```
> Maven Dependencies
> src
> target
  pom.xml
v   Lesson01.2-hibernate-jpa
  v   src/main/java
    v   edu.mum.cs544.I01
      >   Application.java
    >   edu.mum.cs544.I01.model
  >   src/main/resources
  >   src/test/java
  >   src/test/resources
  >   JRE System Library [JavaSE-1.8]
  >   Maven Dependencies
  >   src
  >   target
      pom.xml
v   NumberQuizJSP
```

Handwritten: "run as JAVA application"

Select Java Application — □ ×

Select type (? = any character, * = any String, TZ = TimeZone):

`**`

Cache refresh (100%)

Matching items:

```
  ASTFrame - antlr.debug.misc
----------------- Workspace matches -----------------
  AppletServer - javassist.tools.rmi
  Application - edu.mum.cs544.I01
  ArrayHelper - org.hibernate.internal.util.collections
  Backup - org.h2.tools
  ChangeFileEncryption - org.h2.tools
  Compiler - javassist.tools.reflect
  Console - org.h2.tools
  ConvertTraceFile - org.h2.tools
  CreateCluster - org.h2.tools
```
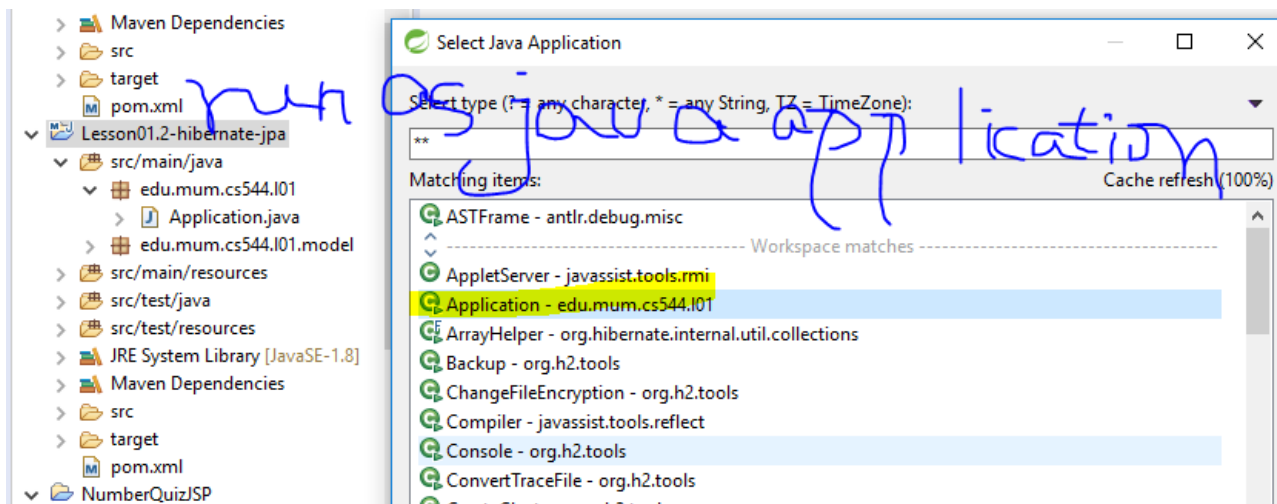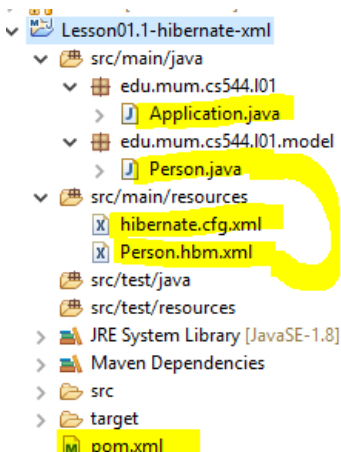


```
<terminated> Application [Java Application] C:\Program Files\Java\jre1.8.0_111\bin\javaw.exe (Mar 31, 2017, 3:45:09 PM)
INFO: HHH000115: Hibernate connection pool size: 1 (min=1)
Mar 31, 2017 3:45:16 PM org.hibernate.dialect.Dialect <init>
INFO: HHH000400: Using dialect: org.hibernate.dialect.H2Dialect
Hibernate: drop table PERSON if exists
Hibernate: create table PERSON (ID integer not null, FIRSTNAME varchar(255), LASTNAME varchar(
Mar 31, 2017 3:45:17 PM org.hibernate.tool.schema.internal.SchemaCreatorImpl applyImportSource
INFO: HHH000476: Executing import script 'org.hibernate.tool.schema.internal.exec.ScriptSource
Hibernate: select max(ID) from PERSON
Hibernate: /* insert edu.mum.cs544.l01.model.Person */ insert into PERSON (FIRSTNAME, LASTNAME
Hibernate: /* insert edu.mum.cs544.l01.model.Person */ insert into PERSON (FIRSTNAME, LASTNAME
Hibernate: /* insert edu.mum.cs544.l01.model.Person */ insert into PERSON (FIRSTNAME, LASTNAME
================= OUTPUT =================
get ID from detached bean : 1
=================
Mar 31, 2017 3:45:17 PM org.hibernate.hql.internal.QueryTranslatorFactoryInitiator initiateSer
INFO: HHH000397: Using ASTQueryTranslatorFactory
Hibernate: /* from Person person order by person.lastname desc */ select person0_.ID as ID1_0_
================= OUTPUT =================
ID=:1 , class=class edu.mum.cs544.l01.model.Person,First name=George, Last name= Washington
=================
================= OUTPUT =================
ID=:2 , class=class edu.mum.cs544.l01.model.Person,First name=Bimal, Last name= Parajuli
=================
================= OUTPUT =================
ID=:3 , class=class edu.mum.cs544.l01.model.Person,First name=Julia, Last name= Chen
=================
Mar 31, 2017 3:45:17 PM org.hibernate.tool.schema.internal.SchemaDropperImpl$DelayedDropAction
INFO: HHH000477: Starting delayed drop of schema as part of SessionFactory shut-down'
Hibernate: drop table PERSON if exists
Mar 31, 2017 3:45:17 PM org.hibernate.engine.jdbc.connections.internal.DriverManagerConnection
INFO: HHH10001008: Cleaning up connection pool [jdbc:h2:~/test]
```



```
v   Lesson01.1-hibernate-xml
  v   src/main/java
    v   edu.mum.cs544.I01
      >   Application.java
    v   edu.mum.cs544.I01.model
      >   Person.java
  v   src/main/resources
        hibernate.cfg.xml
        Person.hbm.xml
      src/test/java
      src/test/resources
  >   JRE System Library [JavaSE-1.8]
  >   Maven Dependencies
  >   src
  >   target
      pom.xml
```

Hibernate Example with XML Mapping File

PERSON Table

ID	FIRSTNAME	LASTNAME

Person.java

```java
public class Person {
    private int id;
    private String firstname;
    private String lastname;

    public Person() {
    }
    ...
}
```

Person.hbm.xml

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

<hibernate-mapping>
    <class name="edu.mum.cs544.l01.model.Person" table="PERSON">
    <id name="id" type="int" access="field">
        <column name="ID" />
        <generator class="increment" />
    </id>
    <property name="firstname" column="FIRSTNAME" type="string" />
    <property name="lastname" column="LASTNAME" type="string" />
    </class>
</hibernate-mapping>
```

hibernate.cfg.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE hibernate-configuration PUBLIC "-//Hibernate/Hibernate Configuration DTD 3.0//EN"
        "http://hibernate.sourceforge.net/hibernate-configuration-3.0.dtd">
<hibernate-configuration>
    <session-factory>
        <property name="hibernate.dialect">org.hibernate.dialect.H2Dialect</property>
        <property name="hibernate.connection.driver_class">org.h2.Driver</property>
        <property name="hibernate.connection.url">jdbc:h2:~/test</property>
        <property name="hibernate.connection.username">sa</property>
        <property name="hibernate.connection.password">sa</property>
        <!-- Create DB Schema -->
        <property name="hibernate.hbm2ddl.auto">create-drop</property>
        <!-- Print SQL on stdout -->
        <property name="hibernate.show_sql">true</property>
        <!-- List of mapping files -->
        <mapping resource="Person.hbm.xml"/>
    </session-factory>
</hibernate-configuration>
```

Set the database user name and password