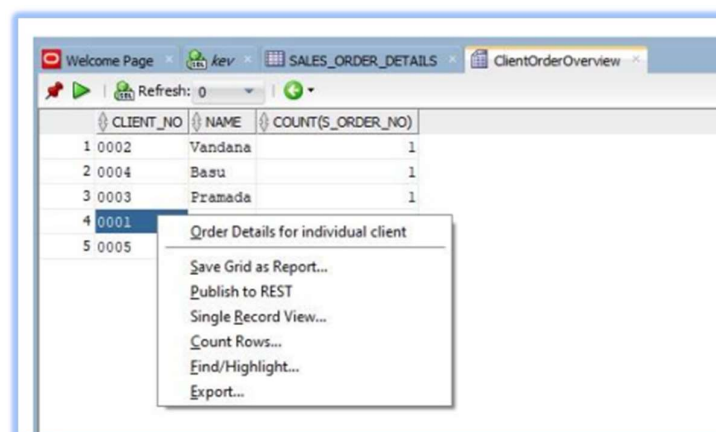
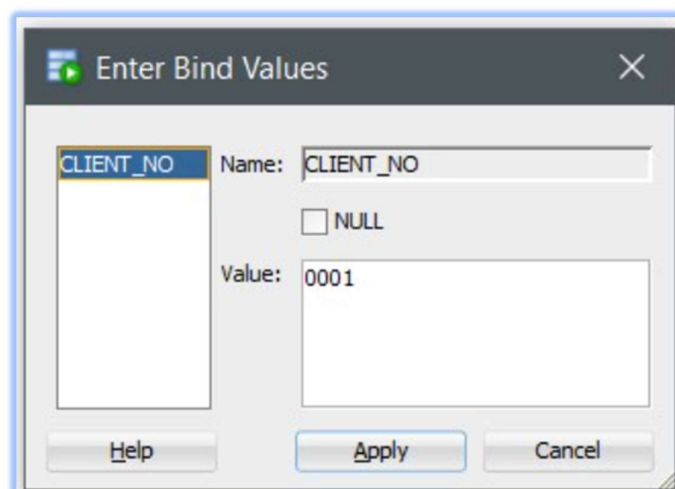
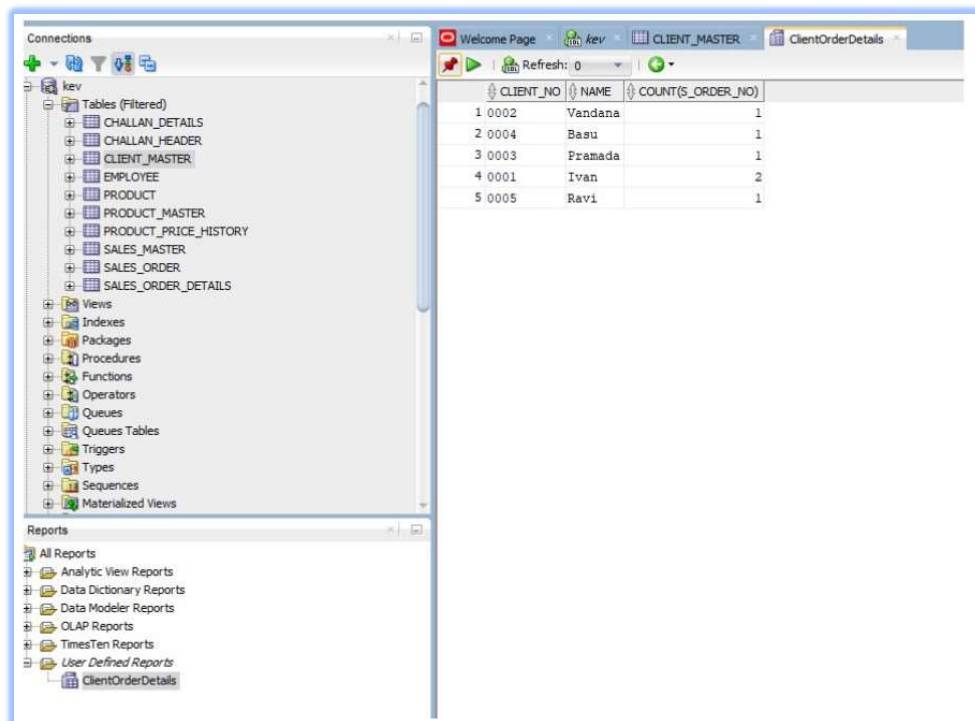


## LAB - 10

Name	Keval D Gandevia
Roll Number	CE046
ID	19CEUEG017
Subject	Big Data Analytics

**Aim:** Delivering reports including visualizations and customized properties.

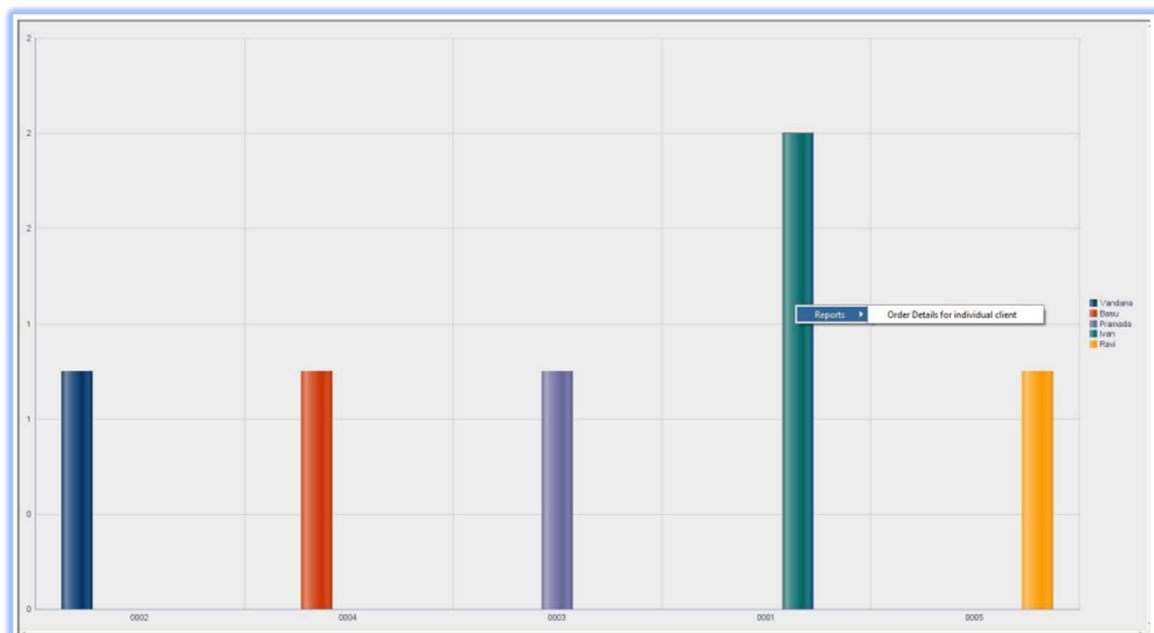
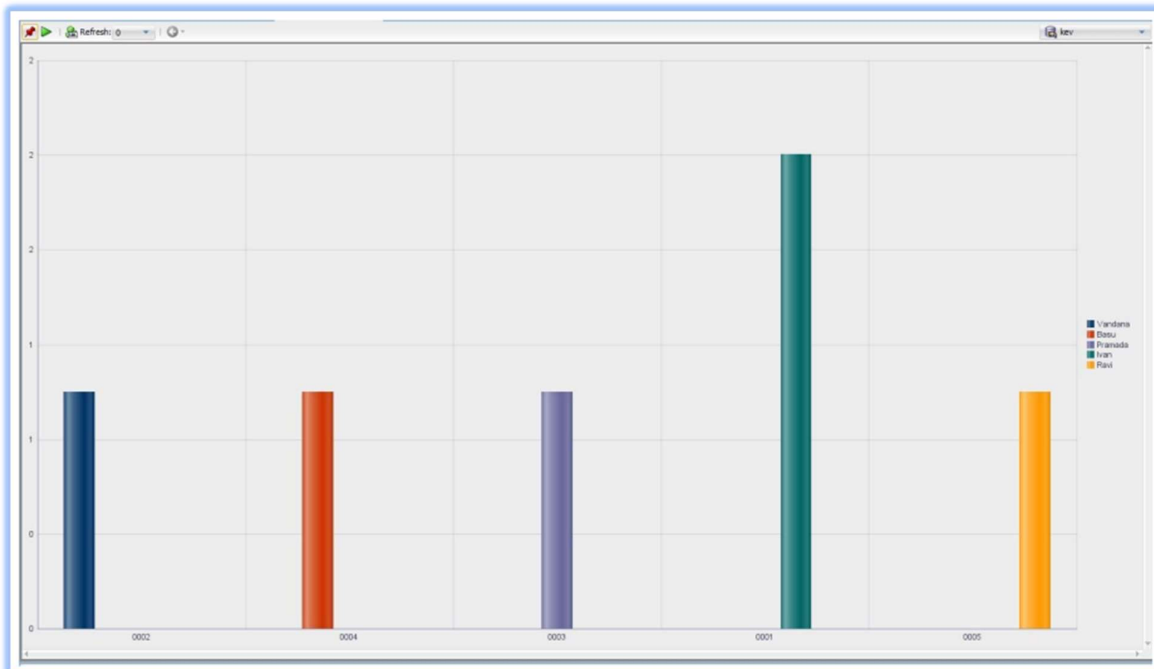
**Generate report using SQLDeveloper.**



Welcome Page | [SALES\\_ORDER\\_DETAILS](#) | ClientOrdersDetails

Refresh: 0

S_ORDER_NO	ORDER_DATE	CLIENT_NO	DELY_ADD	SALESMAN_NO	DELY_TYPE	BILL_YN	DELY_DATE	ORDER_STATUS
1 019010	12-01-96	0001	(null)	S00001	F	N	20-01-96	inprocess
2 019003	03-04-96	0001	(null)	S00001	F	Y	07-04-96	fulfilled



## Using Jasper studio.

**Q. 1: University Name on X-axis, Avg Percentage by various students on Y-Axis. Use bar chart.**

### ❖ Import csv file:

Import To Collection lab10.students

Select File

C:\Users\jeavio\Downloads\Source Data.csv [BROWSE](#)

Select Input File Type

JSON **CSV**

Options

Select delimiter **COMMA**

☒ Ignore empty strings

☐ Stop on errors

Specify Fields and Types

	<input checked="" type="checkbox"/> Candidate Id String	<input checked="" type="checkbox"/> Employee Id String	<input checked="" type="checkbox"/> First Name String	<input checked="" type="checkbox"/> Middle Name String	<input checked="" type="checkbox"/> Last Name String
1	C0001	E0001	Supriyo	empty string	empty string
2	C0002	E0002	Shailendra	Kumar	empty string
3	C0003	E0003	Prameet	empty string	empty string
4	C0004	empty string	Priyank	Kumar	empty string

### ❖ In Jasper studio create a data adapter for mongo db connection.

- Provide Name: MongoDB Connection
- Mongo URI: mongodb://localhost:27017/lab10

**Data Adapter Wizard**

**Data Adapter**  
MongoDB Connection

Name: MongoDB Connection

Mongo URI: mongodb://HOST:27017/lab10

Username:

Password:

? Test < Back Next > Finish Cancel

**New Report Wizard**

**Report Templates**  
Please select a report from a template

Zoom:

Categories

- All
- Print Ready Reports
- Web Interactive Reports
- Format A4
- Format Landscape
- Report Books

Blank A4

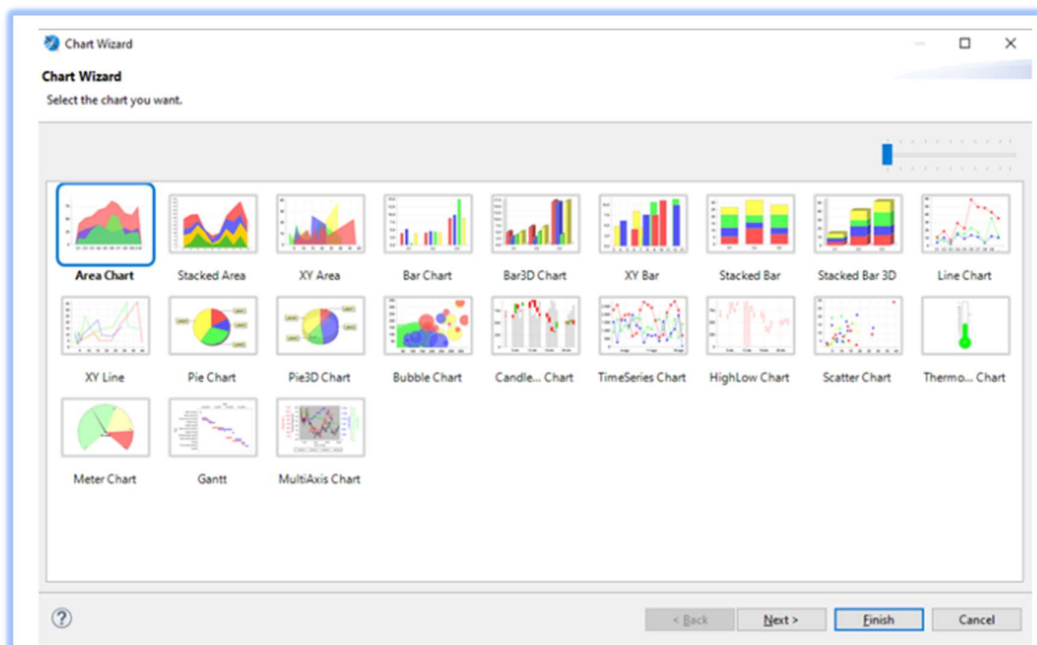
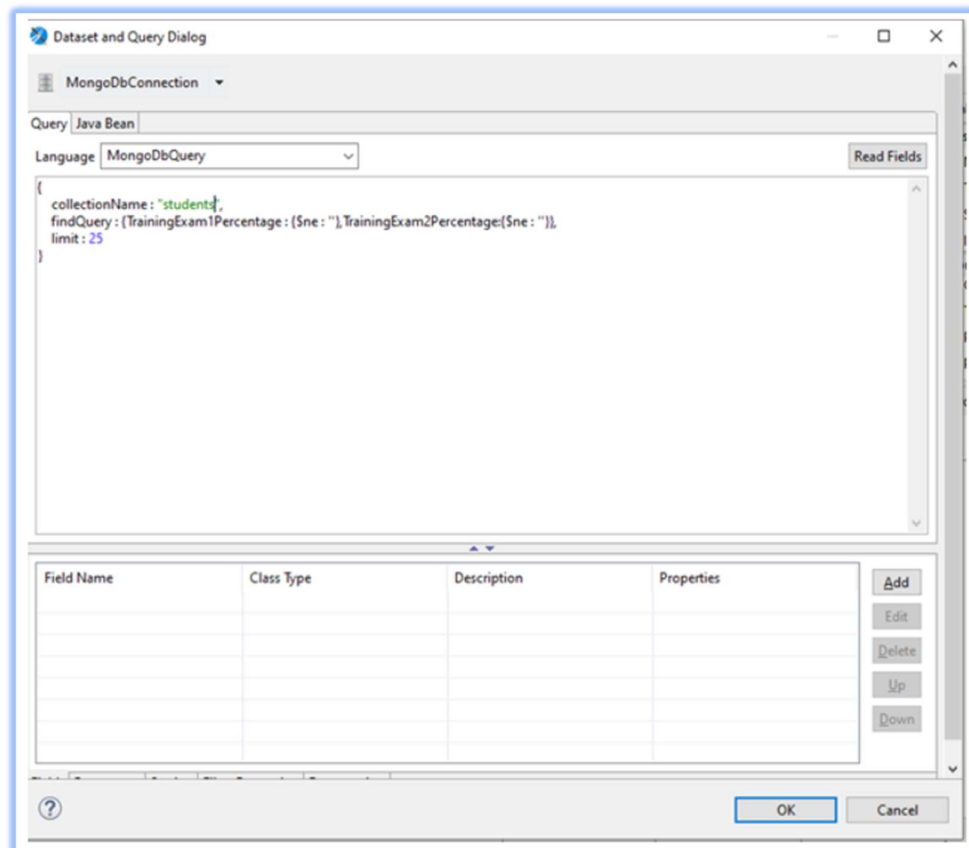
Blank A4 Landscape

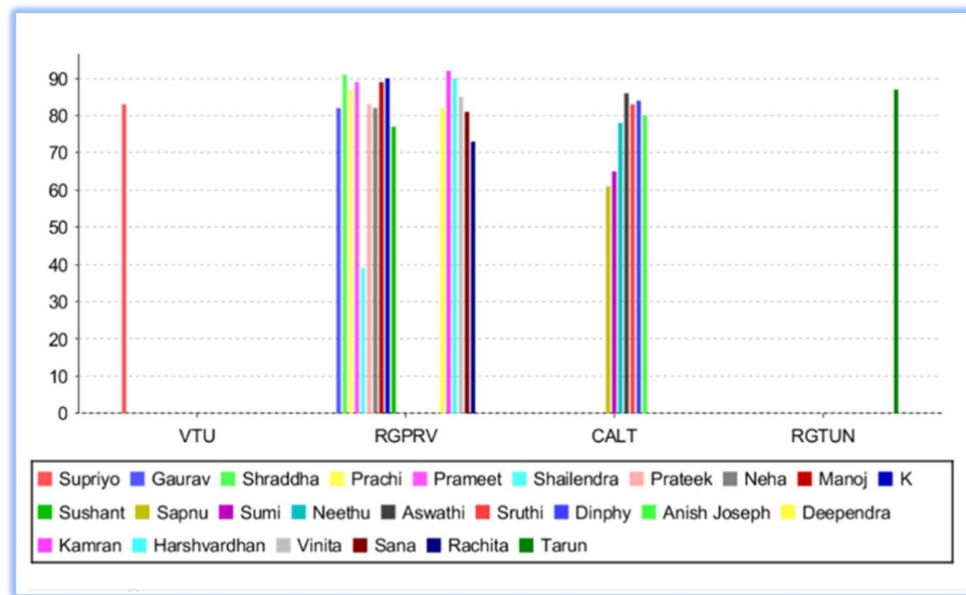
Blank Letter

Blank Title

Blank Title

? < Back Next > Finish Cancel





## **Q. 2: Embed the JasperReport to your java application/web.**

- ❖ Create a new project in netbeans.
- ❖ Adding dependencies required for the project.

### **❖ POM.xml file:**

```

<dependency>
    <groupId>org.mongodb</groupId>
    <artifactId>mongo-java-driver</artifactId>
    <version>3.12.7</version>
</dependency>
<dependency>
    <groupId>net.sf.jasperreports</groupId>
    <artifactId>jasperreports</artifactId>
    <version>6.14.0</version>
</dependency>

```

- ❖ Right Click Dependencies select Download Declared Dependencies. Then choose the jasper report file that you want to embed with a web application. Remember that this file should not contain any query that only contains report configuration.
- ❖ In the Workspace section Select MyReports >> JasperReports >> Compile Report.
- ❖ Then copy the .jasper file and the following location.

❖ **Create following files:**

(1) Student.java file:

```
public class Student
{
    public Double percentage;
    public String university;
    public String background;
    public Student(Double percentage, String university, String background) {
        this.percentage = percentage;
        this.university = university;
        this.background = background;
    }
    public Student() {
    }
    public Double getPercentage() {
```



```
        return percentage;
    }

    public String getUniversity() {
        return university;
    }

    public String getBackground() {
        return background;
    }

    public void setPercentage(Double percentage) {
        this.percentage = percentage;
    }

    public void setUniversity(String university) {
        this.university = university;
    }

    public void setBackground(String background) {
        this.background = background;
    }

    @Override
    public String toString() {
        return "Student{" + "percentage=" + percentage + ", university=" + university +
            ", background=" +
                background + '}';
    }
}
```

## (2) MongoDB connection file:

```
import com.mongodb.MongoClient;
import com.mongodb.client.MongoCollection;
import org.bson.Document;
public class MongoConnection
{
    MongoClient mongoc;
    public MongoCollection<Document> getMongoCollection()
    {
        mongoc = new MongoClient( "localhost" , 27017 );
        return mongoc.getDatabase("lab10").getCollection("students");
    }
}
```

## (3) Retriever.java:

```
package com.webapp.maven.webapp;

import com.mongodb.BasicDBObject;
import com.mongodb.DBObject;
import com.webapp.maven.webapp.*;
import com.mongodb.client.MongoCollection;
import com.mongodb.client.MongoCursor;
import java.util.ArrayList;import java.util.HashMap;
import java.util.HashSet;
```

```

import java.util.Iterator;

import java.util.List;

import java.util.Map.Entry;

import java.util.Set;

import org.bson.Document;

public class Retriever {

    MongoConnection mcon;

    public List<StudentRc> getStudentList(String bck)

    {

        mcon = new MongoConnection();

        MongoCollection<Document> mcol = mcon.getMongoCollection();

       DBObject query = BasicDBObject.parse("{ $group: { _id: \"$University
        Name\", avgp: { $avg: \"$DegreePercentage\" } } }");

        MongoCursor<Document> mcr = mcol.find().iterator();

        Set<String> unlist = getUniversityList();

        List<StudentRc> lsr = new ArrayList<StudentRc>();

        HashMap<String, List<Double>> avpercentage = new
        HashMap<String, List<Double>>();

        HashMap<String, String> backuni = new HashMap<String, String>();

        while(mcr.hasNext())

        {

            Document row = mcr.next();

            if(!row.getString("Background(CS\\NCS)").equals(bck) &&
            !bck.equals("__ALL__"))

                continue;

            String uname = row.getString("University Name");

            if(!avpercentage.containsKey(uname))

            {

```

```

        avpercentage.put(uname, new ArrayList<Double>());

        backuni.put(uname, row.getString("Background(CS\\NCS)"));

    }

    avpercentage.get(uname).add(Double.parseDouble(row.get("DegreePercentage
").toString()));
}

Iterator<Entry<String,String>> bguin = backuni.entrySet().iterator();
while(bguin.hasNext())
{
    Entry<String,String> temp = bguin.next();

    Double avpr = 0.0;

    avpr = avpercentage.get(temp.getKey()).stream().map(pr -> pr).reduce(avpr,
(accumulator,
    _item) -> accumulator + _item);

    avpr = avpr / avpercentage.get(temp.getKey()).size();

    lsr.add(new StudentRc(avpr, temp.getKey(), temp.getValue()));
}

mcon.mongoc.close();

return lsr;
}

public Set<String> getUniversityList()
{
    mcon = new MongoConnection();

    MongoClient<Document> mcr = mcon.getMongoCollection().find().iterator();

    Set<String> stu = new HashSet<String>();

    while(mcr.hasNext())
    {
        Document row = mcr.next();
    }
}

```

```

        stu.add(row.getString("University Name"));

    }

    mcon.mongoc.close();

    return stu;

}

}

```

#### (4) SelectParameter.jsp:

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<%@page import="java.util.Set"%>

<%@page import="com.webapp.maven.webapp.Retriever"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>Select Backgroundtype</title>

        <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css"
integrity="sha384-
        Vkoo8x4CGsO3+Hhvx8T/Q5PaXtkKtu6ug5TOeNV6gBiFeWPGFN9MuhOf23Q9Ifjh
        "
        crossorigin="anonymous">

        <script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.min.js"
        integrity="sha384-
wfSDF2E50Y2D1uUdj0O3uMBJnjuUD4Ih7YwaYd1iqfktj0Uod8GCExl3Og8ifwB6"

```

```

        crossorigin="anonymous"></script>

</head>

<body>

    <br><br>

    <div class="container w-75 m-auto shadow p-3 mb-5 bg-white rounded"> <div
class="alert alert-light text-secondary w-50 m-auto " role="alert">

        Select <text class="text-primary">Background</text> From below
        Dropdown

    </div>

    <br>

    <select id="background" class="form-control form-control-sm w-50 m-auto"
    onchange="navigateToUni()" >

        <option></option>

        <option>CS</option>

        <option>NCS</option>

        <option>__ALL__</option>

    </select><!-- comment -->

</div>

</body>

<script>

    function navigateToUni()

    {

        uname = document.getElementById("background");

        window.location.replace("/maven-
webapp/DisplayReport.jsp?bckg="+uname.value);

    }

</script>

</html>

```

#### (5) DisplayReport.jsp:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>

<%@page import="net.sf.jasperreports.engine.JasperPrintManager"%>

<%@page import="com.webapp.maven.webapp.Retriever"%>

<%@page import="net.sf.jasperreports.engine.JasperRunManager"%><%@page
import="java.util.List"%>

<%@page import="java.util.ArrayList"%>

<%@page import="com.webapp.maven.webapp.StudentRc"%>

<%@page import="net.sf.jasperreports.engine.JasperPrint"%>

<%@page import="net.sf.jasperreports.engine.JasperFillManager"%>

<%@page import="java.util.Map"%>

<%@page import="java.util.HashMap"%>

<%@page import="net.sf.jasperreports.engine.data.JRBeanCollectionDataSource"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>JSP Page</title>

    </head>

    <body>

        <% String bckg = request.getParameter("bckg");

        List<StudentRc> li = (new Retriever()).getStudentList(bckg);

        JRBeanCollectionDataSource beanColDataSource = new
        JRBeanCollectionDataSource(li);

        Map<String, Object> parameters = new HashMap<String, Object>();

        String jpath = "C:\\Users\\HP\\Documents\\NetBeansProjects\\maven
```

```

webapp\\src\\main\\resources\\JStudentReport.jasper";

byte bytes[] = JasperRunManager.runReportToPdf(jpath,
parameters,beanColDataSource);

response.setContentType("application/pdf");

response.setContentLength(bytes.length);

ServletOutputStream outStream = response.getOutputStream();

outStream.write(bytes, 0, bytes.length);

outStream.flush();

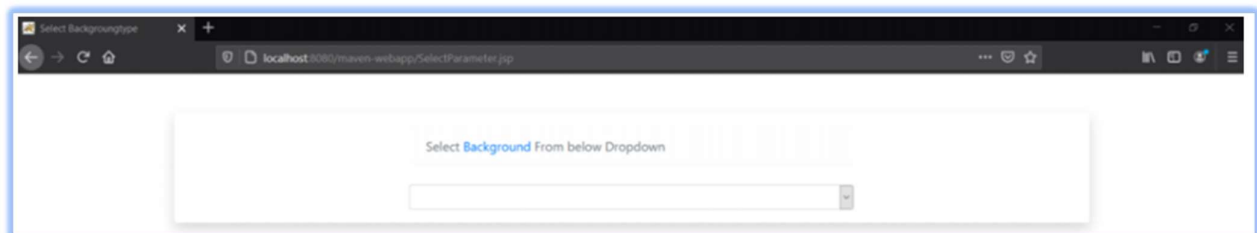
outStream.close();

%>

</body>

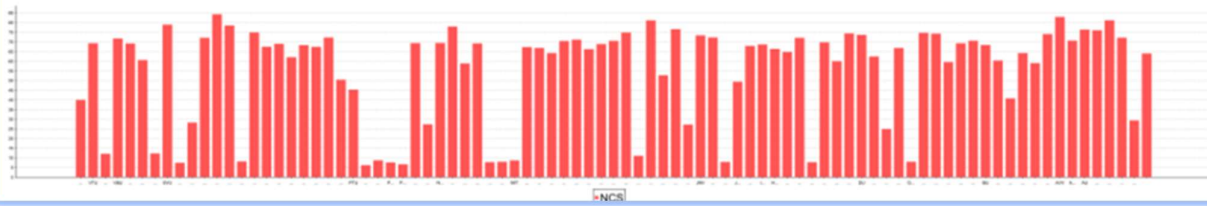
</html>

```





## Report: NCS



Select Backgroundtype

localhost:8080/maven-website/SelectParameter.jsp

Select Background From below Dropdown

CS  
NCS  
\_All\_

