

**JAVA SWING BASED
“POLLUTION TRACKER ECOSYSTEM”
SQL CONNECTIVITY USING JDBC**

A

Report

*Submitted in partial fulfilment of the
Requirements for the award of the Degree of*

BACHELOR OF ENGINEERING

IN

INFORMATION TECHNOLOGY

By

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ACCREDITED BY NAAC WITH 'A++' GRADE
(Affiliated to Osmania University and Approved by AICTE)
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BONAFIDE CERTIFICATE

This is to certify that this project report titled

‘POLLUTION TRACKER ECOSYSTEM’

is a project work of T.Ajay Kumar bearing roll no. 1602-20-737-122 and D.

Hrudai Aditya bearing roll no. 1602-20-737-162 who carried out this

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for the academic year 2021- 2022

Signature

External Examiner

Signature

Internal Examiner

Abstract

- ❖ Our case study projects an overview of the changing nature of the various pollutants in a given locality and their contribution to various health hazards for the people in the area, this database management system also successfully helps in visualizing the relation between various emission sources and their produced pollutant through the identified latitude and longitude of the emission sources and implementing a graph database with these relationships as edges and vertices, it also holds the records of the previous iterations of the pollutant levels which is useful for various scientific studies with this information at hand it enables us to take necessary steps in mitigation of climate change.

INTRODUCTION:

Requirement Analysis:

List of tables:

- Users
- Place
- Pollution_Info
- Pollutants
- Esources
- Pollution Effects

List of attributes with their Domain Type:

User:

User id : Number()

User name: Varchar2()

Password: Number()

State: Varchar2()

Place:

Area_id : Number()

City_id : Number()

Zip_code: Number()

Place_name : Varchar2()

Place_geo_location : SDO_GEOMETRY

Pollution_Information:

Area_id: Number()

City_id: Number()

Day: DATE, per_pollution NUMBER(10,2)

Pollutants:

Pollution_id(pid): Number()

Pollutant_Name: Varchar2()

Degree: Number()

Emission_Source:

Eid: Number()

Esname: Varchar2()

Production_rate: Number()

Source_Type: Varchar2()

Area_id: Number()

City_id: Number()

Source_location: SDO_Geometry

Pollution_Effects:

Pid: Number()

Pname: Varchar2()

Disease: Varchar2()

Most_common_Symptom: Varchar2()

THROUGH THE PROJECT:

This project enables us to explore the way data is stored in Oracle databases and it also helps us retrieve the data required through various queries written in SQL which are interlaced with the GUI built. Our project also enables storing of information for further use and the implementation of the graph databases on a given database enables us to visualize the relations easier.

ARCHITECTURE AND TECHNOLOGY USED:

Software Used:

Java Eclipse, Oracle 11g Database, Java SE version 8, SQL Plus,neo4j,cyper.

Java SWING:

Swing is a GUI widget toolkit for Java. It is part of Oracle's Java Foundation Classes (JFC) – an API for providing a graphical user interface (GUI) for Java programs. Swing was developed to provide a more sophisticated set of GUI components than the earlier AWT. Swing provides a look and feels that emulates the look and feel of several platforms, and also supports a pluggable look and feel that allows applications to have a look and feel unrelated to the

underlying platform. It has more powerful and flexible components than AWT. In addition to familiar components such as buttons, checkboxes, and labels, Swing provides several advanced components such as tabbed panels, scroll panes, trees, tables, and lists.

SQL:

Structure Query Language (SQL) is a database query language used for storing and managing data in Relational DBMS. SQL was the first commercial language introduced for E.F Codd's Relational model of the database. Today almost all RDBMS (MySQL, Oracle, Sybase, MS Access) use SQL as the standard database query language. SQL is used to perform all types of data operations in RDBMS

Java-SQL Connectivity using JDBC:

Java Database Connectivity (JDBC) is an application programming interface (API) for the programming language Java, which defines how a client may access a database. It is a Java-based data access technology used for Java database connectivity. It is part of the Java Standard Edition platform, from Oracle Corporation. It provides methods to query and update data in a database and is oriented towards relational databases. The connection to the database can be performed using Java programming (JDBC API) as:

```
public class Main
{
    try
    {
        //step1 load the driver class
        Class.forName("oracle.jdbc.driver.OracleDriver");

        //step2 create the connection object
        Connection
        con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:
        RDBMS","it20737122","vasavi");

        ////step3 create the statement object
        //Statement stmt=con.createStatement();
```

```

        //step4 execute query
        String query = ''

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt =
con.prepareStatement(query);
        preparedStmt.execute();

        //store the connection object
        con.close();

    }
    catch (SQLException connectException)
    {
        System.out.println(connectException.getMessage());
        System.out.println(connectException.getSQLState());
        System.out.println(connectException.getErrorCode());
        System.exit(1);
    }
}

```

Jdbc for updating the set values

```

1String sql = "UPDATE Users SET password=?, fullname=?, email=? WHERE username=?";
2
3PreparedStatement statement = conn.prepareStatement(sql);
4statement.setString(1, "123456789");
5statement.setString(2, "William Henry Bill Gates");
6statement.setString(3, "bill.gates@microsoft.com");
7statement.setString(4, "bill");
8
9int rowsUpdated = statement.executeUpdate();
10if (rowsUpdated > 0) {
11    System.out.println("An existing user was updated successfully!");
12}

```

Deleting the jdbc set values

```

1
2String sql = "DELETE FROM Users WHERE username=?";
3
4PreparedStatement statement = conn.prepareStatement(sql);
5statement.setString(1, "bill");
6
7int rowsDeleted = statement.executeUpdate();
8if (rowsDeleted > 0) {
9    System.out.println("A user was deleted successfully!");
}

```

Selecting rows


```

try{
    //step1 load the driver class
    Class.forName("oracle.jdbc.driver.OracleDriver");
    if(result=="people")
    {
        state1="view";
    }
    else
    {
        state1="edit";
    }
    //step2 create the connection object
    Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it2073
7122","vasavi");
    String userid = this.jTextField1.getText();
    String password = this.jPasswordField1.getText();
    ///step3 create the statement object
    String sql = "SELECT * FROM Users WHERE user_id=? AND password=? AND
state=?";

    PreparedStatement statement = con.prepareStatement(sql);
    statement.setInt(1,Integer.parseInt(userid));
    statement.setString(2,password);
    statement.setString(3,state1);
    //step4 execute query
    //ResultSet rs=stmt.executeQuery(query);
    int rowsfound = statement.executeUpdate();
    if(rowsfound>0) {
        System.out.println(sql);}
    //stmt.executeQuery(query);
    System.out.println("Done");

    //close the connection object
    con.close();

}catch(Exception e){
    System.out.println(e);
}

```

Thus, the connection from Java to the Oracle database is performed and therefore, can be used for updating tables in the database can also be done using the above commands

Table Created in SQL for the above-mentioned purpose is as:

CREATING TABLES: (DDL)

Users table

```
CREATE TABLE users(user_id NUMBER(10),user_name  
VARCHAR2(20),password VARCHAR2(30),state  
VARCHAR2(10),PRIMARY KEY(user_id));
```

Place table

```
CREATE TABLE place(area_id NUMBER(10),city_id NUMBER(10),zipcode  
NUMBER(10),place_name VARCHAR2(30),place_geo_location  
SDO_GEOMETRY,PRIMARY KEY(area_id));
```

Pollution_info table

```
CREATE TABLE pollution_info(area_id NUMBER(10),city_id  
NUMBER(10),day DATE,per_pollution NUMBER(10,2));
```

Pollutants table

```
CREATE TABLE pollutants(pid NUMBER(10),pname  
VARCHAR2(20),degree NUMBER(3),PRIMARY KEY(pid));
```

Statistics table

```
CREATE TABLE statistics(pid NUMBER(10),pname  
VARCHAR2(20),area_id NUMBER(10),city_id NUMBER(10) ,per_present  
NUMBER(10,2),FOREIGN KEY(pid) REFERENCES pollutants);
```

Emission sources table

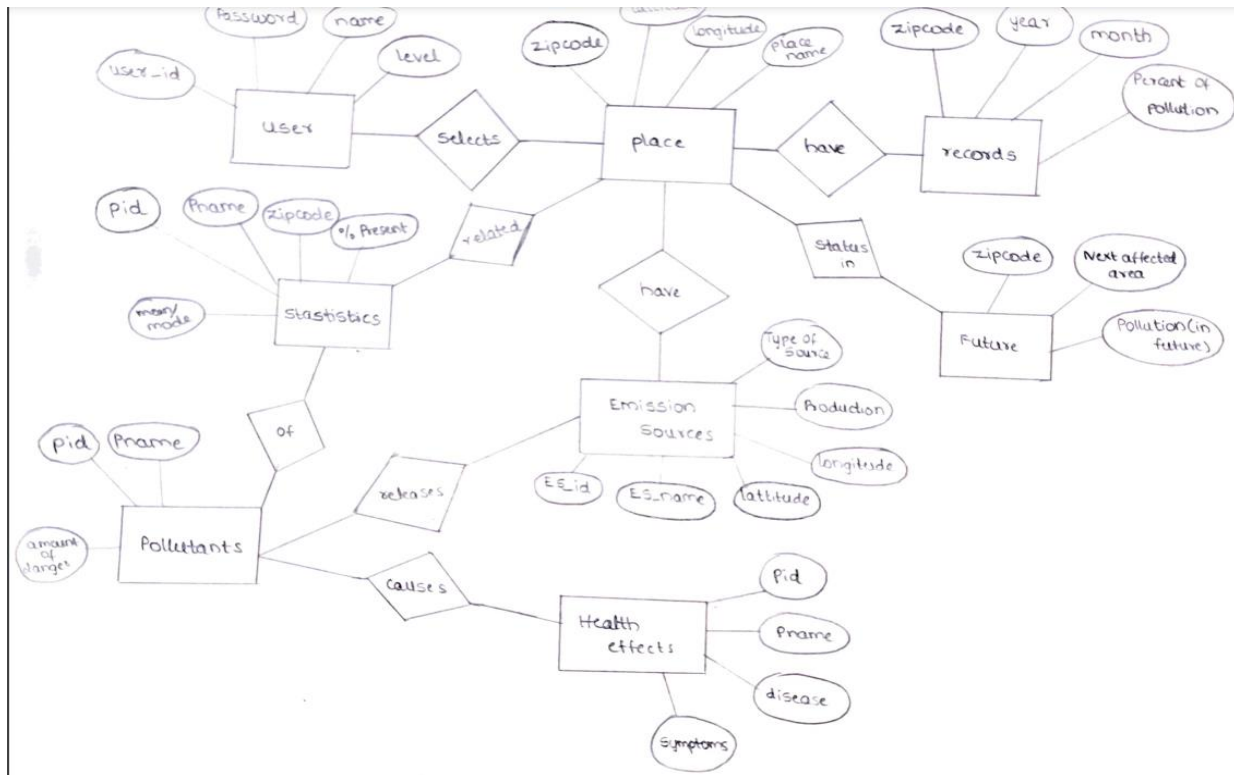
```
CREATE TABLE esources(eid NUMBER(10),esname  
VARCHAR2(30),production_rate NUMBER(10,2),source_type  
VARCHAR2(20),area_id NUMBER(10),city_id  
NUMBER(10),source_geo_location SDO_GEOMETRY,PRIMARY  
KEY(eid));
```

Pollution_effects table

```
CREATE TABLE pollution_effects(pid NUMBER(10),pname  
VARCHAR2(20),disease VARCHAR2(20),mcommon_symptom  
VARCHAR2(20));
```

DESIGN:

ER DIAGRAM:



Database Design:

Users table:

SQL> desc users;

Name	Null?	Type
USER_ID	NOT NULL	NUMBER(10)
USER_NAME		VARCHAR2(20)
PASSWORD		VARCHAR2(30)
STATE		VARCHAR2(10)

Place table:

```
SQL> desc place;
```

Name	Null?	Type
AREA_ID	NOT NULL	NUMBER(10)
CITY_ID		NUMBER(10)
ZIPCODE		NUMBER(10)
PLACE_NAME		VARCHAR2(30)
PLACE_GEO_LOCATION		PUBLIC.SDO_GEOMETRY

Pollution_info

```
SQL> desc pollution_info;
```

Name	Null?	Type
AREA_ID		NUMBER(10)
CITY_ID		NUMBER(10)
DAY		DATE
PER_POLLUTION		NUMBER(10,2)

Pollutants

```
SQL> desc pollutants;
```

Name	Null?	Type
PID	NOT NULL	NUMBER(10)
PNAME		VARCHAR2(20)
DEGREE		VARCHAR2(10)

e_sources

```
SQL> desc e_sources;
```

Name	Null?	Type
EID	NOT NULL	NUMBER(10)

ESNAME	VARCHAR2(20)
PRODUCTION	NUMBER(10)
SOURCE_TYPE	VARCHAR2(10)
SOURCE_GEO_LOCATION	PUBLIC.SDO_GEOMETRY

pollution_effects

SQL> desc pollution_effects;

Name	Null?	Type

PID		NUMBER(10)
PNAME		VARCHAR2(20)
DISEASE		VARCHAR2(20)
SYMPTOMS		VARCHAR2(20)

INSERTING VALUES INTO TABLES : (DML)

USERS table:

INSERT INTO users VALUES(&user_id,&user_name','&password','&state');

Place table

INSERT INTO place
VALUES(&area_id,&city_id,&zipcode,&place_name',SDO_GEOMETRY(20
01,8307,SDO_POINT_TYPE(&latitude,&longitude,NULL),NULL,NULL));

Pollution_info table

INSERT INTO pollution_info
VALUES(&area_id,&city_id,'&day',&per_pollution);

Pollutants table

INSERT INTO pollutants VALUES(&pid,&pname',°ree);

Statistics table

INSERT INTO statistics
VALUES(&pid,&pname',&area_id,&city_id,&per_present);

Emission sources table

```
INSERT INTO esources
VALUES(&eid,&esname',&production_rate',&source_type',&area_id,&city_id
,SDO_GEOMETRY(2001,8307,SDO_POINT_TYPE(&latitude,&longitude,N
ULL),NULL,NULL));
```

Pollution_effects table

```
INSERT INTO pollution_effects
VALUES(&pid,&pname','&disease','&mcommon_symptom');
```

INTEGRITY CONSTRAINTS:

CHECK:

- 1) ALTER TABLE users ADD CONSTRAINT ck_state CHECK(state in('view','edit'));//only two modes made available as states in users table.
- 2) ALTER TABLE pollutants ADD CONSTRAINT ck_degree CHECK (degree between 1 AND 10);

UNIQUE:

- 1) ALTER TABLE esources ADD CONSTRAINT un_esname UNIQUE(esname);//emission sources name made as unique.
- 2) ALTER TABLE pollutants ADD CONSTRAINT un_pname UNIQUE(pname);//pollutant name made as unique.

NOT NULL

- 1)ALTER TABLE place MODIFY(place_name VARCHAR2(20) CONSTRAINT nn_pname NOT NULL);//place name is not null.
- 2) ALTER TABLE pollutants MODIFY(pname VARCHAR2(20) CONSTRAINT nn_pollname NOT NULL);//pollutant name is not null.

FOREIGN KEY

- 1) ALTER TABLE pollution_info ADD FOREIGN KEY(area_id) REFERENCES place; //area_id made as foreign key in pollution_info.

BUILT IN FUNCTIONS

SELECT * FROM pollution_info WHERE day<SYSDATE AND day>SYSDATE-8; // RECORDS FROM LAST 8 days

SELECT pid,lower(pname) FROM pollutants WHERE degree>7; // pollutants with degree greater than 7

SELECT * FROM pollutants WHERE pname LIKE 'C%'; // Name of the pollutants whose name starts with character C

INNER QUERIES

1)SELECT pname,disease FROM pollution_effects WHERE pid IN (SELECT pid FROM pollutants WHERE degree>7); // selects name and disease name which have degree >7

2)SELECT pid,pname,per_present FROM statistics WHERE area_id IN (SELECT area_id FROM place WHERE place_name LIKE 'n%'); // selects the pid,pname and percentage pollution present in area where name of area starts with character n

3) SELECT area_id,city_id ,per_present FROM statistics WHERE pid IN (SELECT pid FROM pollution_effects WHERE disease='LUNG CANCER'); // selects the statistics which causes disease lung cancer

Metadata table:

INSERT INTO

user_sdo_geom_metadata(table_name,column_name,diminfo,srid)VALUES('&table','&location_column',SDO_DIM_ARRAY(SDO_DIM_ELEMENT('LONG',-180.0,180.0,0.5),SDO_DIM_ELEMENT('LAT',-90.0,90.0,0.5)),8307);

```
CREATE INDEX place_sidx ON place(place_geo_location)
    INDEXTYPE IS mdsys.spatial_index;
```

```
CREATE INDEX esources_sidx ON
esources(source_geo_location)
    INDEXTYPE IS mdsys.spatial_index;
```

SPECIAL SDO_NN GEOMETRY Queries:

1) *Nearest Emission For Given Area ID*

```
SELECT /*+ordered (es esources_spidx) */
       e.eid,
       e.esname,
       e.source_type
FROM place p,
       esources e

WHERE p.area_id=&area_id AND p.city_id=&city_id

AND sdo_nn(e.source_geo_location,
p.place_geo_location,'sdo_num_res=1')

= 'TRUE';
```

```
SQL> SELECT /*+ordered (e esources_spidx) */
2      e.eid,
3      e.esname,
4      e.source_type
5 FROM place p,
6      esources e
7 WHERE p.area_id=&area_id AND p.city_id=&city_id
8 AND sdo_nn(e.source_geo_location, p.place_geo_location,'sdo_num_res=1')
9      = 'TRUE';
Enter value for area_id: 3003
Enter value for city_id: 5005
old 7: WHERE p.area_id=&area_id AND p.city_id=&city_id
new 7: WHERE p.area_id=3003 AND p.city_id=5005

      EID ESNAME                                SOURCE_TYPE
-----
1005 Adi zro                                Cement factory
```

2) *Output all the emission source for given area-id within a range*

```
SELECT /*+ordered*/

       e.eid,

       e.esname,
```



```

        e.source_type
FROM place p,

        esources e

WHERE p.area_id=&area_id AND p.city_id=&city_id

AND sdo_within_distance (p.place_geo_location,
e.source_geo_location, 'distance = 1000 unit=MILE')=
'TRUE';

```

```

SQL> SELECT /*+ordered*/
2   e.eid,
3   e.esname,
4   e.source_type
5 FROM place p,
6   esources e
7 WHERE p.area_id=&area_id AND p.city_id=&city_id
8 AND sdo_within_distance (p.place_geo_location, e.source_geo_location, 'distance = 1000 unit=MILE')= 'TRUE';
Enter value for area_id: 3003
Enter value for city_id: 5005
old 7: WHERE p.area_id=&area_id AND p.city_id=&city_id
new 7: WHERE p.area_id=3003 AND p.city_id=5005

        EID ESNAME                SOURCE_TYPE
-----
1003 Srisai traders                Industry
1005 Adi zro                       Cement factory

```

3) ***Calculates the distance between emission source to all the places***

```

SELECT /*+ordered index(ps place_spidx) */
        p.area_id,
        p.city_id,
        p.place_name,
        sdo_nn_distance (1) distance
FROM esources e,
place p
WHERE e.eid=1003

```

```

AND sdo_nn
    ( p.place_geo_location,e.source_geo_location,
'sdo_num_res=3', 1)
    = 'TRUE'

ORDER BY distance;

```

```

SQL> SELECT /*+ordered index(ps place_spidx) */
2     p.area_id,
3     p.city_id,
4     p.place_name,
5     sdo_nn_distance (1) distance
6 FROM esources e,
7 place p
8 WHERE e.eid=1003
9 AND sdo_nn
10    ( p.place_geo_location,e.source_geo_location, 'sdo_num_res=3', 1)
11    = 'TRUE'
12 ORDER BY distance;

```

AREA_ID	CITY_ID	PLACE_NAME	DISTANCE
3003	5005	narsingi	446951.987
2004	5004	nagar kurnool	5124488.14
2002	1001	vizag	6119837.09

4) ***Outputs the top three emission source in the given area***

```

SELECT /*+ordered*/
e.eid,
    e.esname,
    e.source_type
FROM place p,
    esources e
WHERE p.area_id= 3003

```

```
AND sdo_nn (e.source_geo_location,  
p.place_geo_location, 'sdo_num_res=3')  
  
= 'TRUE';
```

```
SQL> SELECT /*+ordered*/  
2 e.eid,  
3   e.esname,  
4   e.source_type  
5 FROM place p,  
6   esources e  
7 WHERE p.area_id= 3003  
8 AND sdo_nn (e.source_geo_location, p.place_geo_location, 'sdo_num_res=3')  
9   = 'TRUE';
```

EID	ESNAME	SOURCE_TYPE
1003	Srisai traders	Industry
1005	Adi zro	Cement factory

GRAPH DATABASE NEO4J:

Neo4j is a graph database. A graph database, instead of having rows and columns has nodes edges, and properties. Powered by a native graph database, Neo4j stores and manages data in its more natural, connected state, maintaining data relationships that deliver lightning-fast queries.

IMPEMENTATION:

Pollutants causes diseases:

create (co2:pollutants{pid:900,pname:'carbon dioxide',degree:9}),

(co:pollutants{pid:901,pname:'carbon monoxide',degree:10}),

(pb:pollutants{pid:902,pname:'Lead',degree:8}),

(o3:pollutants{pid:903,pname:'ozone',degree:7}),

(so2:pollutants{pid:904,pname:'sulphur dioxide',degree:9}),

(no:pollutants{pid:905,pname:'nitric oxide',degree:8}),

(cvd:disease{did:900,dname:'Cardiovascular disease',c_symptom:'Chest pain'}),

(lc:disease{did:901,dname:'Lung cancer',c_symptom:'Hoarseness'}),

(ckd:disease{did:902,dname:'Chronic kidney disease',c_symptom:'shortness of breath'}),

(chd:disease{did:903,dname:'coronary heart disease',c_symptom:'Heart attack'}),

(arthritis:disease{did:904,dname:'Arthritis',c_symptom:'joint pain'}),

(anemia:disease{did:905,dname:'anemia',c_symptom:'yellowish skin'}),

(bronchitis:disease{did:906,dname:'bronchitis',c_symptom:'Chest discomfort'}),

(asthma:disease{did:907,dname:'asthma',c_symptom:'Chest tightness'}),

(dizzy:disease{did:908,dname:'dizziness',c_symptom:'no energy'}),

(co2)-[:causes]->(lc),

(co2)-[:causes]->(dizzy),

(co)-[:causes]->(dizzy),

(co)-[:causes]->(cvd),

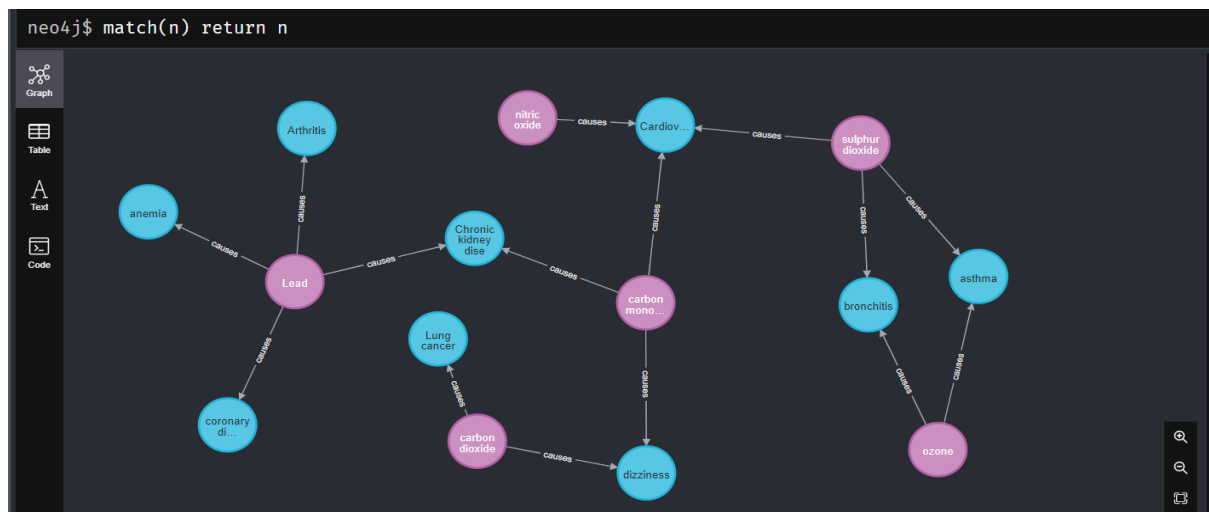
(co)-[:causes]->(ckd),

(no)-[:causes]->(cvd),

```

(pb)-[:causes]->(chd),
(pb)-[:causes]->(ckd),
(so2)-[:causes]->(asthma),
(o3)-[:causes]->(asthma),
(o3)-[:causes]->(bronchitis),
(so2)-[:causes]->(bronchitis),
(pb)-[:causes]->(anemia),
(pb)-[:causes]->(arthritis),
(so2)-[:causes]->(cvd)

```



Places have emission sources

```

create (narsingi:places{area_id:3003,city_id:5005,zipcode:506163,place_name:
'narsingi'}),
(ibrahimbagh:places{area_id:3004,city_id:5005,zipcode:506163,place_name:'i
brahimbagh'}),
(shankarpalli:places{area_id:3005,city_id:5005,zipcode:506163,place_name:'sh
ankarpalli'}),
(ibrahimpatnam:places{area_id:4004,city_id:5015,zipcode:500075,place_name
:'ibrahimpatnam'}),
(kukatpally:places{area_id:4006,city_id:5020,zipcode:500077,place_name:'kuk
atpally'}),

```

```
(es400:esources{eid:400,ename:'sai cement
factory',production_growth_rate:30.22,source_type:'cement
factory',area_id:3003,city_id:5005}),

(es401:esources{eid:401,ename:'sai
steel',production_growth_rate:10.22,source_type:'steel
factory',area_id:4004,city_id:5015}),

(es402:esources{eid:402,ename:'om
iron',production_growth_rate:15.92,source_type:'iron
factory',area_id:4006,city_id:5020}),

(es403:esources{eid:403,ename:'Zicronium
Industry',production_growth_rate:40.92,source_type:' Zicronium Industry
',area_id:3005,city_id:5005}),

(es404:esources{eid:404,ename:'eshwar
coal',production_growth_rate:39.92,source_type:'coal
factory',area_id:4006,city_id:5020}),

(es405:esources{eid:405,ename:'sai
gold',production_growth_rate:19.92,source_type:'gold
factory',area_id:3003,city_id:5005}),

(narsingi)-[:have]->(es400),

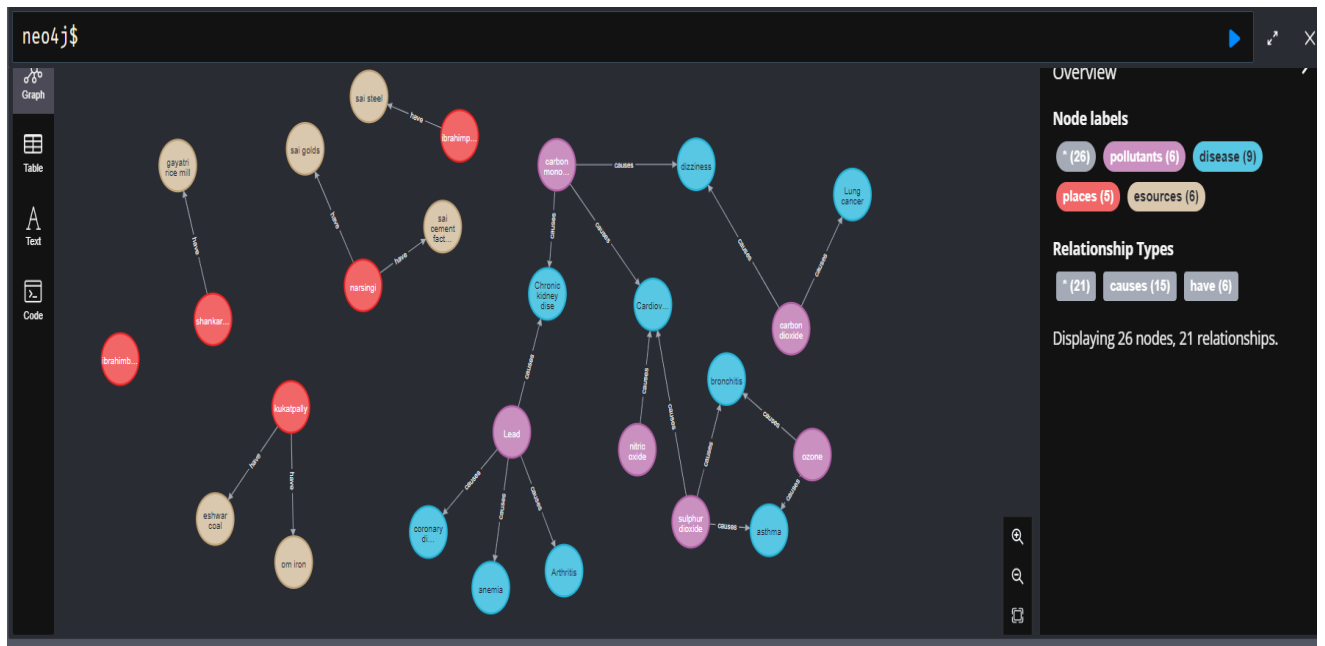
(ibrahimpatnam)-[:have]->(es401),

(kukatpally)-[:have]->(es402),

(shankarpalli)-[:have]->(es403),

(kukatally)-[:have]->(es404),

(narsingi)-[:have]->(es405),
```



Places and current status

```
create(cur_narsingi:status{area_id:3003,city_id:5005,day:'12-06-22',per_pollution:30}),
```

```
(cur_shankarpalli:status{area_id:3005,city_id:5005,day:'12-06-22',per_pollution:25}),
```

```
(cur_kukatpally:status{area_id:4006,city_id:5020,day:'12-06-22',per_pollution:12}),
```

```
(cur_ibrahimpatnam:status{area_id:4004,city_id:5015,day:'12-06-22',per_pollution:22}),
```

```
(cur_ibrahimbagh:status{area_id:3004,city_id:5005,day:'12-06-22',per_pollution:42}),
```

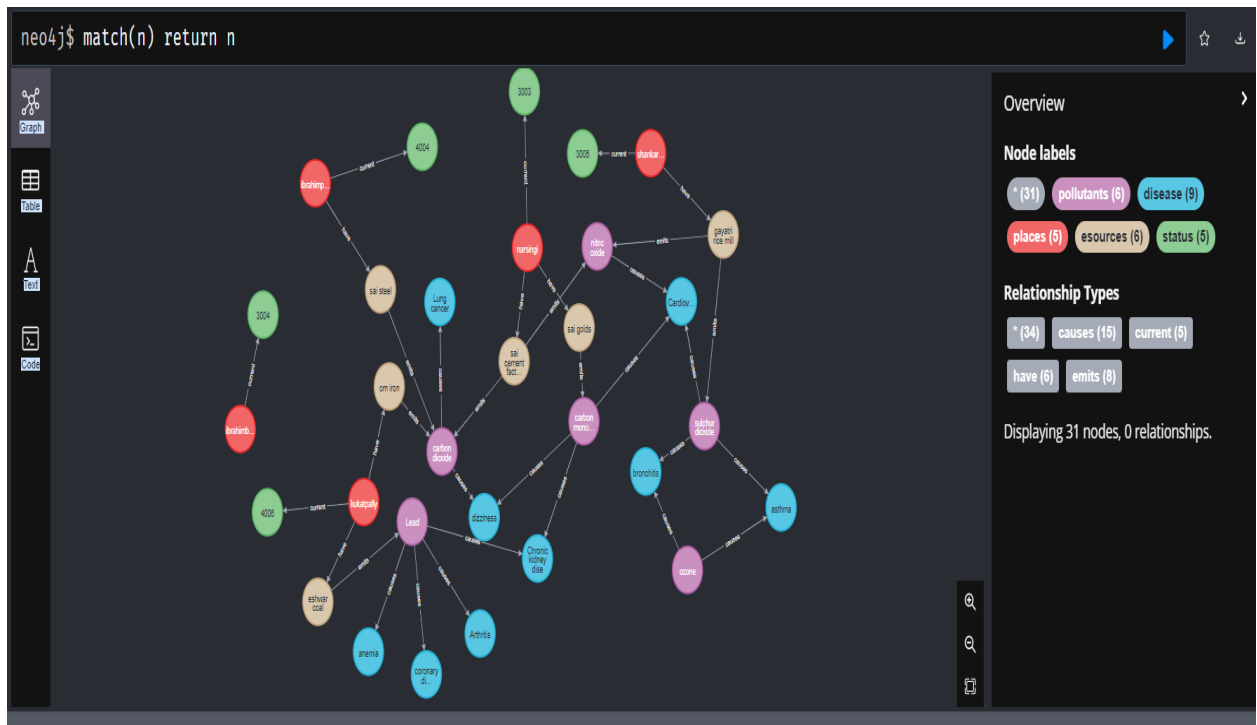
```
(narsingi)-[:current]-> (cur_narsingi),
```

```
(shankarpalli)-[:current]-> (cur_shankarpalli),
```

```
(kukatpally)-[:current]-> (cur_kukatpally),
```

```
(ibrahimpatnam)-[:current]-> (cur_ibrahimpatnam),
```

```
(ibrahimbagh)-[:current]-> (cur_ibrahimbagh),
```



Esources emits pollutants

(es400)-[:emits]->(co2),

(es400)-[:emits]->(no),

(es401)-[:emits]->(co2),

(es402)-[:emits]->(co2),

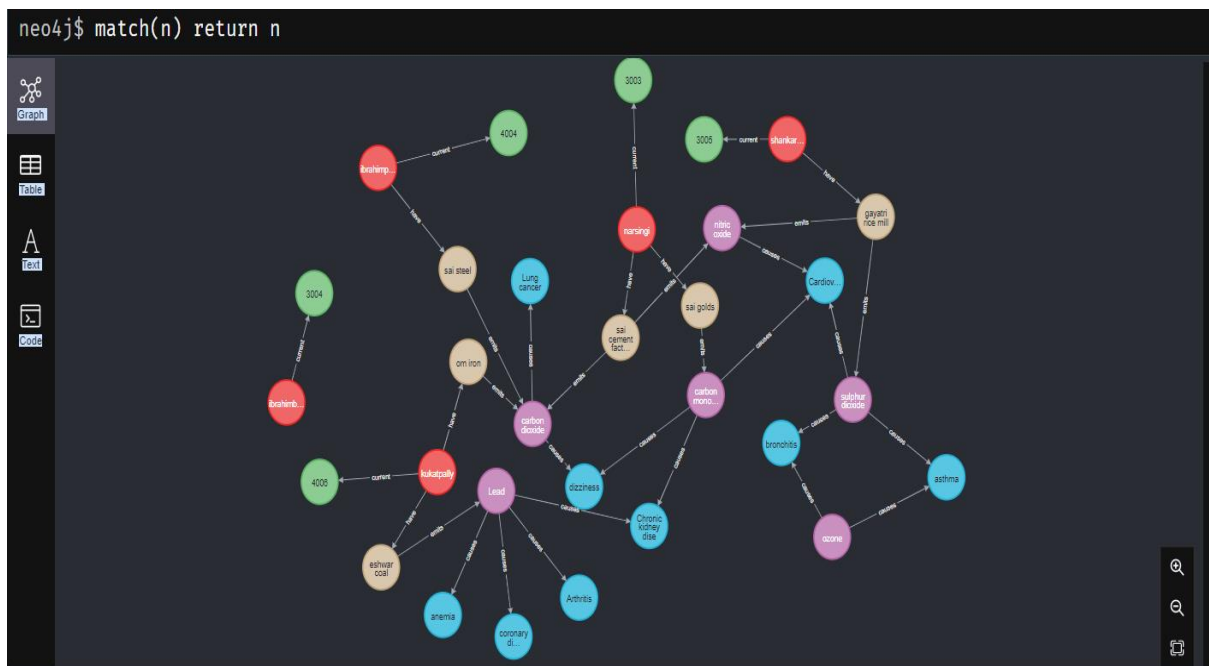
(es403)-[:emits]->(so2),

(es404)-[:emits]->(pb),

(es405)-[:emits]->(co),

(es403)-[:emits]->(no)

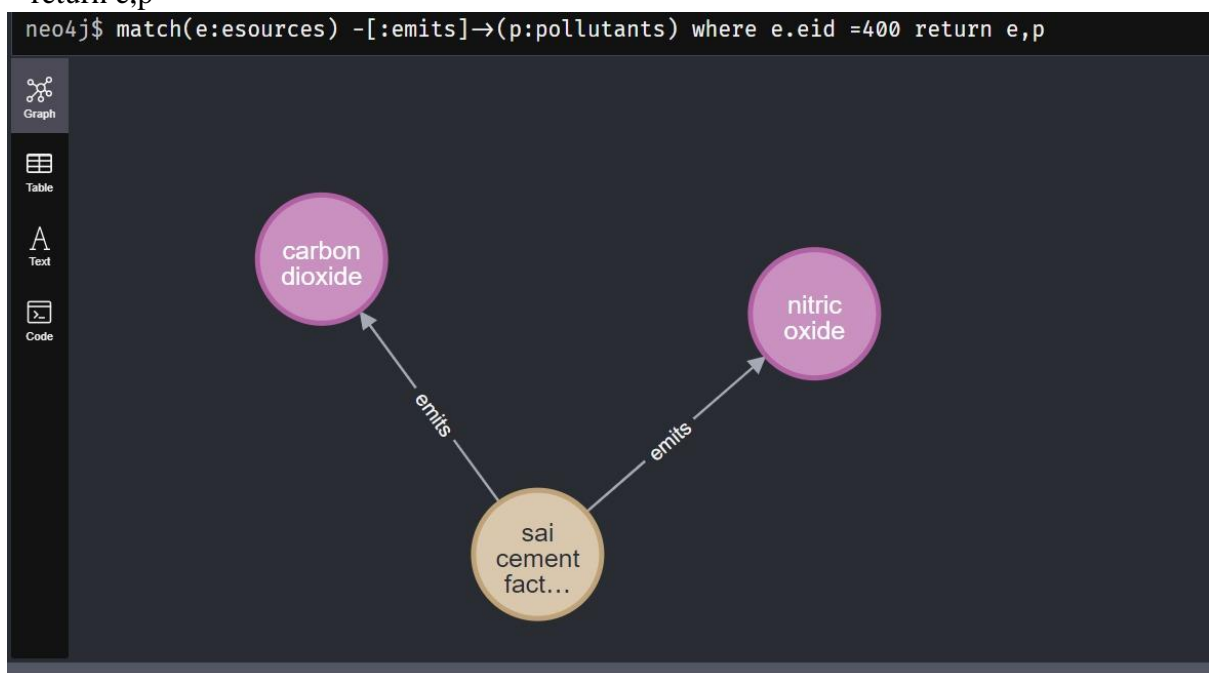
OVERALL GRAPH



NEO4J Quires:

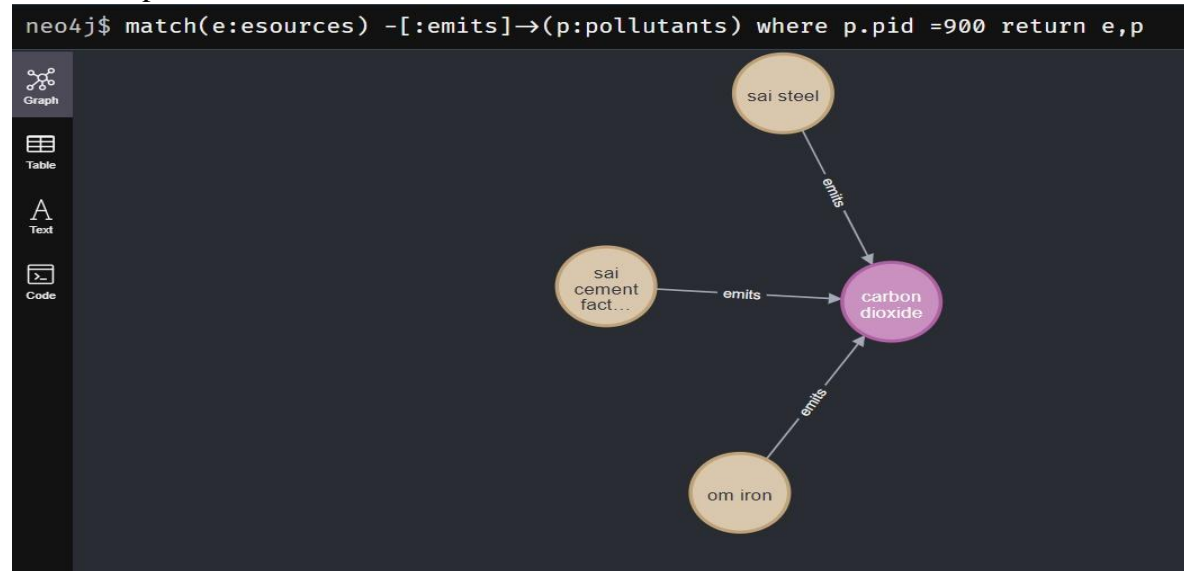
1)Returns the pollutants emitted:

```
match(e:esources) -[:emits]->(p:pollutants)
  where e.eid = 400
  return e,p
```



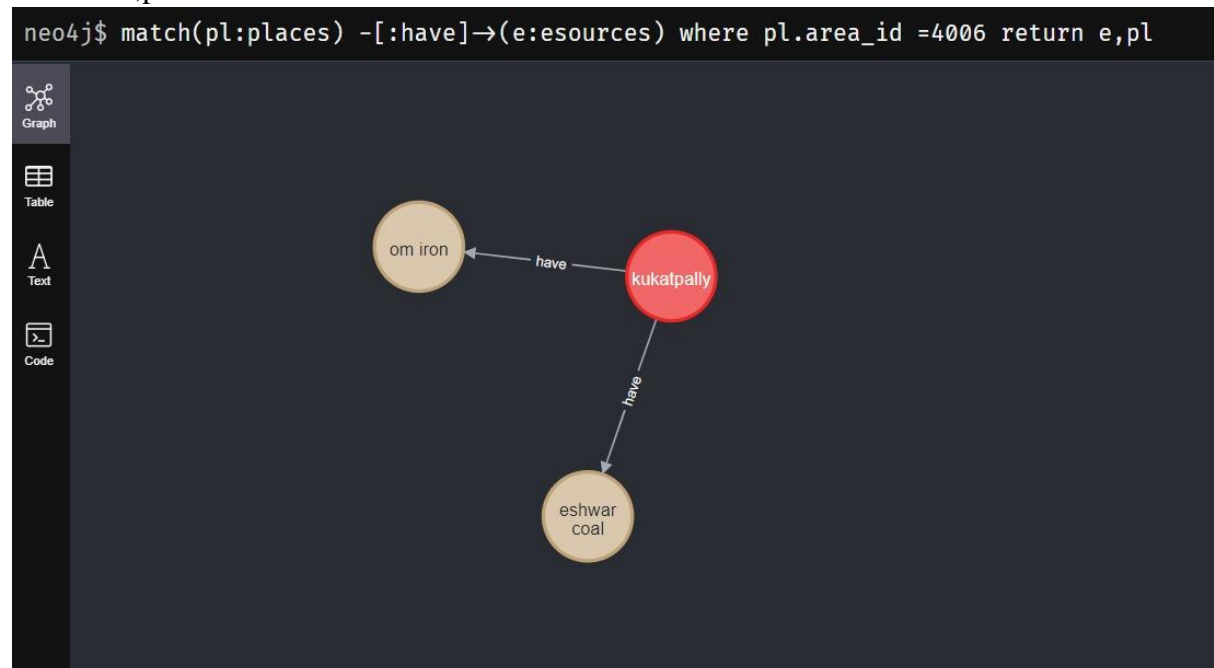
2)returns the esources of particular pollutant

```
match(e:esources) -[:emits]->(p:pollutants)
  where p.pid =900
  return e,p
```



3)returns the factories at particular place

```
match(pl:places) -[:have]->(e:esources)
  where pl.area_id =4006
  return e,pl
```

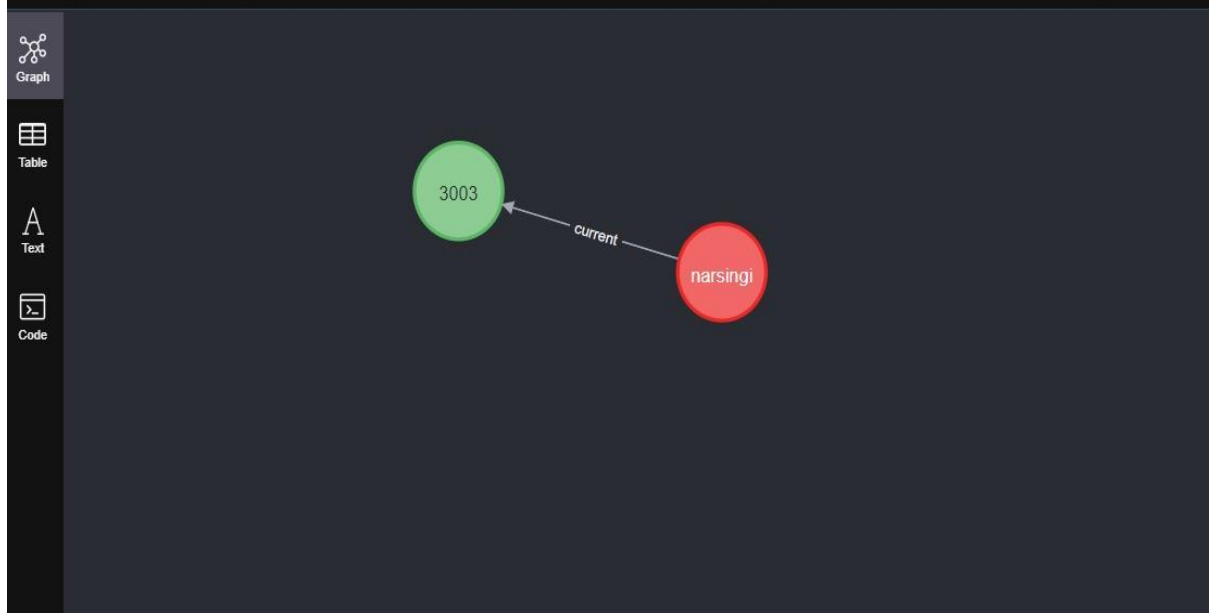


4)returns the current status of a place

```
match(pl:places) -[:current]->(s:status)
  where pl.area_id =3003
```

```
return pl,s
```

```
neo4j$ match(pl:places) -[:current]->(s:status) where pl.area_id =3003 return pl,s
```



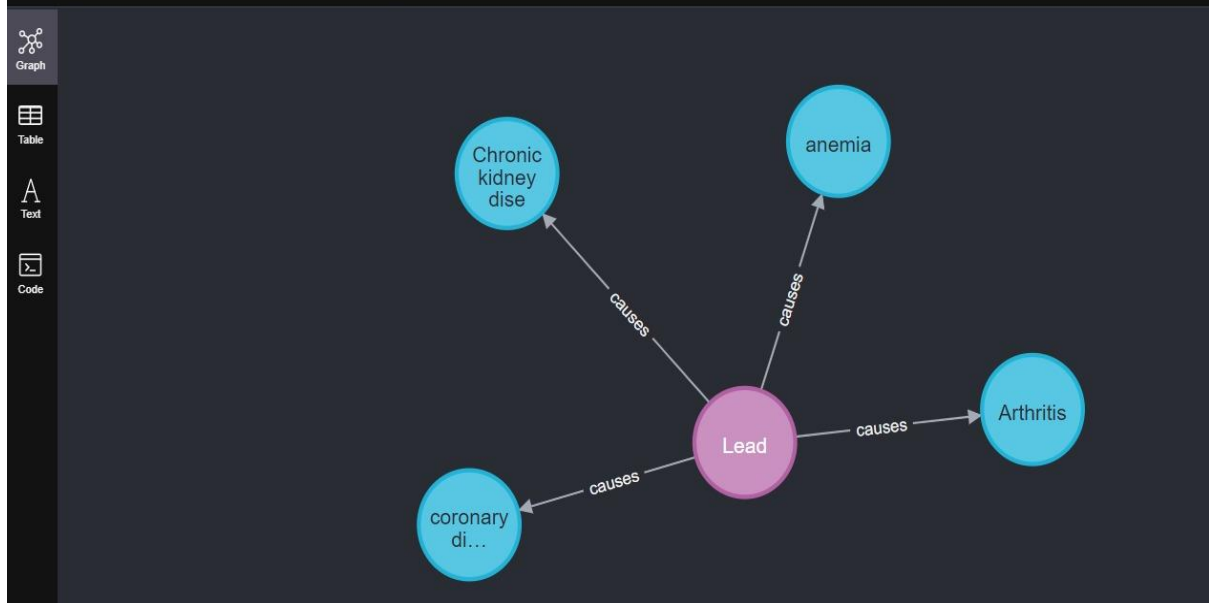
5)returns the diseases caused by the pollutant

```
match(p:pollutants)-[:causes]->(d:disease)
```

```
where p.pid=902
```

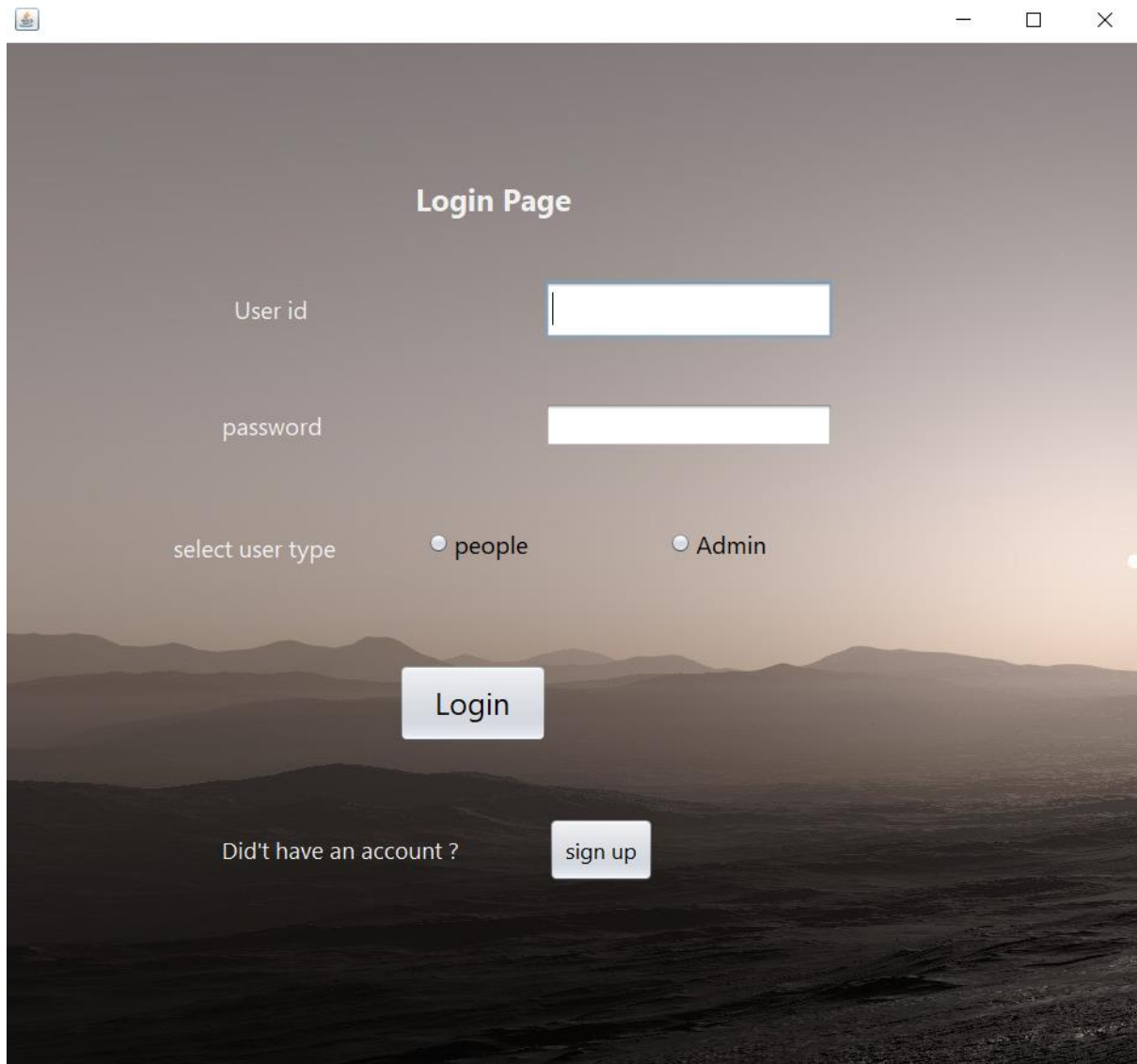
```
return p,d
```

```
neo4j$ match(p:pollutants)-[:causes]->(d:disease) where p.pid=902 return p,d
```



IMPEMENTATION:

Main Login Interface



Source_Code

```
import java.sql.*;
import javax.swing.*;
/**
 *
 * @author AJAY KUMAR,Hrudai Aditya
 */
public class dbmsUI extends javax.swing.JFrame {
    public dbmsUI() {
        initComponents();
        setVisible(false);
    }
}
```

```

* This method is called from within the constructor to initialize the form.
* WARNING: Do NOT modify this code. The content of this method is always
* regenerated by the Form Editor.
*/
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    buttonGroup1 = new javax.swing.ButtonGroup();
    jLabel1 = new javax.swing.JLabel();
    jTextField1 = new javax.swing.JTextField();
    jLabel2 = new javax.swing.JLabel();
    jLabel3 = new javax.swing.JLabel();
    jButton1 = new javax.swing.JButton();
    jLabel4 = new javax.swing.JLabel();
    jLabel5 = new javax.swing.JLabel();
    jLabel6 = new javax.swing.JLabel();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jLabel1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jLabel1.setForeground(new java.awt.Color(242, 242, 242));
    jLabel1.setText("User id");
    getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(190, 190, 92,
58));

    jTextField1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jTextField1.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jTextField1ActionPerformed(evt);
        }
    });
    getContentPane().add(jTextField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(447, 196,
238, 48));

    jLabel2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jLabel2.setForeground(new java.awt.Color(242, 242, 242));
    jLabel2.setText("password");
    getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(180, 290,
140, 51));

    jLabel3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jLabel3.setForeground(new java.awt.Color(242, 242, 242));
    jLabel3.setText("select user type");
    getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(140, 390,
136, 53));

    buttonGroup1.add(jButton1);
    jButton1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jButton1.setText("people");

```

```

jRadioButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jRadioButton1ActionPerformed(evt);
    }
});
getContentPane().add(jRadioButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(350,
400, -1, -1));

buttonGroup1.add(jRadioButton2);
jRadioButton2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jRadioButton2.setText("Admin");
jRadioButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jRadioButton2ActionPerformed(evt);
    }
});
getContentPane().add(jRadioButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(550,
400, -1, -1));

jPasswordField1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jPasswordField1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jPasswordField1ActionPerformed(evt);
    }
});
getContentPane().add(jPasswordField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(447,
297, 238, 37));

jButton1.setFont(new java.awt.Font("Segoe UI", 0, 25)); // NOI18N
jButton1.setText("Login");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(326, 513,
123, 65));

jLabel4.setFont(new java.awt.Font("Segoe UI", 0, 19)); // NOI18N
jLabel4.setForeground(new java.awt.Color(242, 242, 242));
jLabel4.setText("Didn't have an account ?");
getContentPane().add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(180, 640,
201, 53));

jButton2.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jButton2.setText("sign up");
jButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton2ActionPerformed(evt);
    }
});
getContentPane().add(jButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(450, 640, -1,
53));

jLabel5.setFont(new java.awt.Font("Segoe UI", 1, 25)); // NOI18N

```

```

jLabel5.setForeground(new java.awt.Color(242, 242, 242));
jLabel5.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel5.setText("Login Page");
getContentPane().add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(274, 96, 260,
67));

jLabel6.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY KUMAR\\Desktop\\wallhaven-
nr83y1.jpg")); // NOI18N
jLabel6.setText("jLabel6");
getContentPane().add(jLabel6, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 940,
850));

pack();
} // </editor-fold>
String result;
private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jRadioButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    result = this.jRadioButton1.getText();
}

private void jPasswordField1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    String state1;
    try{
        //step1 load the driver class
        Class.forName("oracle.jdbc.driver.OracleDriver");

        //step2 create the connection object
        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");

        String userid = this(jTextField1.getText());
        String password = this(jPasswordField1.getText());
        if("people".equals(result))
        {
            state1="view";
            System.out.println("in");
        }
        else
        {
            state1="edit";
        }
        ///step3 create the statement object
        //Statement stmt=con.createStatement();
        //step4 execute query
        String query = " SELECT * FROM users WHERE user_id=? AND password= ?";

```

```

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setInt (1,Integer.parseInt(userid));
        preparedStmt.setString (2,password);
        // preparedStmt.setString(3,state1);
        System.out.println(query);
        int r=preparedStmt.executeUpdate();
        System.out.println(userid+" "+password);
        if(r>0)
        {
            JOptionPane.showMessageDialog(new JFrame(), "Logged in successfully!");
            dispose();
            if("view".equals(state1))
            {
                viewui v=new viewui();
                v.setVisible(true);
            }
            else
            {
                people_main p=new people_main();
                p.setVisible(true);
            }
        }
        else
        {
            JOptionPane.showMessageDialog(new JFrame(), "Wrong Details! ", "error",
JOptionPane.ERROR_MESSAGE);
        }
        //stmt.executeQuery(query);
        System.out.println("Done");
        //write logic for data insertion into the database
        //dispose();

        //store the connection object
        con.close();

        }catch(Exception e){
            System.out.println(e);
        }
    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        result = this.jRadioButton2.getText();
    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        signup_form sf=new signup_form();
        sf.setVisible(true);
        dispose();
        // TODO add your handling code here:
    }
    public void validate_()
    {
        String message = "";

```



```

        String userid = this.jTextField1.getText();
String password;
password = this.jPasswordField1.getText();

//System.out.println(company);
//System.out.println(phone);
if (userid.length() < 2) {
    message = message + "Userid must be greater than 2 characters!\n";
}
else {
    for(char c : userid.replaceAll(" ", "").toCharArray()) {
        if (!Character.isDigit(c)) {
            message = message + "Userid cannot have special characters
and alphabets!\n";
            break;
        }
    }
    if (password.length() < 8) {
        message = message + "password cannot be less than 8 charcaters!\n";
    }
    if(result.length() ==0){
        message=message+"Select any one in user type\n";
    }
    if (message.length() != 0) {
        JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);

    }
    else
    {
        //write logic for data insertion into the database
        JOptionPane.showMessageDialog(new JFrame(), "Logged in successfully!");
    }
}

try {
    for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
        if ("Nimbus".equals(info.getName())) {
            javax.swing.UIManager.setLookAndFeel(info.getClassName());
            break;
        }
    }
} catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(dbmsUI.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(dbmsUI.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(dbmsUI.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

```

```

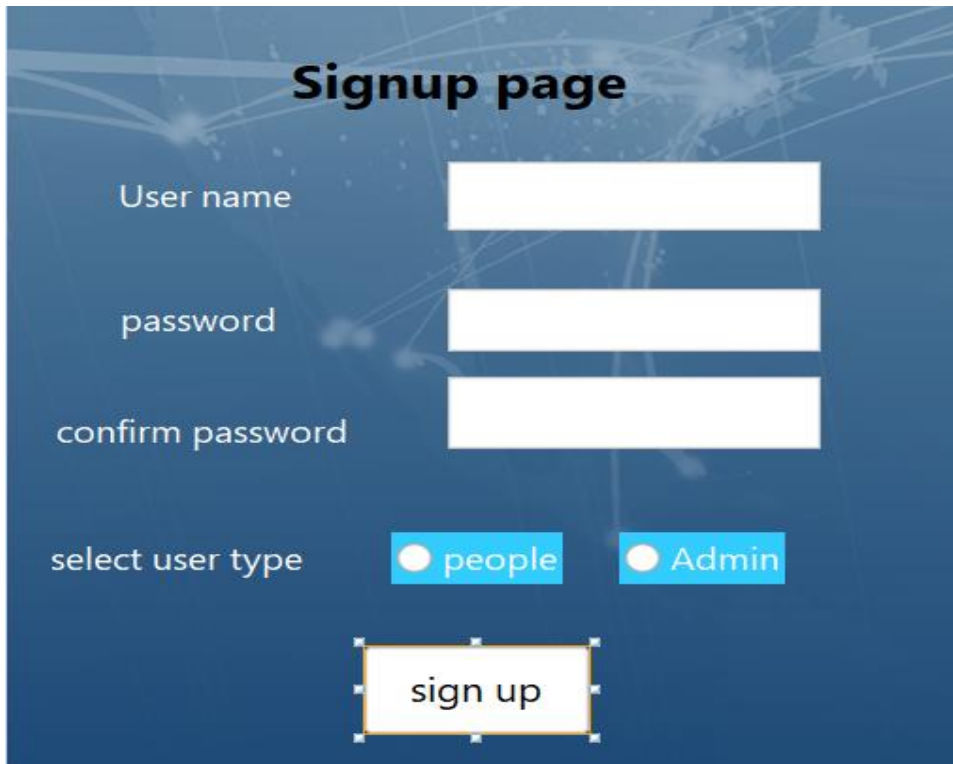
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(dbmsUI.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    }
    //</editor-fold>

    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new dbmsUI().setVisible(true);
        }
    });
}
// Variables declaration - do not modify
private javax.swing.ButtonGroup buttonGroup1;
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel6;
private javax.swing.JPasswordField jPasswordField1;
private javax.swing.JRadioButton jRadioButton1;
private javax.swing.JRadioButton jRadioButton2;
private javax.swing.JTextField jTextField1;
// End of variables declaration
}

```

SIGNUP PAGE INTERFACE:

A screenshot of a web-based signup page. The page has a dark blue background with a faint, abstract pattern of white lines and dots. At the top, the title "Signup page" is displayed in a bold, white, sans-serif font. Below the title, there are three white rectangular input fields stacked vertically. The first field is labeled "User name" in white text to its left. The second field is labeled "password" in white text to its left. The third field is labeled "confirm password" in white text to its left. Below these fields, there is a label "select user type" in white text. To its right, there are two radio button options: "people" and "Admin", each preceded by a small white circle. At the bottom center, there is a white rectangular button with the text "sign up" in a bold, black, sans-serif font. The button has a thin black border and small square handles at its corners, suggesting it is a draggable element in a design tool.

```
package com.mycompany.dbms;
import javax.swing.*.*;
import java.sql.*;
public class signup_form extends javax.swing.JFrame {

    /**
     * Creates new form signup_form
     */
    public signup_form() {
        initComponents();
        setVisible(false);
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        buttonGroup1 = new javax.swing.ButtonGroup();
        jPanel1 = new javax.swing.JPanel();
        jLabel5 = new javax.swing.JLabel();
        jTextField2 = new javax.swing.JTextField();
        jLabel11 = new javax.swing.JLabel();
        jTextField1 = new javax.swing.JTextField();
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        jPasswordField1 = new javax.swing.JPasswordField();
        jLabel4 = new javax.swing.JLabel();
        jButton1 = new javax.swing.JButton();
        jButton2 = new javax.swing.JButton();

        buttonGroup1 = new javax.swing.ButtonGroup();
        jPanel1 = new javax.swing.JPanel();
        jLabel5 = new javax.swing.JLabel();
        jTextField2 = new javax.swing.JTextField();
        jLabel11 = new javax.swing.JLabel();
        jTextField1 = new javax.swing.JTextField();
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        jPasswordField1 = new javax.swing.JPasswordField();
        jLabel4 = new javax.swing.JLabel();
        jButton1 = new javax.swing.JButton();
        jButton2 = new javax.swing.JButton();
    }
}
```

```

jButton1 = new javax.swing.JButton();
jLabel7 = new javax.swing.JLabel();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

jPanel1.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

jLabel5.setFont(new java.awt.Font("Segoe UI", 1, 30)); // NOI18N
jLabel5.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel5.setText("Signup page");
jPanel1.add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(122, 15, 236, 68));

jTextField2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField2ActionPerformed(evt);
    }
});
jPanel1.add(jTextField2, new org.netbeans.lib.awtextra.AbsoluteConstraints(234, 182, 198, 40));

jLabel1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel1.setForeground(new java.awt.Color(255, 255, 255));
jLabel1.setText("User name");
jPanel1.add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(59, 104, 127, 36));

jTextField1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField1ActionPerformed(evt);
    }
});
jPanel1.add(jTextField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(234, 101, 198, 44));

jLabel2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel2.setForeground(new java.awt.Color(255, 255, 255));
jLabel2.setText(" password");
jPanel1.add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(50, 176, 117, 50));

jLabel3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel3.setForeground(new java.awt.Color(255, 255, 255));
jLabel3.setText("confirm password");
jPanel1.add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(26, 238, 170, 68));

jPasswordField1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jPasswordField1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jPasswordField1ActionPerformed(evt);
    }
});
jPanel1.add(jPasswordField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(234, 238, 198,
46));

jLabel4.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel4.setForeground(new java.awt.Color(255, 255, 255));
jLabel4.setText("select user type");

```

```

jPanel1.add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(23, 332, 175, 42));

jRadioButton1.setBackground(new java.awt.Color(51, 204, 255));
buttonGroup1.add(jRadioButton1);
jRadioButton1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jRadioButton1.setForeground(new java.awt.Color(255, 255, 255));
jRadioButton1.setText("people");
jRadioButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jRadioButton1ActionPerformed(evt);
    }
});
jPanel1.add(jRadioButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(204, 337, -1, -1));

jRadioButton2.setBackground(new java.awt.Color(51, 204, 255));
buttonGroup1.add(jRadioButton2);
jRadioButton2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jRadioButton2.setForeground(new java.awt.Color(255, 255, 255));
jRadioButton2.setText("Admin");
jRadioButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jRadioButton2ActionPerformed(evt);
    }
});
jPanel1.add(jRadioButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(325, 337, -1, -1));

jButton1.setFont(new java.awt.Font("Segoe UI", 0, 22)); // NOI18N
jButton1.setText("sign up");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
jPanel1.add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(190, 410, 119, 55));

jLabel7.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY KUMAR\\Desktop\\1627029798.jpg")); // NOI18N
jLabel7.setText("jLabel7");
jPanel1.add(jLabel7, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 510, 490));

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
);
layout.setVerticalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(0, 0, Short.MAX_VALUE))
);

```

```

);

    pack();
} // </editor-fold>
String result;
String state1;
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    try{
        //step1 load the driver class
        Class.forName("oracle.jdbc.driver.OracleDriver");

        //step2 create the connection object
        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");

        String username = this.jTextField1.getText();
        String password = this.jTextField2.getText();
        Statement st = con.createStatement();
        ResultSet rs = st.executeQuery("select count(*) from users");
        int userid=1000;
        while(rs.next())
            userid+=rs.getInt(1);
        if(result=="people")
        {
            state1="view";
        }
        else
        {
            state1="edit";
        }
        ///step3 create the statement object
        //Statement stmt=con.createStatement();
        //step4 execute query
        String query = " insert into users (user_id,user_name,password,state)"
            + " values (?, ?, ?, ?)";

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setInt (1,userid);
        preparedStmt.setString (2,username);
        preparedStmt.setString (3,password);
        preparedStmt.setString(4,state1);
        System.out.println(query);
        preparedStmt.execute();
        //stmt.executeQuery(query);
        System.out.println("Done");
        //write logic for data insertion into the database
        JOptionPane.showMessageDialog(new JFrame(), "Created successfully!, your id is "+userid);
        dispose();
        //store the connection object
        con.close();
        dbmsUI d=new dbmsUI();
        d.setVisible(true);
    }
}

```

```

        }catch(Exception e){
            System.out.println(e);
        }
    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        result = this.jRadioButton2.getText();
    }

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        result = this.jRadioButton1.getText();
    }

    private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    private void jTextField2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    public void validate_()
    {
        String message = "";
        String username = this.jTextField1.getText();
        String password, conpassword;
        password = this.jTextField2.getText();
        conpassword=this.jPasswordField1.getText();
        if (username.length() < 5) {
            message = message + "Username must be greater than 5 characters!\n";
        }
        else {
            for(char c : username.replaceAll(" ", "").toCharArray()) {
                if (!(Character.isLetterOrDigit(c))) {
                    message = message + "Username name cannot have special
characters!\n";
                    break;
                }
            }
        }
        if (password.length() < 8) {
            message = message + "password cannot be less than 8 charcaters!\n";
        }
        if (conpassword.length() < 8) {
            message = message + "confirm password cannot be less than 8 charcaters!\n";
        }
        if(!password.equals(conpassword))
        {
            message=message+"Both password and confirm password doesn't match";

```

```

    }
    if(result.length() ==0){
        message=message+"Select any one in user type\n";
    }
    if (message.length() != 0) {
        JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);

    }
    else
    {
        //write logic for data insertion into the database
        JOptionPane.showMessageDialog(new JFrame(), "Created successfully!");
    }
}

try {
    for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
        if ("Nimbus".equals(info.getName())) {
            javax.swing.UIManager.setLookAndFeel(info.getClassName());
            break;
        }
    }
} catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(signup_form.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(signup_form.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(signup_form.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(signup_form.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
    }
}
//</editor-fold>

/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new signup_form().setVisible(true);
    }
});
}

// Variables declaration - do not modify
private javax.swing.ButtonGroup buttonGroup1;
private javax.swing.JButton jButton1;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;

```

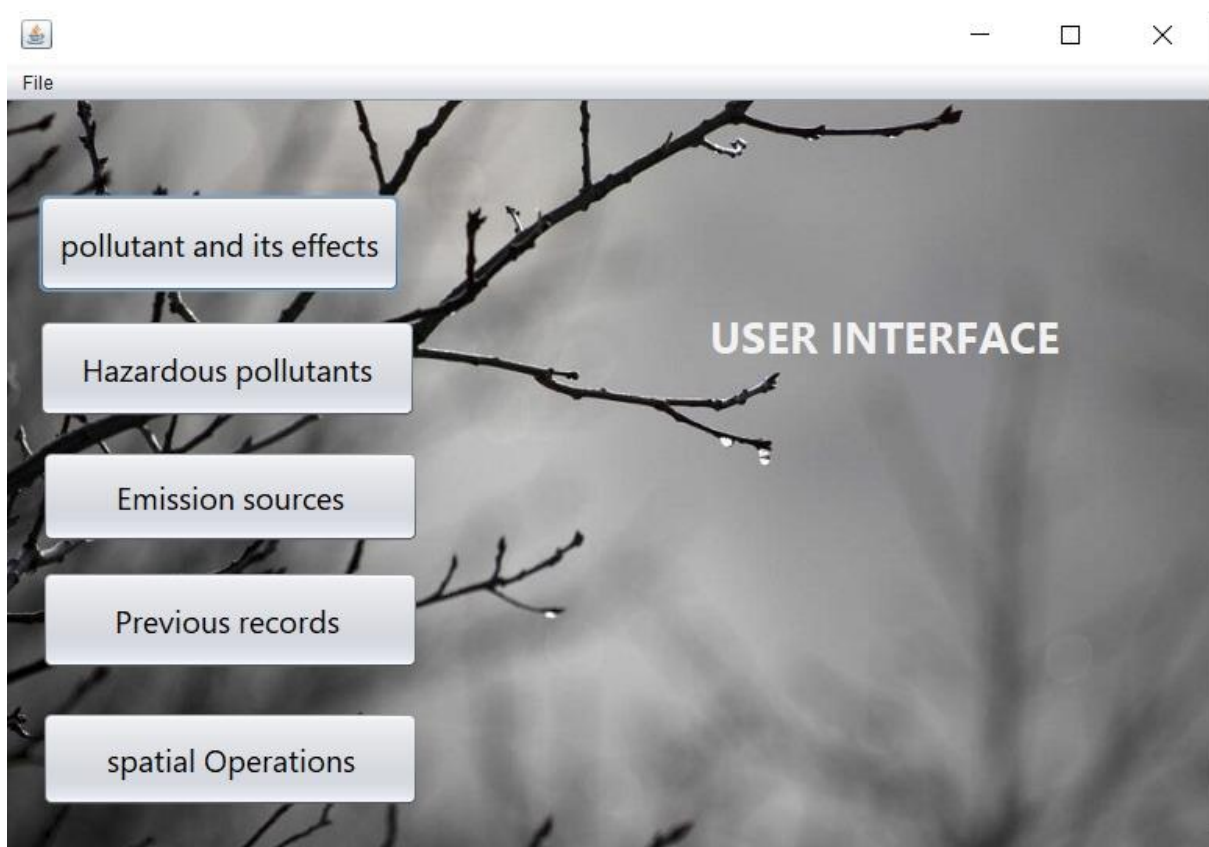


```

private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel7;
private javax.swing.JPanel jPanel1;
private javax.swing.JPasswordField jPasswordField1;
private javax.swing.JRadioButton jRadioButton1;
private javax.swing.JRadioButton jRadioButton2;
private javax.swing.JTextField jTextField1;
private javax.swing.JTextField jTextField2;
// End of variables declaration
}

```

User Interface:



```

public class viewui extends javax.swing.JFrame {

    /**
     * Creates new form viewui
     */
    public static int inpu;
    public viewui() {
        initComponents();
        setVisible(false);
    }
}

```

```

private void initComponents() {

    jPopupMenu1 = new javax.swing.JPopupMenu();
    JMenuItem1 = new javax.swing.JMenuItem();
    JButton1 = new javax.swing.JButton();
    JButton2 = new javax.swing.JButton();
    JButton3 = new javax.swing.JButton();
    JButton5 = new javax.swing.JButton();
    JButton4 = new javax.swing.JButton();
    JLabel1 = new javax.swing.JLabel();
    JLabel2 = new javax.swing.JLabel();
    JMenuBar1 = new javax.swing.JMenuBar();
    JMenu1 = new javax.swing.JMenu();

    JMenuItem1.setText("jMenuItem1");

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    JButton1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    JButton1.setText("pollutant and its effects");
    JButton1.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            JButton1ActionPerformed(evt);
        }
    });
    getContentPane().add(JButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(20, 60, -1,
63));

    JButton2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    JButton2.setText("Hazardous pollutants");
    JButton2.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            JButton2ActionPerformed(evt);
        }
    });
    getContentPane().add(JButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(20, 140, 242,
63));

    JButton3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    JButton3.setText("Emission sources");
    JButton3.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            JButton3ActionPerformed(evt);
        }
    });
    getContentPane().add(JButton3, new org.netbeans.lib.awtextra.AbsoluteConstraints(22, 224, 242,
59));

    JButton5.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    JButton5.setText("Previous records ");
    JButton5.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            JButton5ActionPerformed(evt);
        }
    });
}

```

```

    }
});
getContentPane().add(jButton5, new org.netbeans.lib.awtextra.AbsoluteConstraints(22, 301, 242,
63));

jButton4.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jButton4.setText("spatial Operations");
jButton4.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton4ActionPerformed(evt);
    }
});
getContentPane().add(jButton4, new org.netbeans.lib.awtextra.AbsoluteConstraints(22, 391, 242,
61));

jLabel1.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY KUMAR\\Desktop\\hd-
wallpapers android-iphone-desktop-hd-backgrounds-wallpapers-1080p-4k-rzxzq.jpg")); // NOI18N
jLabel1.setText("jLabel1");
getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 10, 770,
470));

jLabel2.setText("jLabel2");
getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(480, 180, -1, -
1));

jMenu1.setText("File");
jMenuBar1.add(jMenu1);

setJMenuBar(jMenuBar1);

pack();
} // </editor-fold>

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    inpu=1;
    pollution_effects pe=new pollution_effects();
    pe.setVisible(true);
}

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    esourceview esv=new esourceview();
    esv.setVisible(true);
}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    inpu=2;
    pollutant p=new pollutant();
    p.setVisible(true);
}

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:

```

```

        statistics st=new statistics();
        st.setVisible(true);
    }

    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        sptaildist sp=new sptaildist();
        sp.setVisible(true);
    }

    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
                javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

            java.util.logging.Logger.getLogger(viewui.class.getName()).log(java.util.logging.Level.SEVERE,
                null, ex);
        } catch (InstantiationException ex) {

            java.util.logging.Logger.getLogger(viewui.class.getName()).log(java.util.logging.Level.SEVERE,
                null, ex);
        } catch (IllegalAccessException ex) {

            java.util.logging.Logger.getLogger(viewui.class.getName()).log(java.util.logging.Level.SEVERE,
                null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

            java.util.logging.Logger.getLogger(viewui.class.getName()).log(java.util.logging.Level.SEVERE,
                null, ex);
        }
    }
    //</editor-fold>

    /** Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new viewui().setVisible(true);
        }
    });
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton4;
private javax.swing.JButton jButton5;

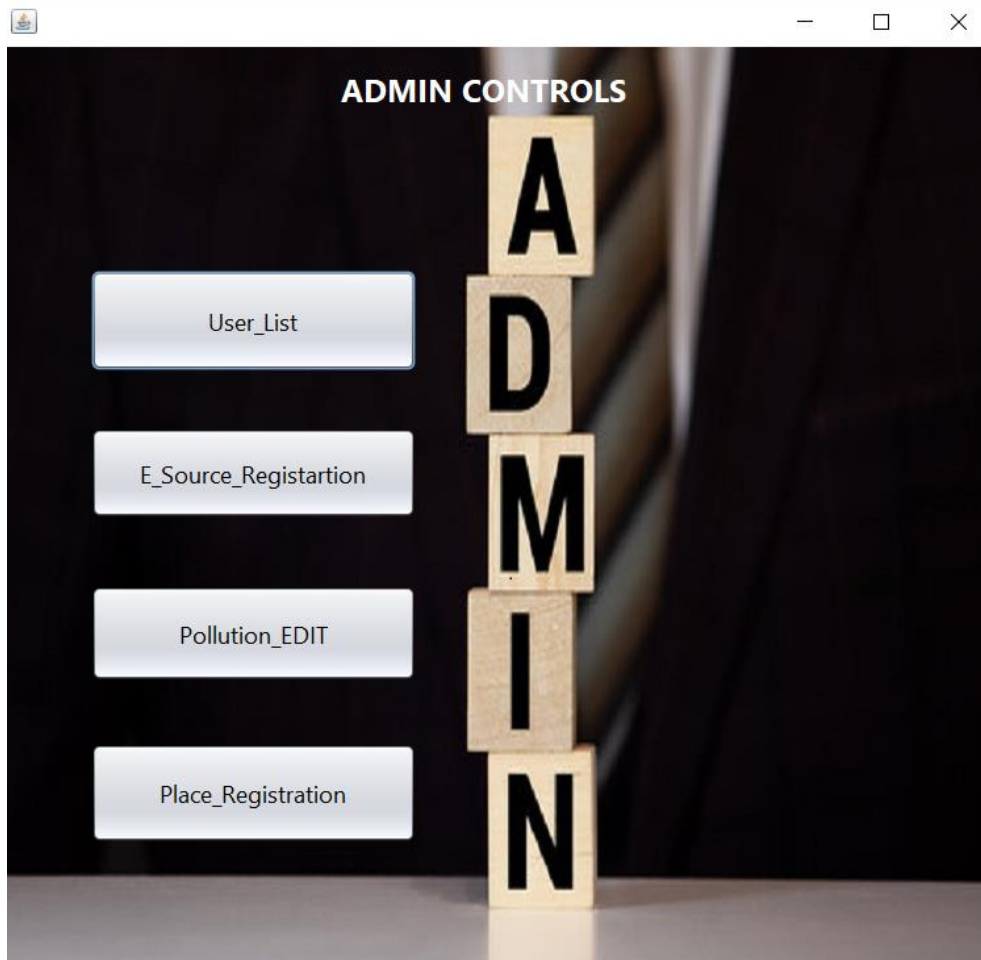
```

```

private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JMenu jMenu1;
private javax.swing.JMenuBar jMenuBar1;
private javax.swing.JMenuItem jMenuItem1;
private javax.swing.JPopupMenu jPopupMenu1;
// End of variables declaration
}

```

ADMIN INTERFACE



```

public class people_main extends javax.swing.JFrame {
    public static int i;
    public people_main() {
        initComponents();
    }
    private void initComponents() {

        jLabel1 = new javax.swing.JLabel();
        jButton3 = new javax.swing.JButton();

```

```

jButton1 = new javax.swing.JButton();
jButton5 = new javax.swing.JButton();
jButton6 = new javax.swing.JButton();
jLabel3 = new javax.swing.JLabel();
setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());
jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 24)); // NOI18N
jLabel1.setForeground(new java.awt.Color(255, 255, 255));
jLabel1.setText("ADMIN CONTROLS");
getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(260, 0, 239,
64));

jButton3.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jButton3.setText("Pollution_EDIT");
jButton3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton3ActionPerformed(evt);
    }
});
getContentPane().add(jButton3, new org.netbeans.lib.awtextra.AbsoluteConstraints(70, 410, 247,
72));

jButton1.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jButton1.setText("User_List");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(70, 170, 247,
76));

jButton5.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jButton5.setText("Place_Registration");
jButton5.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton5ActionPerformed(evt);
    }
});
getContentPane().add(jButton5, new org.netbeans.lib.awtextra.AbsoluteConstraints(70, 530, 247,
75));

jButton6.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jButton6.setText("E_Source_Registartion");
jButton6.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton6ActionPerformed(evt);
    }
});
getContentPane().add(jButton6, new org.netbeans.lib.awtextra.AbsoluteConstraints(70, 290, 247,
68));

jLabel3.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY
KUMAR\\Desktop\\admin.jpeg")); // NOI18N
jLabel3.setText("jLabel3");

```

```

        getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 760,
700));

        pack();
    } // </editor-fold>

    private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
        placeeeee pl = new placeeeee();
        pl.setVisible(true);
    }
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        user_list ul = new user_list();
        ul.setVisible(true);
    }
    private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        esources es=new esources();
        es.setVisible(true);
    }
    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        pollution_info pi=new pollution_info();
        pi.setVisible(true);
    }

    public static void main(String args[]) {
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(people_main.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(people_main.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(people_main.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(people_main.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }
    } //</editor-fold>

    /* Create and display the form */

```

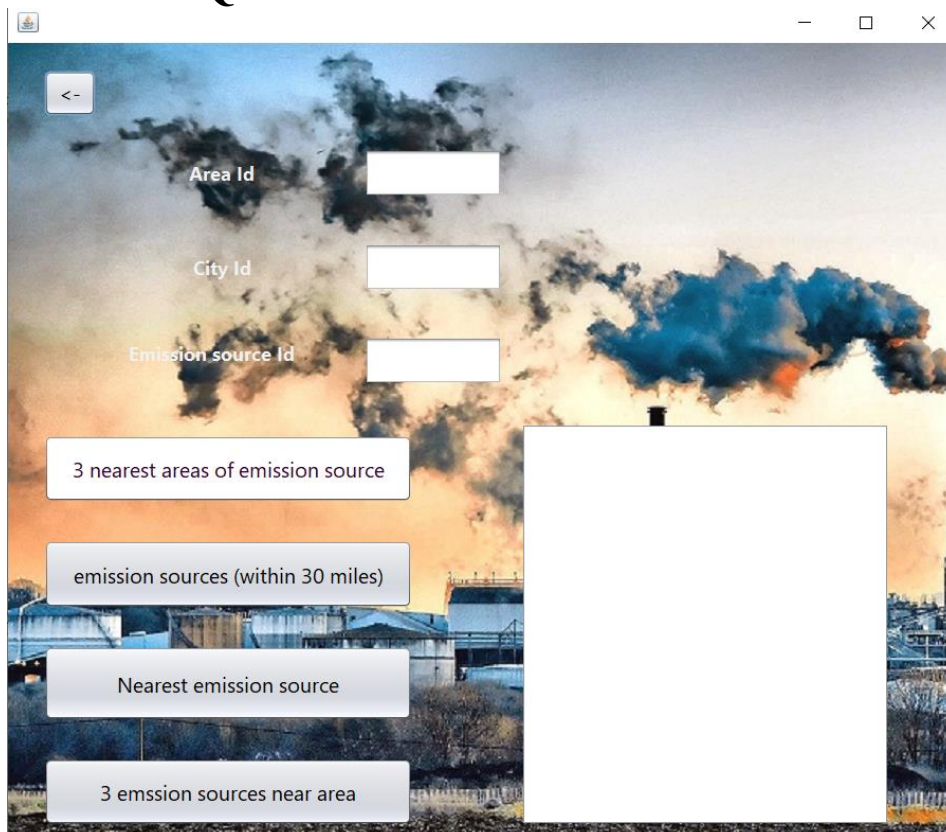
```

java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new people_main().setVisible(true);
    }
});
}

private javax.swing.JButton jButton1;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton5;
private javax.swing.JButton jButton6;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel3;
// End of variables declaration
}

```

SPECIAL QUERY INTERFACE:



```

package com.mycompany.dbms;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
public class sptaildist extends javax.swing.JFrame {

    /**
     * Creates new form sptaildist
     */

```



```

public sptaildist() {
    initComponents();
    setVisible(false);
}
public static String st="";
String message = "";
/**
 * This method is called from within the constructor to initialize the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jButton1 = new javax.swing.JButton();
    jButton2 = new javax.swing.JButton();
    jButton3 = new javax.swing.JButton();
    jButton4 = new javax.swing.JButton();
    jLabel2 = new javax.swing.JLabel();
    jTextField1 = new javax.swing.JTextField();
    jTextField2 = new javax.swing.JTextField();
    jLabel3 = new javax.swing.JLabel();
    jScrollPane1 = new javax.swing.JScrollPane();
    jTextArea1 = new javax.swing.JTextArea();
    jButton5 = new javax.swing.JButton();
    jLabel1 = new javax.swing.JLabel();
    jTextField3 = new javax.swing.JTextField();
    jLabel4 = new javax.swing.JLabel();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jButton1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jButton1.setText("Nearest emission source");
    jButton1.setHorizontalTextPosition(javax.swing.SwingConstants.CENTER);
    jButton1.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton1ActionPerformed(evt);
        }
    });
    getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(34, 569, 348,
70));

    jButton2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
    jButton2.setText("emission sources (within 30 miles)");
    jButton2.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton2ActionPerformed(evt);
        }
    });
    getContentPane().add(jButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(34, 469, 348,
64));

    jButton3.setBackground(new java.awt.Color(242, 242, 242));

```

```

jButton3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jButton3.setForeground(new java.awt.Color(51, 0, 51));
jButton3.setText("3 nearest areas of emission source");
jButton3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton3ActionPerformed(evt);
    }
});
getContentPane().add(jButton3, new org.netbeans.lib.awtextra.AbsoluteConstraints(34, 370, 348,
63));

```

```

jButton4.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jButton4.setText("3 emission sources near area");
jButton4.setActionCommand("");
jButton4.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton4ActionPerformed(evt);
    }
});
getContentPane().add(jButton4, new org.netbeans.lib.awtextra.AbsoluteConstraints(34, 675, 348,
63));

```

```

jLabel2.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
jLabel2.setForeground(new java.awt.Color(242, 242, 242));
jLabel2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel2.setText("Area Id");
getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(160, 100, 84,
45));

```

```

jTextField1.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
getContentPane().add(jTextField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(337, 100,
130, 45));

```

```

jTextField2.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
getContentPane().add(jTextField2, new org.netbeans.lib.awtextra.AbsoluteConstraints(337, 189,
130, 45));

```

```

jLabel3.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
jLabel3.setForeground(new java.awt.Color(242, 242, 242));
jLabel3.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel3.setText("City Id");
getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(160, 189, 84,
45));

```

```

jTextArea1.setColumns(20);
jTextArea1.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jTextArea1.setRows(5);
jScrollPane1.setViewportView(jTextArea1);

getContentPane().add(jScrollPane1, new org.netbeans.lib.awtextra.AbsoluteConstraints(485,
359, 348, 379));

```

```

jButton5.setFont(new java.awt.Font("Segoe UI", 0, 19)); // NOI18N
jButton5.setText("<-");
jButton5.addActionListener(new java.awt.event.ActionListener() {

```

```

        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton5ActionPerformed(evt);
        }
    });
    getContentPane().add(jButton5, new org.netbeans.lib.awtextra.AbsoluteConstraints(34, 26, -1,
43));

    jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
    jLabel1.setForeground(new java.awt.Color(242, 242, 242));
    jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    jLabel1.setText("Emission source Id");
    getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(110, 270,
165, 44));

    jTextField3.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
    getContentPane().add(jTextField3, new org.netbeans.lib.awtextra.AbsoluteConstraints(337, 277,
130, 45));

    jLabel4.setForeground(new java.awt.Color(51, 255, 255));
    jLabel4.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY
KUMAR\\Desktop\\1591914.jpg")); // NOI18N
    jLabel4.setText("jLabel4");
    getContentPane().add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, -130, 900,
1010));

    pack();
} // </editor-fold>

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    if(message.length()==0)
    {
        try{
            //step1 load the driver class
            Class.forName("oracle.jdbc.driver.OracleDriver");

            //step2 create the connection object
            Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");

            String areastr = this(jTextField1.getText());
            String citystr = this(jTextField2.getText());
            ///step3 create the statement object
            //step4 execute query
            String query = " SELECT /*+ordered (e esources_spidx) */ e.eid,e.esname,e.source_type
FROM place p,esources e WHERE p.area_id=? AND p.city_id=?" +
                "AND sdo_nn(e.source_geo_location, p.place_geo_location,'sdo_num_res=1') = 'TRUE'";

            // create the mysql insert preparedstatement
            PreparedStatement preparedStmt = con.prepareStatement(query);
            preparedStmt.setInt(1,Integer.parseInt(areastr));
            preparedStmt.setInt(2,Integer.parseInt(citystr));
            System.out.println(query);
            ResultSet rs=preparedStmt.executeQuery();

```

```

int c=0;
while(rs.next()){
    st+="Emission Source :"+String.valueOf(++c);
    st+="\nEmission source Id: "+String.valueOf(rs.getInt(1));
    st+="\nEmission Source Name: "+rs.getString(2)+"\nEmission source Type:
"+rs.getString(3)+"\n";
}
jTextArea1.setText(st);
st="";
//stmt.executeQuery(query);
System.out.println("Done");
    //esid+=1;

//store the connection object
con.close();

}catch(Exception e){
    System.out.println(e);
}
}

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    dispose();
}

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    String esstr1=this.jTextField3.getText();
    if (esstr1.length() < 4) {
        message = message + "emission source id cannot be less than 4
charcaters!\n";
    }
    else {
        for(char c : esstr1.replaceAll(" ", "").toCharArray()) {
            if (!(Character.isDigit(c))) {
                message = message + "emission source id can have only
numbers!\n";
                break;
            }
        }
    }
    if (message.length() != 0) {
        JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);
    }
    if(message.length()==0)
    {
        try{
            Class.forName("oracle.jdbc.driver.OracleDriver");

```

```

        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");
        String areastr = this.jTextField1.getText();
        String citystr = this.jTextField2.getText();
        String esstr=this.jTextField3.getText();
        ///step3 create the statement object
        //step4 execute query
        String query = "SELECT /*+ordered index(ps place_spidx)*/ p.area_id, p.city_id,
p.place_name, sdo_nn_distance(1) distance FROM esources e,place p WHERE e.eid=? "+
        "AND sdo_nn( p.place_geo_location,e.source_geo_location, 'sdo_num_res=3', 1) =
'TRUE' ORDER BY distance";

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setInt(1,Integer.parseInt(esstr));
        System.out.println(query);
        ResultSet rs=preparedStmt.executeQuery();
        int c=0;
        while(rs.next()){
            st+="Place :"+String.valueOf(++c);
            st+="\nArea Id: "+String.valueOf(rs.getInt(1));
            st+="\nCity Id: "+String.valueOf(rs.getInt(1));
            st+="\nplace Name: "+rs.getString(3)+"\ndistance: "+rs.getFloat(4)+"\n\n";
        }
        if(st.length()!=0) {
            jTextArea1.setText(st);
        }
        else
            jTextArea1.setText("No places Found");
        st="";
        //stmt.executeQuery(query);
        System.out.println("Done");
        //esid+=1;

        //store the connection object
        con.close();

        }catch(Exception e){
            System.out.println(e);
        }
    }
}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    if(message.length()==0)
    {
        try{
            //step1 load the driver class
            Class.forName("oracle.jdbc.driver.OracleDriver");

            //step2 create the connection object

```

```

        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","vasavi");

        String areastr = this.jTextField1.getText();
        String citystr = this.jTextField2.getText();
        ///step3 create the statement object
        //step4 execute query
        String query = "SELECT /*+ordered*/ e.eid,e.esname, e.source_type FROM place p,
esources e WHERE p.area_id=? AND p.city_id=? "+
        "AND sdo_within_distance (p.place_geo_location, e.source_geo_location,'distance =
50 unit=MILE')= 'TRUE'";

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setInt(1,Integer.parseInt(areastr));
        preparedStmt.setInt(2,Integer.parseInt(citystr));
        System.out.println(query);
        ResultSet rs=preparedStmt.executeQuery();
        int c=0;
        while(rs.next()){
            st+="Emission Source :"+String.valueOf(++c);
            st+="\nEmission source Id: "+String.valueOf(rs.getInt(1));
            st+="\nEmission Source Name: "+rs.getString(2)+"\nEmission source Type:
"+rs.getString(3)+"\n";
        }
        if(st.length() != 0) {
            jTextArea1.setText(st);
        }
        else
            jTextArea1.setText("No Emission Sources Found");
        st="";
        //stmt.executeQuery(query);
        System.out.println("Done");
        //esid+=1;

        //store the connection object
        con.close();

        }catch(Exception e){
            System.out.println(e);
        }
    }
}

private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    if(message.length() == 0)
    {
        try{
            //step1 load the driver class
            Class.forName("oracle.jdbc.driver.OracleDriver");

            //step2 create the connection object

```

```

        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");
        String areastr = this.jTextField1.getText();
        String citystr = this.jTextField2.getText();
        ///step3 create the statement object
        //step4 execute query
        String query = "SELECT /*+ordered*/ e.eid, e.esname, e.source_type FROM place p,
esources e WHERE p.area_id= ? AND p.city_id=?" +
"AND sdo_nn (e.source_geo_location, p.place_geo_location, 'sdo_num_res=3') = 'TRUE'";

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setInt(1,Integer.parseInt(areastr));
        preparedStmt.setInt(2,Integer.parseInt(citystr));
        System.out.println(query);
        ResultSet rs=preparedStmt.executeQuery();
        int c=0;
        while(rs.next()){
            st+="Emission Source :"+String.valueOf(++c);
            st+="\nEmission source Id: "+String.valueOf(rs.getInt(1));
            st+="\nEmission Source Name: "+rs.getString(2)+"\nEmission source Type:
"+rs.getString(3)+"\n\n";
        }
        if(st.length() != 0) {
            jTextArea1.setText(st);
        }
        else
            jTextArea1.setText("No Emission Sources Found");
        st="";
        //stmt.executeQuery(query);
        System.out.println("Done");
        //esid+=1;

        //store the connection object
        con.close();

    } catch (Exception e) {
        System.out.println(e);
    }
}

public void validate_()
{
    message="";
    String areastr,citystr;
    areastr = this.jTextField1.getText();
    int areaid,cityid;
    citystr=this.jTextField2.getText();
    if (areastr.length() < 4) {
        message = message + "area-id cannot be less than 4 charcaters!\n";
    }
    else {
        for(char c : areastr.replaceAll(" ", "").toCharArray()) {
            if (!(Character.isDigit(c))) {

```

```

                message = message + "Area id can have only numbers!\n";
                break;
            }
        }
    }
    if (citystr.length() < 4) {
        message = message + "city-id cannot be less than 4 charcaters!\n";
    }
    else {
        for(char c : citystr.replaceAll(" ", "").toCharArray()) {
            if (!(Character.isDigit(c))) {
                message = message + "city id can have only numbers!\n";
                break;
            }
        }
    }
    if (message.length() != 0) {
        JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);
    }
}

```

```

public static void main(String args[]) {
    try {
        for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
            if ("Nimbus".equals(info.getName())) {
                javax.swing.UIManager.setLookAndFeel(info.getClassName());
                break;
            }
        }
    } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(sptaildist.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(sptaildist.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(sptaildist.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(sptaildist.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    }
}
//</editor-fold>

```

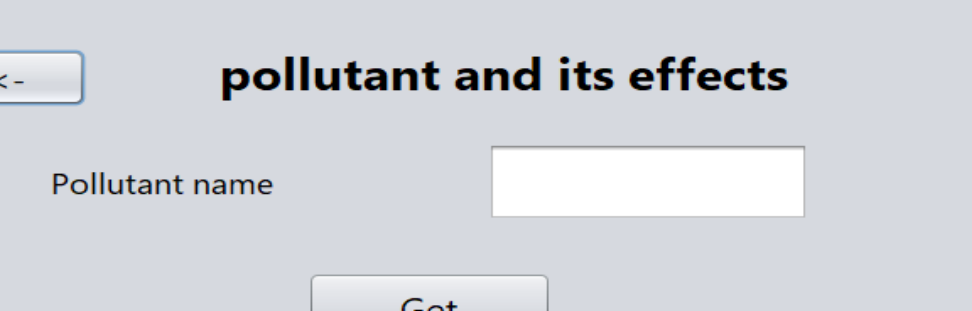
```

/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new sptaildist().setVisible(true);
    }
}

```


OTHER INTERFACES IN USER CONSOLE:

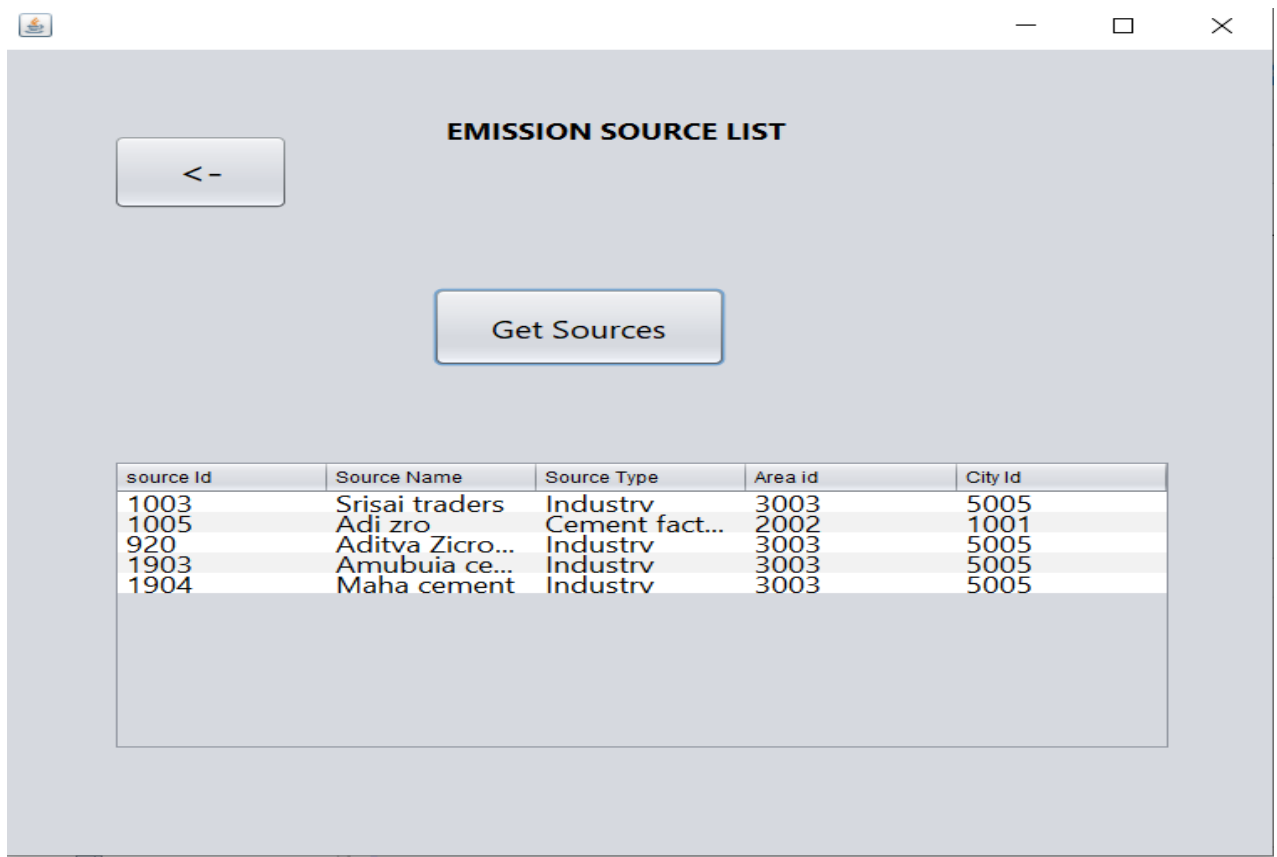
A) Pollutant and its Effect Interface:



The screenshot shows a web application interface. At the top left is a small icon of a cup. The title bar of the window contains standard OS controls (minimize, maximize, close). The main content area has a light gray background. On the left, there is a blue button with the text "< -". In the center, the title "pollutant and its effects" is displayed in a large, bold, black font. Below the title, there is a text input field labeled "Pollutant name". Underneath the input field is a gray button labeled "Get". At the bottom, there is a table with four columns: "pollutant Id", "pollutant Name", "disease", and "common symptom". The table is currently empty of data rows.

pollutant Id	pollutant Name	disease	common symptom
--------------	----------------	---------	----------------

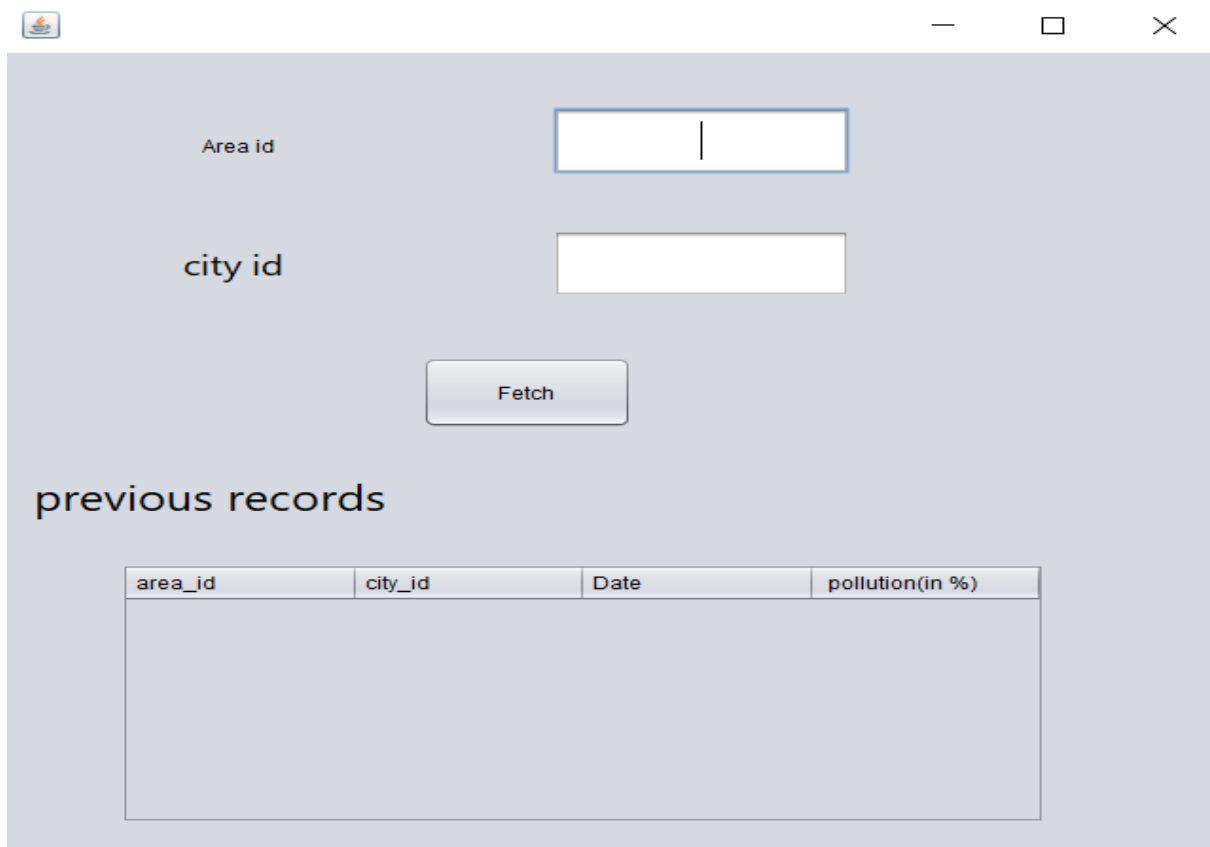
B) Emission Sources interface



The screenshot shows a web application window titled "EMISSION SOURCE LIST". It features a back button labeled "< -" and a "Get Sources" button. Below these is a table with five columns: source Id, Source Name, Source Type, Area id, and City Id. The table contains five rows of data.

source Id	Source Name	Source Type	Area id	City Id
1003	Srisai traders	Industrv	3003	5005
1005	Adi zro	Cement fact...	2002	1001
920	Aditva Zicro...	Industrv	3003	5005
1903	Amubuia ce...	Industrv	3003	5005
1904	Maha cement	Industrv	3003	5005

C) Previous record Fetching interface



The screenshot shows a web application window titled "Previous record Fetching interface". It features two input fields labeled "Area id" and "city id", a "Fetch" button, and a section labeled "previous records" containing a table with four columns: area_id, city_id, Date, and pollution(in %).

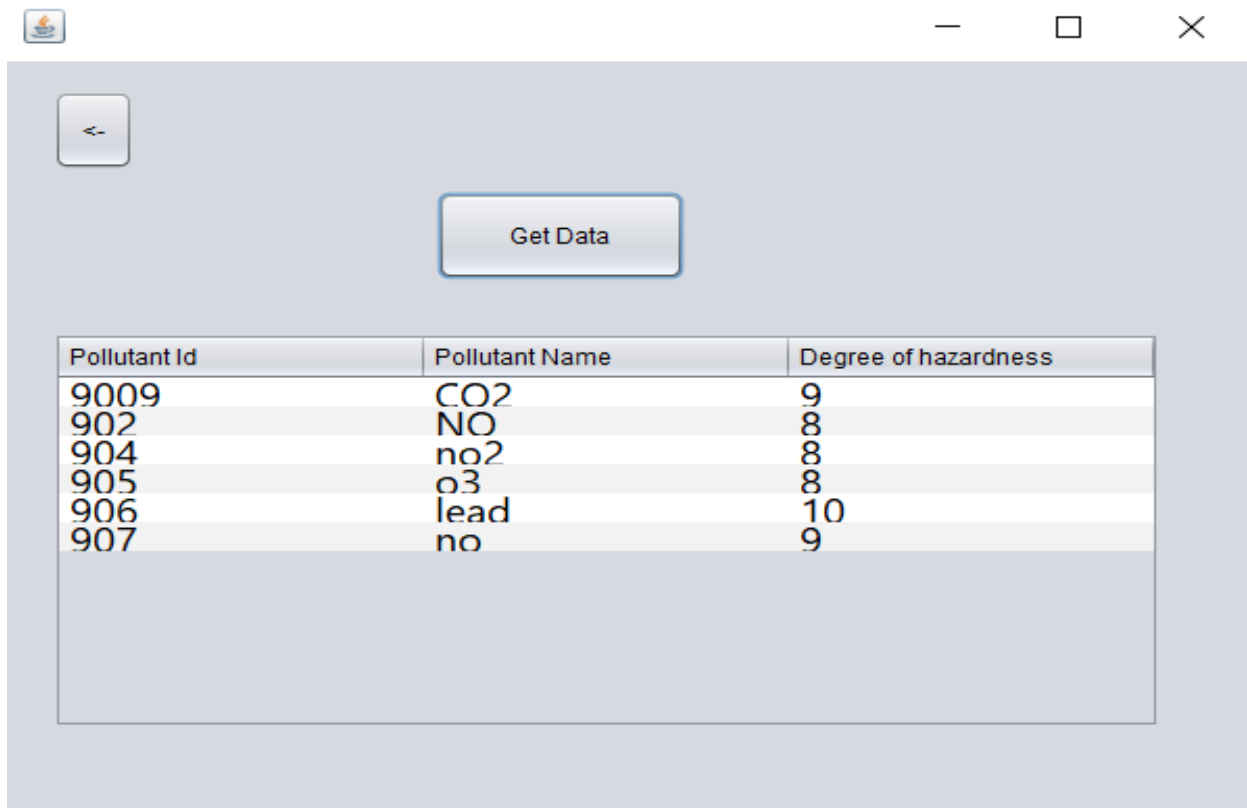
Area id

city id

previous records

area_id	city_id	Date	pollution(in %)
---------	---------	------	-----------------

D)Hazardous List of pollution interface



SOURCE CODE:

```
package com.mycompany.dbms;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
import javax.swing.table.DefaultTableModel;

public statistics() {
    initComponents();
    setVisible(false);
}

String message="";
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jLabel1 = new javax.swing.JLabel();
    jScrollPane1 = new javax.swing.JScrollPane();
    jTable1 = new javax.swing.JTable();
}
```

```

jLabel2 = new javax.swing.JLabel();
jTextField1 = new javax.swing.JTextField();
jLabel3 = new javax.swing.JLabel();
jTextField2 = new javax.swing.JTextField();
jButton1 = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

jLabel1.setFont(new java.awt.Font("Segoe UI", 0, 25)); // NOI18N
jLabel1.setText("previous records");

jTable1.setFont(new java.awt.Font("Segoe UI", 0, 16)); // NOI18N
jTable1.setModel(new javax.swing.table.DefaultTableModel(
    new Object [][] {

        },
    new String [] {
        "area_id", "city_id", "Date", " pollution(in %)"
    }
));
jScrollPane1.setViewportView(jTable1);

jLabel2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel2.setText("Area id");

jTextField1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField1.setHorizontalAlignment(javax.swing.JTextField.CENTER);
jTextField1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField1ActionPerformed(evt);
    }
});

jLabel3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel3.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel3.setText("city id ");

jTextField2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField2.setHorizontalAlignment(javax.swing.JTextField.CENTER);
jTextField2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField2ActionPerformed(evt);
    }
});

jButton1.setText("Fetch");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(

```

```

        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(layout.createSequentialGroup()
                    .addGap(75, 75, 75)

                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
                    .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE, 97,
Short.MAX_VALUE)
                    .addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                .addGap(117, 117, 117)

            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE, 157,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jTextField2, javax.swing.GroupLayout.PREFERRED_SIZE, 157,
javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addGroup(layout.createSequentialGroup()
                .addGap(61, 61, 61)
                .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 488,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGroup(layout.createSequentialGroup()
                .addGap(220, 220, 220)
                .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 111,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGroup(layout.createSequentialGroup()
                .addGap(15, 15, 15)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 240,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addContainerGap(93, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addGap(38, 38, 38)
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE, 47,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 47,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(35, 35, 35)
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jTextField2, javax.swing.GroupLayout.PREFERRED_SIZE, 47,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, 39,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 42,
Short.MAX_VALUE)
            .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 50,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(31, 31, 31)
            .addComponent(jLabel1)
            .addGap(30, 30, 30)

```

```

        .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 182,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(20, 20, 20))
    );

    pack();
} // </editor-fold>

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jTextField2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    if(message.length()==0)
    {
        try{
            //step1 load the driver class
            Class.forName("oracle.jdbc.driver.OracleDriver");

            //step2 create the connection object
            Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");
            String areastr = this(jTextField1.getText());
            String citystr = this(jTextField2.getText());
            String sql = "SELECT * FROM pollution_info where area_id=? AND city_id=?";
            PreparedStatement statement = con.prepareStatement(sql);
            statement.setInt(1,Integer.parseInt(areastr));
            statement.setInt(2,Integer.parseInt(citystr));
            statement.execute();
            int rowsfound = statement.executeUpdate();
            System.out.println("Hello");
            if(rowsfound==0)
            {
                //write logic for data insertion into the database
                JOptionPane.showMessageDialog(new JFrame(),"No details Found! ", "error",
JOptionPane.ERROR_MESSAGE);
            }
            else {
                Statement st=con.createStatement();
                String query="SELECT * FROM pollution_info where area_id="+areastr+" AND city_id
="+citystr;
                //statement.setString(1,pname1);
                System.out.println(query);
                //PreparedStatement st = con.prepareStatement(query);
                ResultSet rs=st.executeQuery(query);
                //table.setModel(DbUtils.resultSetToTableModel(rs));
                while(rs.next())
                {

```

```

        String aid=String.valueOf(rs.getInt("area_id"));
        String cid=rs.getString("city_id");
        String day=rs.getString("day");
        String ppoll=rs.getString("per_pollution");
        String tbData[]={aid,cid,day,ppoll};
        DefaultTableModel tblModel=(DefaultTableModel)jTable1.getModel();
        tblModel.addRow(tbData);
    }
    System.out.println(query);}

    //stmt.executeQuery(query);
    System.out.println("Done");

    //close the connection object
    con.close();

    }catch(Exception e){
        System.out.println(e);
    }
}

/**
 * @param args the command line arguments
 */
public void validate_()
{
    String areastr=jTextField1.getText();
    String citystr=jTextField2.getText();
    if(areastr.length()==0){
        message=message+"Enter area id \n";
    }
    else {
        for(char c : areastr.replaceAll(" ", "").toCharArray()) {
            if (!Character.isDigit(c)) {
                message = message + "area id cannot have alphabets and
special characters!\n";
                break;
            }
        }
    }
    if(citystr.length()==0){
        message=message+"Enter city id \n";
    }
    else {
        for(char c : citystr.replaceAll(" ", "").toCharArray()) {
            if (!Character.isDigit(c)) {
                message = message + "city id cannot have alphabets and
special characters!\n";
                break;
            }
        }
    }
    if (message.length() != 0) {

```

```

        JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);

    }

}

public static void main(String args[]) {
    try {
        for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
            if ("Nimbus".equals(info.getName())) {
                javax.swing.UIManager.setLookAndFeel(info.getClassName());
                break;
            }
        }
    } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(statistics.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(statistics.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(statistics.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(statistics.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    }
}
//</editor-fold>

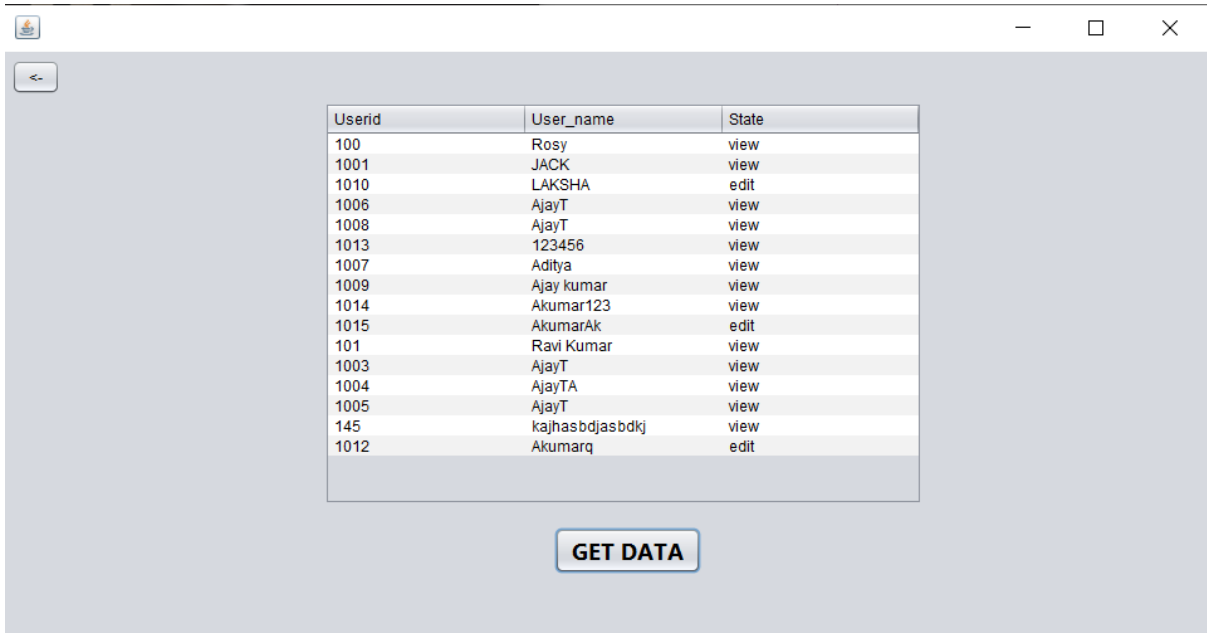
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new statistics().setVisible(true);
    }
});
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JScrollPane jScrollPane1;
private javax.swing.JTable jTable1;
private javax.swing.JTextField jTextField1;
private javax.swing.JTextField jTextField2;
// End of variables declaration
}

```


INTERFACES IN ADMIN CONSOLE


List of Users:



Userid	User_name	State
100	Rosy	view
1001	JACK	view
1010	LAKSHA	edit
1006	AjayT	view
1008	AjayT	view
1013	123456	view
1007	Aditya	view
1009	Ajay kumar	view
1014	Akumar123	view
1015	AkumarAk	edit
101	Ravi Kumar	view
1003	AjayT	view
1004	AjayTA	view
1005	AjayT	view
145	kajhasbdjasbdkj	view
1012	Akumarq	edit

GET DATA

Emission Source Registration:



Emission source Registration

Name of source

area id

city id

source type

Latitude

Longitude

Get Latitude and Longitude

Register

Source Code:

```
package com.mycompany.dbms;
import javax.swing.*.*;
import java.sql.*;
import java.awt.Desktop;
import java.io.IOException;
import java.net.URI;
import java.net.URISyntaxException;
import java.util.logging.Level;
import java.util.logging.Logger;
public class esources extends javax.swing.JFrame {
    public esources() {
        initComponents();
    }
String selectedvalue;
    private void initComponents() {
        buttonGroup1 = new javax.swing.ButtonGroup();
        jLabel1 = new javax.swing.JLabel();
        jTextField1 = new javax.swing.JTextField();
        jLabel2 = new javax.swing.JLabel();
        jTextField2 = new javax.swing.JTextField();
        jLabel3 = new javax.swing.JLabel();
        jTextField3 = new javax.swing.JTextField();
        jLabel4 = new javax.swing.JLabel();
        jComboBox1 = new javax.swing.JComboBox<>();
        jLabel5 = new javax.swing.JLabel();
        jTextField4 = new javax.swing.JTextField();
        jLabel6 = new javax.swing.JLabel();
        jTextField5 = new javax.swing.JTextField();
        jButton1 = new javax.swing.JButton();
        jLabel7 = new javax.swing.JLabel();
        jButton2 = new javax.swing.JButton();
        jLabel8 = new javax.swing.JLabel();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setCursor(new java.awt.Cursor(java.awt.Cursor.DEFAULT_CURSOR));
        getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

        jLabel1.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
        jLabel1.setText("Name of source");
        getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(99, 139, 166,
52));

        jTextField1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
        jTextField1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jTextField1ActionPerformed(evt);
            }
        });
        getContentPane().add(jTextField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(397, 147,
261, -1));
```

```

jLabel2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel2.setForeground(new java.awt.Color(255, 255, 255));
jLabel2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel2.setText("area id");
getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(99, 232, 166,
37));

```

```

jTextField2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField2ActionPerformed(evt);
    }
});
getContentPane().add(jTextField2, new org.netbeans.lib.awtextra.AbsoluteConstraints(397, 232,
261, 37));

```

```

jLabel3.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jLabel3.setForeground(new java.awt.Color(255, 255, 255));
jLabel3.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel3.setText("city id");
getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(99, 300, 166,
37));

```

```

jTextField3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField3ActionPerformed(evt);
    }
});
getContentPane().add(jTextField3, new org.netbeans.lib.awtextra.AbsoluteConstraints(397, 300,
261, -1));

```

```

jLabel4.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
jLabel4.setForeground(new java.awt.Color(255, 255, 255));
jLabel4.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel4.setText("source type");
getContentPane().add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(99, 381, 166,
49));

```

```

jComboBox1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jComboBox1.setMaximumRowCount(6);
jComboBox1.setModel(new javax.swing.DefaultComboBoxModel<>(new String[] { "Cement
factory", "Rice mill", "Industry", "other" }));
jComboBox1.addMouseListener(new java.awt.event.MouseAdapter() {
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        jComboBox1MouseClicked(evt);
    }
});
jComboBox1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jComboBox1ActionPerformed(evt);
    }
});
getContentPane().add(jComboBox1, new org.netbeans.lib.awtextra.AbsoluteConstraints(397,
387, 196, -1));

```

```

jLabel5.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel5.setForeground(new java.awt.Color(255, 255, 255));
jLabel5.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel5.setText("Latitude");
getContentPane().add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(63, 474, 111,
48));

```

```

jTextField4.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField4.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField4ActionPerformed(evt);
    }
});
getContentPane().add(jTextField4, new org.netbeans.lib.awtextra.AbsoluteConstraints(264, 475,
174, 48));

```

```

jLabel6.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel6.setForeground(new java.awt.Color(255, 255, 255));
jLabel6.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel6.setText("Longitude");
getContentPane().add(jLabel6, new org.netbeans.lib.awtextra.AbsoluteConstraints(55, 566, 131,
43));

```

```

jTextField5.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jTextField5.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField5ActionPerformed(evt);
    }
});
getContentPane().add(jTextField5, new org.netbeans.lib.awtextra.AbsoluteConstraints(264, 567,
174, 42));

```

```

jButton1.setFont(new java.awt.Font("Segoe UI", 0, 22)); // NOI18N
jButton1.setText("Register");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(363, 649,
196, 82));

```

```

jLabel7.setFont(new java.awt.Font("Segoe UI", 1, 30)); // NOI18N
jLabel7.setForeground(new java.awt.Color(255, 255, 255));
jLabel7.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel7.setText("Emission source Registration");
getContentPane().add(jLabel7, new org.netbeans.lib.awtextra.AbsoluteConstraints(280, 60, 504,
82));

```

```

jButton2.setFont(new java.awt.Font("Segoe UI", 0, 21)); // NOI18N
jButton2.setForeground(new java.awt.Color(51, 51, 255));
jButton2.setText("Get Latitude and Longitude");
jButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {

```

```

        jButton2ActionPerformed(evt);
    }
});
getContentPane().add(jButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(521, 492,
313, 83));

jLabel8.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY KUMAR\\Desktop\\wallhaven-
nmgm11.jpg")); // NOI18N
jLabel8.setText("jLabel8");
getContentPane().add(jLabel8, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 1020,
760));

pack();
} // </editor-fold>

private void jTextField3ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jComboBox1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    selectedvalue=jComboBox1.getSelectedItem().toString();
}

private void jComboBox1MouseClicked(java.awt.event.MouseEvent evt) {
    // TODO add your handling code here:
}

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jTextField2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jTextField4ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jTextField5ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    validate_();
    try{
        //step1 load the driver class
        Class.forName("oracle.jdbc.driver.OracleDriver");

        //step2 create the connection object

```

```

        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","va
savi");
        String sourcename = this.jTextField1.getText();
        String areastr = this.jTextField2.getText();
        String citystr = this.jTextField3.getText();
        String latistr = this.jTextField4.getText();
        String longistr = this.jTextField5.getText();
        ///step3 create the statement object
        String sql = "SELECT * FROM place WHERE area_id=? AND city_id=?";
        PreparedStatement statement2 = con.prepareStatement(sql);
        statement2.setInt(1,Integer.parseInt(areastr));
        statement2.setInt(2,Integer.parseInt(citystr));
        int rowsfound = statement2.executeUpdate();
        String message1="";
        if(rowsfound==0)
        {
            message1= "Enter valid area and city ids!";
            //write logic for data insertion into the database
            JOptionPane.showMessageDialog(new JFrame(),message1,
"error",JOptionPane.ERROR_MESSAGE);
            System.out.println("I am in");
        }
        //step4 execute query
        if(message1.length()==0) {
            int esid=1900;
            Statement st = con.createStatement();
            ResultSet rs = st.executeQuery("select count(*) from esources");
            while(rs.next())
                esid+=rs.getInt(1);
            String query = " insert into esources
(eid,esname,source_type,area_id,city_id,source_geo_location)"
                + " values (?, ?, ?, ?,?,SDO_GEOMETRY(2001,8307,SDO_POINT_TYPE( ?,
?,NULL),NULL,NULL))";

            // create the mysql insert preparedstatement
            PreparedStatement preparedStmt = con.prepareStatement(query);
            preparedStmt.setInt (1,esid);
            preparedStmt.setString (2,sourcename);
            preparedStmt.setString (3,selectedvalue);
            preparedStmt.setInt(4,Integer.parseInt(areastr));
            preparedStmt.setInt(5,Integer.parseInt(citystr));
            preparedStmt.setFloat(6,Float.parseFloat(latistr));
            preparedStmt.setFloat(7,Float.parseFloat(longistr));
            // System.out.println(sql);
            preparedStmt.execute();
            //stmt.executeQuery(query);
            JOptionPane.showMessageDialog(new JFrame(),"Registered Successfully And Your emission
source id is :"+esid);
            dispose();}
            System.out.println("Done");

            //store the connection object
            con.close();

```

```

        }catch(Exception e){
            System.out.println(e);
        }

    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        Desktop d = Desktop.getDesktop();
        try{
            try {
                d.browse(new URI("https://www.latlong.net/convert-address-to-lat-long.html"));
            } catch (IOException ex) {
                Logger.getLogger(esources.class.getName()).log(Level.SEVERE, null, ex);
            }
        } catch (URISyntaxException ex) {
            Logger.getLogger(esources.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    public void validate_()
    {
        String message = "";
        String areastr,citystr;
        String esname = this.jTextField1.getText();
        int areaid,cityid,lati,longi;
        String latistr=this.jTextField4.getText();
        String longistr=this.jTextField5.getText();
        areastr = this.jTextField2.getText();
        citystr=this.jTextField3.getText();
        if (esname.length() < 5) {
            message = message + "emission source name must be greater than 5
characters!\n";
        }
        else {
            for(char c : esname.replaceAll(" ", "").toCharArray()) {
                if (!(Character.isLetterOrDigit(c))) {
                    message = message + "emission source name cannot have
special characters!\n";
                    break;
                }
            }
        }
        if (areastr.length() < 4) {
            message = message + "area-id cannot be less than 4 charcaters!\n";
        }
        else {
            for(char c : areastr.replaceAll(" ", "").toCharArray()) {
                if (!(Character.isDigit(c))) {
                    message = message + "Area id can have only numbers!\n";
                    break;
                }
            }
        }
    }

```

```

        if (citystr.length() < 4) {
            message = message + "city-id cannot be less than 4 charcaters!\n";
        }
        else {
            for(char c : citystr.replaceAll(" ", "").toCharArray()) {
                if (!(Character.isDigit(c))) {
                    message = message + "city id can have only numbers!\n";
                    break;
                }
            }
        }
        if(selectedvalue.length() ==0){
            message=message+"Select any one in user type\n";
        }
        if (latistr.length() < 6) {
            message = message + "latitude cannot be less than 6 charcaters!\n";
        }
        else {
            for(char c : latistr.replaceAll(" ", "").toCharArray()) {
                if (Character.isAlphabetic(c)) {
                    message = message + "latitude cannot have alphabets and special
characters!\n";
                    break;
                } else {
                }
            }
        }
        if (longistr.length() < 6) {
            message = message + "longitude cannot be less than 6 characters!\n";
        }
        else {
            for(char c : longistr.replaceAll(" ", "").toCharArray()) {
                if (Character.isAlphabetic(c)){
                    message = message + "longitude cannot have alphabets and
special characters!\n";
                    break;
                }
            }
        }
        if (message.length() != 0) {
            JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);
        }
    }

    public static void main(String args[]) {
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

```



```
java.util.logging.Logger.getLogger(esources.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (InstantiationException ex) {
```

```
java.util.logging.Logger.getLogger(esources.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (IllegalAccessException ex) {
```

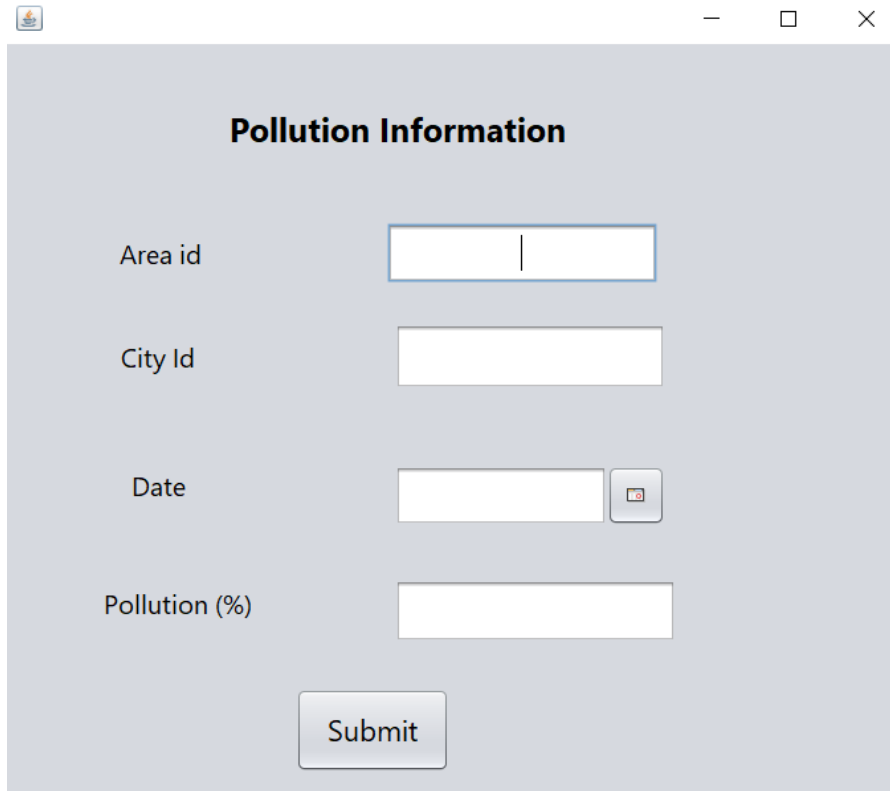
```
java.util.logging.Logger.getLogger(esources.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
```

```
java.util.logging.Logger.getLogger(esources.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    }
//</editor-fold>
```

```
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new esources().setVisible(true);
    }
});
}
```

```
// Variables declaration - do not modify
private javax.swing.ButtonGroup buttonGroup1;
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JComboBox<String> jComboBox1;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel6;
private javax.swing.JLabel jLabel7;
private javax.swing.JLabel jLabel8;
private javax.swing.JTextField jTextField1;
private javax.swing.JTextField jTextField2;
private javax.swing.JTextField jTextField3;
private javax.swing.JTextField jTextField4;
private javax.swing.JTextField jTextField5;
// End of variables declaration
}
```

Pollution Retrieval Information Interface



A screenshot of a web application window titled "Pollution Retrieval Information Interface". The window has a light gray background and a title bar with standard minimize, maximize, and close buttons. The main content area is titled "Pollution Information" in bold black text. Below the title, there are four input fields: "Area id" (a single-character text box), "City Id" (a multi-character text box), "Date" (a date picker with a calendar icon), and "Pollution (%)" (a multi-character text box). A "Submit" button is located at the bottom center of the form.

Pollution Information

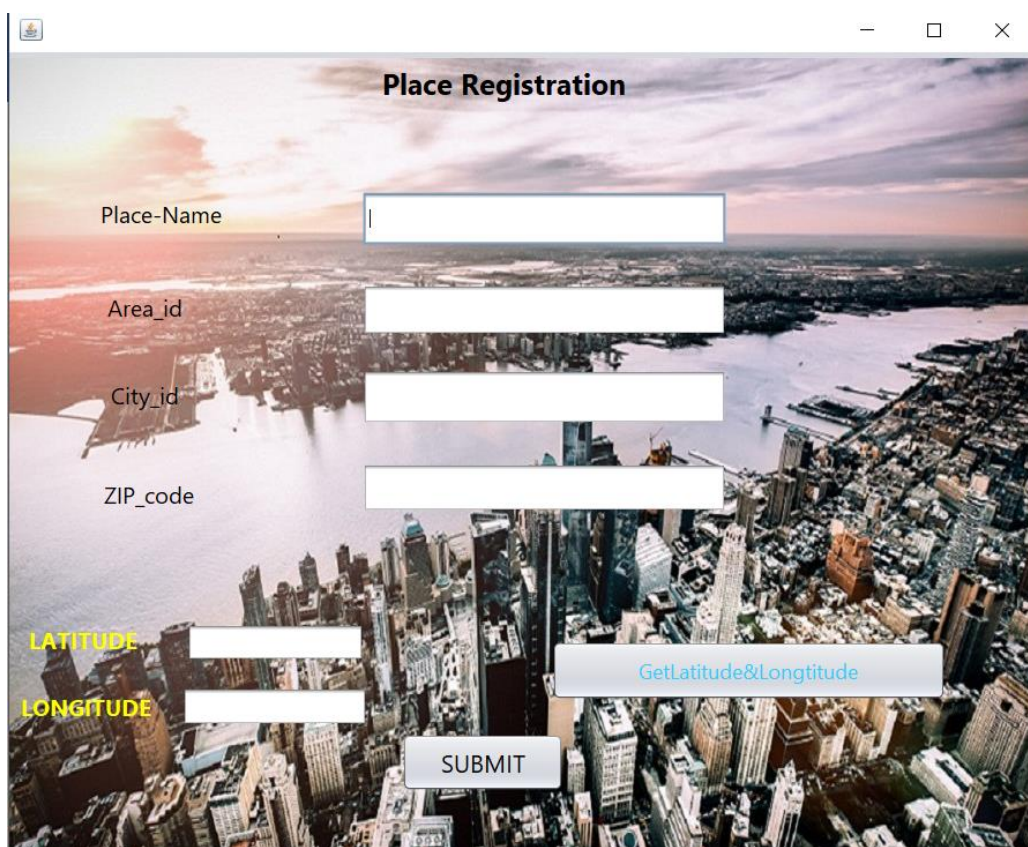
Area id

City Id

Date

Pollution (%)

Place Registration Interface



A screenshot of a web application window titled "Place Registration". The window has a title bar with standard minimize, maximize, and close buttons. The background of the form is a high-angle aerial photograph of a city skyline at sunset. The form contains five input fields: "Place-Name" (a multi-character text box), "Area_id" (a multi-character text box), "City_id" (a multi-character text box), "ZIP_code" (a multi-character text box), and "LATITUDE" (a multi-character text box). Below the "LATITUDE" field is a "LONGITUDE" label and another multi-character text box. A "SUBMIT" button is located at the bottom center. A "GetLatitude&Longitude" button is positioned to the right of the "LATITUDE" and "LONGITUDE" fields.

Place Registration

Place-Name

Area_id

City_id

ZIP_code

LATITUDE

LONGITUDE

Source Code

```
package com.mycompany.dbms;
import java.awt.Desktop;
import java.io.IOException;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
import java.net.URI;
import java.net.URISyntaxException;
import java.util.logging.Level;
import java.util.logging.Logger;

public class placeeeeeee extends javax.swing.JFrame {
    public placeeeeeee() {
        initComponents();
        setVisible(false);
    }

    private void initComponents() {

        jDesktopPane1 = new javax.swing.JDesktopPane();
        jLabel1 = new javax.swing.JLabel();
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        jLabel4 = new javax.swing.JLabel();
        jTextField2 = new javax.swing.JTextField();
        jTextField3 = new javax.swing.JTextField();
        jTextField1 = new javax.swing.JTextField();
        jTextField4 = new javax.swing.JTextField();
        jLabel5 = new javax.swing.JLabel();
        jLabel6 = new javax.swing.JLabel();
        jTextField5 = new javax.swing.JTextField();
        jTextField6 = new javax.swing.JTextField();
        jLabel7 = new javax.swing.JLabel();
        jButton1 = new javax.swing.JButton();
        jButton2 = new javax.swing.JButton();
        jLabel9 = new javax.swing.JLabel();

        javax.swing.GroupLayout jDesktopPane1Layout = new
javax.swing.GroupLayout(jDesktopPane1);
        jDesktopPane1.setLayout(jDesktopPane1Layout);
        jDesktopPane1Layout.setHorizontalGroup(
            jDesktopPane1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(
                    .addGap(0, 100, Short.MAX_VALUE)
                )
        );
        jDesktopPane1Layout.setVerticalGroup(
            jDesktopPane1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(
                    .addGap(0, 100, Short.MAX_VALUE)
                )
        );

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());
```

```

jLabel1.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel1.setText("City_id");
getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(71, 269, 92,
54));

jLabel2.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel2.setText("Area_id");
getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(71, 196, 92,
49));

jLabel3.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel3.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel3.setText("ZIP_code");
getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(69, 356, 104,
52));

jLabel4.setFont(new java.awt.Font("Segoe UI", 0, 20)); // NOI18N
jLabel4.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
jLabel4.setText("Place-Name");
getContentPane().add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(56, 114, 150,
50));

jTextField2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField2ActionPerformed(evt);
    }
});
getContentPane().add(jTextField2, new org.netbeans.lib.awtextra.AbsoluteConstraints(306, 201,
315, 44));

jTextField3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField3ActionPerformed(evt);
    }
});
getContentPane().add(jTextField3, new org.netbeans.lib.awtextra.AbsoluteConstraints(306, 121,
315, 46));

jTextField1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField1ActionPerformed(evt);
    }
});
getContentPane().add(jTextField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(306, 356,
315, 42));

jTextField4.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jTextField4ActionPerformed(evt);
    }
});

```

```

        getContentPane().add(jTextField4, new org.netbeans.lib.awtextra.AbsoluteConstraints(306, 275,
315, 47));

        jLabel5.setFont(new java.awt.Font("Segoe UI", 1, 20)); // NOI18N
        jLabel5.setForeground(new java.awt.Color(255, 255, 0));
        jLabel5.setText("LATITUDE");
        getContentPane().add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(17, 495, 119,
-1));

        jLabel6.setFont(new java.awt.Font("Segoe UI", 1, 20)); // NOI18N
        jLabel6.setForeground(new java.awt.Color(255, 255, 0));
        jLabel6.setText("LONGITUDE");
        getContentPane().add(jLabel6, new org.netbeans.lib.awtextra.AbsoluteConstraints(10, 550, 118,
32));
        getContentPane().add(jTextField5, new org.netbeans.lib.awtextra.AbsoluteConstraints(154, 495,
153, 32));
        getContentPane().add(jTextField6, new org.netbeans.lib.awtextra.AbsoluteConstraints(150, 550,
160, 33));

        jLabel7.setFont(new java.awt.Font("Segoe UI", 1, 25)); // NOI18N
        jLabel7.setText("Place Registration");
        getContentPane().add(jLabel7, new org.netbeans.lib.awtextra.AbsoluteConstraints(323, 6, 224,
42));

        jButton1.setFont(new java.awt.Font("Segoe UI", 0, 21)); // NOI18N
        jButton1.setText("SUBMIT");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });
        getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(340, 590,
140, 50));

        jButton2.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
        jButton2.setForeground(new java.awt.Color(51, 204, 255));
        jButton2.setText("GetLatitude&Longitude");
        jButton2.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton2ActionPerformed(evt);
            }
        });
        getContentPane().add(jButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(470, 510,
341, 51));

        jLabel9.setIcon(new javax.swing.ImageIcon("C:\\Users\\AJAY KUMAR\\Desktop\\jdg.jpeg"));
// NOI18N
        jLabel9.setText("jLabel9");
        getContentPane().add(jLabel9, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 890,
700));

        pack();
    } // </editor-fold>

    private void jTextField2ActionPerformed(java.awt.event.ActionEvent evt) {

```

```

    // TODO add your handling code here:
}

private void jTextField4ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    validate_();
    try{
        //step1 load the driver class
        Class.forName("oracle.jdbc.driver.OracleDriver");

        //step2 c
        Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@218.248.0.7:1521:RDBMS","it20737122","vasavi");

        String place_name = this(jTextField3.getText());
        String area_id = this(jTextField2.getText());
        String city_id = this(jTextField4.getText());
        String zipcode = this(jTextField1.getText());
        String latistr = this(jTextField5.getText());
        String longistr = this(jTextField6.getText());
        //step4 execute query
        String query = " insert into place (area_id,city_id,zipcode,place_name,place_geo_location)"
            + " values (?, ?, ?, ?,SDO_GEOMETRY(2001,8307,SDO_POINT_TYPE( ?,
?,NULL),NULL,NULL))";

        // create the mysql insert preparedstatement
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setInt (1,Integer.parseInt(area_id));
        preparedStmt.setInt (2,Integer.parseInt(city_id));
        preparedStmt.setInt (3,Integer.parseInt(zipcode));
        preparedStmt.setString(4,place_name);

        //System.out.println(query);
        preparedStmt.setFloat(5,Float.parseFloat(latistr));
        preparedStmt.setFloat(6,Float.parseFloat(longistr));
        // System.out.println(sql);
        preparedStmt.execute();
        //stmt.executeQuery(query);
        System.out.println("Done");
        String mss = "Inserted Succesfully";
        JOptionPane.showMessageDialog(new JFrame(), mss, "alert",
JOptionPane.INFORMATION_MESSAGE);
        dispose();
        con.close();

    }catch(Exception e){
        System.out.println(e);
    }

}

```

```

private void jTextField3ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    Desktop d = Desktop.getDesktop();
    try{
        try {
            d.browse(new URI("https://www.latlong.net/convert-address-to-lat-long.html"));
        } catch (IOException ex) {
            Logger.getLogger(placeeeeeee.class.getName()).log(Level.SEVERE, null, ex);
        }
    } catch (URISyntaxException ex) {
        Logger.getLogger(placeeeeeee.class.getName()).log(Level.SEVERE, null, ex);
    }
}

/**
 * @param args the command line arguments
 */

public void validate_()
{
    String message = "";
    String area_id = this(jTextField2.getText());
    String city_id = this(jTextField4.getText());
    String place_name = this(jTextField3.getText());
    String latistr=this(jTextField5.getText());
    String longistr=this(jTextField6.getText());
    if(place_name.length()<4){
        message = message + "Place name must contain atleast 4 characters!\n";
    }
    else{
        for(char c : place_name.replaceAll(" ", "").toCharArray()) {
            if (!(Character.isAlphabetic(c))) {
                message = message + "place name cannot have digits!\n";
                break;
            }
        }
    }

    if(area_id.length()<4){
        message = message + "area id must contain atleast 4 characters!\n";
    }
    else{
        for(char c : area_id.replaceAll(" ", "").toCharArray()) {
            if (!(Character.isDigit(c))) {
                message = message + "area id cannot have special
characters!\n";

```

```

        break;
    }
}

if (city_id.length() < 4) {
    message = message + " city id must be greater than 4 characters!\n";
}
else {
    for(char c : city_id.replaceAll(" ", "").toCharArray()) {
        if (!(Character.isDigit(c))) {
            message = message + "city id cannot have special characters
and alphabets!\n";
            break;
        }
    }
}

if (latistr.length() < 6) {
    message = message + "latitude cannot be less than 6 charcaters!\n";
}
else {
    for(char c : latistr.replaceAll(" ", "").toCharArray()) {
        if (Character.isAlphabetic(c)) {
            message = message + "latitude cannot have alphabets and special
characters!\n";
            break;
        } else {
        }
    }
}

if (longistr.length() < 6) {
    message = message + "longitude cannot be less than 6 characters!\n";
}
else {
    for(char c : longistr.replaceAll(" ", "").toCharArray()) {
        if (Character.isAlphabetic(c)){
            message = message + "longitude cannot have alphabets and
special characters!\n";
            break;
        }
    }
}

if (message.length() != 0) {
    JOptionPane.showMessageDialog(new JFrame(), message, "error",
JOptionPane.ERROR_MESSAGE);
}
}

```

```

public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
    * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
    */
}

```



```

        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
                javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(placeeeeeee.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(placeeeeeee.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(placeeeeeee.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

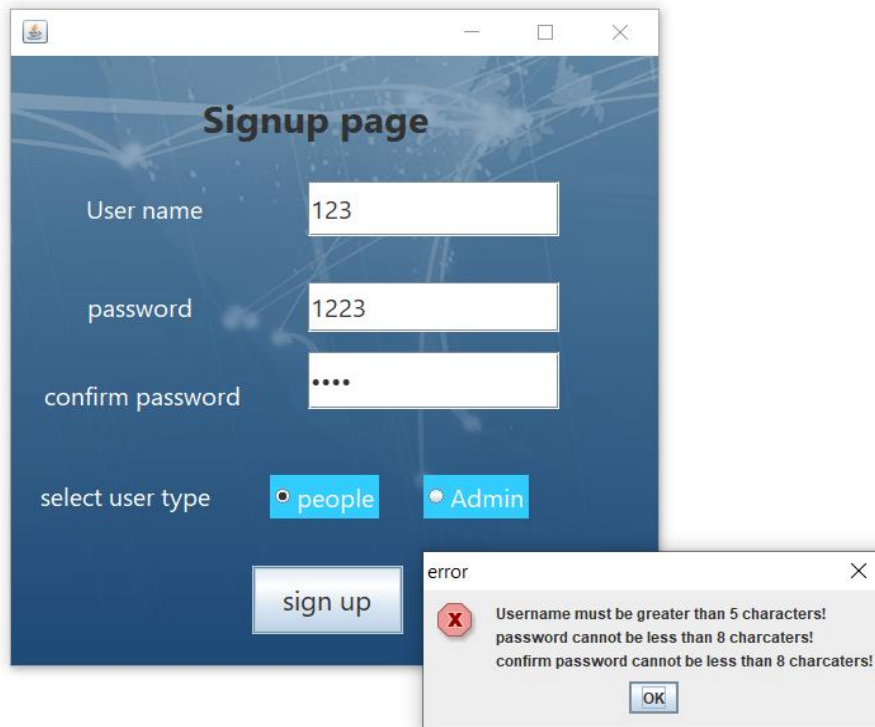
java.util.logging.Logger.getLogger(placeeeeeee.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        }
    }
    //</editor-fold>
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new placeeeeeee().setVisible(true);
        }
    });
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JDesktopPane jDesktopPane1;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel6;
private javax.swing.JLabel jLabel7;
private javax.swing.JLabel jLabel9;
private javax.swing.JTextField jTextField1;
private javax.swing.JTextField jTextField2;
private javax.swing.JTextField jTextField3;
private javax.swing.JTextField jTextField4;
private javax.swing.JTextField jTextField5;
private javax.swing.JTextField jTextField6;
// End of variables declaration
}

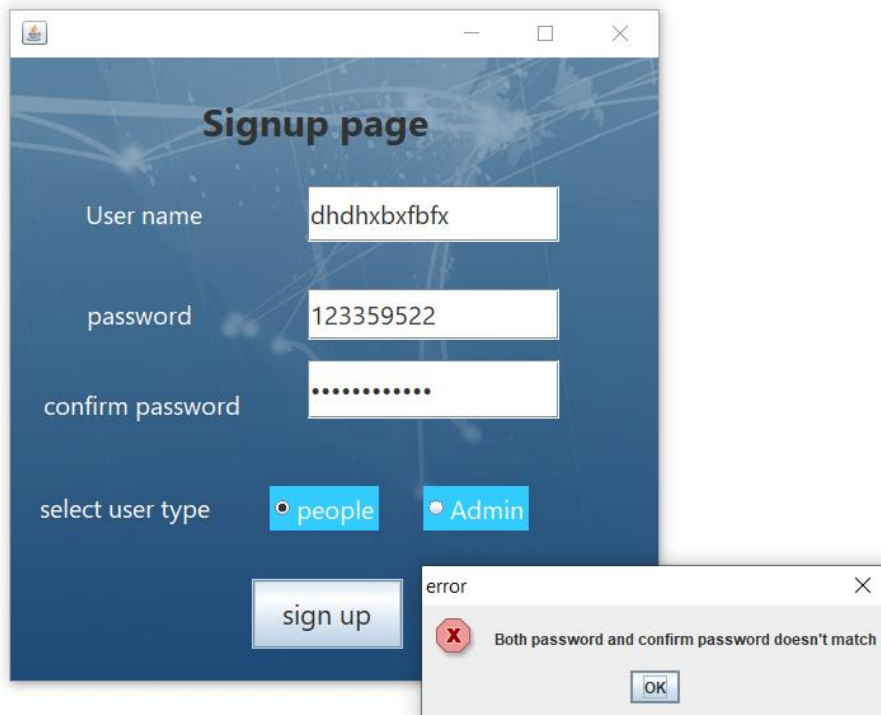
```

Testing

Sign up Error: Length Constraint



(b) Password Don't match



Sign up success

The image shows a 'Signup page' window with a blue background and a network diagram. The form contains the following fields and controls:

- User name:** Text input containing 'Ajay Kumar'.
- password:** Text input containing 'Admin123'.
- confirm password:** Text input containing seven dots.
- select user type:** Two radio buttons labeled 'people' (selected) and 'Admin'.
- sign up:** A blue button at the bottom.

An 'Message' dialog box is open in the foreground, displaying an information icon and the text: 'Created successfully!, your id is 1004'. It has an 'OK' button at the bottom.

Invalid Login in Login page:

The image shows a 'Login Page' window with a landscape background. The form contains the following fields and controls:

- User id:** Text input containing '1001'.
- password:** Text input containing seven dots.
- select user type:** Two radio buttons labeled 'people' (selected) and 'Admin'.
- Login:** A blue button.
- Do not have an account ?** Text with a link to the sign-up page.
- sign up:** A blue button.

An 'error' dialog box is open in the foreground, displaying an error icon and the text: 'Wrong Detailst'. It has an 'OK' button at the bottom.

B)

The screenshot shows a web application window titled "Login Page". The background is a dark, hazy landscape. The page contains the following elements:

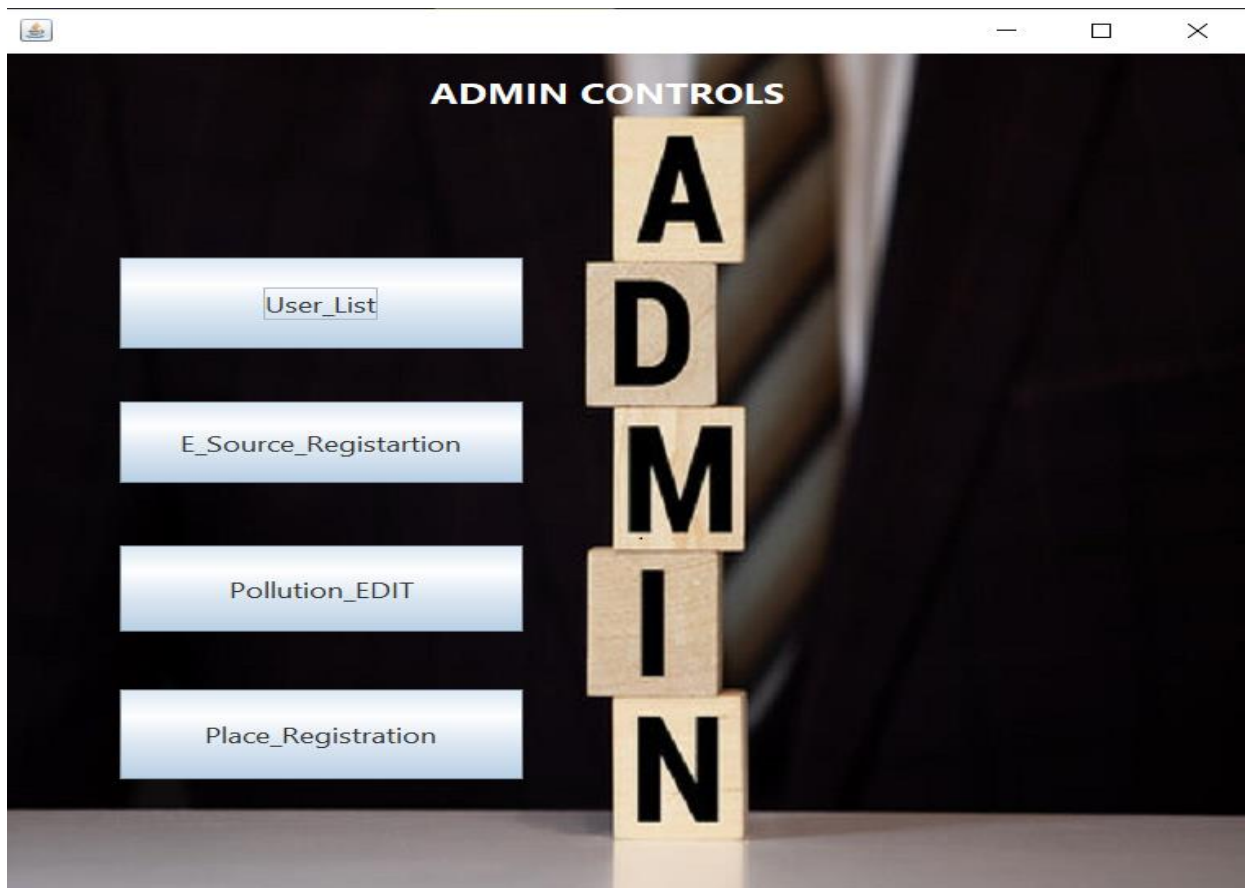
- User id:** A text input field containing the value "12".
- password:** A password input field with a single dot visible.
- select user type:** Two radio buttons labeled "people" (selected) and "Admin".
- Login:** A blue button with white text.
- Do not have an account ?** Text label next to a "sign up" button.
- error dialog:** A small white dialog box with a red "X" icon. The text inside reads: "error", "Userid must be greater than 3 characters!", and "password cannot be less than 8 characters!". There is an "OK" button at the bottom.

Login success:

The screenshot shows the same "Login Page" window after a successful login. The elements are:

- User id:** A text input field containing the value "1004".
- password:** A password input field with seven dots visible.
- select user type:** Two radio buttons labeled "people" and "Admin" (selected).
- Login:** A blue button with white text.
- Do not have an account ?** Text label next to a "sign up" button.
- Message dialog:** A small white dialog box with a blue "i" icon. The text inside reads: "Message", "Logged in successfully!", and "OK" button at the bottom.

ADMIN CONTROLS:



User_list option o/p:

Userid	User_name	State
1000	admin	view
1001	admin2	edit
1002	user	edit
1003	12345	view
1004	Ajay Kumar	edit

GET DATA

E source registration(failure)

Emission source Registration

Name of source: 132621

area id: 2003

city id: 2005

source type: Industry

Latitude: 17.968901

Longitude: 79.594055

Get Latitude and Longitude

Register

error: Enter valid area and city ids!

b)E sources registration

Emission source Registration

Name of source: Demo Source

area id: 30

city id: 50

source type: Industry

Latitude: 17.96

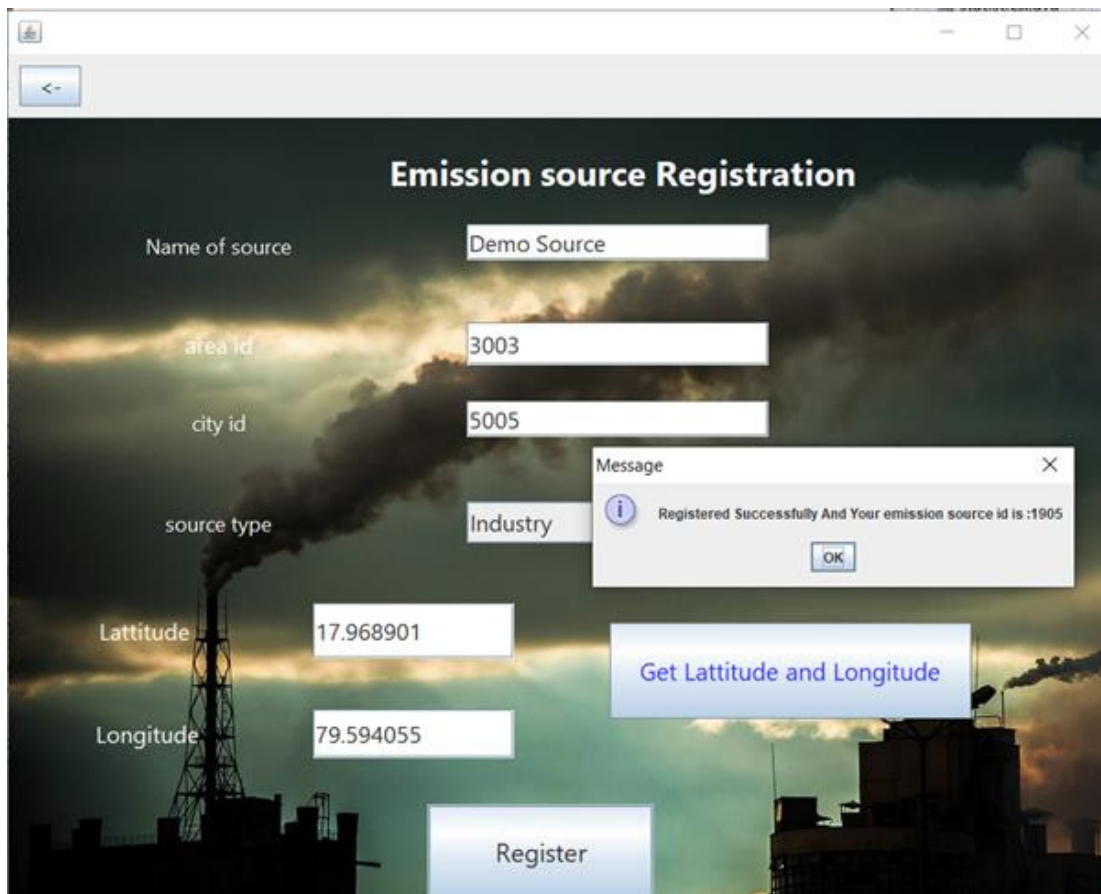
Longitude: 79.59

Get Latitude and Longitude

Register

error: area-id cannot be less than 4 charcaters!
city-id cannot be less than 4 charcaters!
latitude cannot be less than 6 charcaters!
longitude cannot be less than 6 characters!

C)E sources registration success



The screenshot shows a web application window titled "Emission source Registration". The background image depicts industrial smokestacks against a cloudy sky. The form contains the following fields and values:

- Name of source: Demo Source
- area id: 3003
- city id: 5005
- source type: Industry
- Latitude: 17.968901
- Longitude: 79.594055

A blue button labeled "Get Latitude and Longitude" is positioned to the right of the latitude and longitude fields. A "Register" button is located at the bottom center of the form. A modal message box is overlaid on the right side of the form, displaying the text: "Registered Successfully And Your emission source id is :1905". The message box includes an information icon, a close button (X), and an "OK" button.

Latitude Longitude Button o/p:



The screenshot shows a web application interface with a light green background. It features an "Address" label above a text input field containing "Warangal". To the right of the input field is a blue button labeled "Find". Below the input field, a message reads: "Write city name with country code for better results." At the bottom, there are two text input fields: "Latitude" with the value "17.968901" and "Longitude" with the value "79.594055".

Option Pollution edit interface failure:

Pollution Information

Area id

City Id

Date

Pollution (%)

error

areaid must be greater than 4 characters!
city id cannot be less than 4 charcaters!

B) Option Pollution edit interface failure:

Pollution Information

Area id

City Id

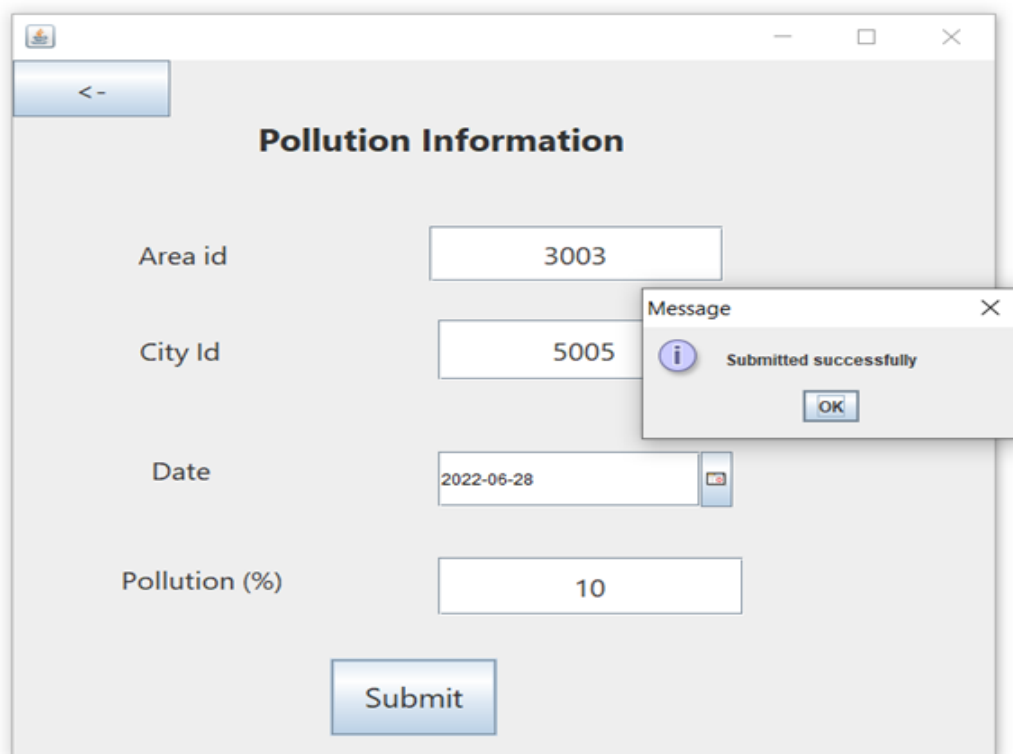
Date

Pollution (%)

error

Enter valid area and city ids!

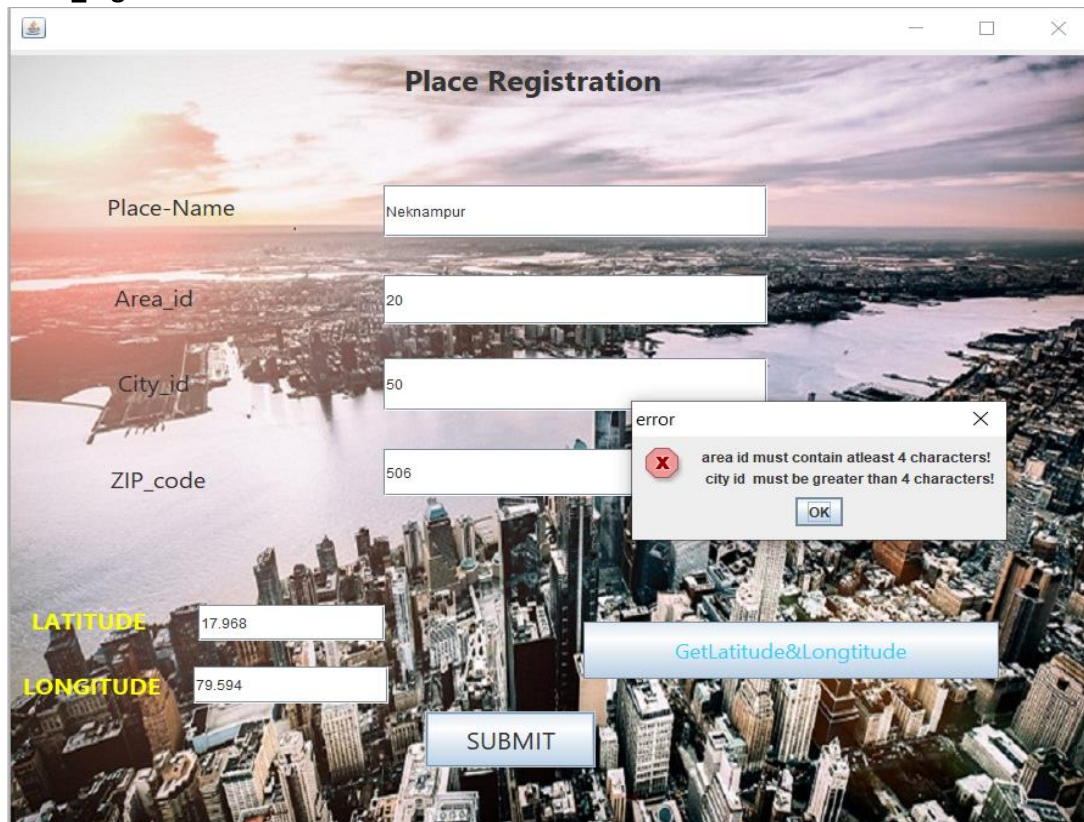
C)Option Pollution edit interface failure:



The screenshot shows a web application window titled "Pollution Information". It contains four input fields: "Area id" with the value "3003", "City Id" with the value "5005", "Date" with the value "2022-06-28", and "Pollution (%)" with the value "10". A "Submit" button is located at the bottom. A modal message box is displayed over the form, indicating "Submitted successfully" with an "OK" button.

Field	Value
Area id	3003
City Id	5005
Date	2022-06-28
Pollution (%)	10

Place_registration interface Failure



The screenshot shows a web application window titled "Place Registration". It contains five input fields: "Place-Name" with the value "Neknampur", "Area_id" with the value "20", "City_id" with the value "50", "ZIP_code" with the value "506", and "LATITUDE" with the value "17.968". A "LONGITUDE" field with the value "79.594" is also present. A "SUBMIT" button is at the bottom. A modal error message box is displayed, stating: "area id must contain atleast 4 characters! city id must be greater than 4 characters!". A "GetLatitude&Longitude" button is also visible.

Field	Value
Place-Name	Neknampur
Area_id	20
City_id	50
ZIP_code	506
LATITUDE	17.968
LONGITUDE	79.594

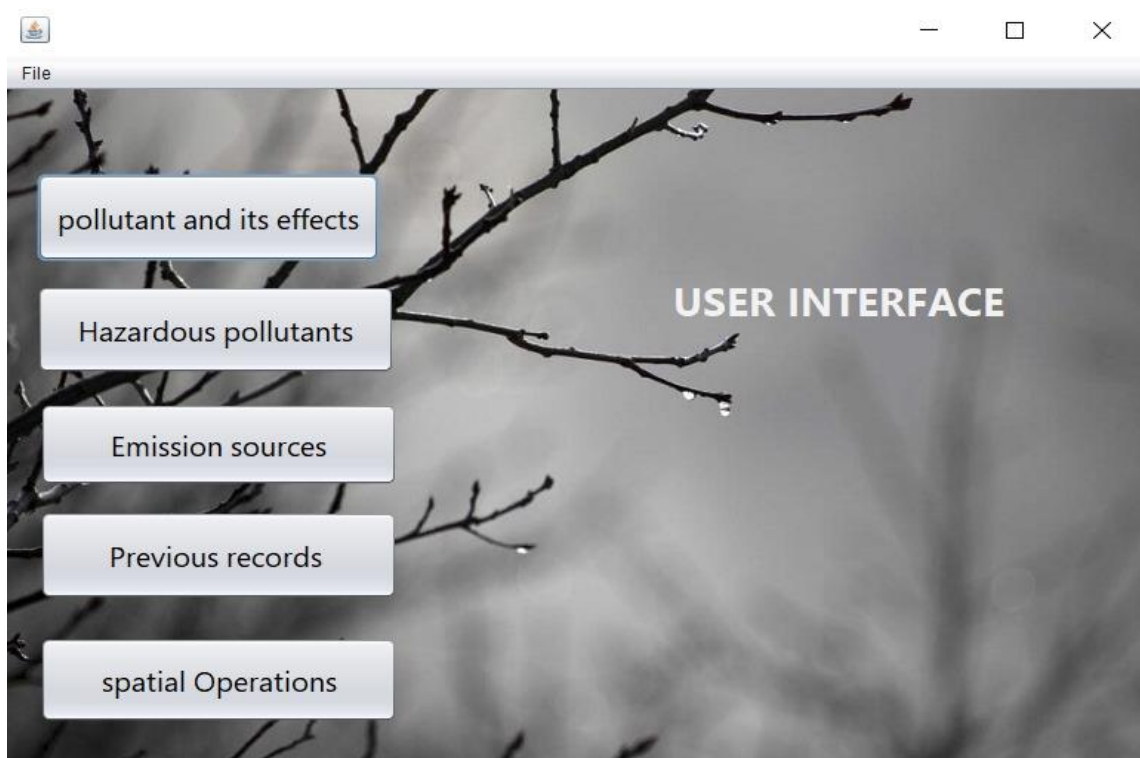
B) Place_registration interface Failure

The screenshot shows the 'Place Registration' interface with a cityscape background. The form fields are: Place-Name (Neknampur), Area_id (20), City_id (50), ZIP_code (506136), LATITUDE (17.968901), and LONGITUDE (79.594055). A 'SUBMIT' button is at the bottom. An 'error' dialog box is open, displaying a red exclamation mark icon and the message: 'area id must contain atleast 4 characters! city id must be greater than 4 characters!'. An 'OK' button is at the bottom of the dialog. A 'GetLatitude&Longitude' button is also visible.

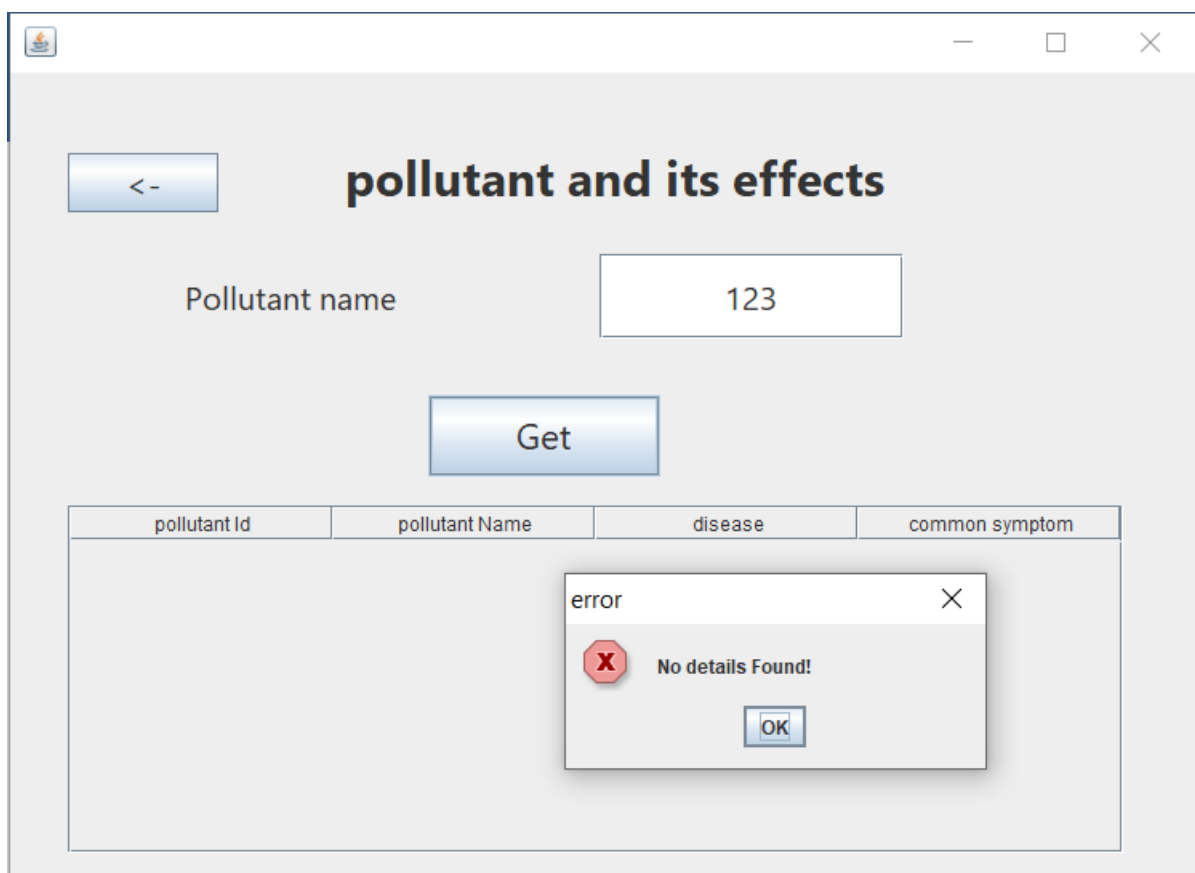
C)Place registration success

The screenshot shows the 'Place Registration' interface with the same cityscape background. The form fields are: Place-Name (Neknampur), Area_id (2003), City_id (5004), ZIP_code (506136), LATITUDE (17.968901), and LONGITUDE (79.594055). A 'SUBMIT' button is at the bottom. An 'alert' dialog box is open, displaying a blue information icon and the message: 'Inserted Succesfully'. An 'OK' button is at the bottom of the dialog. A 'GetLatitude&Longitude' button is also visible.

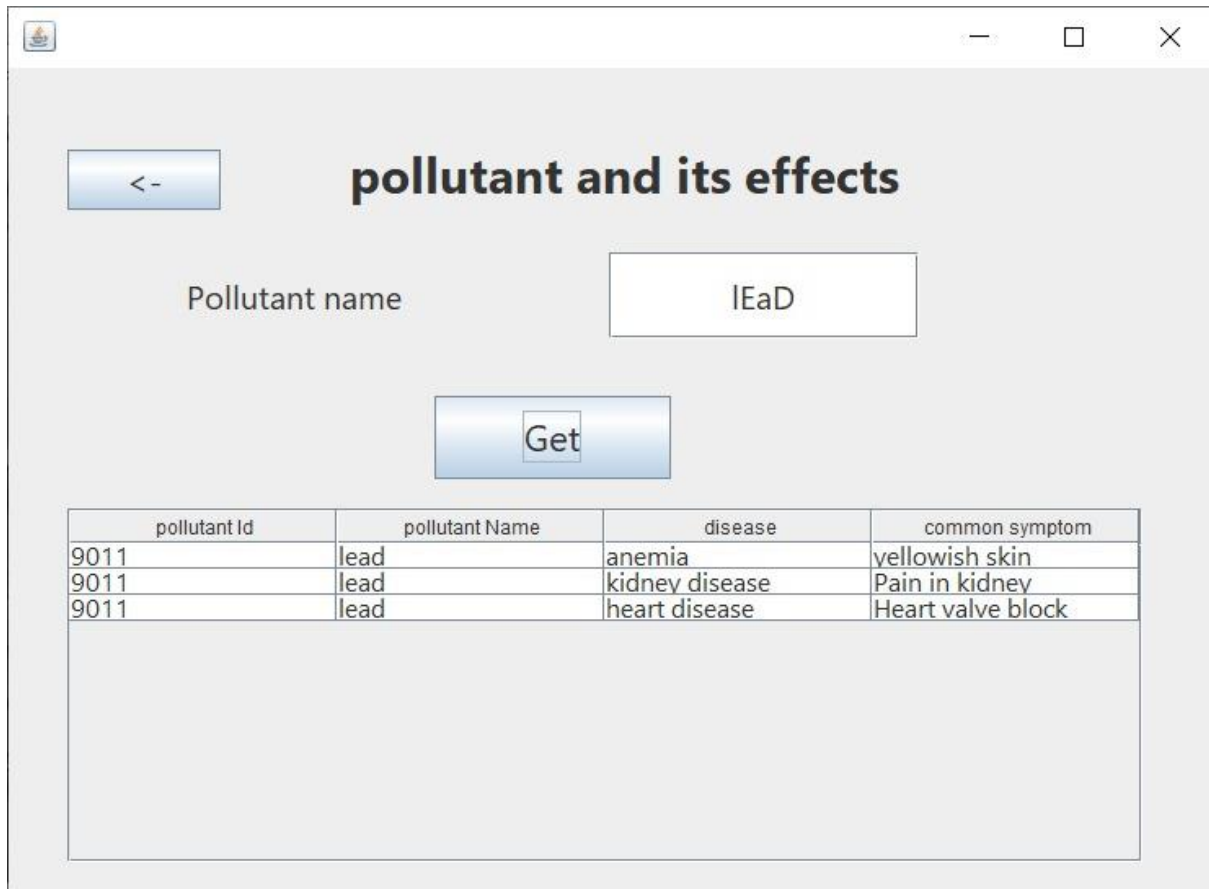
User Interface:



Pollution_Effect Interface Error



Pollution_Effect Interface Success



< -

pollutant and its effects

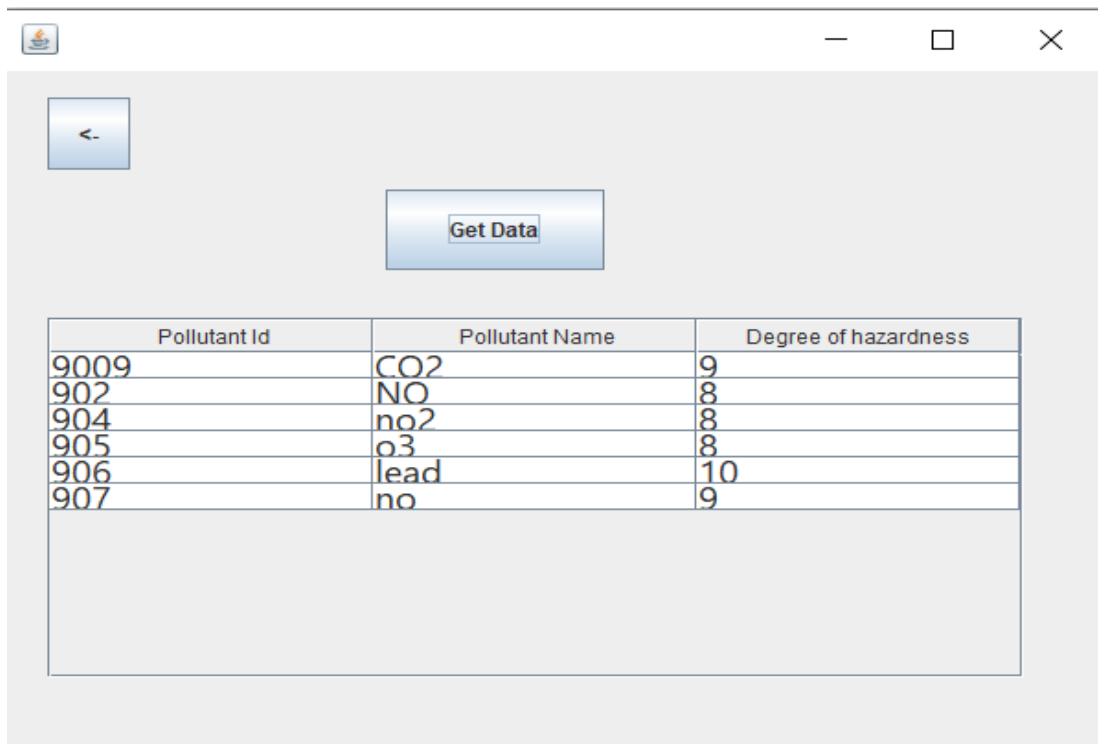
Pollutant name

IEaD

Get

pollutant Id	pollutant Name	disease	common symptom
9011	lead	anemia	yellowish skin
9011	lead	kidney disease	Pain in kidney
9011	lead	heart disease	Heart valve block

Hazardous pollutants interface:

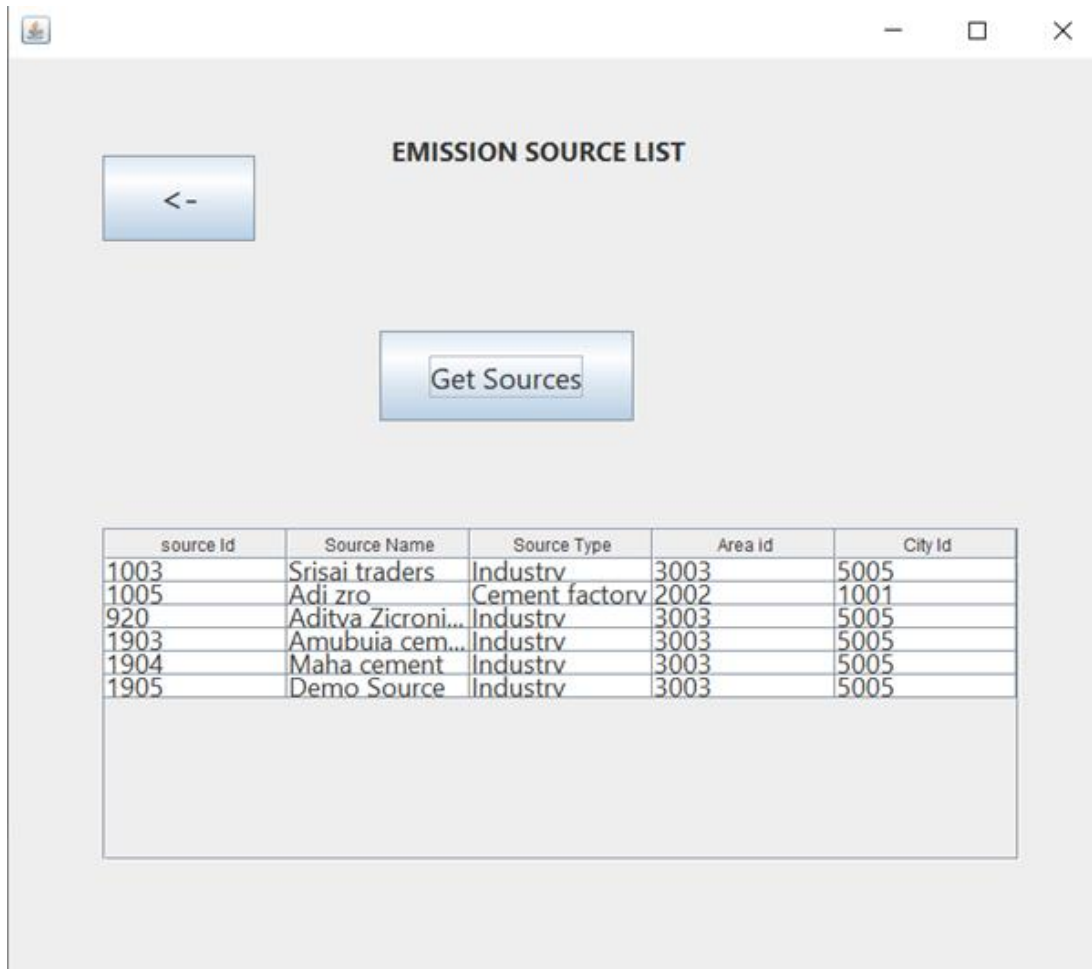


< -

Get Data

Pollutant Id	Pollutant Name	Degree of hazardness
9009	CO2	9
902	NO	8
904	no2	8
905	o3	8
906	lead	10
907	no	9

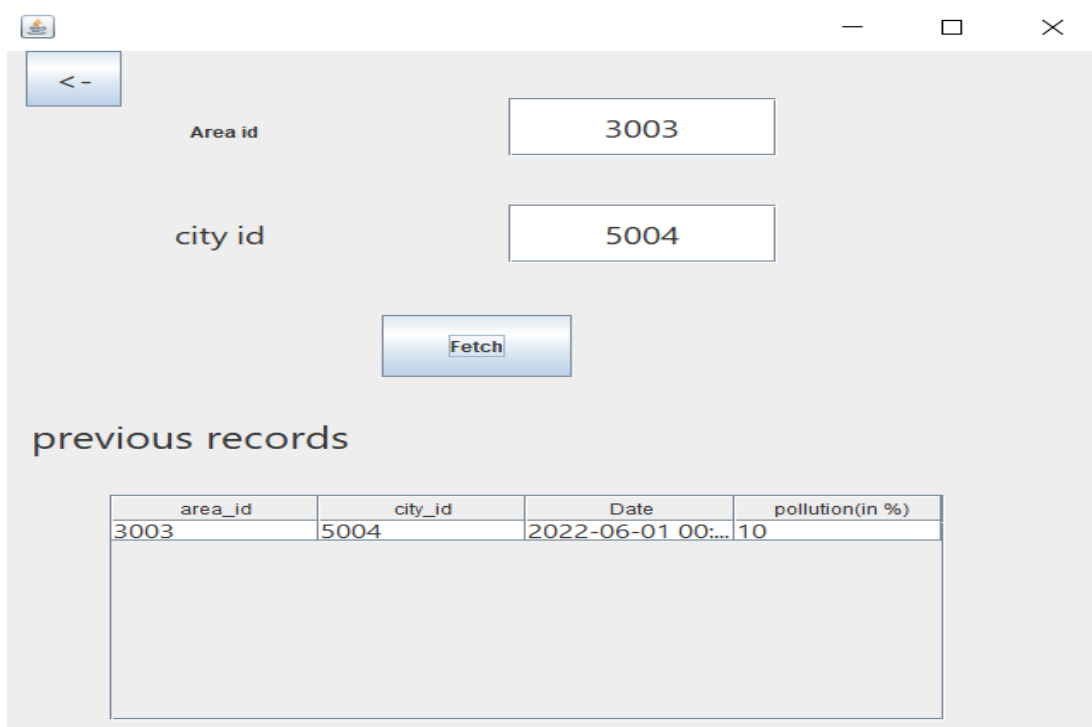
Emission sources list interface:



The screenshot shows a web application window titled "EMISSION SOURCE LIST". It features a back button labeled "< -" and a "Get Sources" button. Below these is a table with five columns: source id, Source Name, Source Type, Area id, and City id. The table contains six rows of data. The first row is highlighted in pink.

source id	Source Name	Source Type	Area id	City id
1003	Srisai traders	Industrv	3003	5005
1005	Adi zro	Cement factory	2002	1001
920	Aditya Zicroni...	Industrv	3003	5005
1903	Amubuia cem...	Industrv	3003	5005
1904	Maha cement	Industrv	3003	5005
1905	Demo Source	Industrv	3003	5005

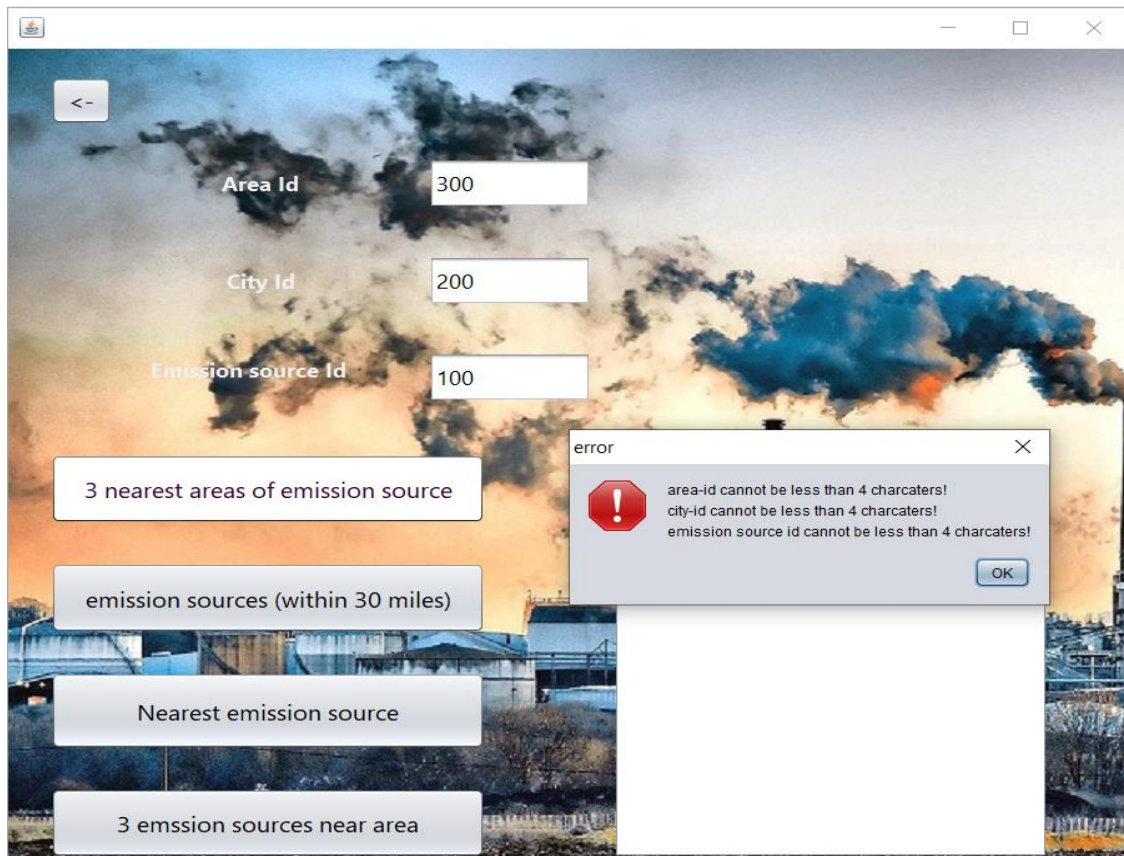
Previous records interface:



The screenshot shows a web application window titled "Previous records". It features a back button labeled "< -", input fields for "Area id" (3003) and "city id" (5004), and a "Fetch" button. Below these is a table with four columns: area_id, city_id, Date, and pollution(in %). The table contains one row of data.

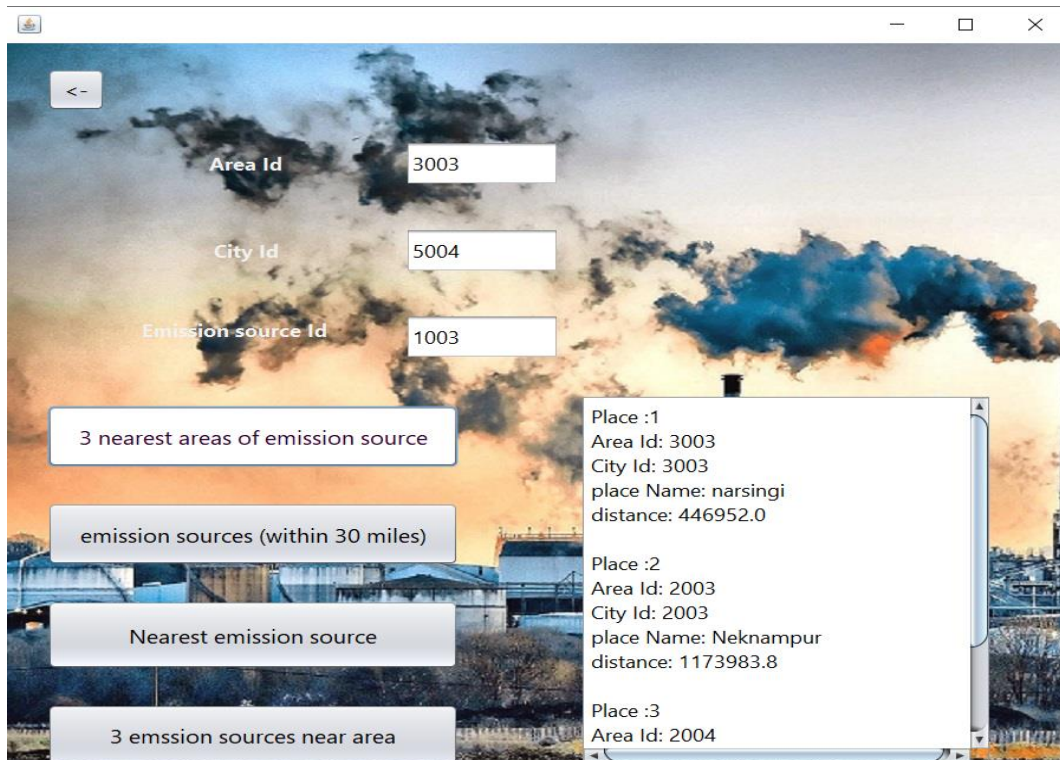
area_id	city_id	Date	pollution(in %)
3003	5004	2022-06-01 00:...	10

Spatial Coordinate interface failures



Spatial Coordinate interface Success:

A) Nearest Areas



B) Within 30 miles

The screenshot shows a web application interface with a background image of a factory emitting smoke. On the left, there are input fields for 'Area Id' (3003), 'City Id' (5004), and 'Emission source Id' (1003). Below these are five buttons: '3 nearest areas of emission source', 'emission sources (within 30 miles)', 'Nearest emission source', and '3 emission sources near area'. On the right, a white box contains the text 'No Emission Sources Found'.

C) Nearest Emission Source

This screenshot shows the same web application interface as in section B, but with the 'City Id' changed to 5005. The buttons on the left are the same. On the right, a white box displays the following information: 'Emission Source :1', 'Emission source Id: 1005', 'Emission Source Name: Adi Zironiums', and 'Emission source Type: Cement factory'.

D)3 Emission Sources near me

<-

Area Id3003

City Id5005

Emission source Id1003

3 nearest areas of emission source

emission sources (within 30 miles)

Nearest emission source

3 emssion sources near area

Emission Source :1
Emission source Id: 920
Emission Source Name: Aditya Zicronics
Emission source Type: Industry

Emission Source :2
Emission source Id: 1003
Emission Source Name: Srisai traders
Emission source Type: Industry

Emission Source :3
Emission source Id: 1005
Emission Source Name: Adi Zironiums
Emission source Type: Cement factory

Result:

We have successfully developed the project ‘ ’ from start to finish and in the pro inculcated how to implement DBMS concepts into a real-world application

GITHUB LINK:

https://github.com/kirito-0512/DBMS_Pollution

Discussion and Future work

This project provides as of now static inputs in future we would like to enable real-time data capture from various sources and run the application and also include AI/ML algorithms for predicting future levels of pollutant.

References

- <https://docs.oracle.com/javase/7/docs/api/>
- <https://stackoverflow.com/>
- <https://www.javatpoint.com/dbms-tutorial>
- <https://netbeans.apache.org/kb/docs/java/gui-functionality.html>
- <https://youtu.be/8jNPelugC2s>
- <https://neo4j.com/developer/graph-database/>