.doFilter(request, response);
    }
}

// 5. Database Connection (JDBC)
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;

public class DatabaseConnection {
    public static Connection getConnection() throws SQLException, ClassNotFoundException
{
        Class.forName("com.mysql.cj.jdbc.Driver");
        return DriverManager.getConnection("jdbc:mysql://localhost:3306/testdb", "root",
"password");
    }
}
```