Project Structure

- annotationEx1
  - src/main/java
    - com.hibernate.annotationEx1
      - App.java
      - HibernateUtil.java
      - Student.java
    - resources
      - hibernate.cfg.xml
  - src/test/java
  - JRE System Library [J2SE-1.5]
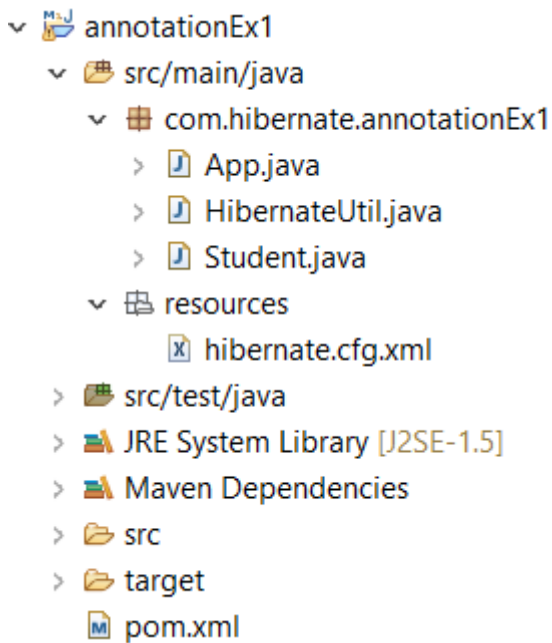 - Maven Dependencies
  - src
  - target
  - pom.xml

Step 1: Create Maven Project

1. Open your IDE (e.g., IntelliJ IDEA, Eclipse).
2. Create a new Maven project.
   - Group ID: com.hibernate
   - Artifact ID: annotationEx1

Step 2: Add the below Dependencies to pom.xml

1. mysql-connector-j
2. hibernate-core (hibernate-core)
3. validation-api (javax.validation)
4. jakarta.persistence-api (jakarta.persistence)

Step-3 Create the Student Class

Create the Student class in the com.hibernate.annotationEx1 package:

package com.hibernate.annotationEx1;

import javax.validation.constraints.NotNull;
import javax.validation.constraints.Pattern;
import javax.validation.constraints.Size;

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

```java
@Entity
@Table(name = "studentannotation")
public class Student {
        @Id
        @GeneratedValue
        @Column(name = "StudentId", unique = true, nullable = false)
        private int studentId;

        @Column(name = "firstName", nullable = false)
        @NotNull(message = "First name should not be null")
        @Size(max=40, message = "Should not exceeds 40 characters")
        private String firstName;

        @NotNull(message = "Last name should not be null")
        @Size(max=40, message = "Should not exceeds 40 characters")
        @Column(name = "lastName", nullable = false)
        private String lastName;
        @Pattern(regexp = ".+@.+\\.[a-z]+")
        @Column(name="email", nullable = false)
        @NotNull(message = "Email should not be null")
        private String email;

        @NotNull(message = "Mobile should not be null")
        @Pattern(regexp = "(^$|[0-9]{10})",message = "Mobile number should be 10 digits only")
        @Column(name="mobile", nullable = false)
        private String mobile;

        public int getStudentId() { return studentId; }
        public void setStudentId(int studentId) { this.studentId = studentId; }

        public String getFirstName() { return firstName; }
        public void setFirstName(String firstName) { this.firstName = firstName; }

        public String getLastName() { return lastName; }
        public void setLastName(String lastName) { this.lastName = lastName; }

        public String getEmail() { return email;}
        public void setEmail(String email) { this.email = email; }

        public String getMobile() { return mobile; }
        public void setMobile(String mobile) { this.mobile = mobile; }
```

```java
    public String ToString() {
        return "Student [Student ID:" + studentId + ", First name :" +
                    firstName + ", Last name :" + firstName +
                    ", Email :" + email + ", Mobile :" + mobile;
    }
}
```

Step 4: Create the hibernate.cfg.xml File

Create a resources package under the src/main/java folder and then create an XML file named hibernate.cfg.xml with the following content:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<hibernate-configuration>
    <session-factory>
        <property name="hibernate.connection.driver_class"> com.mysql.cj.jdbc.Driver </property>


        <property name="hibernate.connection.url">
            jdbc:mysql://localhost:3306/hibernateDB
        </property>
        <property name="hibernate.connection.username">root</property>
        <property name="hibernate.connection.password">password</property>
        <property name="hibernate.dialect">org.hibernate.dialect.MySQLDialect</property>
        <property name="show_sql">true</property>
        <property name="format_sql">true</property>
        <property name="hbm2ddl.auto">create </property>

        <mapping class="com.hibernate.annotationEx1.Student"></mapping>
    </session-factory>
</hibernate-configuration>
```

Note: Ensure the MySQL database hibernateDB exists, and replace the username and password with your actual MySQL credentials.

Step 5: Create the HibernateUtil Class

Create the HibernateUtil class in the com.hibernate.xmlconfigurationEx1 package:

```java
package com.hibernate.annotationEx1;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class HibernateUtil {
    private static final SessionFactory sessionFactory = buildSessionFactory();
```

```java
        private static SessionFactory buildSessionFactory() {
                SessionFactory sessionFactory = null;
                try {

                        Configuration configuration = new Configuration();
                        configuration.configure("resources/hibernate.cfg.xml");
                        sessionFactory = configuration.buildSessionFactory();

                }
                catch (Exception e) { e.printStackTrace(); }
                return sessionFactory;

        }

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

Step-6 Now add the below lines of code into **App.java** class file.

```java
package com.hibernate.annotationEx1;

import org.hibernate.HibernateException;
import org.hibernate.Session;
import org.hibernate.Transaction;

public class App
{
   public static void main( String[] args )
   {
        Student student = new Student();
        student.setStudentId(1);
        student.setFirstName("Kalpesh");
        student.setLastName("Patel");
        student.setEmail("kalpesh@aol.com");
        student.setMobile("994356565");

        Session session = HibernateUtil.getSessionFactory().openSession();

        Transaction tran = null;
        try {
```

```
            tran = session.beginTransaction();
            session.persist(student);
            tran.commit();

            System.out.println("Student saved successfully...");
    } catch (HibernateException e) {
            System.out.println("Error :" + e.getMessage());
    }
  }
}
```

Step-7 Right click on App.java file and Run the application