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Web Technology Practical 5

Title: Implement the sample program demonstrating the use of Servlet. e.g., Create a database table ebookshop (book_id, book_title, book_author, book_price, quantity) using database like Oracle/MySQL etc. and display (use SQL select query) the table content using servlet

Ebookshop.sql

```
CREATE DATABASE IF NOT EXISTS ebookshop;
```

```
USE ebookshop;
```

```
CREATE TABLE IF NOT EXISTS books (
```

```
    book_id INT AUTO_INCREMENT PRIMARY KEY,
```

```
    book_title VARCHAR(255) NOT NULL,
```

```
    book_author VARCHAR(255) NOT NULL,
```

```
    book_price DECIMAL(10,2) NOT NULL,
```

```
    quantity INT NOT NULL
```

```
);
```

```
INSERT INTO books (book_title, book_author, book_price, quantity) VALUES
```

```
('The Alchemist', 'Paulo Coelho', 9.99, 10),
```

```
('To Kill a Mockingbird', 'Harper Lee', 7.99, 5),
```

```
('1984', 'George Orwell', 8.99, 8),
```

```
('The Great Gatsby', 'F. Scott Fitzgerald', 10.99, 3);
```

The database is as follows:

book_id	book_title	book_author	book_price	quantity
1	The Alchemist	Paulo Coelho	9.99	10
2	To Kill a Mockingbird	Harper Lee	7.99	5
3	1984	George Orwell	8.99	8
4	The Great Gatsby	F. Scott Fitzgerald	10.99	3

The code is as follows:

EbookShopServlet.java

```

import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;

public class EbookshopServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Ebookshop</title></head><body>");
        out.println("<h1>Book List</h1>");
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn = DriverManager.getConnection(
                "jdbc:mysql://localhost:3306/ebookshop", "root", "");
            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT * FROM books");
            out.println("<table border='1'>");
            out.println("<tr><th>ID</th><th>Title</th><th>Author</th><th>Price</th><th>Quantity</th></tr>");
;
            while (rs.next()) {
                out.println("<tr><td>" + rs.getInt("book_id") + "</td>");
                out.println("<td>" + rs.getString("book_title") + "</td>");
                out.println("<td>" + rs.getString("book_author") + "</td>");
                out.println("<td>" + rs.getDouble("book_price") + "</td>");
                out.println("<td>" + rs.getInt("quantity") + "</td></tr>");
            }
            out.println("</table>");
            rs.close();
            stmt.close();
        }
    }
}

```

```
    conn.close();
} catch (Exception e) {
    out.println("<p>Error: " + e.getMessage() + "</p>");
}
out.println("</body></html>");
}
}
```

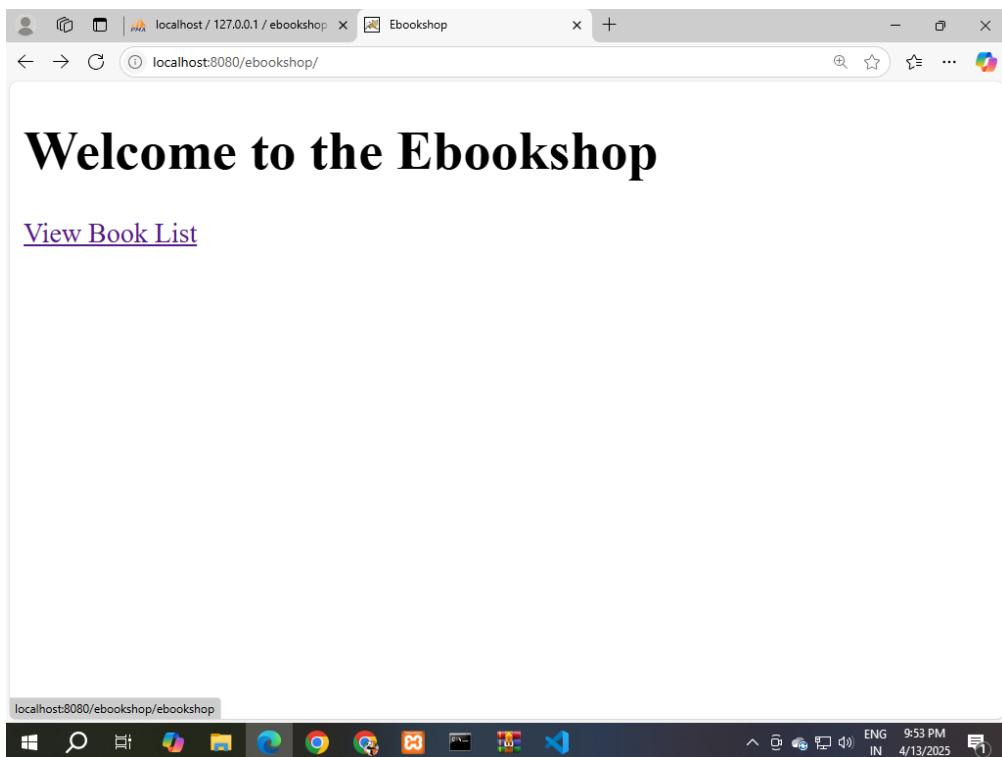
Index.html

```
<!DOCTYPE html>
<html>
<head>
<title>Ebookshop</title>
</head>
<body>
<h1>Welcome to the Ebookshop</h1>
<p><a href="/ebookshop">View Book List</a></p>
</body>
</html>
```

Web.xml (used for mapping the servlet class)

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"
    version="3.1">
    <servlet>
        <servlet-name>EbookshopServlet</servlet-name>
        <servlet-class>EbookshopServlet</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>EbookshopServlet</servlet-name>
        <url-pattern>/ebookshop</url-pattern>
    </servlet-mapping>
</web-app>
```

The output is as follows:



A screenshot of a Microsoft Edge browser window. The title bar says "localhost / 127.0.0.1 / ebookshop" and the tab name is "Ebookshop". The address bar shows "localhost:8080/ebookshop/ebookshop". The main content area displays the text "Book List" in a large, bold, black font. Below it is a table showing a list of books with columns: ID, Title, Author, Price, and Quantity. The data is as follows:

ID	Title	Author	Price	Quantity
1	The Alchemist	Paulo Coelho	9.99	10
2	To Kill a Mockingbird	Harper Lee	7.99	5
3	1984	George Orwell	8.99	8
4	The Great Gatsby	F. Scott Fitzgerald	10.99	3

At the bottom of the browser window, the status bar shows "localhost:8080/ebookshop/ebookshop". The taskbar at the bottom of the screen also has an "Ebookshop" icon.

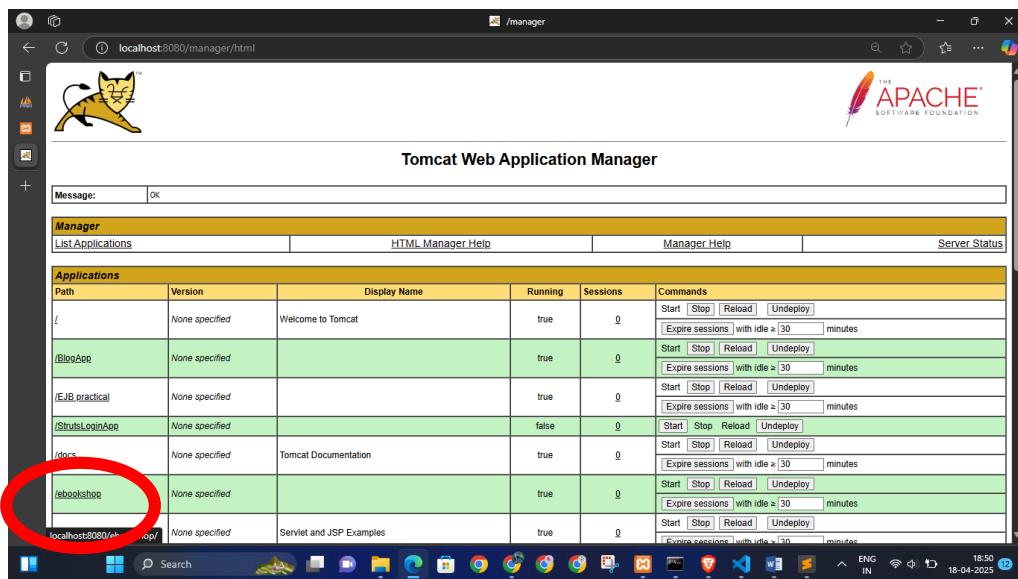
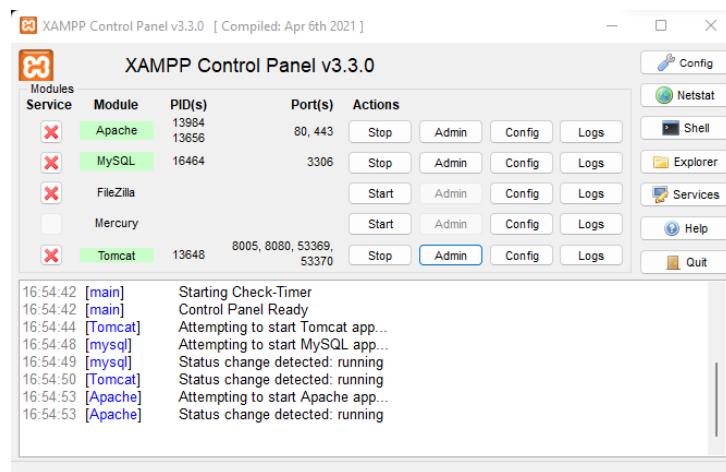
The directory structure is as follows:

```

    ▼ ebookshop
        ▼ WEB-INF
            ▼ classes
                /* EbookshopServlet.java
            ▼ lib
                101 011 mysql-connector-j-9.2.0.jar
                101 011 servlet-api.jar
                <> web.xml
                /* create_ebookshop.sql
                /* EbookshopServlet.java
                <> home.jsp
                <> index.html
                101 011 mysql-connector-j-9.2.0.jar

```

The servlet is run using the XAMPP server TOMCAT server available inside it:



Conclusion: Thus in this way I have successfully created a servlet and retrieved information through it