**Collection Mapping in Hibernate**

**MySQL**

**CREATE DATABASE ecommerce**

**USE ecommerce**

**•**

**• DROP TABLE IF EXISTS `colors`;**

**• /\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;**

**• /\*!40101 SET character\_set\_client = utf8 \*/;**

**• CREATE TABLE `colors` (**

**• `ID` bigint(20) NOT NULL AUTO\_INCREMENT,**

**• `color\_name` varchar(40) DEFAULT NULL,**

**• `idx` int(11) DEFAULT NULL,**

**• `product\_id` bigint(20) DEFAULT NULL,**

**• PRIMARY KEY (`ID`)**

**• ) ENGINE=InnoDB AUTO\_INCREMENT=6 DEFAULT CHARSET=latin1;**

**• /\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;**

**•**

**• --**

**• -- Dumping data for table `colors`**

**• --**

**•**

**• LOCK TABLES `colors` WRITE;**

**• /\*!40000 ALTER TABLE `colors` DISABLE KEYS \*/;**

**• INSERT INTO `colors` VALUES (1,'Red',0,1),(2,'Silver',1,1),(3,'Gray',0,2),(4,'White',1,2),(5,'Maroon',0,3);**

**• /\*!40000 ALTER TABLE `colors` ENABLE KEYS \*/;**

**• UNLOCK TABLES;**

**•**

**• --**

**• -- Table structure for table `eproduct`**

**• --**

**•**

**• DROP TABLE IF EXISTS `eproduct`;**

**• /\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;**

**• /\*!40101 SET character\_set\_client = utf8 \*/;**

**• CREATE TABLE `eproduct` (**

**• `ID` bigint(20) NOT NULL AUTO\_INCREMENT,**

**• `name` varchar(100) DEFAULT NULL,**

**• `price` decimal(10,2) DEFAULT NULL,**

**• `date\_added` timestamp NOT NULL DEFAULT CURRENT\_TIMESTAMP,**

**• PRIMARY KEY (`ID`)**

**• ) ENGINE=InnoDB AUTO\_INCREMENT=4 DEFAULT CHARSET=latin1;**

**• /\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;**

**•**

**• --**

**• -- Dumping data for table `eproduct`**

**• --**

**•**

**• LOCK TABLES `eproduct` WRITE;**

**• /\*!40000 ALTER TABLE `eproduct` DISABLE KEYS \*/;**

**• INSERT INTO `eproduct` VALUES (1,'HP Laptop ABC',21900.00,'2019-06-04 07:18:57'),(2,'Acer Laptop ABC',23300.00,'2019-06-04 07:19:07'),(3,'Lenovo Laptop ABC',33322.00,'2019-06-04 07:19:19');**

**• /\*!40000 ALTER TABLE `eproduct` ENABLE KEYS \*/;**

**• UNLOCK TABLES;**

**•**

**• --**

**• -- Table structure for table `finance`**

**• --**

**•**

**• DROP TABLE IF EXISTS `finance`;**

**• /\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;**

**• /\*!40101 SET character\_set\_client = utf8 \*/;**

**• CREATE TABLE `finance` (**

**• `ID` bigint(20) NOT NULL AUTO\_INCREMENT,**

**• `ftype` varchar(10) DEFAULT NULL,**

**• `name` varchar(30) DEFAULT NULL,**

**• `product\_id` bigint(20) DEFAULT NULL,**

**• PRIMARY KEY (`ID`)**

**• ) ENGINE=InnoDB AUTO\_INCREMENT=6 DEFAULT CHARSET=latin1;**

**• /\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;**

**•**

**• --**

**• -- Dumping data for table `finance`**

**• --**

**•**

**• LOCK TABLES `finance` WRITE;**

**• /\*!40000 ALTER TABLE `finance` DISABLE KEYS \*/;**

**• INSERT INTO `finance` VALUES (1,'CREDITCARD','EMI on Citibank Card',1),(3,'BANK','40% finance from SBI',2),(4,'BANK','60% finance from ICICI',3),(5,'BANK','20% finance from ICICI',1);**

**• /\*!40000 ALTER TABLE `finance` ENABLE KEYS \*/;**

**• UNLOCK TABLES;**

**•**

**• --**

**• -- Table structure for table `os`**

**• --**

**•**

**• DROP TABLE IF EXISTS `os`;**

**• /\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;**

**• /\*!40101 SET character\_set\_client = utf8 \*/;**

**• CREATE TABLE `os` (**

**• `ID` bigint(20) NOT NULL AUTO\_INCREMENT,**

**• `name` varchar(30) DEFAULT NULL,**

**• `product\_id` bigint(20) DEFAULT NULL,**

**• PRIMARY KEY (`ID`)**

**• ) ENGINE=InnoDB AUTO\_INCREMENT=6 DEFAULT CHARSET=latin1;**

**• /\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;**

**•**

**• --**

**• -- Dumping data for table `os`**

**• --**

**•**

**• LOCK TABLES `os` WRITE;**

**• /\*!40000 ALTER TABLE `os` DISABLE KEYS \*/;**

**• INSERT INTO `os` VALUES (1,'Windows 10',1),(2,'Windows 10',2),(3,'FreeDOS',2),(4,'RedHat Linux',2),(5,'Windows 10',3);**

**• /\*!40000 ALTER TABLE `os` ENABLE KEYS \*/;**

**• UNLOCK TABLES;**

**•**

**• --**

**• -- Table structure for table `screensizes`**

**• --**

**•**

**• DROP TABLE IF EXISTS `screensizes`;**

**• /\*!40101 SET @saved\_cs\_client = @@character\_set\_client \*/;**

**• /\*!40101 SET character\_set\_client = utf8 \*/;**

**• CREATE TABLE `screensizes` (**

**• `ID` bigint(20) NOT NULL AUTO\_INCREMENT,**

**• `size` varchar(10) DEFAULT NULL,**

**• `product\_id` bigint(20) DEFAULT NULL,**

**• PRIMARY KEY (`ID`)**

**• ) ENGINE=InnoDB AUTO\_INCREMENT=5 DEFAULT CHARSET=latin1;**

**• /\*!40101 SET character\_set\_client = @saved\_cs\_client \*/;**

**•**

**• --**

**• -- Dumping data for table `screensizes`**

**• --**

**•**

**• LOCK TABLES `screensizes` WRITE;**

**• /\*!40000 ALTER TABLE `screensizes` DISABLE KEYS \*/;**

**• INSERT INTO `screensizes` VALUES (1,'12 in',1),(2,'14.5 in',2),(3,'14.9 in',2),(4,'15.5 in',3);**

**• /\*!40000 ALTER TABLE `screensizes` ENABLE KEYS \*/;**

**• UNLOCK TABLES;**

**class Color**

**package** com.ecommerce;

**public** **class** Color {

**private** **long** COLORID;

**private** String name;

**public** Color() {

}

**public** Color(String name) {

**this**.COLORID = 0;

**this**.name = name;

}

**public** **long** getCOLORID() {**return** **this**.COLORID; }

**public** String getName() { **return** **this**.name;}

**public** **void** setCOLORID(**long** id) { **this**.COLORID = id;}

**public** **void** setName(String name) { **this**.name = name;}

}

**class EProduct**

**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** List<Color> colors;

**private** Collection<ScreenSizes> screenSizes;

**private** Set<OS> os;

**private** Map finance;

**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** List<Color> getColors() { **return** **this**.colors;}

**public** Collection<ScreenSizes> getScreensizes() { **return** **this**.screenSizes;}

**public** Set<OS> getOs() { **return** **this**.os;}

**public** Map getFinance() { **return** **this**.finance;}

**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** setColors(List<Color> colors) { **this**.colors = colors;}

**public** **void** setScreensizes(Collection<ScreenSizes> sizes) { **this**.screenSizes = sizes;}

**public** **void** setOs(Set<OS> os) { **this**.os = os;}

**public** **void** setFinance(Map finance) { **this**.finance = finance;}

}

**class Finance**

**package** com.ecommerce;

**public** **class** Finance {

**private** **long** FINANCEID;

**private** String name;

**private** String ftype;

**public** Finance() {

}

**public** Finance(String name, String ftype) {

**this**.FINANCEID = 0;

**this**.name = name;

**this**.ftype = ftype;

}

**public** **long** getFINANCEID() {**return** **this**.FINANCEID; }

**public** String getName() { **return** **this**.name;}

**public** String getFtype() { **return** **this**.ftype;}

**public** **void** setFINANCEID(**long** id) { **this**.FINANCEID = id;}

**public** **void** setName(String name) { **this**.name = name;}

**public** **void** setFtype(String ftype) { **this**.ftype= ftype;}

}

**class OS**

**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***;

}

}

**class ScreenSizes**

**package** com.ecommerce;

**public** **class** ScreenSizes {

**private** **long** SCREENID;

**private** String size;

**public** ScreenSizes() {

}

**public** ScreenSizes(String size) {

**this**.SCREENID = 0;

**this**.size = size;

}

**public** **long** getSCREENID() {**return** **this**.SCREENID; }

**public** String getSize() { **return** **this**.size;}

**public** **void** setSCREENID(**long** id) { **this**.SCREENID = id;}

**public** **void** setSize(String size) { **this**.size = size;}

}

**HibernateUtil class**

**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***;

}

}

**Color.hbm.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="Color" table="colors">

<id name="COLORID" type="long" column="ID">

<generator class="identity"/>

</id>

<property name="name" type="string" column="COLOR\_NAME"/>

</class>

</hibernate-mapping>

**EProduct.hbm.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" 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"/>

<list name="colors" cascade="all">

<key column="product\_id" />

<list-index column="idx" />

<one-to-many class="com.ecommerce.Color" />

</list>

<bag name="screensizes" cascade="all">

<key column="product\_id"></key>

<one-to-many class="com.ecommerce.ScreenSizes"/>

</bag>

<set name = "os" cascade="all">

<key column = "product\_id"/>

<one-to-many class="OS"/>

</set>

<map name = "finance" cascade="all">

<key column = "product\_id"/>

<index column = "ftype" type = "string"/>

<one-to-many class="com.ecommerce.Finance"/>

</map>

</class>

</hibernate-mapping>

**Finance.hbm.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="Finance" table="finance">

<id name="FINANCEID" type="long" column="ID">

<generator class="identity"/>

</id>

<property name="name" type="string" column="NAME"/>

<property name="ftype" type="string" column="FTYPE"/>

</class>

</hibernate-mapping>

**Os.hbm.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="OS" table="os">

<id name="OSID" type="long" column="ID">

<generator class="identity"/>

</id>

<property name="name" type="string" column="NAME"/>

</class>

</hibernate-mapping>

**ScreenSizes.hbm.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="ScreenSizes" table="screensizes">

<id name="SCREENID" type="long" column="ID">

<generator class="identity"/>

</id>

<property name="size" type="string" column="SIZE"/>

</class>

</hibernate-mapping>

**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/ecommerce</property>

<property name="connection.username">root</property>

<property name="connection.password">master</property>

<mapping resource="com/ecommerce/EProduct.hbm.xml"/>

<mapping resource="com/ecommerce/Color.hbm.xml"/>

<mapping resource="com/ecommerce/ScreenSizes.hbm.xml"/>

<mapping resource="com/ecommerce/Os.hbm.xml"/>

<mapping resource="com/ecommerce/Finance.hbm.xml"/>

</session-factory>

</hibernate-configuration>