Project Structure

```
∨ 🗂 many-to-many
  ∨ 🗁 src/main/java
    ∨ ⊞ com.hibernate.many_to_many
      > 🗋 App.java
      > 🗋 Cart.java
      > 🗋 HibernateUtil.java
      > 🗋 Item.java
    ∨ 🗄 resources
        🗴 cart.hbm.xml
        🗴 hibernate.cfg.xml
        🗴 item.hbm.xml
  > 🗁 src/test/java
  > 🗦 JRE System Library [J2SE-1.5]
  > 🗦 Maven Dependencies
  > 🗀 src
  > 🗀 target
    🗋 pom.xml
```
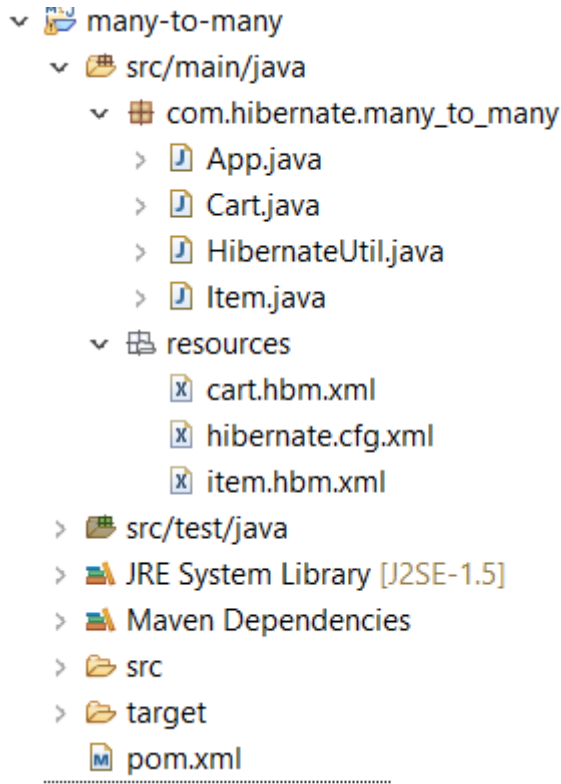
Step 1: Create Maven Project

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

Step 2: Add the below Dependencies to pom.xml

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

Step-3 Create the below Classes

1. Create the Cart class in the com.hibernate.many_to_many_example package.
2. Create the Item class in the com.hibernate.many_to_many_example package.

Class : Cart

package com.hibernate.many_to_many;

import java.util.Set;
public class Cart {
      private long id;
      private double total;

      private Set<Item> items;

      public double getTotal() { **return** total; }

```java
        public void setTotal(double total) { this.total = total;}

        public long getId() { return id; }
        public void setId(long id) { this.id = id; }

        public Set<Item> getItems() { return items; }
        public void setItems(Set<Item> items) { this.items = items; }
}
```

Class : Item

```java
package com.hibernate.many_to_many;

import java.util.*;

public class Item {
        private long id;
        private double price;
        private String description;

        private Set<Cart> carts;

        public long getId() { return id; }
        public void setId(long id) { this.id = id; }
        public double getPrice() { return price; }
        public void setPrice(double price) { this.price = price; }

        public String getDescription() { return description; }
        public void setDescription(String description) {
                this.description = description;
        }

        public Set<Cart> getCarts() { return carts; }
        public void setCarts(Set<Cart> carts) { this.carts = carts;}
}
```

Step 4: Create a resources package inside the src/man/java folder.

Create a XML file named item.hbm.xml with the following content inside the resources folder.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE hibernate-mapping PUBLIC "-//Hibernate/Hibernate Mapping DTD 3.0//EN"
"https://hibernate.org/dtd/hibernate-mapping-3.0.dtd" >

<hibernate-mapping package="com.hibernate.many_to_many">

        <class name="Item" table="ITEM">
                <id name="id" type="long">
                        <column name="item_id" />
                        <generator class="identity" />
                </id>
```

```xml
        <property name="description" type="string" column="item_desc" />
        <property name="price" type="double" column="item_price" />
        <set name="carts" table="CART_ITEMS" fetch="select" cascade="all">
                <key column="item_id" />
                <many-to-many class="Cart" column="cart_id" />
        </set>
    </class>
</hibernate-mapping>
```

Create a XML file named cart.hbm.xml with the following content inside the resources folder.

```xml
<?xml version="1.0"?>
<!DOCTYPE hibernate-mapping PUBLIC "-//Hibernate/Hibernate Mapping DTD 3.0//EN"
        "https://hibernate.org/dtd/hibernate-mapping-3.0.dtd">
<hibernate-mapping package="com.hibernate.many_to_many">
    <class name="Cart" table="CART">
            <id name="id" type="long">
                    <column name="cart_id" />
                    <generator class="identity" />
            </id>
            <property name="total" type="double" column="cart_total" />

            <set name="items" table="CART_ITEMS" fetch="select" cascade="all">
                    <key column="cart_id" />
                    <many-to-many class="Item" column="item_id" />
            </set>
    </class>
</hibernate-mapping>
```

Create a XML file named hibernate.cfg.xml with the following content inside the resources folder.

```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>
```

```xml
        <property name="format_sql">true</property>
        <property name="hbm2ddl.auto">create </property>

        <mapping resource="resources/cart.hbm.xml" />
        <mapping resource="resources/item.hbm.xml" />


    </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.one_to_one_example package:

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

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

import org.hibernate.Session;
import org.hibernate.Transaction;
import java.util.*;
public class App  {
   public static void main( String[] args ) {
        Session session = HibernateUtil.getSessionFactory().openSession();

        Transaction tran = null;
        try {
                tran = session.beginTransaction();

                Item item1 = new Item();
                item1.setPrice(100000); item1.setDescription("iPhone");

                Item item2 = new Item();
                item2.setPrice(6000); item2.setDescription("iPod");


                Set<Item> items1 = new HashSet<Item>();
                items1.add(item1); items1.add(item2);


                Cart cart1 = new Cart();
                cart1.setItems(items1);
                cart1.setTotal(106000);

                Cart cart2 = new Cart();
                Set<Item> items2 = new HashSet<Item>();
                items2.add(item1);

                cart2.setItems(items2);
                cart2.setTotal(100000);

                session.persist(cart1);
                session.persist(cart2);

                tran.commit();
                session.close();
        }
        catch (Exception e) {
                System.out.println("Error :" + e.getMessage());
                if(tran!=null) tran.rollback();
        }
```

```
    }
}
```

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