Spring JDBC

1. Write a program to insert, update and delete records from the given table.
2. Write a program to demonstrate PreparedStatement in Spring JdbcTemplate.
3. Write a program in Spring JDBC to demonstrate ResultSetExtractor Interface.
4. Write a program to demonstrate RowMapper interface to fetch the records from the database.

1. Write a program to insert, update and delete records from the given table.

Create Movies Table : CREATE TABLE

mymovies1 (

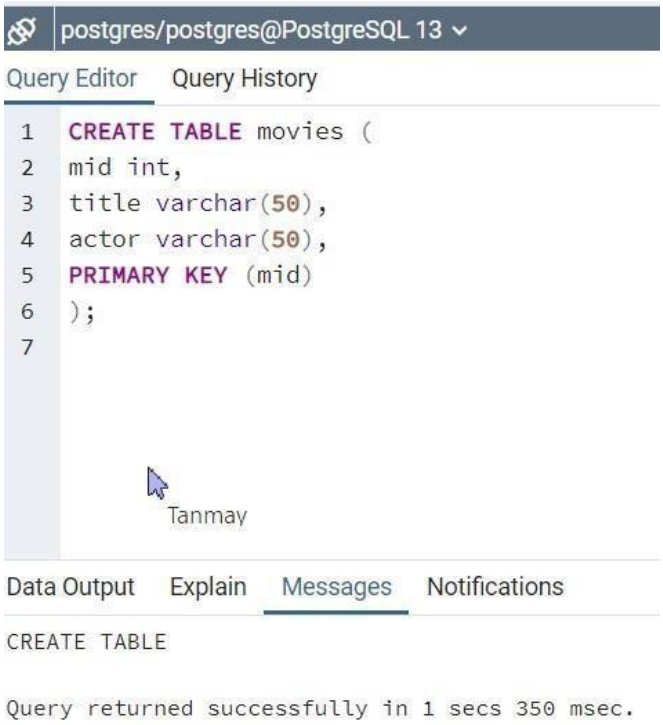
mid int, title

varchar(50), actor

varchar(50),

PRIMARY KEY (mid)

);



Problem Statement 1 : Write a program to insert, update and delete records from the given table.

Solution :

Solution:

How to generate getter and setter methods

Right click on file-> source-> Generate getters and setters methods.

Movie1.java

```
Package com.spring;

public class Movie1 {

        int mid;
        String title; String
        actor;
        public Movie1(int mid, String title, String actor) {
                super();
                this.mid = mid; this.title
                = title; this.actor =
                actor;
        } public
        Movie1() {
        super();
                // TODO Auto-generated constructor stub
        } public int
        getMid() { return
        mid;
        }
        public void setMid(int mid) { this.mid
                = mid;
        }
        public String getTitle() { return
                title;
        }
        public void setTitle(String title) { this.title
                = title;
        }
        public String getActor() {
                return actor;
        } public void setActor(String
        actor) { this.actor = actor; }


}
```

MovieDAO.java

```
Package com.spring;

import org.springframework.jdbc.core.*;
public class MovieDAO { JdbcTemplate jdbcTemplate;

public void setJdbcTemplate(JdbcTemplate jdbcTemplate) { this.jdbcTemplate
        = jdbcTemplate;
}
public int insMovie(Movie1 m1)
{
        String insSql="insert into mymovies1
values("+m1.getMid()+",'"+m1.getTitle()+"','"+m1.getActor()+"')"; return
jdbcTemplate.update(insSql);
} public int updateMovie(Movie1

m1){

   String query="update mymovies1 set title='"+m1.getTitle()+"',actor='"+m1.getActor()+"'
where mid='"+m1.getMid()+"' ";
   return jdbcTemplate.update(query);
}

public int deleteMovie(Movie1 m1){
   String query="delete from mymovies1 where mid='"+m1.getMid()+"' ";
return jdbcTemplate.update(query);
} }
```

appctx.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.springframework.org/schema/beans
```

```
http://www.springframework.org/schema/beans/spring-beans.xsd">
<bean id="ds" class="org.springframework.jdbc.datasource.DriverManagerDataSource">
<property name="driverClassName" value="org.postgresql.Driver" />
<property name="url" value="jdbc:postgresql://localhost:5432/postgres" />
<property name="username"                    value="postgres" />
<property name="password"          "password value=" />
</bean>

<bean id="jdbcTemplate" class="org.springframework.jdbc.core.JdbcTemplate">
<property name="dataSource" ref="ds"></property>
</bean>

<bean id="mymovie" class="com.springMovieDAO">
<property name="jdbcTemplate" ref="jdbcTemplate"></property>  </bean>
</beans>
```

Create Main java File package com.spring; **import**

org.springframework.context.ApplicationContext; **import**

org.springframework.context.support.ClassPathXmlApplicationContext;

public class MovieTest { **private static** ApplicationContext

appCon; **public static void** main(String[] args) { // **TODO**

Auto-generated method stub *appCon* = **new**

ClassPathXmlApplicationContext("appctx.xml");

MovieDAO m1 = (MovieDAO) *appCon*.getBean("mymovie");

// insert query

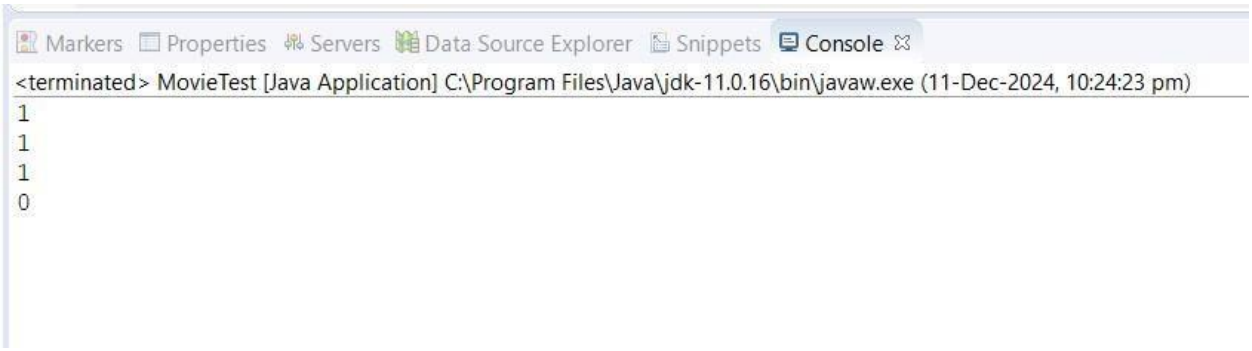
Movie1 t1 = **new** Movie1(8, "17 raj", "Zac");

System.***out***.println(m1.insMovie(t1));

Movie1 t = **new** Movie1(9, "shree", "Christopher");

System.***out***.println(m1.insMovie(t));

```
// update query
int status = m1.updateMovie(new Movie1(5, "ashish", "Zac"));

System.out.println(status);

// delete

Movie1 t2=new Movie1(); t2.setMid(3); int s=m1.deleteMovie(t2);

System.out.println(s);


}


}
```



Update:

We update row 1

Data Output Explain Messages Notifications

	mid [PK] integer	title character varying (50)	actor character varying (50)
1	1	18 Again	Zac
2	2	23 Again	Zac
3	4	17 Again	Zac
4	5	Interstellar	Christopher

Delete:
We deleted row no 3 So, After deleted row

Data Output Messages Notifications

	mid [PK] integer	title character varying (50)	actor character varying (50)
1	4	17 Again	Zac
2	5	ashish	Zac
3	8	17 raj	Zac
4	9	shree	Christopher

Statement 2: Write a program to demonstrate PreparedStatement in Spring JdbcTemplate.

Solution :

Movie1.java package

com.spring; public

class Movie1 { int

mid;

```
 String title;
String actor;
public Movie1(int
mid, String title,
String actor) {
super();  this.mid
= mid; this.title =
title;  this.actor  =
actor;

 }
 public Movie1() {
super();
 }
 public int getMid() {
return mid;
 }
 public void
setMid(int mid) {
this.mid = mid;
 }
 public String
getTitle() { return
title;
```

```
 }

 public void

setTitle(String title) {

this.title = title;

 }

 public String

getActor() { return

actor;

 }
 public void

setActor(String actor)

{  this.actor = actor;

 }

}
```

MovieDAO1.java package com.spring; import

java.sql.PreparedStatement; import java.sql.SQLException;

import org.springframework.dao.DataAccessException; import

org.springframework.jdbc.core.JdbcTemplate; import

org.springframework.jdbc.core.PreparedStatementCallback;

public class MovieDAO { JdbcTemplate jdbcTemplate; public

void setJdbcTemplate(JdbcTemplate jdbcTemplate)

{ this.jdbcTemplate =

jdbcTemplate;

}

public Boolean saveMovieByPreparedStatement(final Movie1 e)

{

 String query="insert into mymovies1 values(?,?,?)";

    return jdbcTemplate.execute(query,new PreparedStatementCallback<Boolean>(){

    @Override   public Boolean

doInPreparedStatement(PreparedStatement ps)

throws SQLException, DataAccessException

    {

            ps.setInt(1,e.getMid());

ps.setString(2,e.getTitle());

ps.setString(3,e.getActor());   return

ps.execute();

    }

    });

}

} **appctx.java**

```
<?xml version="1.0" encoding="UTF-8"?>
<beans
xmlns="http://www.springframework.org/schema/beans"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.springframework.org/schema/
beans
http://www.springframework.org/schema/beans/springbeans.xsd
"> <bean id="ds"
class="org.springframework.jdbc.datasource.DriverManagerDat
aSource">
<property name="driverClassName"
value="org.postgresql.Driver" /> <property
name="url"
value="jdbc:postgresql://localhost:5432/postgres" />
<property name="username" value="postgres" />
<property name="password" value="password" /> </bean>
<bean id="jdbcTemplate" class="org.springframework.jdbc.core.JdbcTemplate">
<property name="dataSource" ref="ds"></property> </bean>
<bean id="mymovie" class="com.spring.MovieDAO">
<property name="jdbcTemplate" ref="jdbcTemplate"></property>
</bean>


 </beans>
```

MovieTest1.java

```
package com.spring; import

org.springframework.context.ApplicationContext;
```

```
import
org.springframework.context.support.ClassPathXmlApplic

ationContext; public class MovieTest { private static

ApplicationContext appCon; public static void

main(String[] args) { // TODO Autogenerated method stub

 appCon = new
ClassPathXmlApplicationContext("appctx.xml");

MovieDAO
m1=(MovieDAO)appCon.getBean("mymovie");

m1.saveMovieByPreparedStatement(new Movie1(80,"Bhaijaan","Slemon"));

}

}
```

Output :

Data Output Messages Notifications

	mid [PK] integer	title character varying (50)	actor character varying (50)
1	4	17 Again	Zac
2	5	ashish	Zac
3	8	17 raj	Zac
4	9	shree	Christopher
5	80	Bhaijaan	Slemon

Problem Statement 3 : Write a program in Spring JDBC to demonstrate ResultSetExtractor Interface.

Solution :

Movie2.java package

```
com.spring;

public class Movie2 {

        int mid;
        String title; String
        actor; public int
        getMid() { return
        mid; }
        public void setMid(int mid) { this.mid
                = mid;
        }
        public String getTitle() { return
                title;
        }
        public void setTitle(String title) { this.title
                = title;
        }
        public String getActor() {
                return actor;
        }
        public void setActor(String actor) {
                this.actor = actor;
        }
        public String toString(){
        return mid+" "+title+" "+actor;

}
}
```

MovieDAO2.java

```
package com.spring;
import        java.sql.ResultSet;

import java.sql.SQLException;
```

```
import java.util.ArrayList;
import java.util.List; import
org.springframework.dao.Data
AccessException; import
org.springframework.jdbc.core
.JdbcTemplate; import
org.springframework.jdbc.core
.ResultSetExtractor; public
class MovieDAO2 {
JdbcTemplate jdbcTemplate;

    public void setJdbcTemplate(JdbcTemplate jdbcTemplate) { this.jdbcTemplate
        = jdbcTemplate; } public List<Movie2> getAllMovie(){
return jdbcTemplate.query("select * from mymovies1",new
ResultSetExtractor<List<Movie2>>(){ @Override public List<Movie2>
extractData(ResultSet rs) throws SQLException,
        DataAccessException {

        List<Movie2> list=new ArrayList<Movie2>();
    while(rs.next()){
        Movie2 e=new Movie2();
        e.setMid(rs.getInt(1));
        e.setTitle(rs.getString(2));
        e.setActor(rs.getString(3));
        list.add(e);
        }
    return list;
        }
```

```
                    });
                  }
} appctx2.java


<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd">

<bean id="ds" class="org.springframework.jdbc.datasource.DriverManagerDataSource">
<property name="driverClassName" value="org.postgresql.Driver" />
<property name="url" value="jdbc:postgresql://localhost:5432/postgres" />
<property name="username" value="postgres" />
<property name="password" value="password" />
</bean>

<bean id="jdbcTemplate" class="org.springframework.jdbc.core.JdbcTemplate">
<property name="dataSource" ref="ds"></property>
</bean>

<bean id="mymovie" class="org.me.MovieDAO2">
<property name="jdbcTemplate" ref="jdbcTemplate"></property>
</bean>
</beans>
```

MovieTest2.java package org.me; import java.util.List; import

org.springframework.context.ApplicationContext; import

org.springframework.context.support.ClassPathXmlApplicationContext;

public class MovieTest2 { private static ApplicationContext appCon; public

static void main(String[] args) { appCon = new

ClassPathXmlApplicationContext("appctx2.xml");

MovieDAO2 m1=(MovieDAO2)appCon.getBean("mymovie");

```
            List<Movie2> list=m1.getAllMovie();
        for(Movie2 e:list)

            System.out.println(e);

        }

}
```

Output :

```
Markers  Properties  Servers  Data Source Explorer  Snippets  Console
<terminated> MovieTest [Java Application] C:\Program Files\Java\jdk-11.0.16\bin\javaw.exe (11-Dec-
Movie1 [mid=4, title=17 Again, actor=Zac]
Movie1 [mid=8, title=17 raj, actor=Zac]
Movie1 [mid=9, title=shree, actor=Christopher]
Movie1 [mid=5, title=ashish, actor=Zac]
Movie1 [mid=80, title=Bhaijaan, actor=Slemon]
```

Problem Statement 4 : Write a program to demonstrate RowMapper interface to fetch the records from the database.

Solution :

Filename-Movie.java

```
Package com.spring;
```

```
public class Movie3 { int
        mid;
        String title; String
        actor;
        public Movie3(int mid, String title, String actor)
                { super(); this.mid = mid; this.title = title;
                this.actor = actor;
        }

        public Movie3() {
                super();
                // TODO Auto-generated constructor stub
        }
        public int getMid() { return
                mid;
        }
        public void setMid(int mid) {
                this.mid = mid;
        }
        public String getTitle() {
                return title;
        }
        public void setTitle(String title) {
                this.title = title;
        }
```

```
        public String getActor() { return
                actor;
        }
        public void setActor(String actor) { this.actor
                = actor;
        }
}
```

Filename- MovieDAO3.java

```
Package com.spring; import
java.sql.ResultSet;
import java.sql.SQLException;
import java.util.List;
import org.springframework.jdbc.core.JdbcTemplate;
import org.springframework.jdbc.core.RowMapper;

public class MovieDAO3 { JdbcTemplate
        jdbcTemplate;



        public void setJdbcTemplate(JdbcTemplate jdbcTemplate) { this.jdbcTemplate
                = jdbcTemplate;
        }
        public List<Movie2> getAllEmployeesRowMapper(){  return jdbcTemplate.query("select
                * from movies",new RowMapper<Movie2>(){
```

```
                @Override      public Movie2 mapRow(ResultSet rs, int rownumber) throws
            SQLException {      Movie2 e=new Movie2();
                e.setMid(rs.getInt(1));
                e.setTitle(rs.getString(2));
                e.setActor(rs.getString(3));
                return e;
            }
            });                 }
}
```

Filename- appctx3.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd">

<bean id="ds" class="org.springframework.jdbc.datasource.DriverManagerDataSource">
<property name="driverClassName" value="org.postgresql.Driver" />
<property name="url" value="jdbc:postgresql://localhost:5434/postgres" />
<property name="username" value="postgres" />
<property name="password"          "password value=" />
</bean>
<bean id="jdbcTemplate" class="org.springframework.jdbc.core.JdbcTemplate">
<property name="dataSource" ref="ds"></property>
</bean>
<bean id="mymovie" class="MovieDAO3">
```

```
<property name="jdbcTemplate" ref="jdbcTemplate"></property>

</bean>

</beans>
```

Filename- MovieTest3.java

```
Package com.spring
import java.util.List;

import org.springframework.context.ApplicationContext; import

org.springframework.context.support.ClassPathXmlApplicationContext;

public class MovieTest3 { private static ApplicationContext

        appCon;

        public static void main(String[] args) { // TODO Auto-generated method

                stub appCon = new

                ClassPathXmlApplicationContext("appctx3.xml");

                MovieDAO3 m1=(MovieDAO3)appCon.getBean("mymovie");

                 List<Movie2> list=m1.getAllEmployeesRowMapper();


                   for(Movie2 e:list)

                      System.out.println(e);

        }}
```

OUTPUT-

Markers | Properties | Servers | Data Source Explorer | Snippets | Console

<terminated> MovieTest [Java Application] C:\Program Files\Java\jdk-11.0.16\bin\javaw.exe (11-Dec-2024, 11:33:35 pm)

```
com.spring.Movie1@1f53a5dc
com.spring.Movie1@1b75c2e3
com.spring.Movie1@1984b1f
com.spring.Movie1@3bd323e9
com.spring.Movie1@39ac0c0a
```