Phase – 2 Practice Project: Assisted Practice

22. Configure Hibernate using XML in Eclipse IDE.

- **Code**
- ✓ **Database Code**

create database ecommerce1;

use ecommerce1;

CREATE TABLE eproduct (

      ID bigint primary key auto_increment,

      name varchar(100), price decimal(10,2),

      date_added timestamp default now()

)

INSERT INTO eproduct(name, price) VALUES ('HP Laptop ABC', 12000);

INSERT INTO eproduct(name, price) VALUES ('Acer Laptop ABC', 14000);

INSERT INTO eproduct(name, price) VALUES ('Lenovo Laptop ABC', 12000);

select * from eproduct;

✓ hibernate.cfg.xml

```xml
<?xml version='1.0' encoding='utf-8'?>
<!DOCTYPE hibernate-configuration PUBLIC
"-//Hibernate/Hibernate Configuration DTD 3.0//EN"
"http://www.hibernate.org/dtd/hibernate-configuration-3.0.dtd">
<hibernate-configuration>
  <session-factory>
    <!-- Database connection settings -->
    <property
name="connection.driver_class">com.mysql.cj.jdbc.Driver</property>
    <property
name="connection.url">jdbc:mysql://localhost:3306/ecommerce1</property>
    <property name="connection.username">root</property>
    <property name="connection.password">Arun121212</property>

    <mapping resource="com/ecommerce/EProduct.hbm.xml"/>
  </session-factory>
</hibernate-configuration>
```

✓ HibernateUtil.java

```java
package com.ecommerce;

import org.hibernate.SessionFactory;
import org.hibernate.boot.Metadata;
import org.hibernate.boot.MetadataSources;
import org.hibernate.boot.registry.StandardServiceRegistry;
import org.hibernate.boot.registry.StandardServiceRegistryBuilder;

public class HibernateUtil {

        private static final SessionFactory sessionFactory;

        static {
                try {
                        StandardServiceRegistry standardRegistry = new
StandardServiceRegistryBuilder()

.configure("hibernate.cfg.xml").build();
                        Metadata metaData = new
MetadataSources(standardRegistry).getMetadataBuilder().build();
                        sessionFactory =
metaData.getSessionFactoryBuilder().build();
                } catch (Throwable th) {
                        throw new ExceptionInInitializerError(th);
                }
        }

        public static SessionFactory getSessionFactory() {
                return sessionFactory;
        }
}
```

✓ index.html

```html
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Hibernate With XML</title>
</head>
<body>
<h1>Hibernate with XML</h1>
<a href="list">List Products</a>

</body>
</html>
```

✓ EProduct.java

```java
package com.ecommerce;

import java.math.BigDecimal;
import java.util.Date;

public class EProduct {
        private long ID;
        private String name;
        private BigDecimal price;
        private Date dateAdded;

        public EProduct() {

        }
        public EProduct(long id, String name, BigDecimal price, Date
dateAdded) {
                this.ID = id;
                this.name = name;
                this.price = price;
                this.dateAdded = dateAdded;
        }

        public long getID() {return this.ID; }
        public String getName() { return this.name;}
        public BigDecimal getPrice() { return this.price;}
        public Date getDateAdded() { return this.dateAdded;}

        public void setID(long id) { this.ID = id;}
        public void setName(String name) { this.name = name;}
        public void setPrice(BigDecimal price) { this.price = price;}
        public void setDateAdded(Date date) { this.dateAdded = date;}


}
```
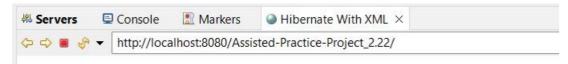
✓ ListProducts.java

```java
package com;

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

import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.transaction.*;
import javax.xml.bind.*;

import java.io.Serializable;
import java.util.List;
```

```java
import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.Transaction;
import org.hibernate.cfg.Configuration;


import com.ecommerce.EProduct;
import com.ecommerce.HibernateUtil;

/**
 * Servlet implementation class ListProducts
 */
// @WebServlet("/list")
public class ListProducts extends HttpServlet {
        private static final long serialVersionUID = 1L;



    /**
 * @see HttpServlet#HttpServlet()
 */
    public ListProducts() {
        super();
        // TODO Auto-generated constructor stub
    }

        /**
         * @see HttpServlet#doGet(HttpServletRequest request,
HttpServletResponse response)
         */
        protected void doGet(HttpServletRequest request,
HttpServletResponse response) throws ServletException, IOException {
                // TODO Auto-generated method stub
                try {
                        SessionFactory factory =
HibernateUtil.getSessionFactory();

                        Session session = factory.openSession();
                        // using HQL
                        List<EProduct> list = session.createQuery("from
EProduct").list();

                        session.close();

                         PrintWriter out = response.getWriter();
                         out.println("<html><body>");
                         out.println("<b>Product Listing</b><br>");

                         for(EProduct p: list) {
                                out.println("ID: " +
String.valueOf(p.getID()) + ", Name: " + p.getName() +
                                                ", Price: " +
String.valueOf(p.getPrice()) + ", Date Added: " +
p.getDateAdded().toString() + "<br>");
                        }
```

```java
            out.println("</body></html>");


        } catch (Exception ex) {
                throw ex;
        }

    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request,
HttpServletResponse response)
     */
    protected void doPost(HttpServletRequest request,
HttpServletResponse response) throws ServletException, IOException {
            // TODO Auto-generated method stub
            doGet(request, response);
    }

}
```
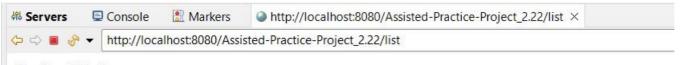
✓ **EProduct.hbm.xml**

```xml
<?xml version="1.0"?>
<!DOCTYPE hibernate-mapping PUBLIC
"-//Hibernate/Hibernate Mapping DTD 3.0//EN"
"http://www.hibernate.org/dtd/hibernate-mapping-3.0.dtd">
<hibernate-mapping package="com.ecommerce">
    <class name="EProduct" table="eproduct">
        <id name="ID" column="ID">
            <generator class="increment"/>
        </id>
        <property name="name" type="string" column="NAME"/>
        <property name="price" type="big_decimal" column="PRICE"/>
        <property name="dateAdded" type="timestamp"
column="DATE_ADDED"/>

    </class>
</hibernate-mapping>
```

✓ **web.xml**

```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID"
version="2.5">
  <display-name>Assisted-Practice-Project 2.22</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
```

```xml
      <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <description></description>
    <display-name>ListProducts</display-name>
    <servlet-name>ListProducts</servlet-name>
    <servlet-class>com.ListProducts</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>ListProducts</servlet-name>
    <url-pattern>/list</url-pattern>
  </servlet-mapping>
</web-app>
```

- **Output**