GURUDEV ARTS & SCIENCE COLLEGE
MATHIL, PAYYANUR, KANNUR DIST.
(Affiliated to Kannur University)

BACHELOR OF COMPUTER APPLICATION

ENTERPRISE JAVA PROGRAMMING PRACTICAL RECORD

Name :

Class No :

University Reg. No :

GURUDEV ARTS & SCIENCE COLLEGE
MATHIL, PAYYANUR, KANNUR DIST.

(Affiliated to Kannur University)

DEPARTMENT OF COMPUTER SCIENCE

Certified that this is the bonafide record of practicals done by...of …… year..in Gurudev Arts and Science College, Mathil for the year 20….. to 20…..

Lecturer in Charge   Head Of Dept., Computer Science

Submitted for University Examinations 20…..

Examiners : 1.

2.

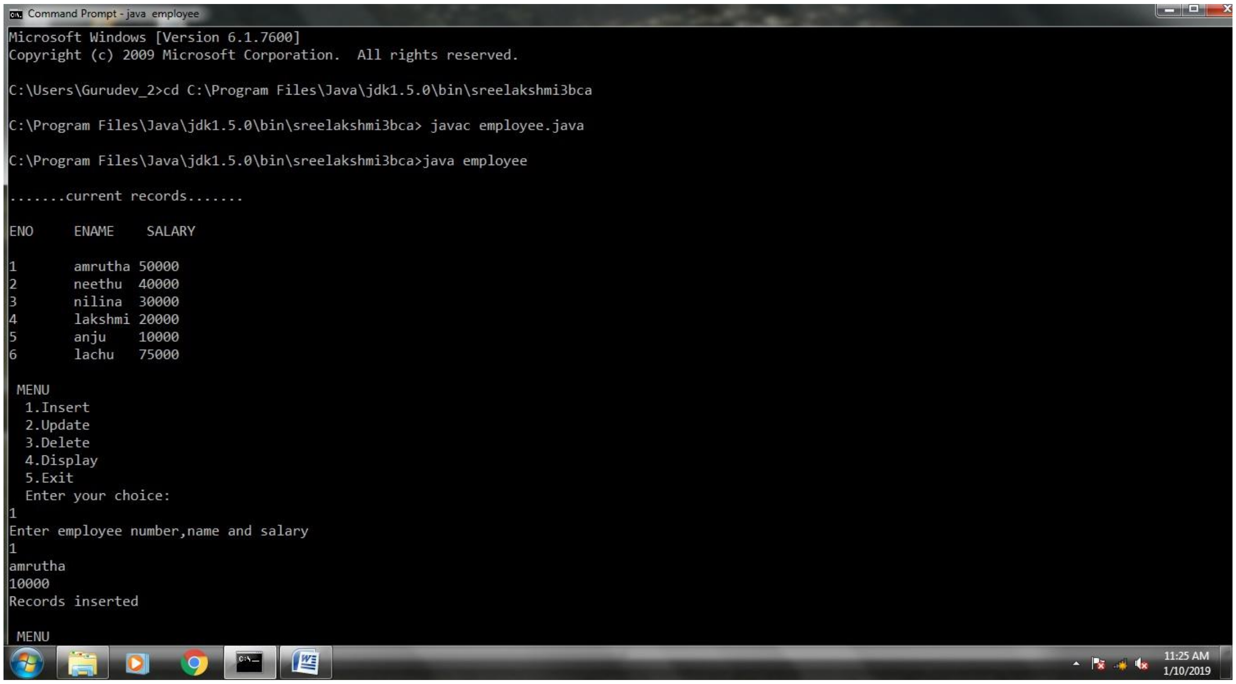
PROGRAM -1

JDBC program to insert, delete and update records into employee table.

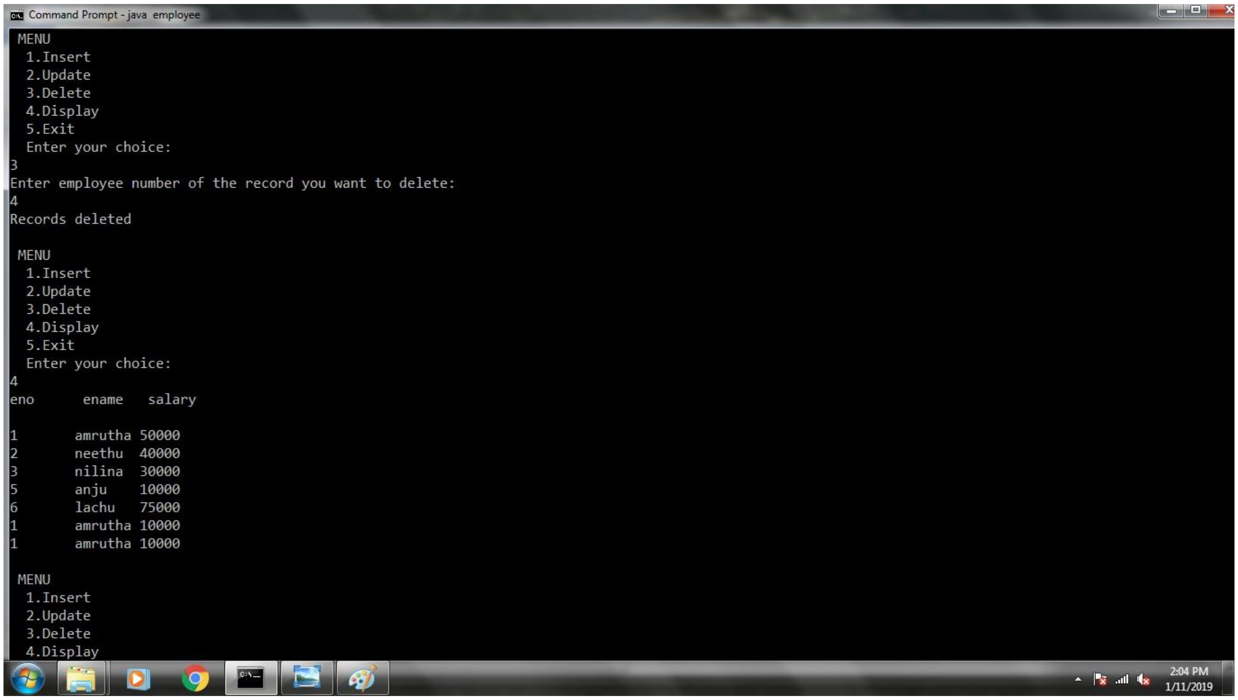
```
import java.sql.*;
import java.io.*;
public class employee
{
     static final String JDBC_DRIVER="com.mysql.jdbc.Driver";
     static final String DB_URL="jdbc:mysql://localhost/abcd";
     static final String USER="root";
     static final String PASS="gurudev";
     public static void main(String[] args)throws IOException
    {
        int ch,upc;
        int no,sal;
        String name;
        BufferedReader br=new BufferedReader(new
InputStreamReader(System.in));
      try
       {
           Class.forName("com.mysql.jdbc.Driver");
        }
           catch(ClassNotFoundException  e)
     {
        System.out.println("Unable to load driver");
}
try
{
   Connection conn=DriverManager.getConnection(DB_URL,USER,PASS);
   Statement stmt=conn.createStatement();
   System.out.println("\n.......current records.......\n");
   System.out.println("ENO\tENAME \t SALARY \n");
   ResultSet rs=stmt.executeQuery("select * from employee");
   while(rs.next())
  {

System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("sa
lary"));
  }
  do
 {
   System.out.println("\n MENU  \n  1.Insert  \n  2.Update  \n  3.Delete  \n
4.Display  \n  5.Exit  \n  Enter your choice:");
   ch=Integer.parseInt(br.readLine());
   switch(ch)
  {
case 1:
            System.out.println("Enter employee number,name and salary");
            no=Integer.parseInt(br.readLine());
            name=br.readLine();
            sal=Integer.parseInt(br.readLine());
            stmt.executeUpdate("insert into
employee(eno,ename,salary)values("+no+",'"+name+"',"+sal+")");
            System.out.println("Records inserted");
            break;
case 2:
           System.out.println("Enter employee number of the record to be updated:");
           no=Integer.parseInt(br.readLine());
           System.out.println("Enter the new name and salary");
           name=br.readLine();
           sal=Integer.parseInt(br.readLine());
           try
           {
               conn.setAutoCommit(false);
               upc=stmt.executeUpdate("update employee set
ename='"+name+"',salary="+sal+"where eno="+no);
               if(upc!=0)
               {
                 conn.commit();
                 System.out.println("Records Updated");
               }
               else
              {
                System.out.println("No such records exist");
                break;
               }
             }
             catch(SQLException e)
             {
                 System.out.println("Exception occured:"+e+"\n Records not Updated
\n");
                 conn.rollback();

              }
            break;
case 3:
            System.out.println("Enter employee number of the record you want to
delete:");
            no=Integer.parseInt(br.readLine());
            try
            {
               conn.setAutoCommit(false);
               upc=stmt.executeUpdate("delete from employee where eno="+no);
               if(upc!=0)
               {
                  System.out.println("Records deleted");
                  conn.commit();
               }
               else
               {
                   System.out.println("No such records exist");
                   break;
                }
             }
            catch(SQLException e)
             {
                System.out.println("Exception occured:"+e+" \n Records not
deleted\n");
                conn.rollback();
             }
            break;
case 4:
            ResultSet rs1=stmt.executeQuery("select * from employee");
            System.out.println("eno \t ename \t salary \n");
            while(rs1.next())
            {

System.out.println(rs1.getInt("eno")+"\t"+rs1.getString("ename")+"\t"+rs1.getInt
("salary"));
```

```
            }
            break;
case 5:
           System.exit(0);

            System.out.println("Enter a valid choice");

}
}
while(ch!=5);
rs.close();
stmt.close();
conn.close();
}
catch(SQLException e)
{
    System.out.println("connection failed:" +e.getMessage());
}
}
}
```

OUTPUT:



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi3bca

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi3bca> javac employee.java

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi3bca>java employee

.......current records.......

ENO     ENAME    SALARY

1       amrutha 50000
2       neethu  40000
3       nilina  30000
4       lakshmi 20000
5       anju    10000
6       lachu   75000

 MENU
  1.Insert
  2.Update
  3.Delete
  4.Display
  5.Exit
  Enter your choice:
1
Enter employee number,name and salary
1
amrutha
10000
Records inserted

 MENU
```



```
 MENU
  1.Insert
  2.Update
  3.Delete
  4.Display
  5.Exit
  Enter your choice:
3
Enter employee number of the record you want to delete:
4
Records deleted

 MENU
  1.Insert
  2.Update
  3.Delete
  4.Display
  5.Exit
  Enter your choice:
4
eno      ename   salary

1       amrutha 50000
2       neethu  40000
3       nilina  30000
5       anju    10000
6       lachu   75000
1       amrutha 10000
1       amrutha 10000

 MENU
  1.Insert
  2.Update
  3.Delete
  4.Display
```

PROGRAM -2

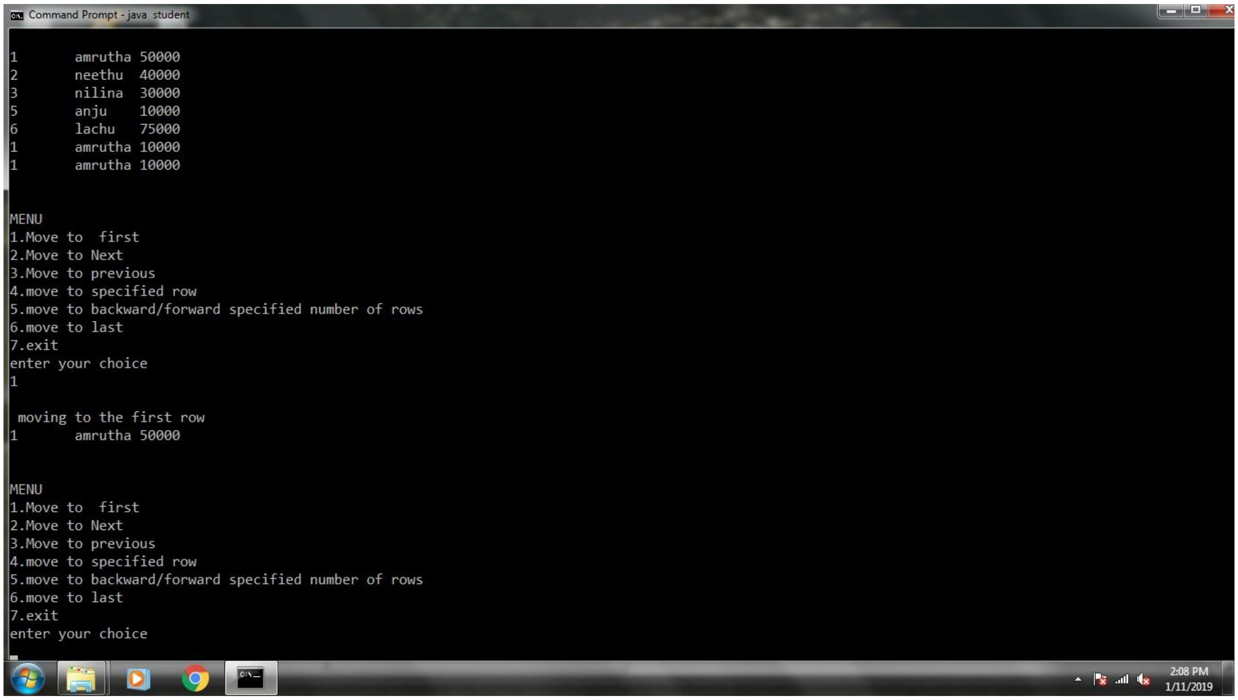
JDBC program to connect to student table. implement the record scrolling function-first(),last(),next(),previous(),beforeFirst(),afterLast(),absolute() and relative().

```
import java.sql.*;
import java.io.*;
public class student
  {

     static final String JDBC_DRIVER="com.mysql.jdbc.Driver";
     static final String DB_URL="jdbc:mysql://localhost/abcd";
     static final String USER="root";
     static final String PASS="gurudev";

public static void main(String[]args)throws IOException
      {
int ch,row,rows;
BufferedReader br=new BufferedReader(newInputStreamReader(System.in));
try
{
Class.forName("com.mysql.jdbc.Driver");
```

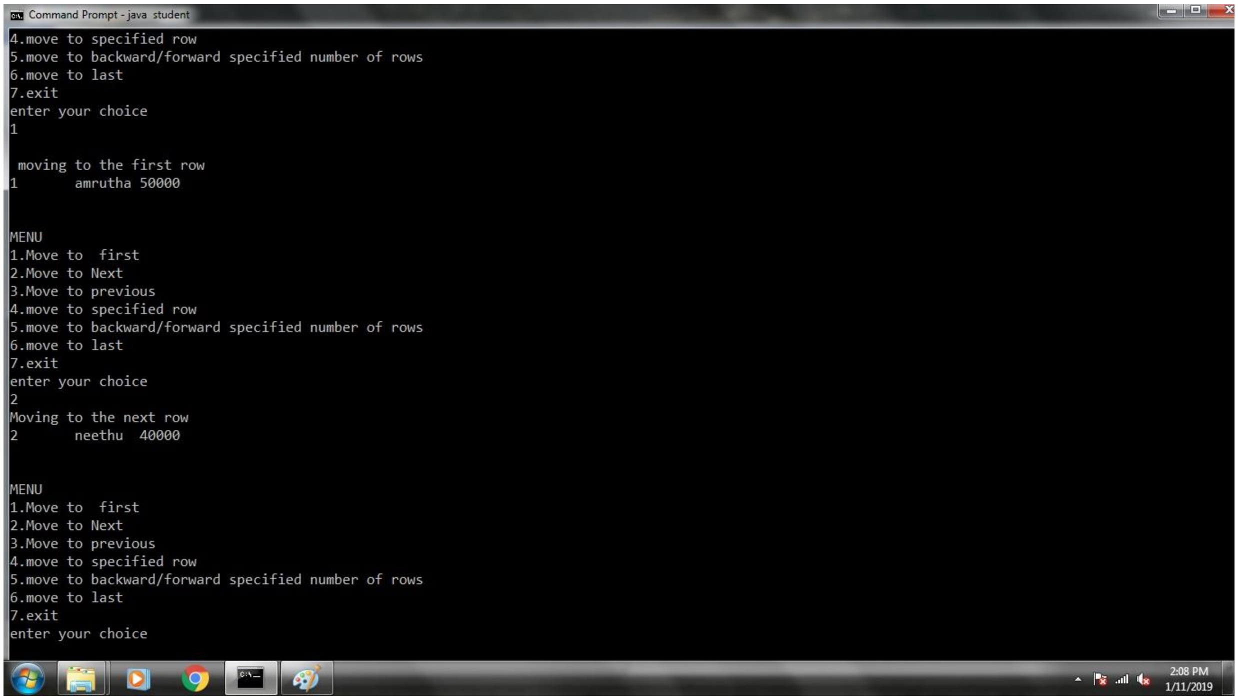
```
}
 catch(ClassNotFoundException e)
 {
 System.out.println("Unable to load the driver");
 }

 try
 {
 Connection con=DriverManager.getConnection(DB_URL,USER,PASS);
 Statement stmt=con.createStatement();
 ResultSet rs=stmt.executeQuery("select * from employee");
 System.out.println("\n...CURRENT TABLE...");
 System.out.println("eno\t ename \t salary\n");
 while(rs.next())
 {
 System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("sa
 lary"));
 }
 do
 {
 System.out.println("\n\nMENU\n1.Move to  first\n2.Move to Next\n3.Move to
 previous\n4.move to specified row\n5.move to backward/forward specified
 number of rows\n6.move to last\n7.exit\nenter your choice");
 ch=Integer.parseInt(br.readLine());
 switch(ch)
 {
 case 1:
 rs.first();
 System.out.println("\n moving to the first row");
 System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("sa
 lary"));
 break;
 case 2:
 rs.next();
 System.out.println("Moving to the next row");
 System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("sa
 lary"));
 break;
 case 3:rs.previous();
 System.out.println("\n moving to the previous row");
 System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("salary"));
 break;


 case 4:
 System.out.println("Enter the row  no :");
 row=Integer.parseInt(br.readLine());
 rs.absolute(row);
 System.out.println("\n moving to the specified row");
 System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("salary"));
 break;


 case 5:
 System.out.println("Enter the  no of rows you want to be moved forward/backward:");
 rows=Integer.parseInt(br.readLine());
 rs.relative(rows);
 System.out.println("\n moving to the specified row");
 break;


 case 6:
 rs.last();
 System.out.println("\n moving to the last row");
 System.out.println(rs.getInt("eno")+"\t"+rs.getString("ename")+"\t"+rs.getInt("salary"));
 break;


 case 7:
 System.exit(0);
 }
 }
  while(ch!=7);
```

```
rs.close();
stmt.close();
con.close();
}
catch(SQLException e)
{
System.out.println("Connection failed:"+e.getMessage());
e.printStackTrace(System.out);
}
}
}
```

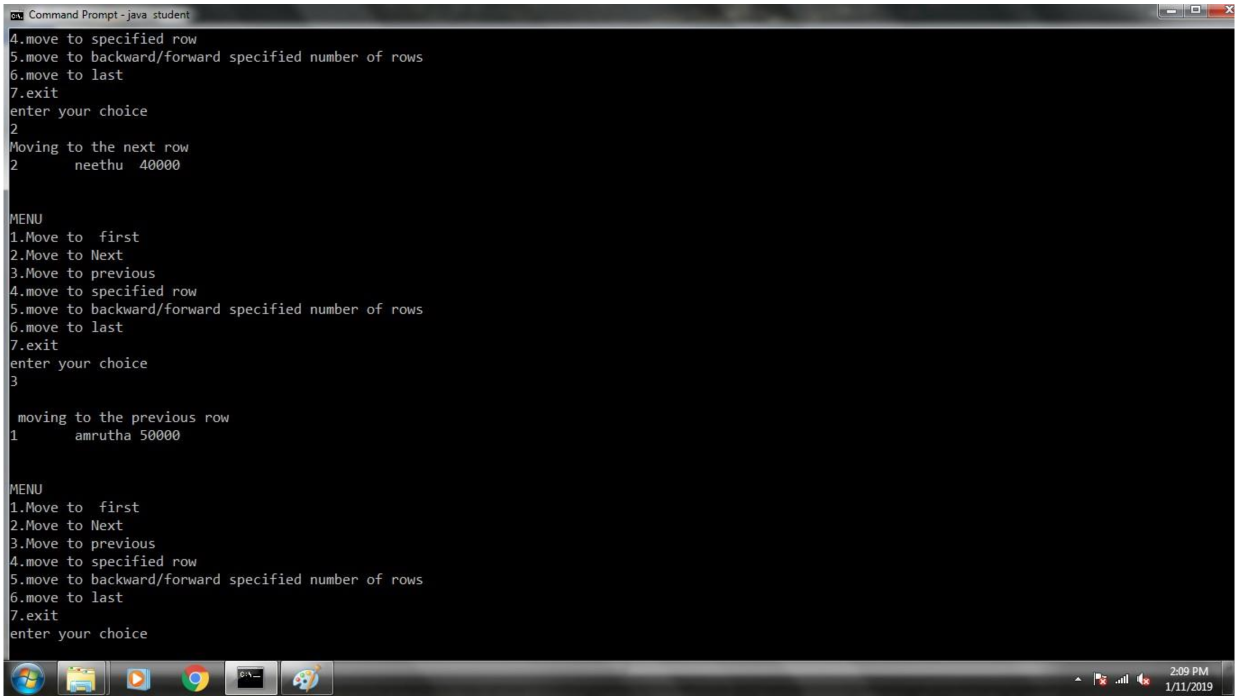
OUTPUT:



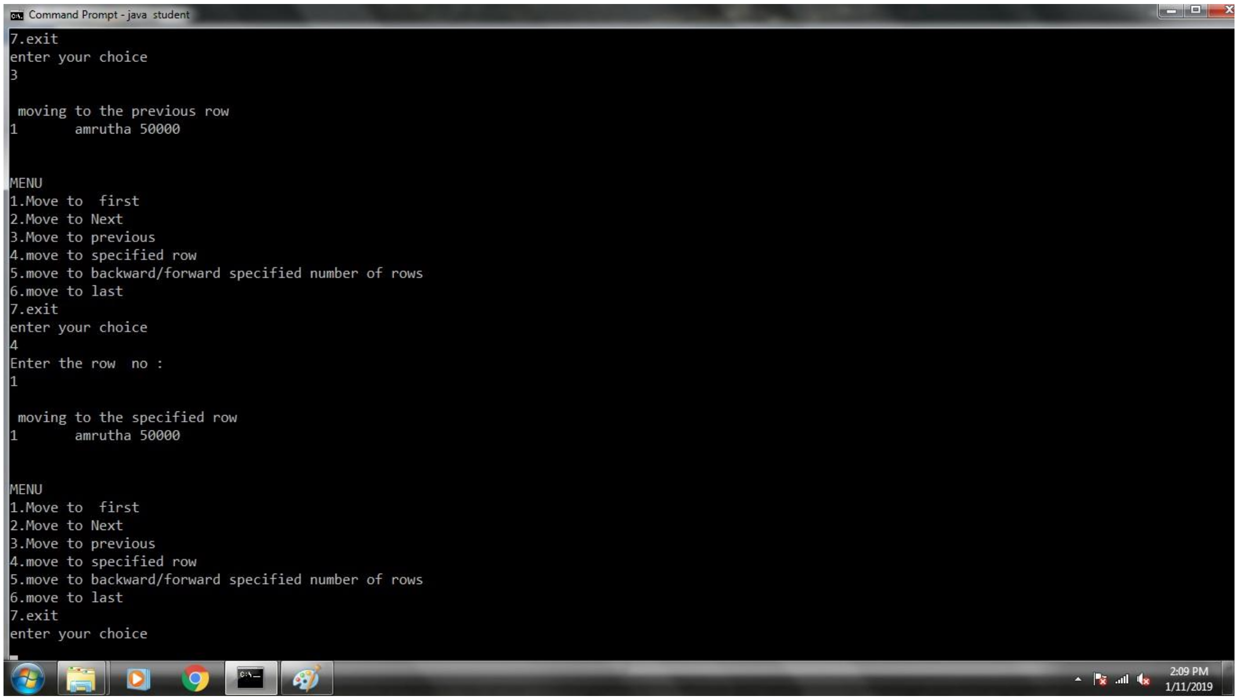
```
1       amrutha 50000
2       neethu  40000
3       nilina  30000
5       anju    10000
6       lachu   75000
1       amrutha 10000
1       amrutha 10000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
1

 moving to the first row
1       amrutha 50000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
```



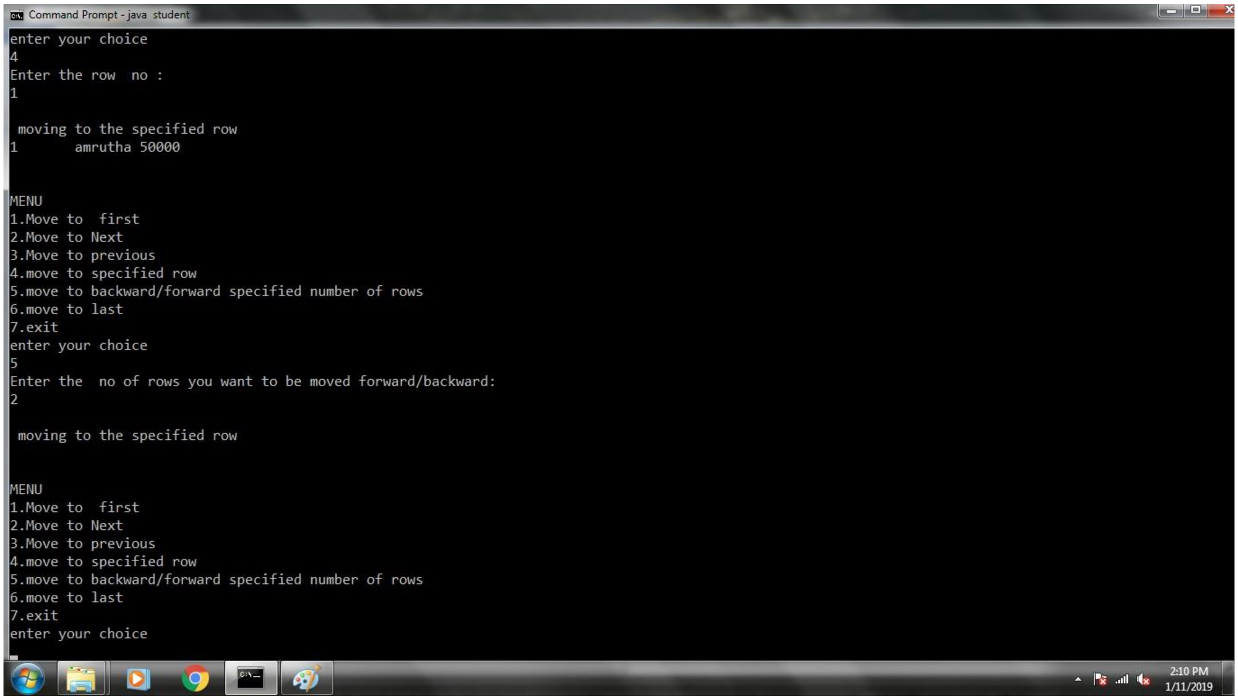
```
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
1

 moving to the first row
1       amrutha 50000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
2
Moving to the next row
2       neethu  40000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
```



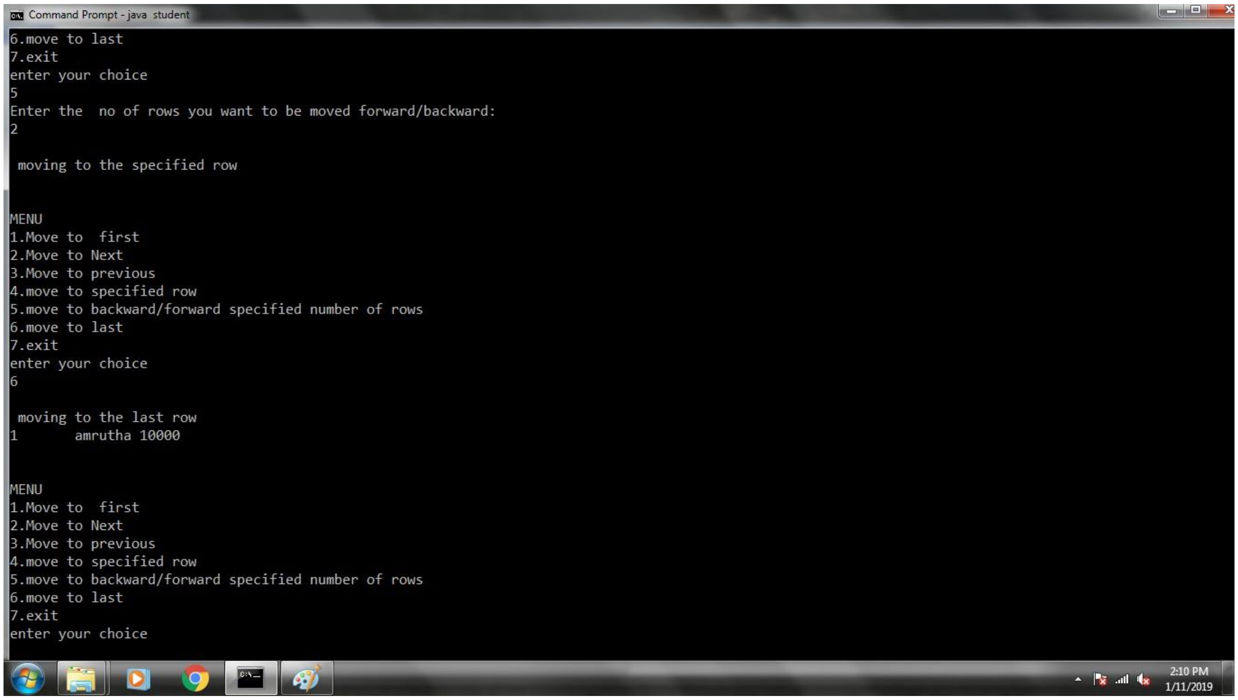
```
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
2
Moving to the next row
2       neethu  40000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
3

 moving to the previous row
1       amrutha 50000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
```



```
7.exit
enter your choice
3

 moving to the previous row
1       amrutha 50000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
4
Enter the row  no :
1

 moving to the specified row
1       amrutha 50000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
```



```
enter your choice
4
Enter the row  no :
1

 moving to the specified row
1       amrutha 50000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
5
Enter the  no of rows you want to be moved forward/backward:
2

 moving to the specified row


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
```



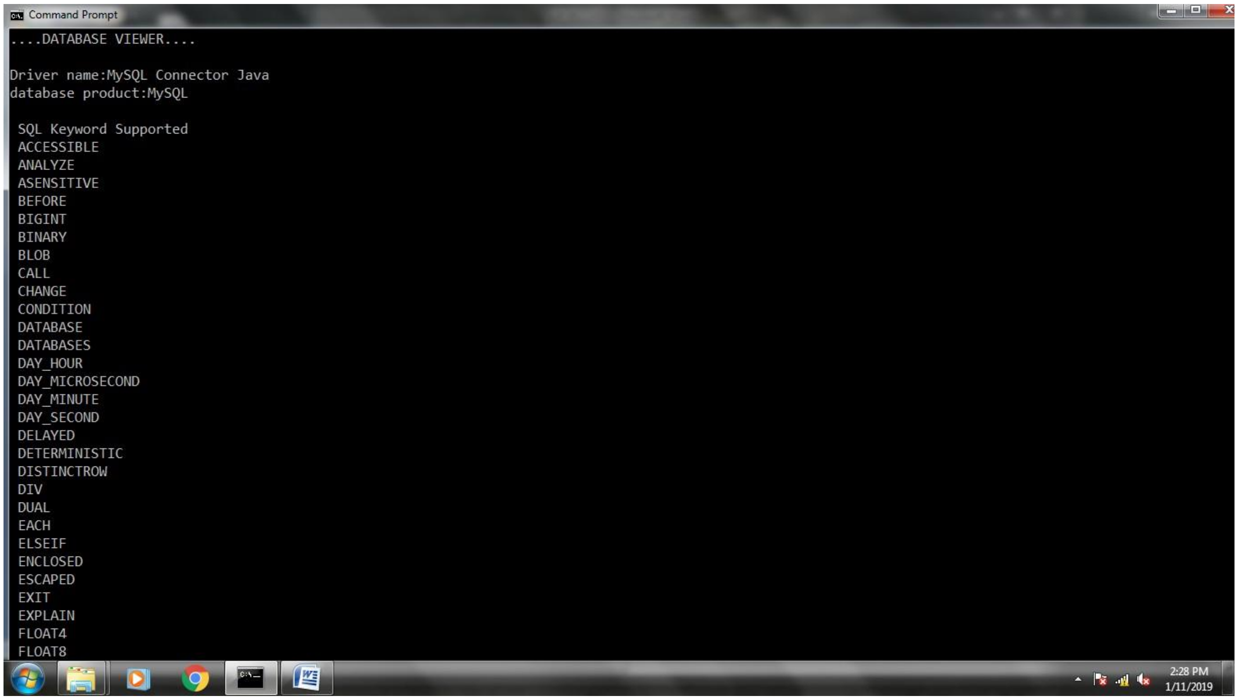
```
6.move to last
7.exit
enter your choice
5
Enter the  no of rows you want to be moved forward/backward:
2

 moving to the specified row


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
6

 moving to the last row
1       amrutha 10000


MENU
1.Move to  first
2.Move to Next
3.Move to previous
4.move to specified row
5.move to backward/forward specified number of rows
6.move to last
7.exit
enter your choice
```

PROGRAM-3

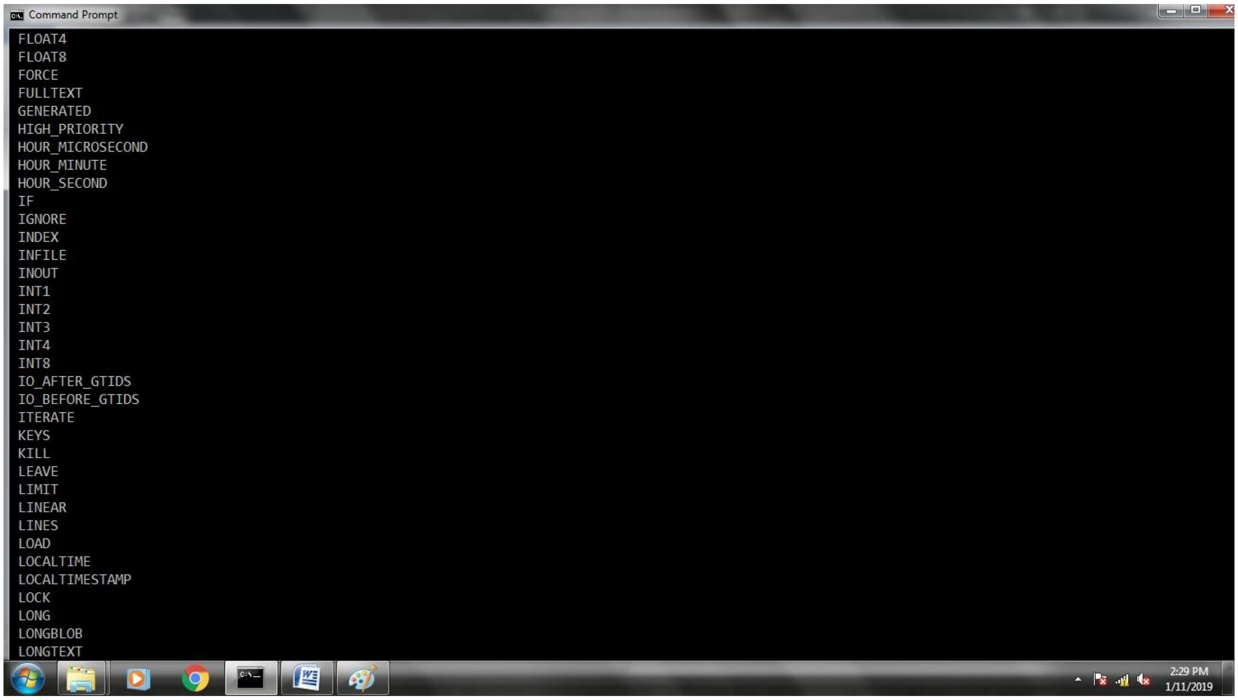
JDBC to display database metadata.

```
import java.sql.*;
import java.io.*;
import java.util.StringTokenizer;
public class DBViewer
{
static final String JDBC_DRIVER="com.mysql.jdbc.Driver";
static final String DB_URL="jdbc:mysql://localhost/abcd";
static final String USER="root";
static final String PASS="gurudev";
public static void main(String args[])
{
System.out.println("\n....DATABASE  VIEWER ....\n");
{
try
{
Class.forName(JDBC_DRIVER);
Connection con=DriverManager.getConnection(DB_URL,USER,PASS);
DatabaseMetaData dbmd=con.getMetaData();
System.out.println("Driver name:"+dbmd.getDriverName());
System.out.println("database product:"+dbmd.getDatabaseProductName());
System.out.println("\n SQL Keyword Supported");
StringTokenizer st=new StringTokenizer(dbmd.getSQLKeywords(),",");
while(st.hasMoreTokens())
System.out.println(" "+st.nextToken());
String[]tableTypes={"TABLES"};
ResultSet rs=dbmd.getTables(null,null,null,tableTypes);
while(rs.next())
{
String table_name=rs.getString("TABLE_TYPE");
System.out.println("indexes");
ResultSet ilist=dbmd.getIndexInfo(null,null,table_name,false,false);
while(ilist.next())
{
System.out.println("indexname:"+ilist.getString("INDEX_NAME"));
System.out.println("coloumnname:"+ilist.getString("COLOUMN NAME"));
}
ilist.close();
}
rs.close();
con.close();
}
catch(ClassNotFoundException e)
{
System.out.println("unable to load driver");
}
catch(SQLException e)
{
System.out.println("Exception:"+e);
}
}
}
}
```

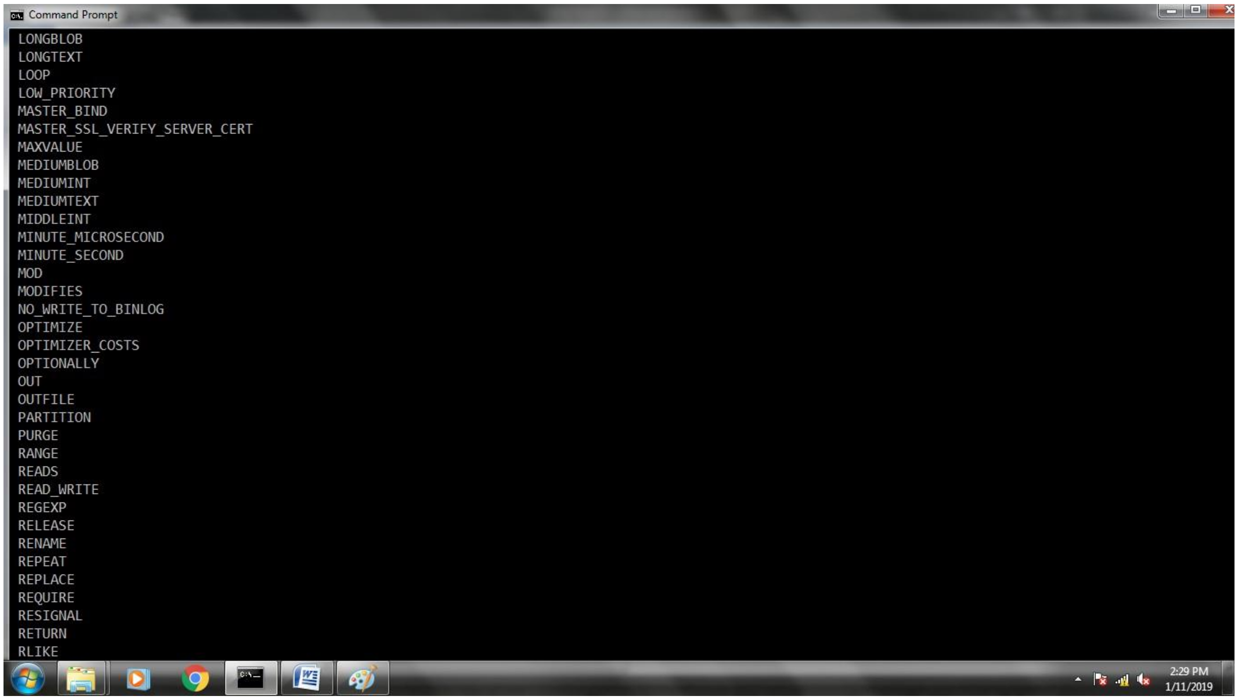
OUTPUT:



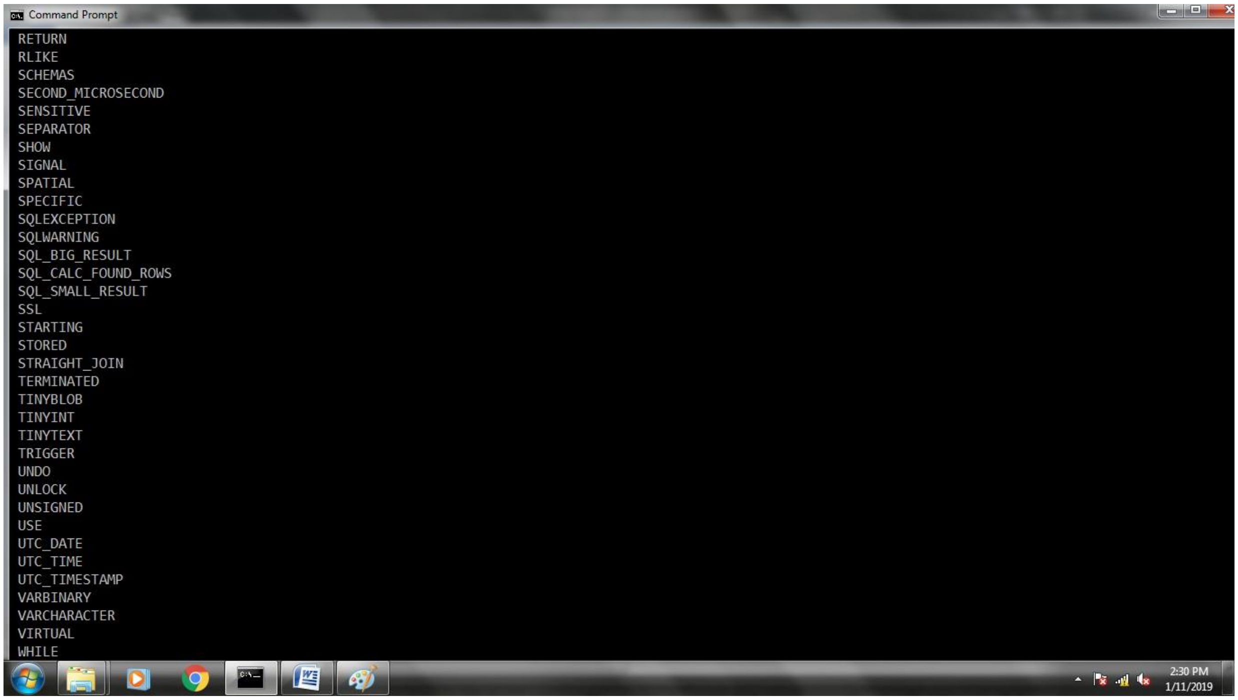
```
....DATABASE VIEWER....

Driver name:MySQL Connector Java
database product:MySQL

 SQL Keyword Supported
 ACCESSIBLE
 ANALYZE
 ASENSITIVE
 BEFORE
 BIGINT
 BINARY
 BLOB
 CALL
 CHANGE
 CONDITION
 DATABASE
 DATABASES
 DAY_HOUR
 DAY_MICROSECOND
 DAY_MINUTE
 DAY_SECOND
 DELAYED
 DETERMINISTIC
 DISTINCTROW
 DIV
 DUAL
 EACH
 ELSEIF
 ENCLOSED
 ESCAPED
 EXIT
 EXPLAIN
 FLOAT4
 FLOAT8
```



```
 FLOAT4
 FLOAT8
 FORCE
 FULLTEXT
 GENERATED
 HIGH_PRIORITY
 HOUR_MICROSECOND
 HOUR_MINUTE
 HOUR_SECOND
 IF
 IGNORE
 INDEX
 INFILE
 INOUT
 INT1
 INT2
 INT3
 INT4
 INT8
 IO_AFTER_GTIDS
 IO_BEFORE_GTIDS
 ITERATE
 KEYS
 KILL
 LEAVE
 LIMIT
 LINEAR
 LINES
 LOAD
 LOCALTIME
 LOCALTIMESTAMP
 LOCK
 LONG
 LONGBLOB
 LONGTEXT
```



```
LONGBLOB
LONGTEXT
LOOP
LOW_PRIORITY
MASTER_BIND
MASTER_SSL_VERIFY_SERVER_CERT
MAXVALUE
MEDIUMBLOB
MEDIUMINT
MEDIUMTEXT
MIDDLEINT
MINUTE_MICROSECOND
MINUTE_SECOND
MOD
MODIFIES
NO_WRITE_TO_BINLOG
OPTIMIZE
OPTIMIZER_COSTS
OPTIONALLY
OUT
OUTFILE
PARTITION
PURGE
RANGE
READS
READ_WRITE
REGEXP
RELEASE
RENAME
REPEAT
REPLACE
REQUIRE
RESIGNAL
RETURN
RLIKE
```



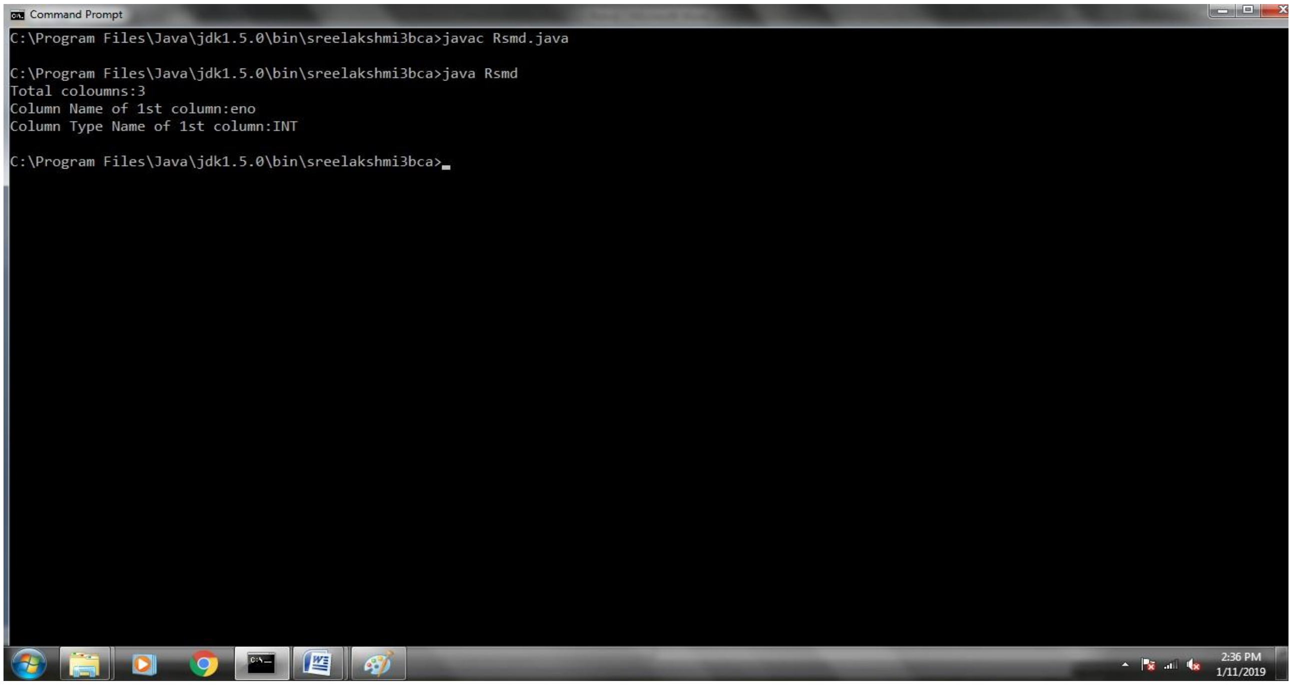
```
RETURN
RLIKE
SCHEMAS
SECOND_MICROSECOND
SENSITIVE
SEPARATOR
SHOW
SIGNAL
SPATIAL
SPECIFIC
SQLEXCEPTION
SQLWARNING
SQL_BIG_RESULT
SQL_CALC_FOUND_ROWS
SQL_SMALL_RESULT
SSL
STARTING
STORED
STRAIGHT_JOIN
TERMINATED
TINYBLOB
TINYINT
TINYTEXT
TRIGGER
UNDO
UNLOCK
UNSIGNED
USE
UTC_DATE
UTC_TIME
UTC_TIMESTAMP
VARBINARY
VARCHARACTER
VIRTUAL
WHILE
```

PROGRAM -4

JDBC program to display Resultset metadata.

```
import java.sql.*;
class Rsmd
{
        static final String JDBC_DRIVER="com.mysql.jdbc.Driver";
        static final String DB_URL="jdbc:mysql://localhost/abcd";
        static final String USER="root";
static final String PASS="gurudev";
static final String table="emp1";
public static void main(String args[])
{
        try
        {
                Class.forName("com.mysql.jdbc.Driver");
                Connection
con=DriverManager.getConnection(DB_URL,USER,PASS);
                PreparedStatement ps=con.prepareStatement("select * from emp1");
ResultSet rs=ps.executeQuery();
ResultSetMetaData rsmd=rs.getMetaData();
System.out.println("Total coloumns:"+rsmd.getColumnCount());
System.out.println("Column Name of 1st column:"+rsmd.getColumnName(1));
System.out.println("Column Type Name of 1st
column:"+rsmd.getColumnTypeName(1));
con.close();
        }
catch(Exception e)
{
        System.out.println(e);
}
        }
}
```

OUTPUT:



```
C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi3bca>javac Rsmd.java

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi3bca>java Rsmd
Total coloumns:3
Column Name of 1st column:eno
Column Type Name of 1st column:INT

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi3bca>_
```

PROGRAM -5

RMI program for complex number operation.

Complex Client.java

```
import java.rmi.Naming;
import java .io.*;
public class ComplexClient
{
public static void main(String args[])throws IOException
{
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
int x,y,z,w,ans1,ans2;
System.out.println("enter 1st complex numbers:");
x=Integer.parseInt(br.readLine());
y=Integer.parseInt(br.readLine());
System.out.println("enter @nd complex number:");
z=Integer.parseInt(br.readLine());
w=Integer.parseInt(br.readLine());
try
{
ComplexInter obj=(ComplexInter)Naming.lookup("rmi://localhost/com");
ans1=obj.add1(x,z);
ans2=obj.add2(y,w);
System.out.println("sum="+ans1+"+i"+ans2);
}
catch(Exception e)
{
System.out.println("Error:"+e);
}
}
}
```

ComplexImpl.java

```
import java.rmi.server.UnicastRemoteObject;
import java.rmi.RemoteException;
public class ComplexImpl extends UnicastRemoteObject implements
ComplexInter
{
public ComplexImpl()throws RemoteException{}
public int add1(int a1,int b1)throws RemoteException
{
int c=a1+b1;
return(c);
}
public int add2(int a2,int b2)throws RemoteException
{
int d=a2+b2;
return(d);
}
}
```

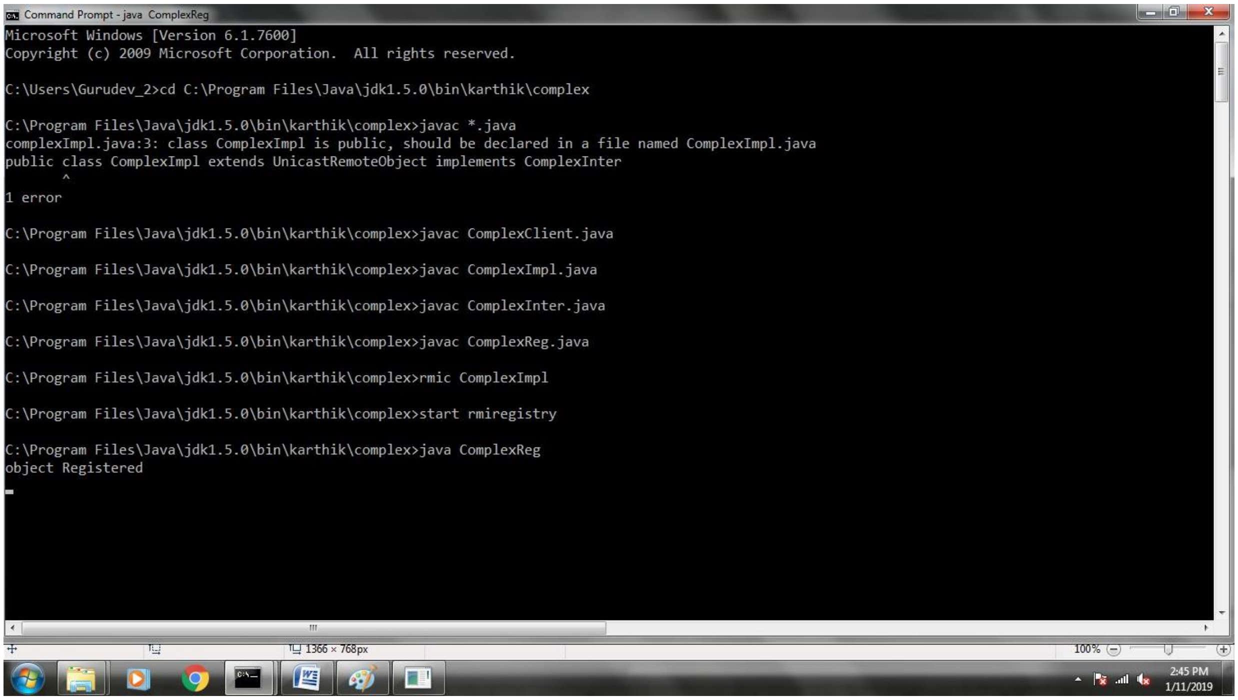
complexInter.java

```
import java.rmi.Remote;
import java.rmi.RemoteException;
public interface ComplexInter extends java.rmi.Remote
{
public int add1(int a1,int b1)throws RemoteException;
public int add2(int a2,int b2)throws RemoteException;
}
```

ComplexReg.java

```
import java.rmi.Naming;
public class ComplexReg
{
public static void main(String artgs[])
{
try
{
ComplexImpl comp=new ComplexImpl();
Naming.rebind("com",comp);
System.out.println("object Registered");
}
catch(Exception e)
{
e.printStackTrace();
}
}
}
```

OUTPUT:



```
Microsoft Windows [Version 6.1.7600]
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C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\karthik\complex

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>javac *.java
complexImpl.java:3: class ComplexImpl is public, should be declared in a file named ComplexImpl.java
public class ComplexImpl extends UnicastRemoteObject implements ComplexInter
       ^
1 error

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>javac ComplexClient.java

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>javac ComplexImpl.java

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>javac ComplexInter.java

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>javac ComplexReg.java

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>rmic ComplexImpl

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>start rmiregistry

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>java ComplexReg
object Registered
```
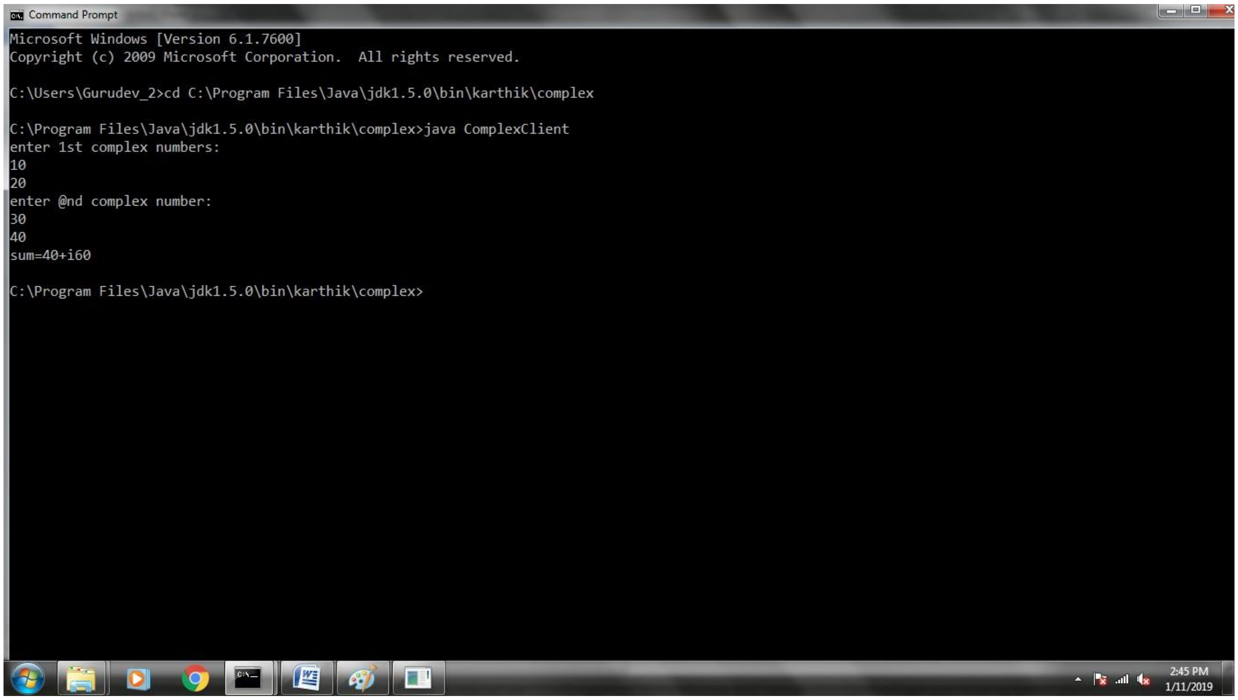



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\karthik\complex

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>java ComplexClient
enter 1st complex numbers:
10
20
enter @nd complex number:
30
40
sum=40+i60

C:\Program Files\Java\jdk1.5.0\bin\karthik\complex>
```

PROGRAM -6

RMI program for bank operation.

Bank.java

```
import java.rmi.*;
public interface bank extends Remote
{
public float deposit(float accno,float amt)throws RemoteException;
public float withdraw (float accno,float amt)throws RemoteException;
public float balance (float accno)throws RemoteException;
};
```

Bankimpl.java

```
import java.rmi.*;
import java.rmi.server.*;
public class bankimpl extends UnicastRemoteObject implements bank
{
float c=0;
public bankimpl()throws RemoteException
{
super();
}
public float deposit(float accno,float amt)throws RemoteException
{
c=c+amt;
return c;
}
public float withdraw(float accno,float amt)throws RemoteException
{
c=c-amt;
return c;
}
public float balance(float accno)throws RemoteException
{
return c;
}
}
```

Client.java

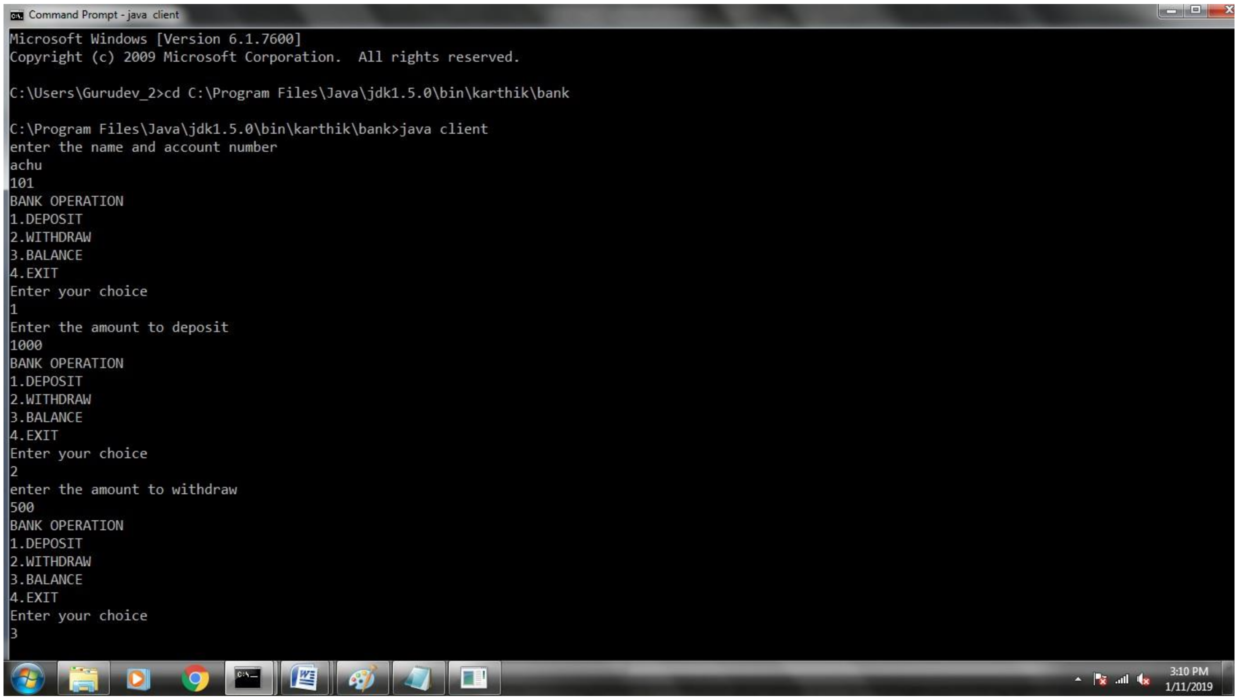
```
import java.rmi.*;
import java.io.*;
public class client
{
public static void main(String args[])
{
float c,act,b,amt;
String name;
int ch;
try
{
BufferedReader rd=new BufferedReader(new InputStreamReader(System.in));
bank ar=(bank)Naming.lookup("bank");
System.out.println("enter the name and account number");
name=rd.readLine();
act=Float.parseFloat(rd.readLine());
do
{
        System.out.println("BANK OPERATION");
        System.out.println("1.DEPOSIT");
        System.out.println("2.WITHDRAW");
        System.out.println("3.BALANCE");
        System.out.println("4.EXIT");
        System.out.println("Enter your choice");
        ch=Integer.parseInt(rd.readLine());
        switch(ch)
        {
                case 1:
                System.out.println("Enter the amount to deposit");
                amt=Float.parseFloat(rd.readLine());
                c=ar.deposit(act,amt);
                break;
                case 2:
                System.out.println("enter the amount to withdraw");
                amt=Float.parseFloat(rd.readLine());
                c=ar.withdraw(act,amt);
                break;
                case 3:
                System.out.println("");
```

```
                    c=ar.balance(act);
                    System.out.println("ACCOUNT NUMBER CURRENT
BALANCE");
                    System.out.println("----------------------------------");
                    System.out.println(act+"            "+c);
                    break;

          }

} while(ch<4);
}
catch(Exception e)
{

}
}
}
```

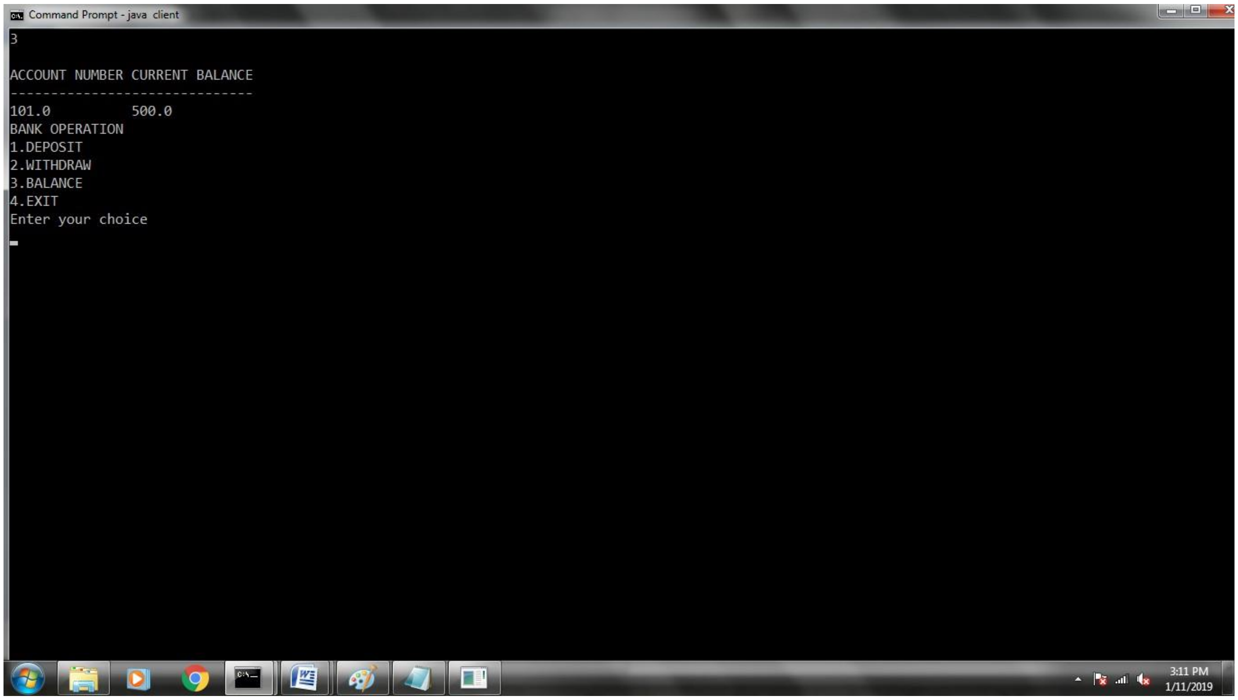
<u>Reg.java</u>

```
import java.rmi.*;
public class reg
{
public static void main(String args[])
{
try
{
bankimpl ob=new bankimpl();
Naming.rebind("bank",ob);
}
catch(Exception e)
{
}
}
}
```

OUTPUT:



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\karthik\bank

C:\Program Files\Java\jdk1.5.0\bin\karthik\bank>java client
enter the name and account number
achu
101
BANK OPERATION
1.DEPOSIT
2.WITHDRAW
3.BALANCE
4.EXIT
Enter your choice
1
Enter the amount to deposit
1000
BANK OPERATION
1.DEPOSIT
2.WITHDRAW
3.BALANCE
4.EXIT
Enter your choice
2
enter the amount to withdraw
500
BANK OPERATION
1.DEPOSIT
2.WITHDRAW
3.BALANCE
4.EXIT
Enter your choice
3
```



```
3

ACCOUNT NUMBER CURRENT BALANCE
------------------------------
101.0          500.0
BANK OPERATION
1.DEPOSIT
2.WITHDRAW
3.BALANCE
4.EXIT
Enter your choice
```

PROGRAM -7

RMI program for matrix addition and subtraction.

Client.java

```
import java.rmi.*;
import java.io.*;
class matt
{
int i,j;
BufferedReader rd=new BufferedReader(new InputStreamReader(System.in));
public int[][]read(int[][] A,int r,int c)throws IOException
{
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
A[i][j]=Integer.parseInt(rd.readLine());
}
}
return A;
}
public void print(int[][]A,int r,int c)throws IOException
{
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
System.out.println(" "+A[i][j]);
}
System.out.println(" ");
}
}
}
public class client
{
public static void main(String args[])
{
int r,c,ch;
matt mt=new matt();
```

```
int[][] A=new int[100][100];
int [][] B=new int[100][100];
int[][] C=new int[100][100];
BufferedReader rd=new BufferedReader(new InputStreamReader(System.in));
try
{
System.out.println("enter the order of matrix");
r=Integer.parseInt(rd.readLine());
c=Integer.parseInt(rd.readLine());
System.out.println("enter the order of first matrix");
A=mt.read(A,r,c);
System.out.println("enter the order of second matrix");
B=mt.read(B,r,c);
System.out.println("FIRST MATRIX");
mt.print(A,r,c);
System.out.println("SECOND MATRIX");
mt.print(B,r,c);
matrix a=(matrix)Naming.lookup("matt");
do
{
System.out.println("");
System.out.println("MATRIX OPERATION");
System.out.println("1.ADDITION");
System.out.println("2.SUBTRACTION");
System.out.println("3.EXIT");
System.out.println("ENTER YOUR CHOICE");
ch=Integer.parseInt(rd.readLine());
switch(ch)
{
case 1:
C=a.add(A,B,r,c);
System.out.println("ADDITION");
mt.print(C,r,c);
break;
case 2:
C=a.sub(A,B,r,c);
System.out.println("SUBTRACTION");
mt.print(C,r,c);
break;
}
}while(ch<3);
}
catch(Exception e)
{
}
}
}
```

Matrix.java

```
import java.rmi.*;
public interface matrix extends Remote
{
public int[][]add(int[][] A,int[][] B,int r,int c)throws RemoteException;
public int[][]sub(int[][] A,int[][] B,int r,int c)throws RemoteException;
};
```

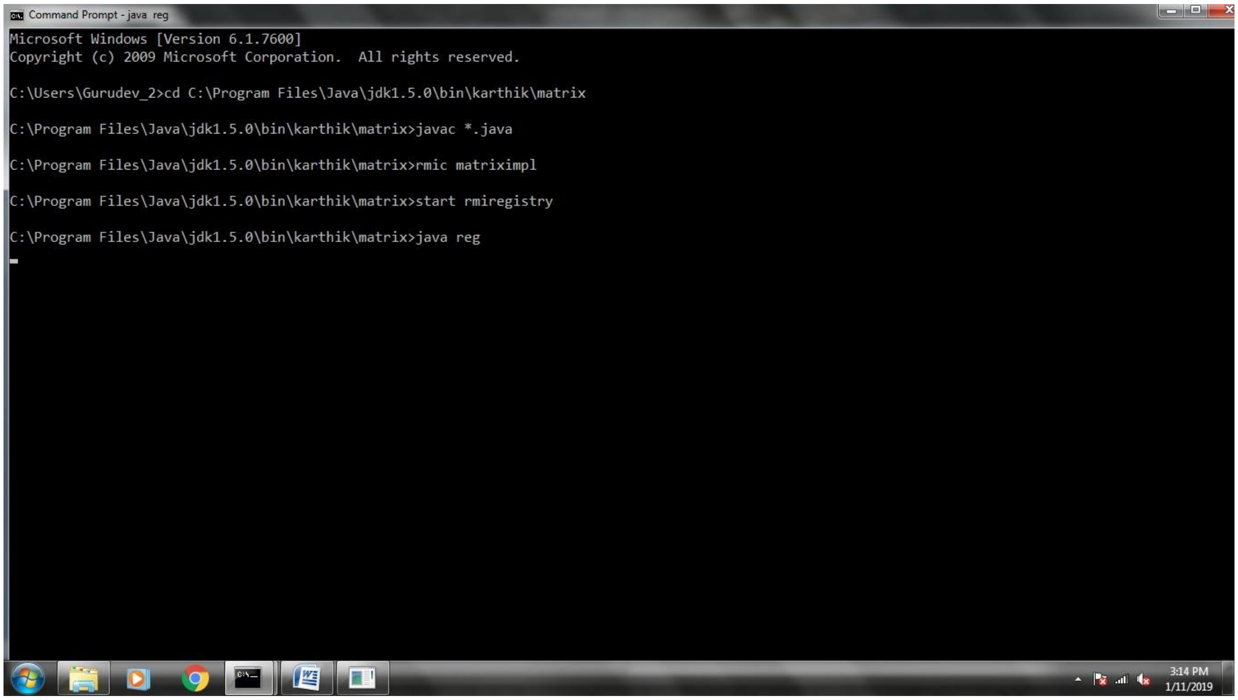
Matriximpl.java

```
import java.rmi.*;
import java.rmi.server.*;
import java.io.*;
public class matriximpl extends UnicastRemoteObject implements matrix
{
String res;
int rsum,i,j;
int[][]C=new int[100][100];
public matriximpl()throws RemoteException
{
super();
}
public int[][]add(int[][] A,int[][] B,int r,int c)throws RemoteException
{
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
C[i][j]=A[i][j]+B[i][j];
}
}
return C;
}
public int[][]sub(int[][] A,int[][] B,int r,int c)throws RemoteException
{
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
C[i][j]=A[i][j]-B[i][j];
}
}
return C;
}
}
```

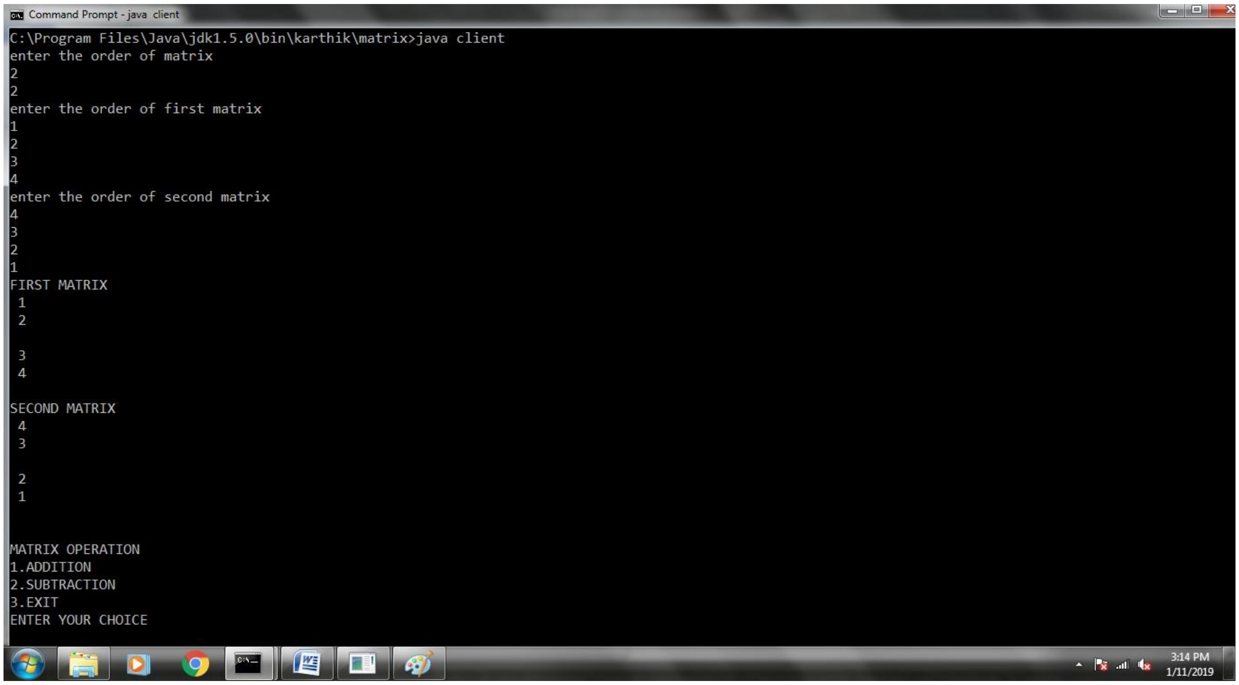
Reg.java

```
import java.rmi.*;
public class reg
{
public static void main(String args[])
{
try
{
matriximpl ob=new matriximpl();
Naming.rebind("matt",ob);
}
catch(Exception e)
{
}
}
}
```

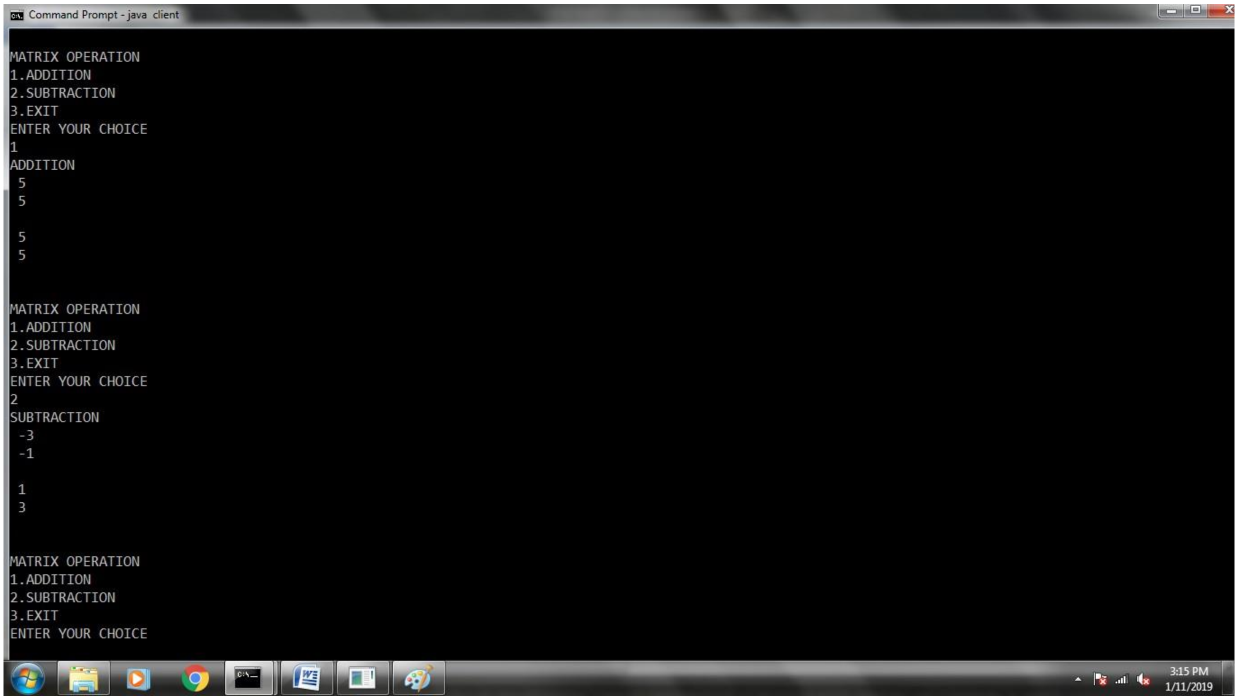
OUTPUT:



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\karthik\matrix

C:\Program Files\Java\jdk1.5.0\bin\karthik\matrix>javac *.java

C:\Program Files\Java\jdk1.5.0\bin\karthik\matrix>rmic matriximpl

C:\Program Files\Java\jdk1.5.0\bin\karthik\matrix>start rmiregistry

C:\Program Files\Java\jdk1.5.0\bin\karthik\matrix>java reg
```



```
C:\Program Files\Java\jdk1.5.0\bin\karthik\matrix>java client
enter the order of matrix
2
2
enter the order of first matrix
1
2
3
4
enter the order of second matrix
4
3
2
1
FIRST MATRIX
 1
 2

 3
 4

SECOND MATRIX
 4
 3

 2
 1


MATRIX OPERATION
1.ADDITION
2.SUBTRACTION
3.EXIT
ENTER YOUR CHOICE
```



```

MATRIX OPERATION
1.ADDITION
2.SUBTRACTION
3.EXIT
ENTER YOUR CHOICE
1
ADDITION
 5
 5

 5
 5


MATRIX OPERATION
1.ADDITION
2.SUBTRACTION
3.EXIT
ENTER YOUR CHOICE
2
SUBTRACTION
 -3
 -1

 1
 3


MATRIX OPERATION
1.ADDITION
2.SUBTRACTION
3.EXIT
ENTER YOUR CHOICE
```

PROGRAM-8

CORBA program for arithmetic operation.

Arithematic.idl

```
interface arithmetic
{
  float add(in float a, in float b);
 float sub(in float a,in float b);
 float mul(in float a,in float b);
 float div(in float a,in float b);
};
```

Arithematicimp.java

```
public class arithmeticimp extends _arithmeticImplBase
{
        float c;
   public float add(float a,float b)
   {

        c=a+b;
        return c;
   }
   public float sub(float a,float b)
   {

        c=a-b;
        return c;
   }
   public float mul(float a,float b)
   {

        c=a*b;
        return c;
   }
   public float div(float a,float b)
   {

        c=a/b;
```

```
          return c;
   }

}
```

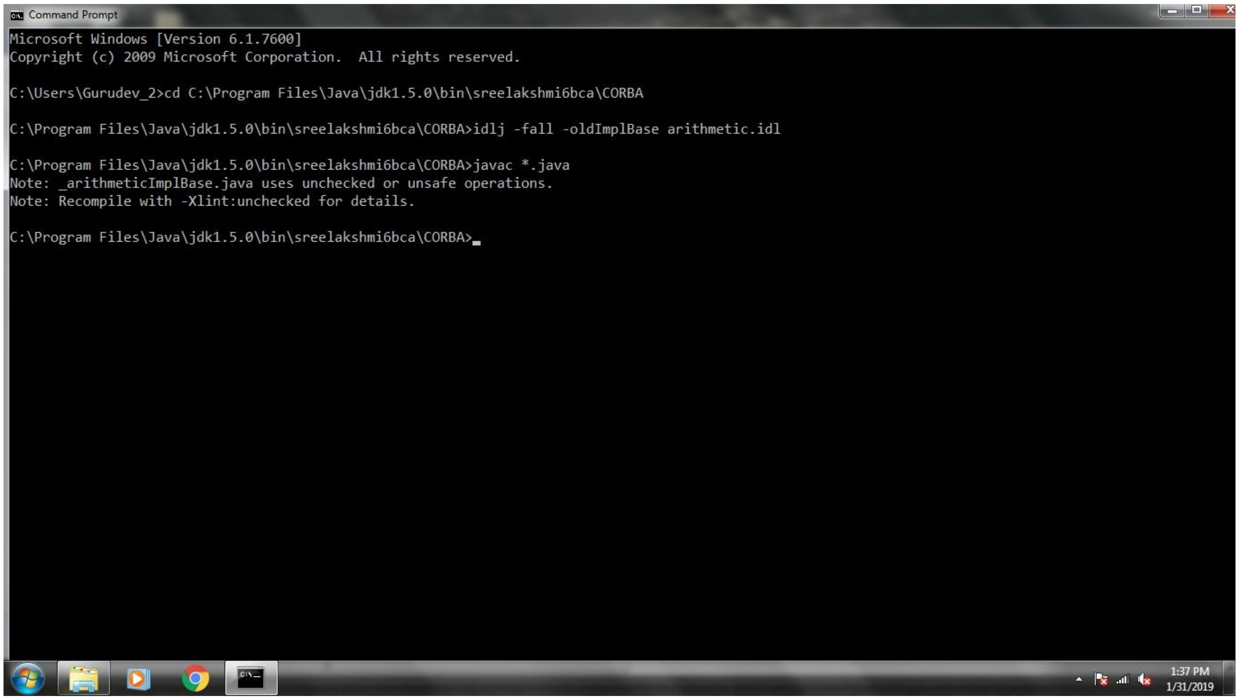
Client.java

```
import org.omg.CORBA.*;
import org.omg.CosNaming.*;
import java.io.*;
public class client
{
public static void main(String arg[])
{
 try{
          BufferedReader rd=new BufferedReader(new
InputStreamReader(System.in));
        ORB orb=ORB.init(arg,null);
        org.omg.CORBA.Object
ob=orb.resolve_initial_references("NameService");
        NamingContext ctx=NamingContextHelper.narrow(ob);
        NameComponent nc=new NameComponent("Message","");
        NameComponent path[]={nc};
        arithmetic ar=arithmeticHelper.narrow(ctx.resolve(path));
        float c,a,b;
          System.out.println("Enter two numbers");
          a=Float.parseFloat(rd.readLine());
          b=Float.parseFloat(rd.readLine());
          c=ar.add(a,b);
          System.out.println("Sum ="+c);
          c=ar.sub(a,b);
          System.out.println("Substract ="+c);

          c=ar.mul(a,b);
          System.out.println("product ="+c);

          c=ar.div(a,b);
          System.out.println("division ="+c);
        }
	catch(Exception e)
	{
	}
	}
	}
```

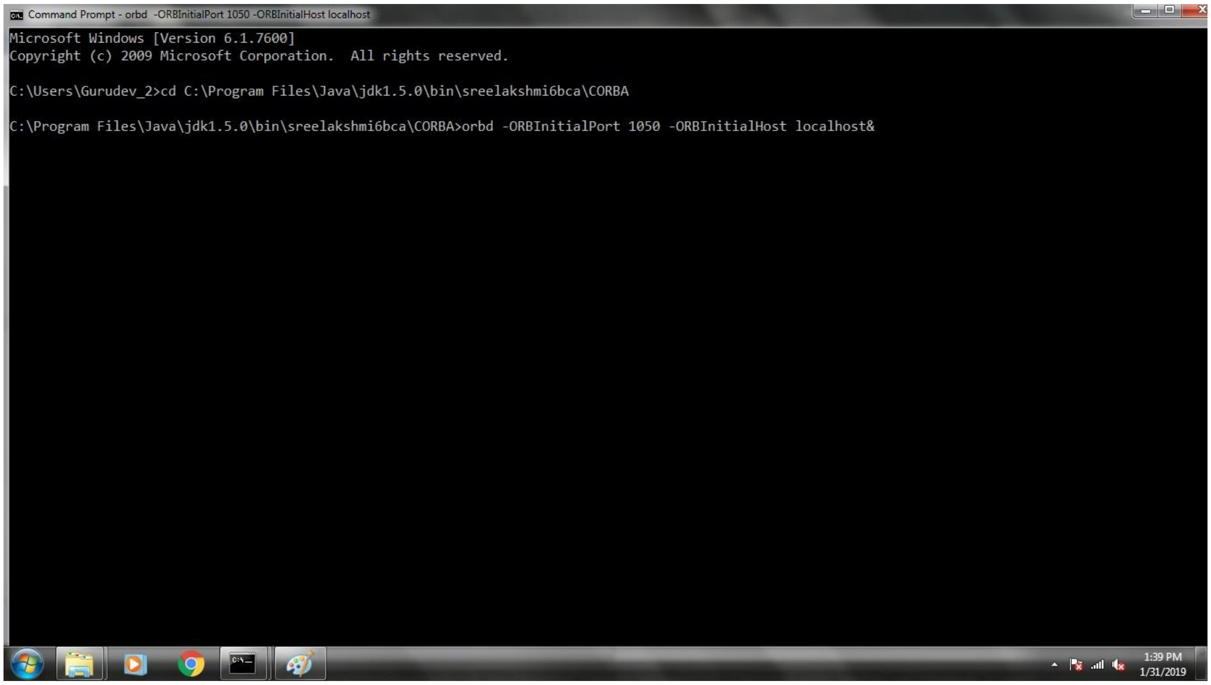
Reg.java

```
import org.omg.CORBA.*;
import org.omg.CosNaming.*;
public class reg
{
public static void main(String arg[])
{
 try{
	ORB orb=ORB.init(arg,null);
	org.omg.CORBA.Object 
ob=orb.resolve_initial_references("NameService");
	NamingContext ctx=NamingContextHelper.narrow(ob);
	NameComponent nc=new NameComponent("Message","");
	NameComponent path[]={nc};
	arithmeticimp m=new arithmeticimp();
	ctx.rebind(path,m);
	orb.run();
	}
	catch(Exception e)
	{
	}
	}
	}
```

OUTPUT:

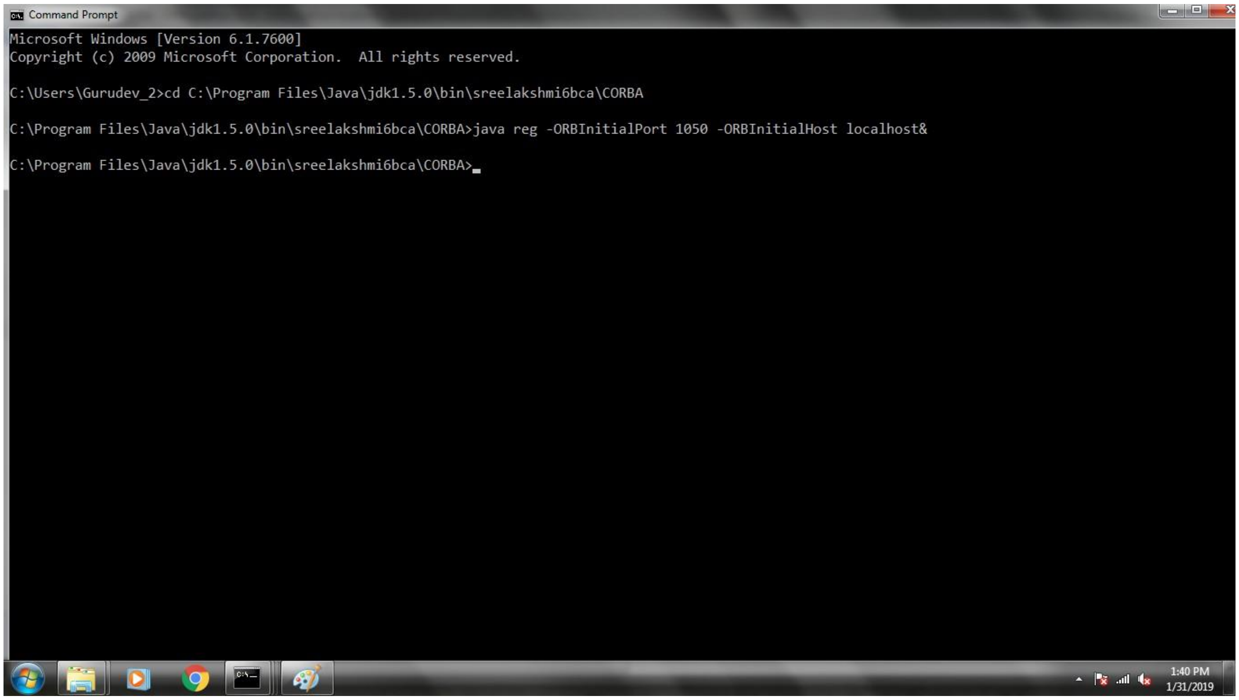


```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>idlj -fall -oldImplBase arithmetic.idl

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>javac *.java
Note: _arithmeticImplBase.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>
```

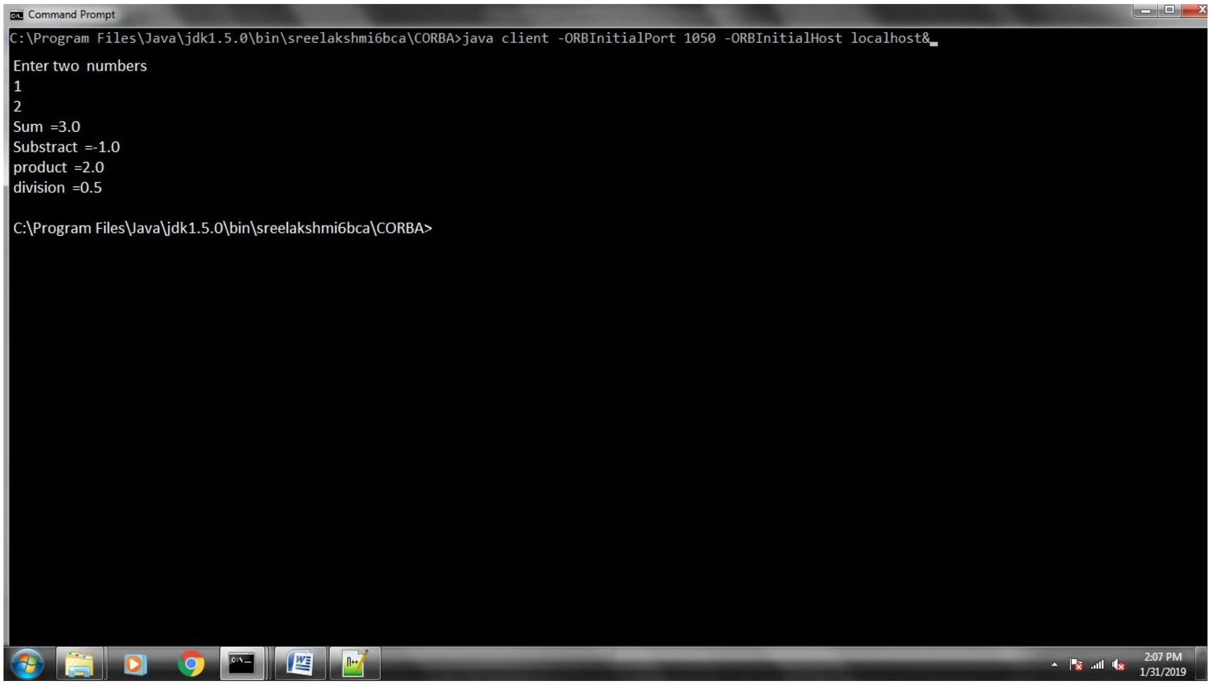


Command Prompt - orbd -ORBInitialPort 1050 -ORBInitialHost localhost
1:39 PM
1/31/2019

```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>orbd -ORBInitialPort 1050 -ORBInitialHost localhost&
```



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Gurudev_2>cd C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>java reg -ORBInitialPort 1050 -ORBInitialHost localhost&

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>_
```



```
C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>java client -ORBInitialPort 1050 -ORBInitialHost localhost&_
Enter two  numbers
1
2
Sum  =3.0
Substract  =-1.0
product  =2.0
division  =0.5

C:\Program Files\Java\jdk1.5.0\bin\sreelakshmi6bca\CORBA>
```

PROGRAM-9

Create an html form to read student detail such as Roll, name, age, sex, qualification, percentage of marks etc. Write a servlet program that displays the same details.

Hello.java

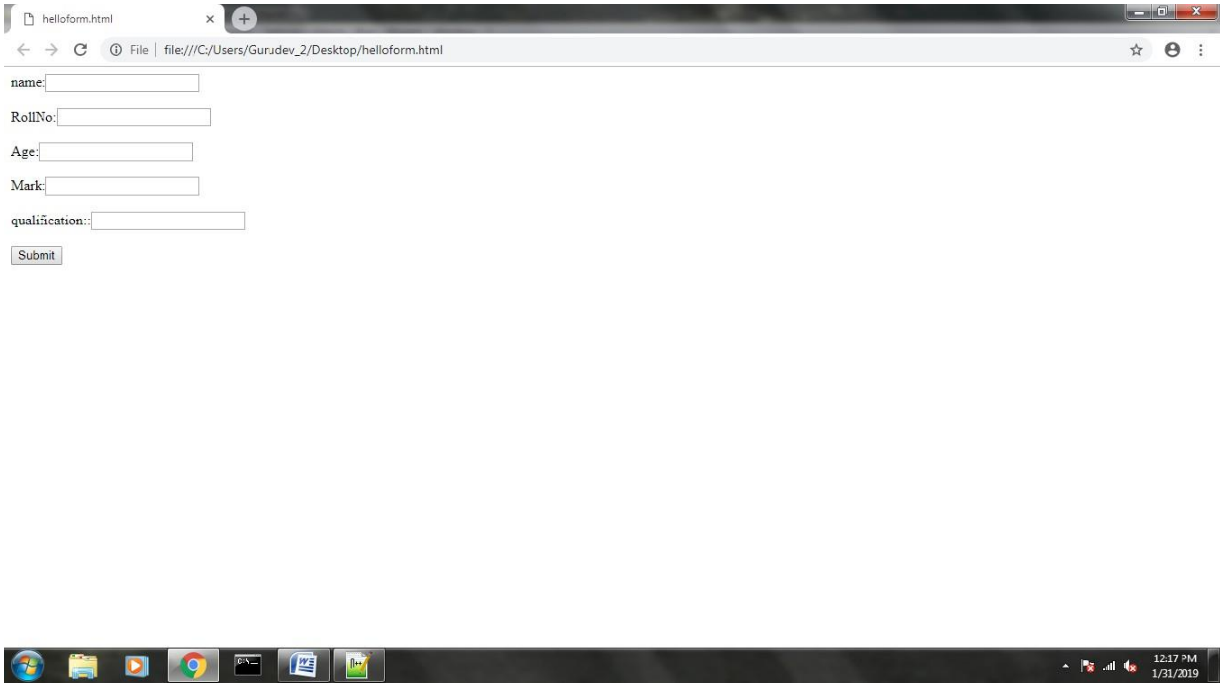
```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class helloform extends HttpServlet
{
protected void doGet(HttpServletRequest req,HttpServletResponse resp)throws
ServletException,IOException
{
resp.setContentType("text/html");
PrintWriter out=resp.getWriter();
String tilte="using GET method to read from data";
out.println("<br>Name</br>:"+req.getParameter("name"));
out.println("<br>RollNo</br>:"+req.getParameter("rollnumber"));
out.println("<br>Age</br>:"+req.getParameter("age"));
out.println("<br>Sex</br>:"+req.getParameter("sex"));
out.println("<br>Mark</br>:"+req.getParameter("mark"));
out.println("<br>Qualification</br>:"+req.getParameter("qualification"));
}
}
```

Hello.html

```
<html>
<body>
<form action=http://localhost:8080/webapps/sample/WEB-INF/classes/helloform
method="GET">
name:<input type="text" name="Name"><br><br>
RollNo:<input type="text" rollnumber="rollnumber><br><br>
sex:<input type="text" sex="sex"><br><br>
Age:<input type="text" age="age"><br><br>
```

```
Mark:<input type="text" mark="mark"><br><br>
qualification::<input type="text" qualification="qualification"><br><br>
<input type="submit" values="submit">
</form>
</body>
</html>
```

OUTPUT:



name:

RollNo:

Age:

Mark:

qualification::