Hibernate Configuration Using Annotations in Eclipse

//Configuring Hibernate with 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.jdbc.Driver</property>
    <property name="connection.url">
jdbc:mysql://localhost:3306/ecommerce</property>
    <property name="connection.username">mysql user id</property>
    <property name="connection.password">mysql
password</property>
  </session-factory>
</hibernate-configuration>
```

//Creating a HibernateUtil class to initiate Hibernate in code

```java
package com.ecommerce;

import org.hibernate.SessionFactory;
```

```java
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;
    }
}
```

//Creating an HTML page index.html

```html
<!DOCTYPE html>
<html>
<head>
```

```html
<meta charset="UTF-8">
<title>Hibernate Annotation Example</title>
</head>
<body>
<a href="list">List Products</a><br>

</body>
</html>
```

//Creating a Java class Eproduct to act as the Data Access Object (DAO) for the table

```java
package com.ecommerce;

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

import javax.persistence.Column;
import javax.persistence.Entity;
import javax.persistence.GeneratedValue;
import javax.persistence.Id;
import javax.persistence.Table;

@Entity
@Table(name= "eproduct")
public class EProduct {

    @Id @GeneratedValue
    @Column(name = "ID")
    private long ID;

    @Column(name = "name")
```

```java
        private String name;

        @Column(name = "price")
        private BigDecimal price;

        @Column(name = "date_added")
        private Date 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;}
}
```

```java
//Creating a ListProducts servlet

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;
```

```java
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;

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("/ListProducts")
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)
     */
```

```java
        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>");
                    }

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


           } catch (Exception ex) {
                 throw ex;
           }

     }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request,
HttpServletResponse response)
```

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

}
```

//Configuring web.xml

```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>HibernateAnnotations</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.htm</welcome-file>
    <welcome-file>default.jsp</welcome-file>
  </welcome-file-list>
  <servlet>
    <servlet-name>ListProducts</servlet-name>
```

```xml
    <servlet-class>ListProducts</servlet-class>
  </servlet>

  <servlet-mapping>
    <servlet-name>ListProducts</servlet-name>
    <url-pattern>/list</url-pattern>
  </servlet-mapping>


</web-app>
```