

8.Demonstrate component mapping in Hibernate.

EProduct.java

```
package com.ecommerce;

import java.math.BigDecimal;
import java.util.Collection;
import java.util.Date;
import java.util.List;
import java.util.Set;
import java.util.Map;

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

    public EProduct() {

    }

    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 ProductParts getParts() { return this.parts;}

    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;}
    public void setParts(ProductParts parts) { this.parts = parts;}
}
```

HibernateUtil.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;
    }
}

```

ProductDetails.java

```

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.math.BigDecimal;
import java.util.ArrayList;
import java.util.Calendar;
import java.util.Collection;
import java.util.List;
import java.util.Map;
import java.util.Set;

```

```
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;
import com.ecommerce.ProductParts;
```

```
@WebServlet("/ProductDetails")
public class ProductDetails extends HttpServlet {
    private static final long serialVersionUID = 1L;
```

```
    public ProductDetails() {
        super();
        // TODO Auto-generated constructor stub
    }
```

```
    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        // TODO Auto-generated method stub
```

```
        try {
            SessionFactory factory = HibernateUtil.getSessionFactory();
```

```
            Session session = factory.openSession();
```

```
            List<EProduct> list = session.createQuery("from EProduct").list();
```

```
            PrintWriter out = response.getWriter();
            out.println("<html><body>");
```

```
            out.println("<b>Component Mapping</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());
```

```
                ProductParts parts = p.getParts();
```

```
                out.println("Parts = " + parts.getCpu() + ", " + parts.getHdd() +
```

```
                ", " + parts.getRam());
```

```
                out.println("<hr>");
```

```

        }

        session.close();

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

    } catch (Exception ex) {
        throw ex;
    }
}

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

```

ProductParts.java

```

package com.ecommerce;

public class ProductParts {

    private String hdd;
    private String cpu;
    private String ram;

    public String getHdd() { return this.hdd;}
    public String getCpu() { return this.cpu;}
    public String getRam() { return this.ram;}

    public void setHdd(String value) { this.hdd= value;}
    public void setCpu(String value) { this.cpu= value;}
    public void setRam(String value) { this.ram= value;}

}

```

index.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<a href="details">Product Details</a><br>

</body>
</html>
```

hibernate.cfg.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.jdbc.Driver</
property>
    <property name="connection.url">jdbc:mysql://localhost:3306/mydb</
property>
    <property name="connection.username">root</property>
    <property name="connection.password">23@Swetha</property>
    <!-- SQL dialect -->
    <property name="dialect">org.hibernate.dialect.MySQL57Dialect</property>

    <!-- Echo all executed SQL to stdout -->
    <property name="show_sql">false</property>

    <!-- Use annotation basaed mapping metadata -->
    <mapping class="com.samples.domain.Message"/>
  </session-factory>
</hibernate-configuration>
```

Web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee" xsi:schemaLocation="http://
xmlns.jcp.org/xml/ns/javaee http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd"
id="WebApp_ID" version="4.0">
  <display-name>ph2-As-set3-prj7</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>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <servlet-name>ProductDetails</servlet-name>
    <servlet-class>ProductDetails</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>ProductDetails</servlet-name>
    <url-pattern>/details</url-pattern>
  </servlet-mapping>
</web-app>
```

Product.hbm.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<!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" type="long" column="ID">
      <generator class="identity"/>
    </id>
    <property name="name" type="string" column="NAME"/>
    <property name="price" type="big_decimal" column="PRICE"/>
    <property name="dateAdded" type="timestamp" column="DATE_ADDED">
      <component name="parts" class="com.ecommerce.ProductParts">
        <property name="hdd" column="parts_hdd" type="string" />
        <property name="cpu" column="parts_cpu" type="string" />
        <property name="ram" column="parts_ram" type="string" />
      </component>
    </class>
</hibernate-mapping>
```