
1. Write a Java Program to demonstrate a Generic Class.

Rtqdn g o "Uvcvg o gpv"3"<" Y tkvg" c" Lexc" Rtqi t c o "vq" fg o qpvtcvg" c" I gpgtke" Encuu0"

Eqfg"<

class geg<T>

```
{
    T obj;
    geg(T obj){ this.obj = obj;}
    public T get() {return this.obj;}
}
```

class G1

```
{
    public static void main (String[]    Y
```

Rtqdn g o "Uvcvg o gpv"4"<" Y tkvg" c" Lxc" Rtqi t c o "vq" fg o qpvtcvg" I gpgtke" Ogvjqfu0"

Eqfg"<

```
public class Genericmethod
{
    void display()
    {
        System.out.println("generic method example");
    }
    <T> void gdisplay (T e)
    {
        System.out.println(e.getClass().getName() + " = " + e);
    }
}
```

Rtqdn g o "Uvcvg o gpv"5"<" Y tkvg" c" Lexc" Rtqi t c o "vq" fg o qpvtcvg" Y knfectfu"kp" Lexc" I gpgtkeu0
Eqfg"<

```
import java.util.*;

public class Wildcardex {

    // Upper bounded
    private static double sum(List<? extends Number> list) {
        double sum = 0.0;
        for (Number i : list) {
            sum = sum + i.doubleValue();
        }
        return sum;
    }

    // Lower Bounded
    private static void show(List<? super Integer> list) {
        list.forEach((x) -> {
            System.out.print(x + " ");
        });
    }

    public static void main(String[] args) {
```


Qwvrvv"<"



Cuuk i p o gpv"4

Nkuv"Kpvgthceg

1. Write a Java program to create List containing list of items of type String and use for- --each loop to print the items of the list.
2. Write a Java program to create List containing list of items and use ListIterator interface to print

Q3 Write a Java program to create List containing list of items of type String and use for- each loop to print the items of the list.

Ans

```
package listeg;
import java.util.*;
public class Array1 {
    public static void main(String[] args) {
        ArrayList<String>list=new ArrayList<String>();

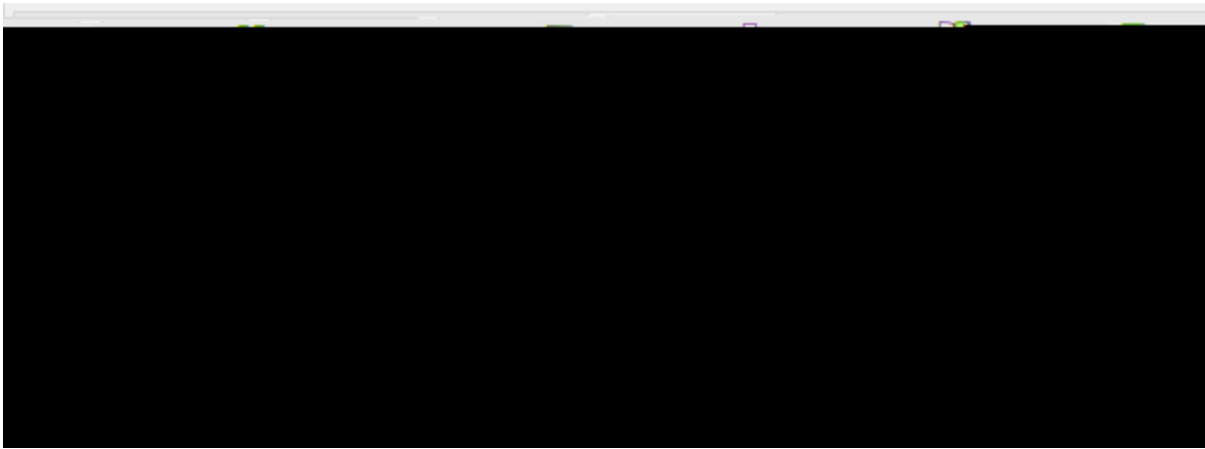
        list.add("MATHS");
        list.add("ADBMS");
        list.add("JAVA");
        list.add("PYTHON");

        System.
```

Q4 Write a Java program to create List containing list of items and use ListIterator

Rtqđg o "Uvcvg o gpv"3<

Qwvrvv"<"



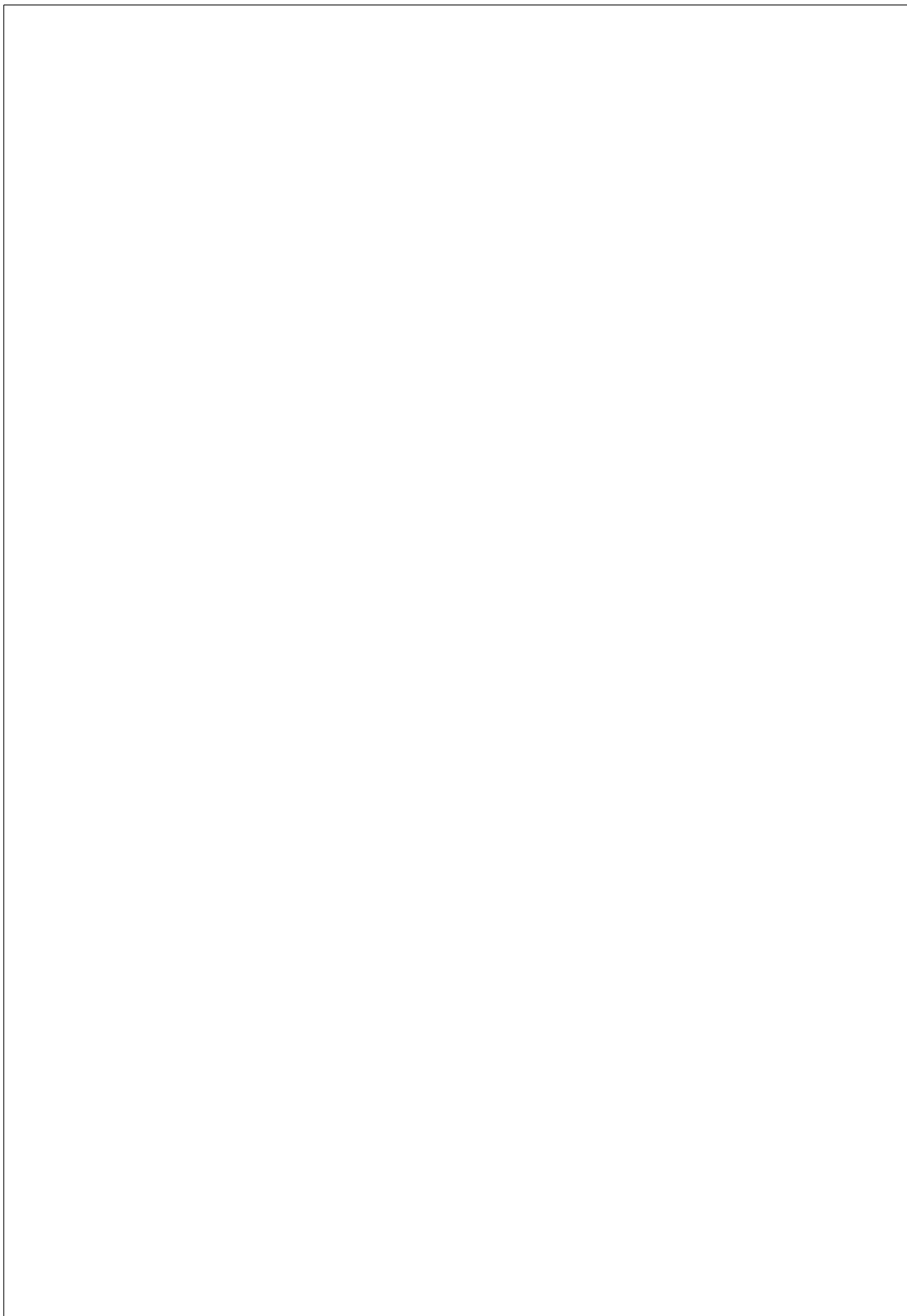
Cuukip o gpv"6

Ocr"Kpvgthceg



Cuukip o gpv"7
Nc o dfc"Gzrtguukqpu

1. Write a Java program using Lambda Expression to print “Hello World!”.
2. Write a Java program using Lambda Expression with single parameter.
3. Write a Java program using Lambda Expression with multiple parameters to add two numbers.
4. Write a Java program using Lambda Expression to calculate the following:
 - a. Convert Fahrenheit to Celcius
 - b. Convert Kilometers to Miles.
5. Write a Java program using Lambda Expression with or without return keyword.

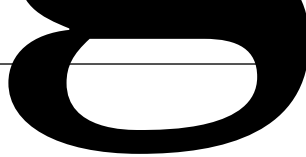


Question 6 Write a Java program using Lambda Expression to calculate the following:

c0 Convert Fahrenheit to Celsius

Answer

```
package Lambdaexpression;
interface temp
{
    public double convert(double temp);
}
public class farherntoCel {
    public static void main(String[] args) {
```

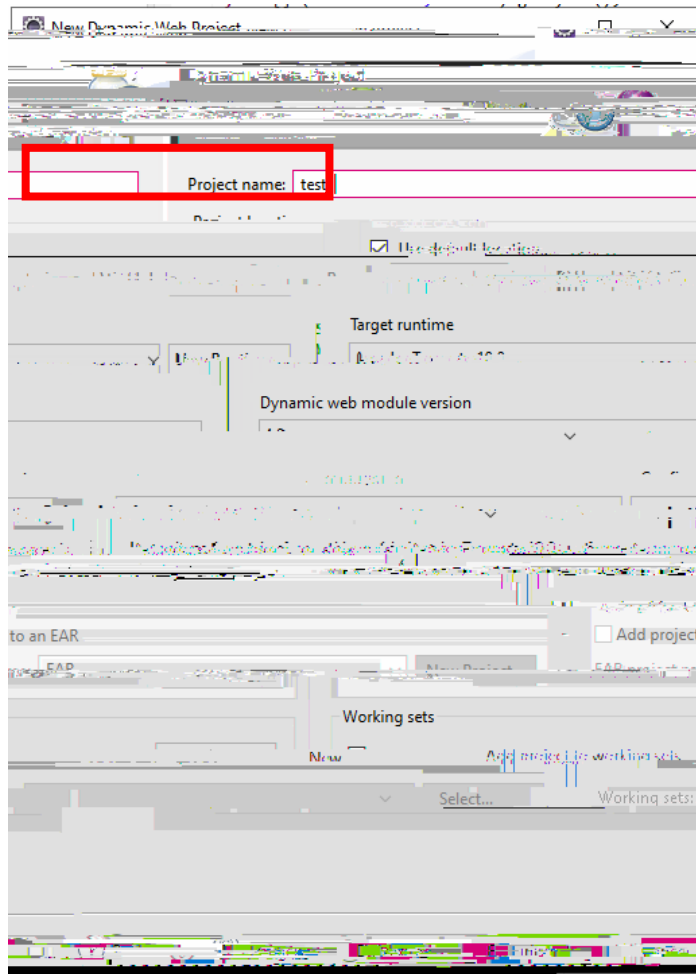



"Cuuk i p o gpvu"8

Y gd"Cr rnkecvkqp" Fgxgnqr o gpv" wukp i "LUR

1. Create a Telephone directory using JSP and store all the information within a database, so that later could be retrieved as per the requirement. Make your own assumptions.
2. Write a JSP page to display the Registration form (Make your own assumptions)
3. Write a JSP program to add, delete and display the records from StudentMaster (RollNo, Name, Semester, Course) table.
4. Design loan calculator using JSP which accepts Period of Time (in years) and Principal Loan Amount. Display the payment amount for each loan and then list the loan balance and interest paid for each payment over the term of the loan for the following time period and interest rate:
 - a. 1 to 7 year at 5.35%
 - b. 8 to 15 year at 5.5%
 - c. 16 to 30 year at 5.75%

3050"Enter Project Name of your wish, and click on Finish.



Vjku"etgevgu"{qwt"F{pc o ke"Ygd"rtqlgev0

**Rtqdn g o "Uvcvg o gpv"30"Etgcvg" c"Vgngr j qpg" fktgevt { "wukpi "LUR"cp f"uvqtg"cm"vjg"kpht o cvkqp"
ykv jkp" c" fcvdcug."uq"vjcv"ncvgt"eqwnf"dg"tgytkgxgf"cu"rgt"vjg"tgswtg o gpv0"Ocmg" {qwt"qyp"
cuuw o rvkqpu0**

Fcvdcug"vcdng"*r j qpg3+"<

CREATE TABLE phone1
(


```
out.println(e);
}

%>

<html>

<head>

<title>JSP:Insert, Update, Delete using MySQL</title>

<!-- javascript for form validation-->
<script>

function validate()
{
var name = document.myform.txt_name;
var no = document.myform.txt_no;
if (name.value == "")
{
```



```
String url ="jdbc:postgresql://localhost:5432/postgres";  
String username ="postgres";  
String password ="admin";  
  
Connection con =null;
```

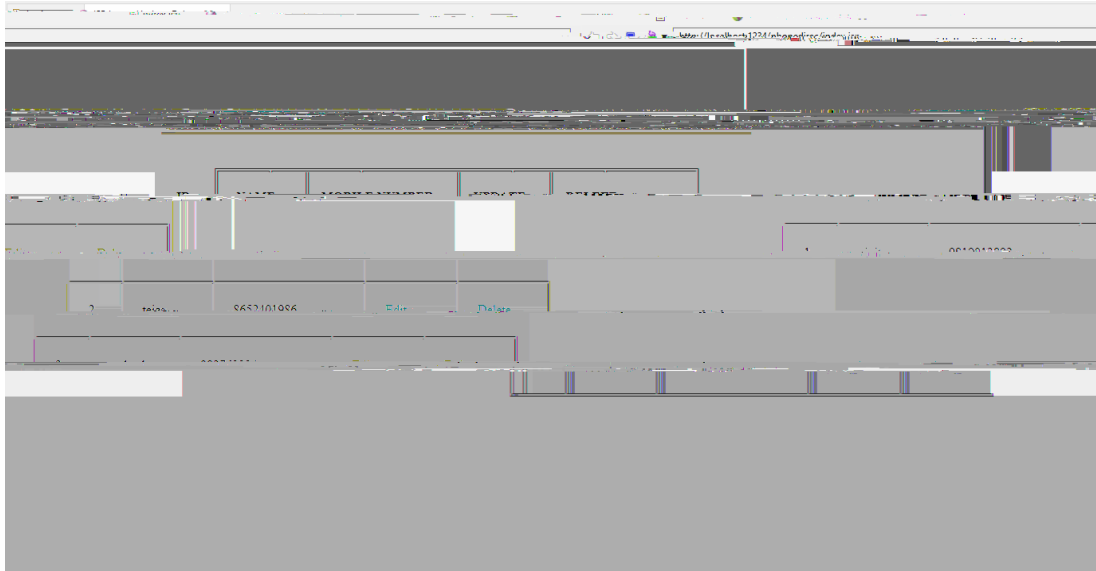
</center>

</form>

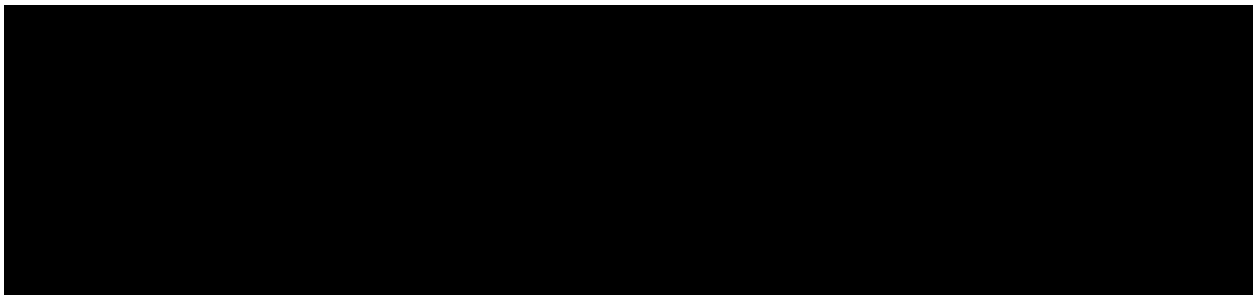
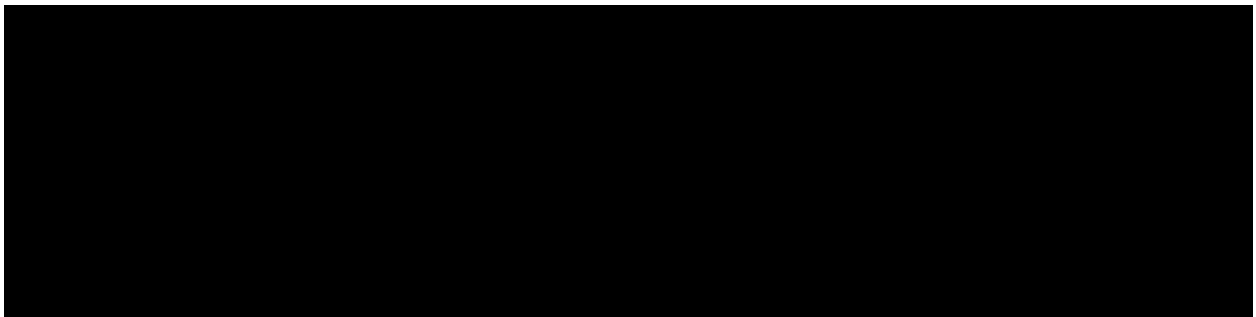
</body>

</html>

Qwrrwv<



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```
name.focus();  
return false;  
}  
if (course.n-      M      M      Â      .
```

<td>Course:</td>

```
{  
out.println(e);  
}  
%>  
<html>  
  
<head>
```

```
<td><%=rs.getString(3)%></td>
<td><%=rs.getString(4)%></td>
<td><%=rs.getString(5)%></td>
<td><%=rs.getString(6)%></td>
<td><%=rs.getString(7)%></td>
< i
```


<th>Name</th>

<th>Sem</th>

<th>Course</th>

<th>Update</th>

<th>Delete</th>

</tr>

<%

try

{

String driver ="org.postgresql.Driver";

String url ="jdbc:postgresql://localhost:5432/postgres";

String username ="postgres";

String password ="admin";

Connection con =null;

Class.forName(driver).newInstance();

con = DriverManager.getConnection(url,username,password);

PreparedStatement pstmt=null; //create statement

pstmt=con.prepareStatement("select * from student1"); //select query

ResultSet rs=pstmt.executeQuery(); //execute query and set in resultset object rs.

while(rs.next())

{

%>

<tr>

<td><%=rs.getInt(1)%></td>

<td><%=rs.getString(2)%></td>

<td><%=rs.getString(3)%></td>

<td><%=rs.getString(4)%></td>

Trishna Tamanna Biswal(B-6)

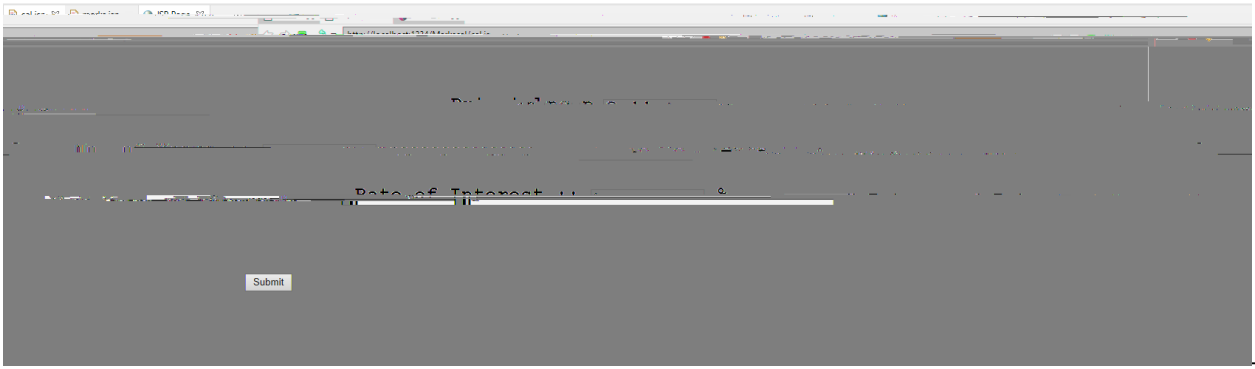

```
hide=Integer.parseInt(request.getParameter("txt_hide")); //it is hidden id get for update record  
rno_up=request.getParameter("txt_rno");
```

```
{  
window.alert("please enter course ?");
```

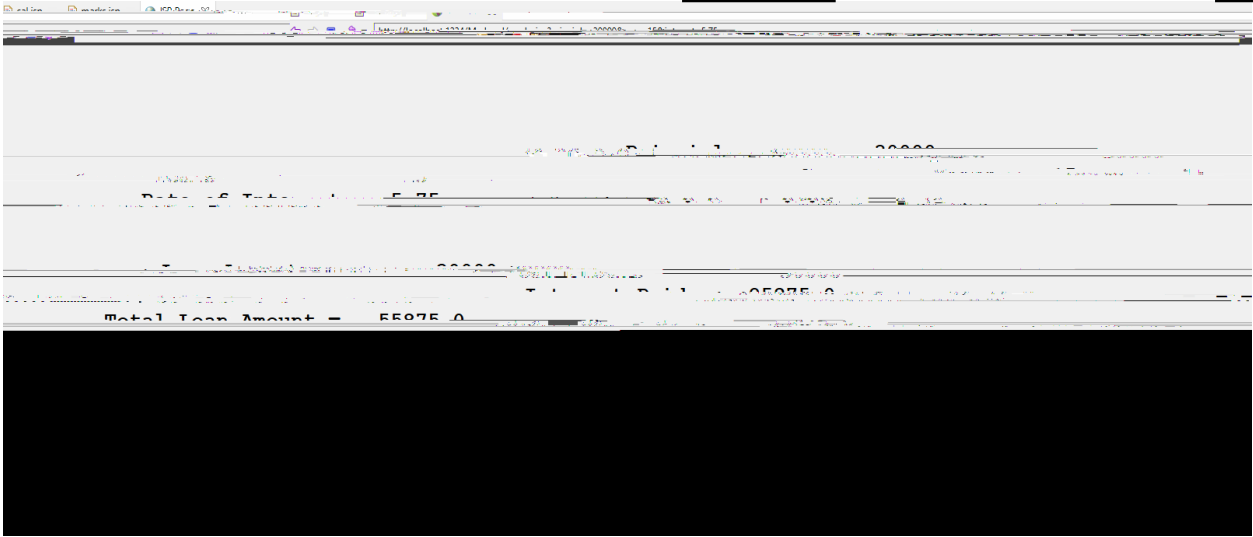



Rtqdn g o "Uvcvg o gpv""60"Fgukip"nqcp"ecnewncvqt"wukpi"LUR" y jke j "ceegrvu"Rgtkqf"qh"Vk o g"*kp"{gctu+"cpf"
Rtkpekrcn"Nqcp"C o qwpv0"Fkurnc{"vjg"rc{ o gpv" c o qwpv"hqt" gcej"nqcp"cpf"vjgp"nkuv"vjg"nqcp"dcncpeg"cpf"
kpvgtguv"rckf"hqt" gcej"rc{ o gpv"qxgt"vjg"vgt o "qh"vjg"nqcp"hqt"vjg"hqmqykpi"vk o g"rgtkqf"cpf"kpvgtguv"
tcvg<
c0"3"vq"9"{gct"cv"7057 '
d0": "vq"37"{gct"cv"707 '
e0"38"vq"52"{gct"cv"7097 '

Ecn# O O



c0"3"vq"9"{gct"cv"7057 '



Rtqdn go "Uvevg ogpv"70" Y tkvg"e"rtqitc o "wukpi"LUR"vjev" fku "iO"kg" "qi ikp"pi" g qv"pi i

<td>
<select name=] mM
<option selected disabled hidden></option>
<option value=] U = I] MU = I</option>
<option value=] U E] PU E</option>
<option value=] U M T] GU M T</option>
</select>
</td>
</tr>
<tr>
<td>
New Center
</td>
<td>



Rtqdn g o "Uvcvg o gpv"

```

<%= "Perimeter of rectanlge:"+perimeter(5,6
) %> </br>
<p>Thanks for visiting my page.</p>
</center>
<% @ include file = "footer.jsp" %>
</body>
</html>

```

Jgc fgt0lur"<

```

<% @ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>

<%!
int pageCount = 0;
void addCount() {
    pageCount++;
}
%>
<% addCount(); %>
<html>
<head>
<title>JSP declaration, scriptlet, directives, expression, header and footer Example</title>
</head>
<body>
<center>

```

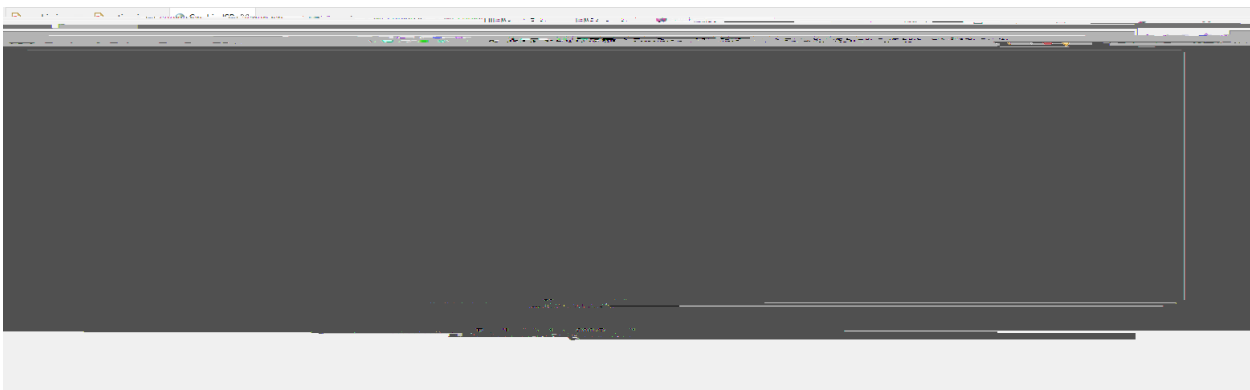
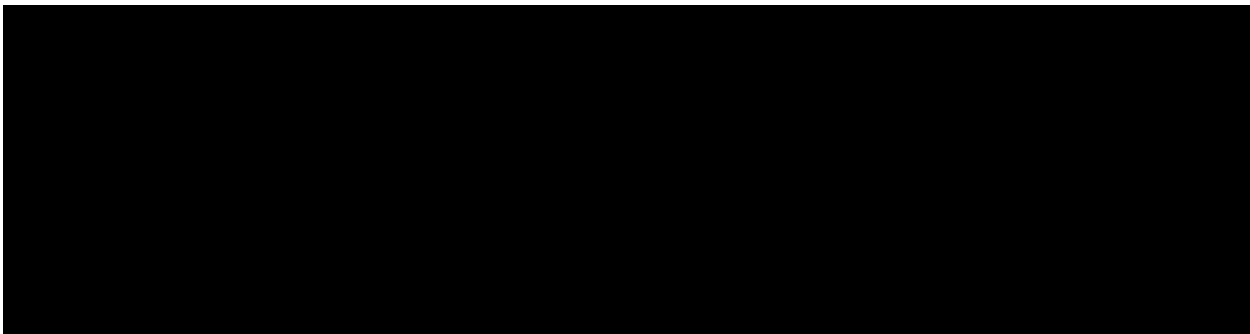


```
username.setMaxAge(60*60*10);  
email.setMaxAge(60*60*10);
```

```
// Add both the cookies in the response header.  
response.addCookie( username );  
response.addCookie( email );  
%>
```

```
<html>  
<head>  
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">  
<title>Cookie JSP</title>  
</head>  
<body>  
<br><br><br><br><br><br><br><br><br><br><br><br><br><br>  
<center>  
<b>Username:</b>  
<%= request.getParameter("username")%><br><br>  
<b>Email:</b>  
<%= request.getParameter("email")%>  
</center>  
</body>  
</html>
```

Qwvrvw<



Cuukipogpv"Pq0"9

Uru pi"Hu ogyqu

1. Ws te a ps gs m t ps nt “Hello Wos d” using sps ng fs mewos .
2. Ws te a ps gs m t demonot s s s) a°wos .

Uygru"vq"Etgcvg"Urtkpi"Ngice{"Rtqlgev

Uygr"3"<"Etgcvkpi"Urtkpi"Ngice{"Rtqlgev0

303"<"Open Ecliv Oro_] O X X 1.1 2

Uvgr"4"<"Cffkpi"vjg"Urtkpi"Nkdtctkgu0
403"<"

Vguv J gnnq Y qtnf0lxc

```
package spring1;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class TestHelloWorld {

    public static void main(String[] args) {

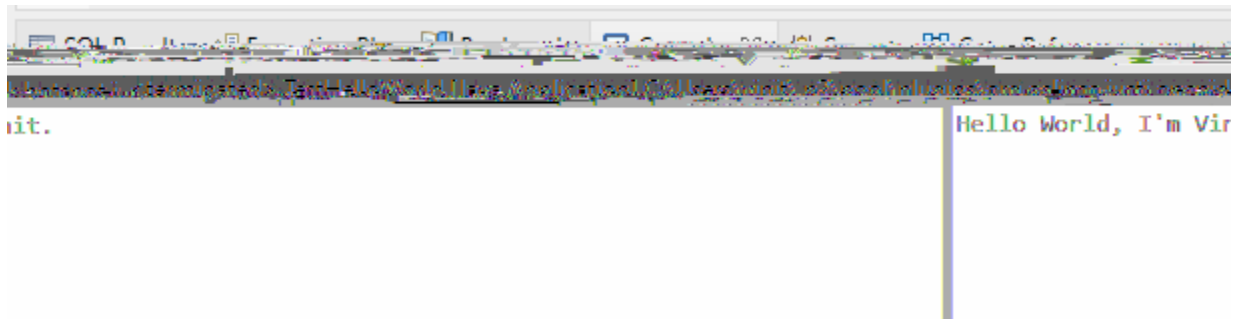
        ClassPathXmlApplicationContext app = new
ClassPathXmlApplicationContext("appctx3.xml");
        HelloWorld hw = (HelloWorld) app.getBean("hw");

        System.qww.println(hw.toString());

    }

}
```

Qwvrvw"<



Q4 Write a program to demonstrate dependency injection via setter method.

8 **10** **15** **20** **25** **30** **35** **40** **45** **50** **55** **60** **65** **70** **75** **80** **85** **90** **95** **100**

Q5 Write a program to demonstrate dependency injection via Constructor.

Cuukip o gpv"Pq":
Curgev"Qtkgpygf"Rtqi t c o o kpi

1. Write a n ! a q. Sitogr ,

Uvgr"4"<"Cffkpi"vjg"Urtkpi"Nkdtctkgu0

403"<"Right click on your Newly created AspectJ project, Choose Build Path > Configure Build Path.

Rtqdn g o "Uvcvg o gpv"3"<

</beans>

dghq tgvuv@lxc

package bvimit.edu;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class beforetest {

 public static void main(String[] args) {

 ApplicationContext context = new ClassPathXmlApplicationContext("aopctx1.xml");

 beforeoperation e = (beforeoperation) context.getBean("opBean");

 System.out.println("calling m1.....");

 e.msg();

 System.out.println("calling m2.....");

 e.m();

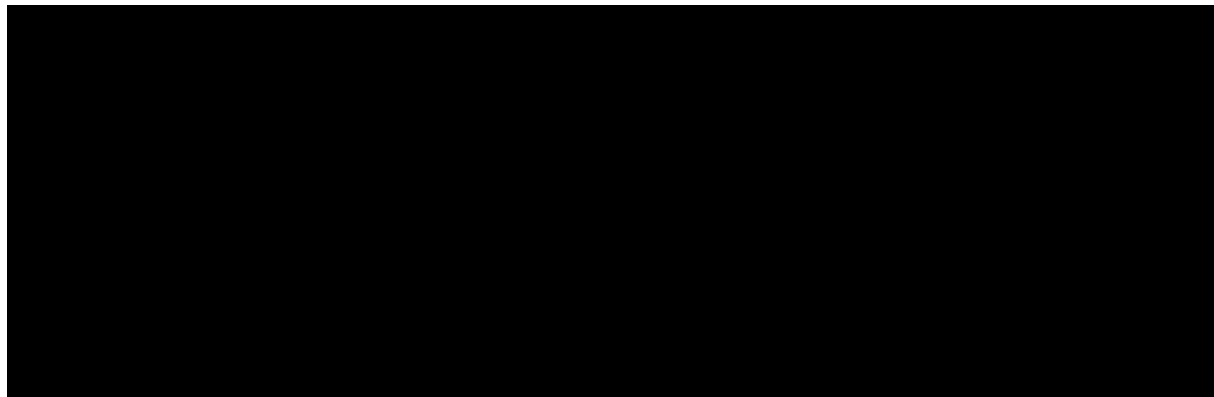
 System.out.println("calling m3.....");

 e.k();

 }

}

Qwvrwv"<



Write a program to demonstrate Spring AOP – after advice.

```
package bvimit.edu;
```

```
import org.aspectj.lang.JoinPoint;
import org.aspectj.lang.annotation.After;
import org.aspectj.lang.annotation.Aspect;
import org.aspectj.lang.annotation.Pointcut;
```

```
@Aspect
public class afteraopdata {

    @Pointcut("execution(int afteroperation.*(..))")
    public void p(){}

    @After("p()")
    public void myadvice(JoinPoint jp)
    {
        System.out.println("after advice");
    }
}
```

```
package bvimit.edu;
```

```
public class afteroperation {
    public void msg() {System.out.println("method 1");}
    public int m(){System.out.println("method 2 with return");return 2;}
    public int k(){System.out.println("method 3 with return");return 3;}
}
```

```
<?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">
```


Rtqdn g o "Uvcvg o gpv"5"<"Write a program to demonstrate Spring AOP – around advice.

Uqnwvkqp"<

Dcpmcqr f cvc0lxc

package bvimit.edu;

import org.aspectj.lang.ge bvimit.edu;

Depreciation

<?xml version="3.0"

xcnkfevz0z o n

Q.1 Write a program to demonstrate Spring AOP –pointcuts.

Answer

Program

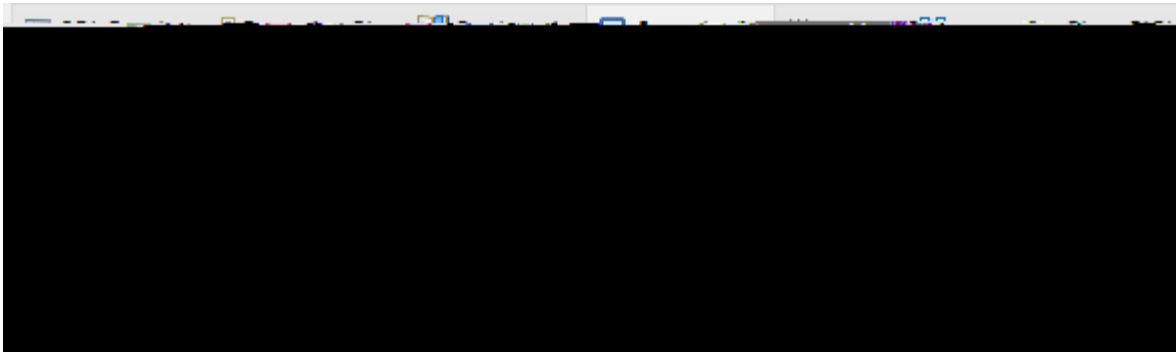
```
package bvimit.edu;  
public class Operation_pc {
```


<bean id=\$vtcemO{Dgcp\$ class=\$dxk o kv0gfw0Cqrfcvcare\$></bean>

<bean
class=\$qti0urtkpihtc o gy qtm0cqr0curgevl0cppqvckqp0CppqvckqpCyc tgCurge vLCwvqRtqz{Etgc vqt\$></bean>

</beans>

Qwvrvv<



Cuukip o gpv"Pq";

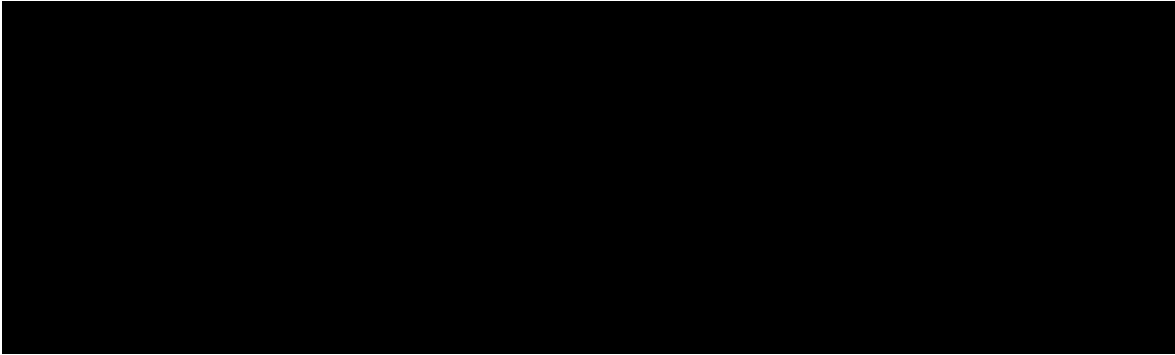
Urtkpi"LFDE

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.

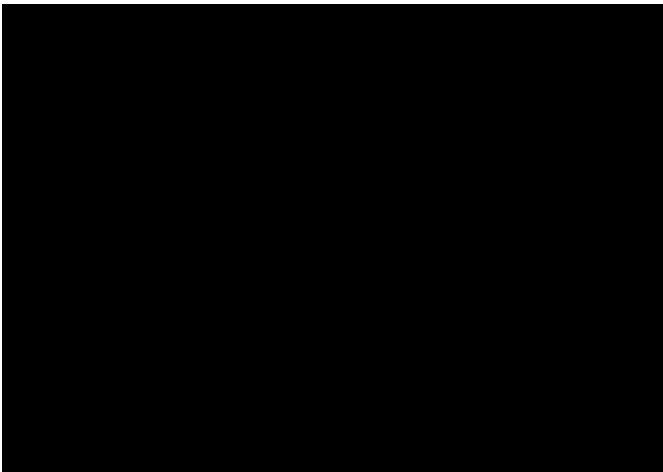
Uygru"vq"Etgcvg"Urtkpi"Ngice{"Rtqlgev

Uygr"3"<"Etgcvgkpi"Urtkpi"Ngice{"Rtqlgev0

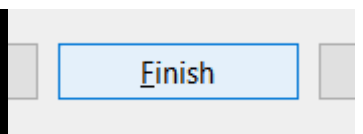
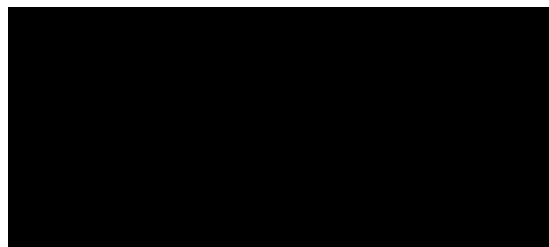
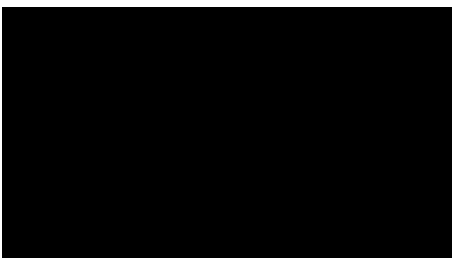
303"<"Open Eclipse. Go To File > New > Other.



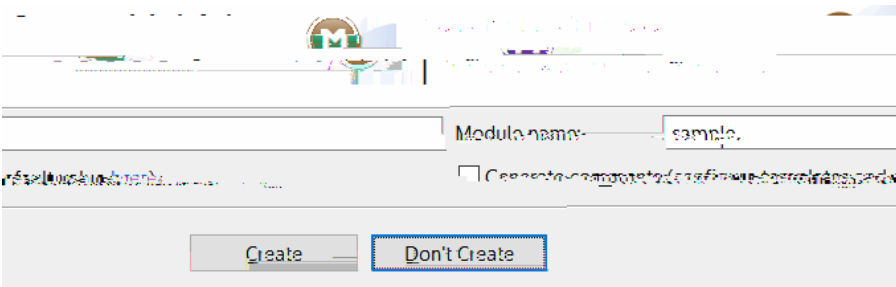
304"<"Search for 'spring' and Select 'Spring Legacy Project'. Then Click on Next.



305"<"Give Project Name of your wish, below there select **Uk o r ng" Lcxc** & simply Finish.

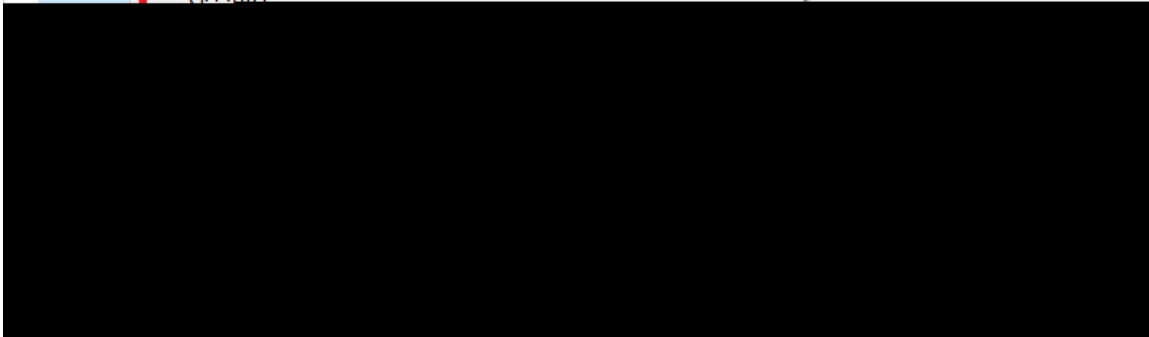


306"<"If asked for Creating module-info.java file, click on **Fqpøv"Etgcvg**.



Uvgr"4"<"Cffkpi"vjg"Urtkpi"Nkdtctkgu0

403"<"Right click on your Newly created Spring Legacy project, Choose Build Path > Configure Build Path.



404"On J 0project,

Q.3 Write a program to insert, update and delete records from the given table.

Solution :

Q.3

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Fcvdcug"<

CREATE TABLE mymovies1

(

mid int,

title varchar(50),

actor varchar(50),

PRIMARY KEY (mid)

);

Hkpcn"Vcdng"Chvgt"Gzgewvkqp"<



Rtqdn g o "Uvcvg o gpv"4"< Write a program to demonstrate PreparedStatement in Spring JdbcTemplate.

Uqnwvkqp"<

Oqxkg30lcxc

package org.me;

```
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;  
    }  
}
```

OqxkgFCQ30lcxc

package org.me;

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 Moxiv a -
```

<property name=

Rtqdn g o "Uvcvg o gp"5"< Write a program in Spring JDBC to demonstrate ResultSetExtractor Interface.

Uqnwvkqp"<

Oqxkg40lcxc

package org.me;

```
public class Movie2 {  
  
    int mid;  
    String title;  
    String actor;  
    public int getMid() {  
        return mid;  
    }  
}
```

```
JdbcTemplate jdbcTemplate;
```

```
public void setJdbcTemplate(JdbcTemplate jdbcTemplate) {
```


Write a program to demonstrate RowMapper interface to fetch the records from the database.

```
package org.me;
```

```
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;  
    }  
}
```


crrzvz50zon

<?xml version=\$3/2\$ encoding=\$WVH/.\$?>

Uvgru"vq"Etgcvg"c"Urtkpi"Dqqv"Rtqlgev

Pqvg"<"Ocmg"uwtg"{qw"jcxg"kpucnngf"vjg"Urtkpi"Rnwikp"kp"Genkrug"Kvugnh0

Uvgr"3"<"

303"<"Open Eclipse. Go To FcBe . Neê . @ther.

Rtqdn g o "Uvcvg o gpv"3< Write a program to create a simple Spring Boot application that prints a message.
Uqnwvkqp"<

Rtqdn g o "Uvcvg o gpv"4< Write a program to demonstrate RESTful Web Services with spring boot

Solution :

J gmq Y qtnfDgcp0lcxc

