

JAVA AWT BASED- INFORMATION RETRIEVAL OF GOOGLE QUERIES OF POSITIVE AND NEGATIVE FEEDBACK- SQL CONNECTIVITY USING JDBC

A

Report

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

**BACHELOR OF ENGINEERING
IN
INFORMATION TECHNOLOGY**

By

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BONAFIDE CERTIFICATE

This is to certify that this project report titled '**Information Retrieval of Google Queries of Positive and Negative Feedback**' is a project work of Ms. Eesha Gandhi bearing roll no. 1602-18-737-067 who carried out the project under my supervision in the IV semester for the academic year 2019- 2020.

Signature

Internal Examiner

Signature

External Examiner

ABSTRACT

Whenever we are in search of an instant solution to any problem, Google is the answer to most of us in such a case. Infact it is the only thing that comes to our mind when we have a question in our minds. Google has 90.46% of the search engine market share worldwide. An average person conducts atleast 3-4 searches every single day.

Numerous queries are asked and answered every single day. Inorder to keep a record of them we need to access the details of the users who post queries, the ones who provide solutions and the ones who rate the solutions or give a suggestion about them. The rating of the query depends on the exactness of the answer and queries with positive feedback comparatively have much higher rating than the queries with negative feedback. The rating and feedback of a particular query help the user to access the solution much quickly and effectively.

This makes things much simpler and easier. Any person searching an answer for a previously asked query can find the precise answer based on the feedback and the job gets done really quickly.

INTRODUCTION

REQUIREMENTS

<u>Table name</u>	<u>Attributes</u>
Interrogators	i_id varchar2(10) i_name char(20)
Analyzers	a_id varchar2(10) a_name char(20)
Queries	q_id number(10) q_name varchar2(100)
Info_Retrieval	i_id varchar2(10) q_id number(10)
Rating	a_id varchar2(10) q_id number(10) feedback char(30)

AIM AND PRIORITY OF THE PROJECT

To create a Java GUI based information retrieval system of Google queries which takes the values like: user id, user name etc. from the person who posts the query/answers the query/rates the query, it also stores information about the query and its feedback. These values are to be updated in the database using JDBC connectivity .

ARCHITECTURE AND TECHNOLOGY

Software used:

Java Eclipse, Oracle 11g Database, Java SE version 13, SQL*Plus.

Java AWT:

Java AWT (Abstract Window Toolkit) is an API to develop GUI or window-based applications in java.

Java AWT components are platform-dependent i.e. components are displayed according to the view of operating system. AWT is heavyweight i.e. its components are using the resources of OS.

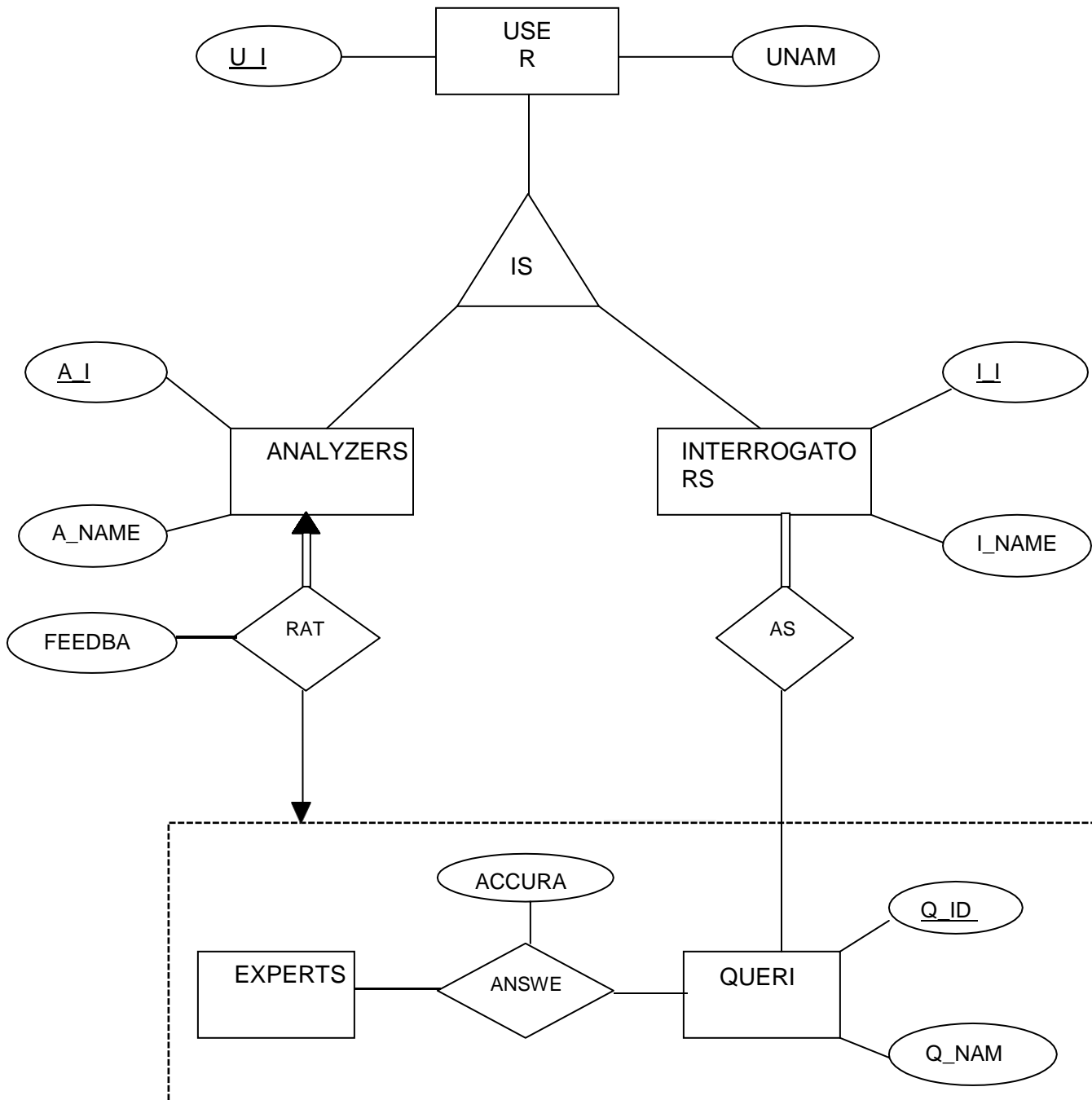
The java.awt package provides classes for AWT API such as TextField, Label, TextArea, RadioButton, CheckBox, Choice, List etc.

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 database. Today almost all RDBMS (MySQL, Oracle, Infomix, Sybase, MS Access) use **SQL** as the standard database query language. SQL is used to perform all types of data operations in RDBMS.

DESIGN

Entity relationship diagram



Database Design:

DDL Operations

Interrogators table:

```
SQL> create table interrogators(
  2 i_id varchar2(10) primary key,
  3 i_name char(20));

Table created.

SQL> desc interrogators;
Name                               Null?    Type
-----
I_ID                               NOT NULL VARCHAR2(10)
I_NAME                             CHAR(20)
```

Analyzers table:

```
SQL> desc analyzers;
Name                               Null?    Type
-----
A_ID                               NOT NULL VARCHAR2(10)
A_NAME                             CHAR(20)

SQL> create table queries(
  2 q_id number(10) primary key,
  3 q_name varchar2(100));
```

Queries table:

```
SQL> create table queries(
  2 q_id number(10) primary key,
  3 q_name varchar2(100));

Table created.

SQL> desc queries;
Name                               Null?    Type
-----
Q_ID                               NOT NULL NUMBER(10)
Q_NAME                             VARCHAR2(100)
```

Info Retrieval table:

```
SQL> create table info_retrieval(
  2 i_id varchar2(10),
  3 q_id number(10),
  4 foreign key(i_id) references interrogators(i_id),
  5 foreign key(q_id) references queries(q_id),
  6 primary key(i_id,q_id));

Table created.

SQL> desc info_retrieval;
```

Name	Null?	Type
I_ID	NOT NULL	VARCHAR2(10)
Q_ID	NOT NULL	NUMBER(10)

Rating table:

```
SQL> create table rating(
  2 a_id varchar2(10),
  3 feedback char(30),
  4 q_id number(10),
  5 foreign key(q_id) references queries(q_id),
  6 foreign key(a_id) references analyzers(a_id),
  7 primary key(a_id,q_id));

Table created.

SQL> desc rating;
```

Name	Null?	Type
A_ID	NOT NULL	VARCHAR2(10)
FEEDBACK		CHAR(30)
Q_ID	NOT NULL	NUMBER(10)

DML Operations

Interrogators table:

```

SQL> insert into interrogators values(&i_id,&i_name');
Enter value for i_id: 43
Enter value for i_name: piyush
old 1: insert into interrogators values(&i_id,&i_name')
new 1: insert into interrogators values(43,'piyush')

1 row created.

SQL> /
Enter value for i_id: 31
Enter value for i_name: mohak
old 1: insert into interrogators values(&i_id,&i_name')
new 1: insert into interrogators values(31,'mohak')

1 row created.

SQL> /
Enter value for i_id: 86
Enter value for i_name: khushi
old 1: insert into interrogators values(&i_id,&i_name')
new 1: insert into interrogators values(86,'khushi')

1 row created.

SQL> /
Enter value for i_id: 60
Enter value for i_name: farhan
old 1: insert into interrogators values(&i_id,&i_name')
new 1: insert into interrogators values(60,'farhan')

1 row created.

SQL> /
Enter value for i_id: 15
Enter value for i_name: devika
old 1: insert into interrogators values(&i_id,&i_name')
new 1: insert into interrogators values(15,'devika')

1 row created.

```

```
SQL> select * from interrogators;
```

I_ID	I_NAME
43	piyush
31	mohak
86	khushi
60	farhan
15	devika

Analyzers table:

```
SQL> insert into analyzers values(10,'rohan');
1 row created.
SQL> insert into analyzers values(20,'eshan');
1 row created.
SQL> insert into analyzers values(30,'manvi');
1 row created.
SQL> insert into analyzers values(89,'kahani');
1 row created.
SQL> insert into analyzers values(45,'krish');
1 row created.
SQL> select * from analyzers;
```

A_ID	A_NAME
10	rohan
20	eshan
30	manvi
89	kahani
45	krish

Queries table:

```
SQL> select * from queries;
```

Q_ID	Q_NAME
105	er_diagram
47	is_a_hierachy
35	integrity_constraints
29	relational algebra
70	sql queries

Info Retrieval table:

```
SQL> insert into info_retrieval values(43,105);
1 row created.
SQL> insert into info_retrieval values(31,47);
1 row created.
SQL> insert into info_retrieval values(86,35);
1 row created.
SQL> insert into info_retrieval values(60,29);
1 row created.
SQL> insert into info_retrieval values(15,70);
1 row created.
SQL> select * from info_retrieval;
```

I_ID	Q_ID
43	105
31	47
86	35
60	29
15	70

Rating table:

```
SQL> insert into rating values(10,'positive',105);
1 row created.
SQL> insert into rating values(20,'negative',47);
1 row created.
SQL> insert into rating values(30,'positive',35);
1 row created.
SQL> insert into rating values(89,'positive',29);
1 row created.
SQL> insert into rating values(45,'positive',70);
1 row created.
SQL> select * from rating;
```

A_ID	FEEDBACK	Q_ID
10	positive	105
20	negative	47
30	positive	35
89	positive	29
45	positive	70

IMPLEMENTATION

Front end programs and its connectivity

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 void connectToDB()
{
    try
    {
        connection
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","eesha","eeshasoham");
        statement = connection.createStatement();

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

Thus, the connection from Java to Oracle database is performed and therefore, can be used for updating tables in the database directly.

Insert queries:

package assignment2;

import java.awt.*;

import java.awt.event.*;

import java.sql.*;

public class InsertQueries extends Frame

{

 Button insertQueriesButton;

 TextField q_idText, q_nameText;

 TextArea errorText;

 Connection connection;

 Statement statement;

 public InsertQueries()

 {

 try

 {

 Class.forName("oracle.jdbc.driver.OracleDriver");

 }

 catch (Exception e)

 {

 System.err.println("Unable to find and load driver");

 System.exit(1);

 }

 connectToDB();

 }

 public void connectToDB()

 {

 try

 {

 connection =

DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe", "eesha", "eeshasoham");

 statement = connection.createStatement();

 }

 catch (SQLException connectException)

 {

 System.out.println(connectException.getMessage());

 System.out.println(connectException.getSQLState());

 System.out.println(connectException.getErrorCode());

 System.exit(1);

 }

 }

 public void buildGUI()

 {

 //Handle Insert Account Button

 insertQueriesButton = new Button("Insert Query");

 insertQueriesButton.addActionListener(new ActionListener()

 {

 public void actionPerformed(ActionEvent e)

 {

 try

 {

```

        String query= "INSERT INTO queries VALUES(" + q_idText.getText() + ", "
+ "" + q_nameText.getText() + ")";
        int i = statement.executeUpdate(query);
        errorText.append("\nInserted " + i + " rows successfully");
    }
    catch (SQLExceptioninsertException)
    {
        displaySQLErrors(insertException);
    }
}
});

```

```

q_idText = new TextField(15);
q_nameText = new TextField(15);

```

```

errorText = new TextArea(10, 40);
errorText.setEditable(false);

```

```

Panel first = new Panel();
first.setLayout(new GridLayout(4, 2));
first.add(new Label("Query ID:"));
first.add(q_idText);
first.add(new Label("Query name:"));
first.add(q_nameText);
first.setBounds(125,90,200,100);

```

```

Panel second = new Panel(new GridLayout(4, 1));
second.add(insertQueriesButton);
second.setBounds(125,220,150,100);

```

```

Panel third = new Panel();
third.add(errorText);
third.setBounds(125,320,300,200);

```

```

setLayout(null);

```

```

add(first);
add(second);
add(third);

```

```

setTitle("New Query Creation");
setSize(500, 600);
setVisible(true);

```

```

}

```

```

private void displaySQLErrors(SQLException e)
{
    errorText.append("\nSQLException: " + e.getMessage() + "\n");
    errorText.append("SQLState: " + e.getSQLState() + "\n");
    errorText.append("VendorError: " + e.getErrorCode() + "\n");
}

```

INFORMATION RETRIEVAL OF GOOGLE QUERIES OF POSITIVE AND NEGATIVE FEEDBACK

```
public static void main(String[] args)
{
    InsertQueries sail = new InsertQueries();

    sail.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            System.exit(0);
        }
    });

    sail.buildGUI();
}
}
```

Update queries:

```
package assignment2;
```

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
```

```
public class UpdateQueries extends Frame
{
```

```
    Button updateQueriesButton;
    List queriesIDList;
    TextField q_idText, q_nameText;
    TextArea errorText;
    Connection connection;
    Statement statement;
    ResultSets;
```

```
    public UpdateQueries()
    {
```

```
        try
        {
            Class.forName("oracle.jdbc.driver.OracleDriver");
        }
        catch (Exception e)
        {
            System.err.println("Unable to find and load driver");
            System.exit(1);
        }
        connectToDB();
    }
```

```
    public void connectToDB()
    {
```

```
        try
        {
            connection =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","eesha","eeshasoham");
            statement = connection.createStatement();
        }
    }
```

```

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

private void loadQueries()
{
    try
    {
        rs = statement.executeQuery("SELECT q_id FROM queries");
        while (rs.next())
        {
            queriesIDList.add(rs.getString("q_id"));
        }
    }
    catch (SQLException e)
    {
        displaySQLErrors(e);
    }
}

public void buildGUI()
{
    queriesIDList = new List(10);
    loadQueries();
    add(queriesIDList);

    //When a list item is selected populate the text fields
    queriesIDList.addItemListener(new ItemListener()
    {
        public void itemStateChanged(ItemEvent e)
        {
            try
            {
                rs = statement.executeQuery("SELECT * FROM queries where q_id
=" + queriesIDList.getSelectedItem());

                rs.next();
                q_idText.setText(rs.getString("q_id"));
                q_nameText.setText(rs.getString("q_name"));

            }
            catch (SQLExceptionselectException)
            {
                displaySQLErrors(selectException);
            }
        }
    });

    //Handle Update Sailor Button

```


INFORMATION RETRIEVAL OF GOOGLE QUERIES OF POSITIVE AND NEGATIVE FEEDBACK

```
updateQueriesButton = new Button("Update Queries");
updateQueriesButton.addActionListener(new ActionListener()
{
    public void actionPerformed(ActionEvent e)
    {
        try
        {
            Statement statement = connection.createStatement();
            int i = statement.executeUpdate("UPDATE queries "
            + "SET q_name=" + q_nameText.getText() + ", "
            + " WHERE q_id= "
            + queriesIDList.getSelectedItemId());
            errorText.append("\nUpdated " + i + " rows successfully");
            queriesIDList.removeAll();
            loadQueries();
        }
        catch (SQLException insertException)
        {
            displaySQLErrors(insertException);
        }
    }
});
q_idText = new TextField(15);
q_nameText = new TextField(15);

errorText = new TextArea(10, 40);
errorText.setEditable(false);

Panel first = new Panel();
first.setLayout(new GridLayout(4, 2));
first.add(new Label("Query ID:"));
first.add(q_idText);
first.add(new Label("Query name:"));
first.add(q_nameText);

first.setBounds(125,90,200,100);

Panel second = new Panel(new GridLayout(4, 1));
second.add(updateQueriesButton);

Panel third = new Panel();
third.add(errorText);

add(first);
add(second);
add(third);

setTitle("Update Queries");
setSize(500, 600);
setLayout(new FlowLayout());
setVisible(true);
}
```

```

private void displaySQLExceptions(SQLException e)
{
    errorText.append("\nSQLException: " + e.getMessage() + "\n");
    errorText.append("SQLState: " + e.getSQLState() + "\n");
    errorText.append("VendorError: " + e.getErrorCode() + "\n");
}

public static void main(String[] args)
{
    UpdateQueries ups = new UpdateQueries();

    ups.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            System.exit(0);
        }
    });

    ups.buildGUI();
}
}

```

Delete queries:

```

package assignment2;

import java.awt.*;
import java.awt.event.*;
import java.sql.*;

public class DeleteQueries extends Frame
{
    Button deleteQueriesButton;
    List QueriesIDList;
    TextField q_idText, q_nameText;
    TextArea errorText;
    Connection connection;
    Statement statement;
    ResultSets;

    public DeleteQueries ()
    {
        try
        {
            Class.forName("oracle.jdbc.driver.OracleDriver");
        }
        catch (Exception e)
        {
            System.err.println("Unable to find and load driver");
            System.exit(1);
        }
        connectToDB();
    }

    public void connectToDB()
    {

```

INFORMATION RETRIEVAL OF GOOGLE QUERIES OF POSITIVE AND NEGATIVE FEEDBACK

```
        try
        {
            connection =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","eesha","eeshasoham");
            statement = connection.createStatement();

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

    private void loadQueries ()
    {
        try
        {
            rs = statement.executeQuery("SELECT * FROM queries");
            while (rs.next())
            {
                QueriesIDList.add(rs.getString("q_id"));
            }
        }
        catch (SQLException e)
        {
            displaySQLErrors(e);
        }
    }

    public void buildGUI()
    {
        QueriesIDList = new List(10);
        loadQueries ();
        add(QueriesIDList);

        //When a list item is selected populate the text fields
        QueriesIDList.addItemListener(new ItemListener()
        {
            public void itemStateChanged(ItemEvent e)
            {
                try
                {
                    rs = statement.executeQuery("SELECT * FROM Queries");
                    while (rs.next())
                    {
                        if(rs.getString("e_id").equals(QueriesIDList.getSelectedItem()))
                            break;
                    }
                    if (!rs.isAfterLast())
                    {
                        q_idText.setText(rs.getString("q_id"));
                        q_nameText.setText(rs.getString("q_name"));
                    }
                }
            }
        });
    }
}
```

```

        }
    }
    catch (SQLExceptionselectException)
    {
        displaySQLErrors(selectException);
    }
}
});

```

//Handle Delete Sailor Button

```

deleteQueriesButton = new Button("Delete Query");
deleteQueriesButton.addActionListener(new ActionListener()
{

```

```

    public void actionPerformed(ActionEvent e)
    {

```

```

        try
        {

```

```

            Statement statement = connection.createStatement();

```

```

            int i = statement.executeUpdate("DELETE FROM Queries WHERE

```

q_id = "

```

                +QueriesIDList.getSelectedItemAt());

```

```

            errorText.append("\nDeleted " + i + " rows successfully");

```

```

            q_idText.setText(null);

```

```

            q_nameText.setText(null);

```

```

            QueriesIDList.removeAll();

```

```

            loadQueries();

```

```

        }

```

```

    catch (SQLExceptioninsertException)
    {

```

```

        displaySQLErrors(insertException);
    }
}

```

```

});

```

```

q_idText = new TextField(15);

```

```

q_nameText = new TextField(15);

```

```

errorText = new TextArea(10, 40);

```

```

errorText.setEditable(false);

```

```

Panel first = new Panel();

```

```

first.setLayout(new GridLayout(4, 2));

```

```

first.add(new Label("Query ID:"));

```

```

first.add(q_idText);

```

```

first.add(new Label("Query name:"));

```

```

first.add(q_nameText);

```

```

first.setBounds(125,90,200,100);

```

```

Panel second = new Panel(new GridLayout(4, 1));

```

```

second.add(deleteQueriesButton);

```

INFORMATION RETRIEVAL OF GOOGLE QUERIES OF POSITIVE AND NEGATIVE FEEDBACK

```
second.setBounds(125,220,150,100);
```

```
    Panel third = new Panel();  
    third.add(errorText);  
  
    add(first);  
    add(second);  
    add(third);  
  
    setTitle("Remove Query");  
    setSize(450, 600);  
    setLayout(new FlowLayout());  
    setVisible(true);
```

```
}
```

```
private void displaySQLExceptions(SQLException e)  
{  
    errorText.append("\nSQLException: " + e.getMessage() + "\n");  
    errorText.append("SQLState:    " + e.getSQLState() + "\n");  
    errorText.append("VendorError: " + e.getErrorCode() + "\n");  
}
```

```
public static void main(String[] args)  
{  
    DeleteQueriesdels = new DeleteQueries();  
  
    dels.addWindowListener(new WindowAdapter(){  
        public void windowClosing(WindowEvent e)  
        {  
            System.exit(0);  
        }  
    });  
  
    dels.buildGUI();  
}  
}
```

Main Program:

```
package assignment2;

import java.awt.*;
import java.awt.event.*;

class GoogleQueries extends Frame implements ActionListener
{
    String msg = "";
    Label ll;
    InsertInterrogators iinterrogators;
    UpdateInterrogators uinterrogators;
    DeleteInterrogators dinterrogators;
    InsertQueries iqueries;
    DeleteQueries dqueries;
    UpdateQueries uqueries;
    InsertAnalyzers ianalyzers;
    DeleteAnalyzers danalyzers;
    UpdateAnalyzers uanalyzers;
    InsertRating irating;
    DeleteRating drating;
    UpdateRating urating;
    InsertInfoRetrieval iinfoRetrieval;
    DeleteInfoRetrieval dinfoRetrieval;
    UpdateInfoRetrieval uinfoRetrieval;

    GoogleQueries()
    {
        ll = new Label();
        ll.setAlignment(Label.CENTER);
        ll.setBounds(100,250,250,200);
        ll.setText("WELCOME TO GOOGLE QUERIES");
        add(ll);

        // create menu bar and add it to frame
        MenuBar mbar = new MenuBar();
        setMenuBar(mbar);

        // create the menu items and add it to Menu
        Menu interrogators = new Menu("Interrogators");
        MenuItem item1, item2, item3;
        interrogators.add(item1 = new MenuItem("Insert Interrogators"));
        interrogators.add(item2 = new MenuItem("Update Interrogators"));
        interrogators.add(item3 = new MenuItem("Delete Interrogators"));
        mbar.add(interrogators);

        Menu queries = new Menu("Queries");
        MenuItem item4, item5, item6;
        queries.add(item4 = new MenuItem("Insert Queries"));
        queries.add(item5 = new MenuItem("Update Queries"));
        queries.add(item6 = new MenuItem("Delete Queries"));
        mbar.add(queries);

        Menu analyzers = new Menu("Analyzers");
```

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```
MenuItem item7, item8, item9;
analyzers.add(item7 = new MenuItem("Insert Analyzers"));
analyzers.add(item8 = new MenuItem("Update Analyzers"));
analyzers.add(item9 = new MenuItem("Delete Analyzers"));
mbar.add(analyzers);

Menu rating= new Menu("Rating");
MenuItem item10,item11,item12;
rating.add(item10=new MenuItem("Insert Rating"));
rating.add(item11=new MenuItem("Update Rating"));
rating.add(item12=new MenuItem("Delete Rating"));
mbar.add(rating);

Menu infoRetrieval=new Menu("InfoRetrieval");
MenuItem item13,item14,item15;
infoRetrieval.add(item13=new MenuItem("Insert InfoRetrieval"));
infoRetrieval.add(item14=new MenuItem("Update InfoRetrieval"));
infoRetrieval.add(item15=new MenuItem("DeleteInfoRetrieval"));
mbar.add(infoRetrieval);

// register listeners
item1.addActionListener(this);
item2.addActionListener(this);
item3.addActionListener(this);
item4.addActionListener(this);
item5.addActionListener(this);
item6.addActionListener(this);
item7.addActionListener(this);
item8.addActionListener(this);
item9.addActionListener(this);
item10.addActionListener(this);
item11.addActionListener(this);
item12.addActionListener(this);
item13.addActionListener(this);
item14.addActionListener(this);
item15.addActionListener(this);

// Anonymous inner class which extends WindowAdaptor to handle the Window event:
windowClosing
addWindowListener(new WindowAdapter(){
    public void windowClosing(WindowEvent we)
    {
        System.exit(0);
    }
});

//Frame properties
setTitle("Google Queries ");
Color clr = new Color(230, 190, 250);
setBackground(clr);
setFont(new Font("Cambria", Font.BOLD, 15));
setLayout(null);
setSize(500, 600);
setVisible(true);

}
```

```

public void actionPerformed(ActionEvent ae)
{
    String arg = ae.getActionCommand();
    if(arg.equals("Insert Interrogators"))
    {
        iinterrogators = new InsertInterrogators();
        iinterrogators.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)
            {
                iinterrogators.dispose();
            }
        });
        iinterrogators.buildGUI();
    }

    else if(arg.equals("Update Interrogators"))
    {
        uinterrogators = new UpdateInterrogators();
        uinterrogators.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)
            {
                uinterrogators.dispose();
            }
        });
        uinterrogators.buildGUI();
    }

    else if(arg.equals("Delete Interrogators"))
    {
        dinterrogators = new DeleteInterrogators();
        dinterrogators.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)
            {
                dinterrogators.dispose();
            }
        });
        dinterrogators.buildGUI();
    }

    else if(arg.equals("Insert Queries"))
    {
        iqueries = new InsertQueries();
        iqueries.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)
            {
                iqueries.dispose();
            }
        });
        iqueries.buildGUI();
    }

    else if(arg.equals("Update Queries"))
    {
        uqueries = new UpdateQueries();
        uqueries.addWindowListener(new WindowAdapter(){

```



```

        public void windowClosing(WindowEvent e)
        {
            uqueries.dispose();
        }
    });
    uqueries.buildGUI();
}
else if(arg.equals("Delete Queries"))
{
    dqueries = new DeleteQueries();
    dqueries.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            dqueries.dispose();
        }
    });
    dqueries.buildGUI();
}
else if(arg.equals("Insert Analyzers"))
{
    ianalyzers = new InsertAnalyzers();
    ianalyzers.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            ianalyzers.dispose();
        }
    });
    ianalyzers.buildGUI();
}
else if(arg.equals("Update Analyzers"))
{
    uanalyzers = new UpdateAnalyzers();
    uanalyzers.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            uanalyzers.dispose();
        }
    });
    uanalyzers.buildGUI();
}
else if(arg.equals("Delete Analyzers"))
{
    danalyzers= new DeleteAnalyzers();
    danalyzers.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            danalyzers.dispose();
        }
    });
    danalyzers.buildGUI();
}
else if(arg.equals("Insert Rating"))
{
    irating = new InsertRating();
    irating.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)

```

```

        {
            irating.dispose();
        }
    });
    irating.buildGUI();
}
else if(arg.equals("Update Rating"))
{
    urating = new UpdateRating();
    urating.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            urating.dispose();
        }
    });
    urating.buildGUI();
}
else if(arg.equals("Delete Rating"))
{
    drating= new DeleteRating();
    drating.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            drating.dispose();
        }
    });
    drating.buildGUI();
}
else if(arg.equals("Insert InfoRetrieval"))
{
    iinfoRetrieval = new InsertInfoRetrieval();
    iinfoRetrieval.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            iinfoRetrieval.dispose();
        }
    });
    iinfoRetrieval.buildGUI();
}
else if(arg.equals("Update InfoRetrieval"))
{
    uinfoRetrieval = new UpdateInfoRetrieval();
    uinfoRetrieval.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
            uinfoRetrieval.dispose();
        }
    });
    uinfoRetrieval.buildGUI();
}
else if(arg.equals("Delete InfoRetrieval"))
{
    dinfoRetrieval = new DeleteInfoRetrieval();
    dinfoRetrieval.addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {

```

```
        dinfoRetrieval.dispose();
    }
    });
    dinfoRetrieval.buildGUI();
}
}
public static void main(String ... args)
{
    new GoogleQueries();
}
}
```

Github links and folder structure:

Link: https://github.com/eeshagandhi/google_queries

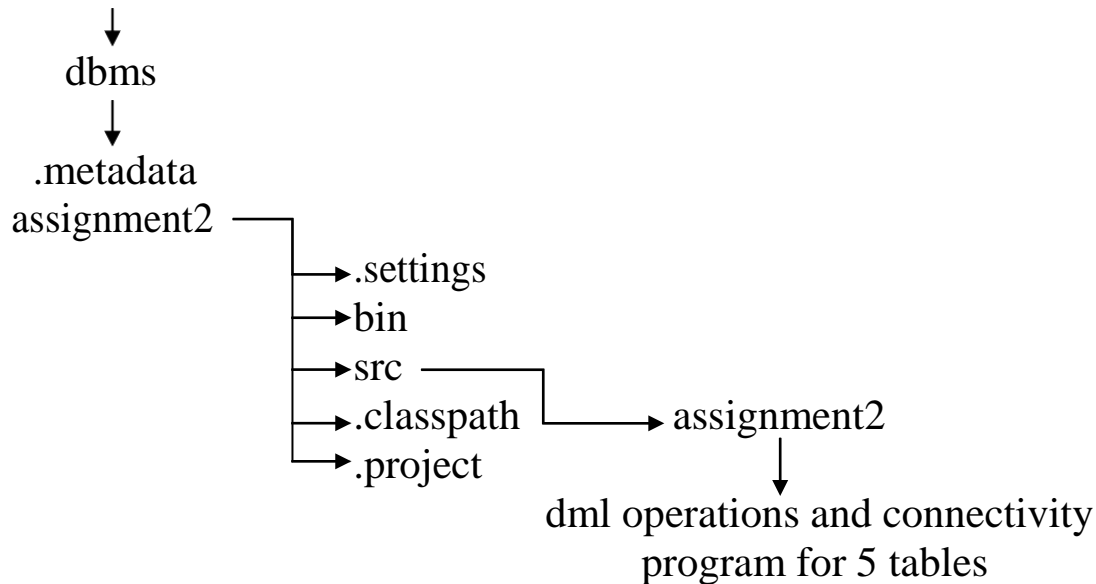
Folder structure:

1602-18-737-067.rar

dbms_report.pdf

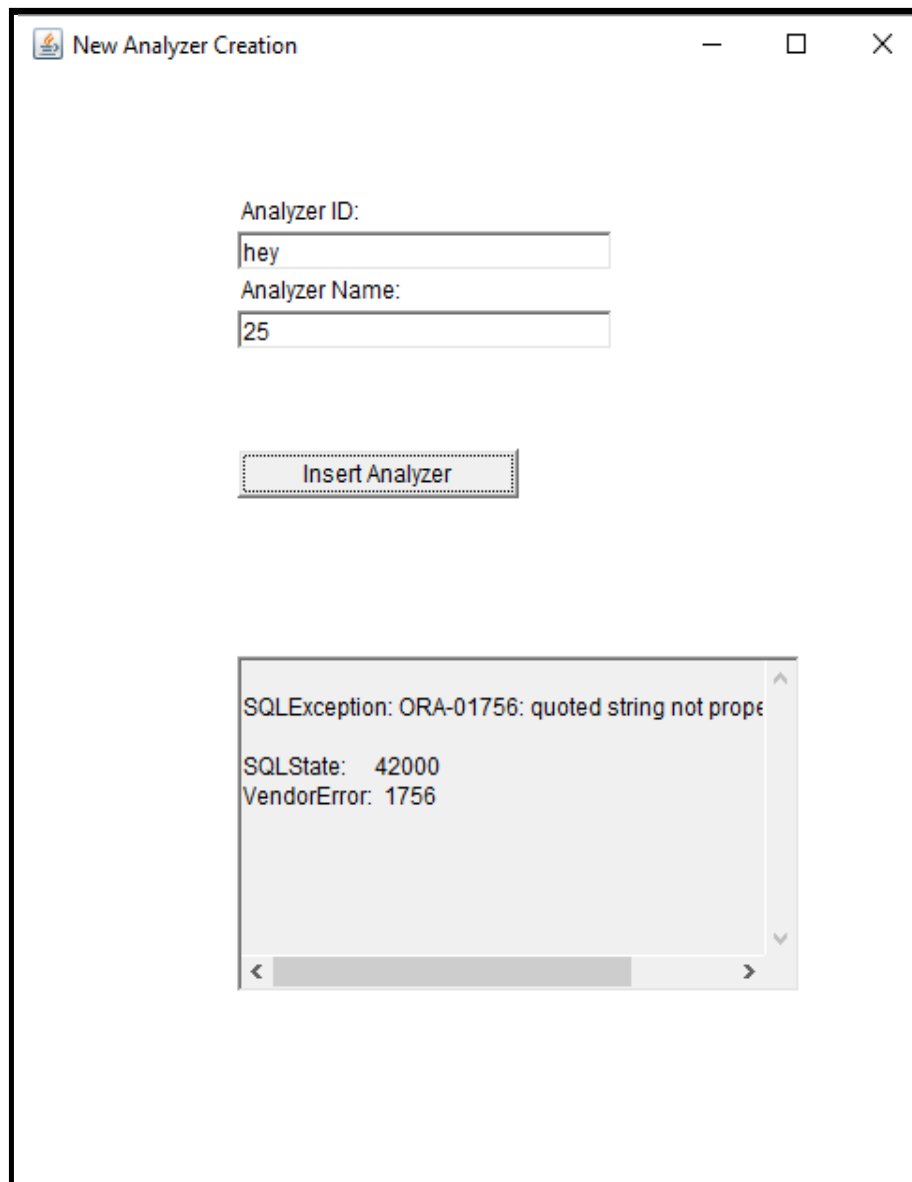
google_queries.pdf (assignment 1)

1602-18-737-067



TESTING

The analyzer's id is a unique value and it can only have a numeric value and not anything else, similarly the name can only be a string. In case of any unexpected or incorrect input it throws an exception.



The screenshot shows a window titled "New Analyzer Creation" with standard Windows window controls (minimize, maximize, close). Inside the window, there are two input fields. The first is labeled "Analyzer ID:" and contains the text "hey". The second is labeled "Analyzer Name:" and contains the text "25". Below these fields is a button labeled "Insert Analyzer". At the bottom of the window is a text area displaying an error message: "SQLException: ORA-01756: quoted string not properly terminated". Below this message, it shows "SQLState: 42000" and "VendorError: 1756". The text area has a scrollbar on the right side.

Analyzer ID:
hey

Analyzer Name:
25

Insert Analyzer

SQLException: ORA-01756: quoted string not properly terminated
SQLState: 42000
VendorError: 1756

The feedback can be either positive or negative and nothing else since it's a quick poll and not a long review.

The screenshot shows a Java Swing window titled "Update Rating". It contains a list box with the values 10, 20, 30, 45, and 89. The value 20 is selected. To the right of the list box are three text input fields labeled "Analyzer ID:", "Query ID:", and "Feedback:". The "Analyzer ID" field contains the value 20, the "Query ID" field contains 47, and the "Feedback" field contains "satisfactory". Below the list box is a button labeled "Update rating". At the bottom right of the window, there is a text area displaying an error message: "SQLException: ORA-01747: invalid user.table.colur", "SQLState: 42000", and "VendorError: 1747".

Rating	Analyzer ID	Query ID	Feedback
10			
20	20	47	satisfactory
30			
45			
89			

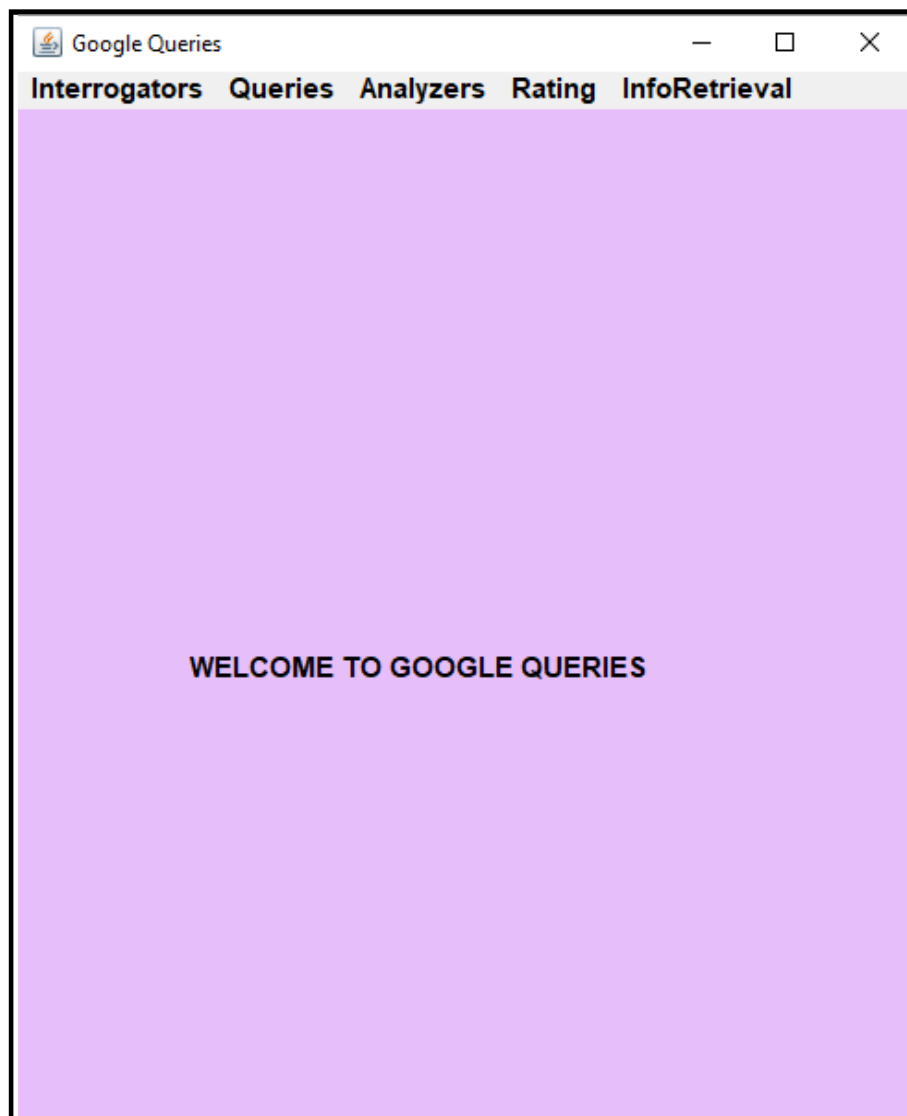
Update rating

SQLException: ORA-01747: invalid user.table.colur
SQLState: 42000
VendorError: 1747


RESULTS

The main page:

It displays the title of the project and it has menu items which are named after the five tables. Each menu item provides three options that can be performed on that particular table: Insert, Update and Delete.



Interrogators:



The screenshot shows a window titled "New Interrogator Creation" with standard Windows window controls (minimize, maximize, close). Inside the window, there is a form with two text input fields. The first field is labeled "Interrogator/User ID:" and contains the value "54". The second field is labeled "Interrogator Name:" and contains the value "aashna". Below these fields is a button labeled "Insert Interrogator". At the bottom of the window, there is a message box with a light gray background and a vertical scrollbar, displaying the text "Inserted 1 rows successfully".

Update Interrogator

15

31

43

54

60

86

90

Interrogator ID:

54

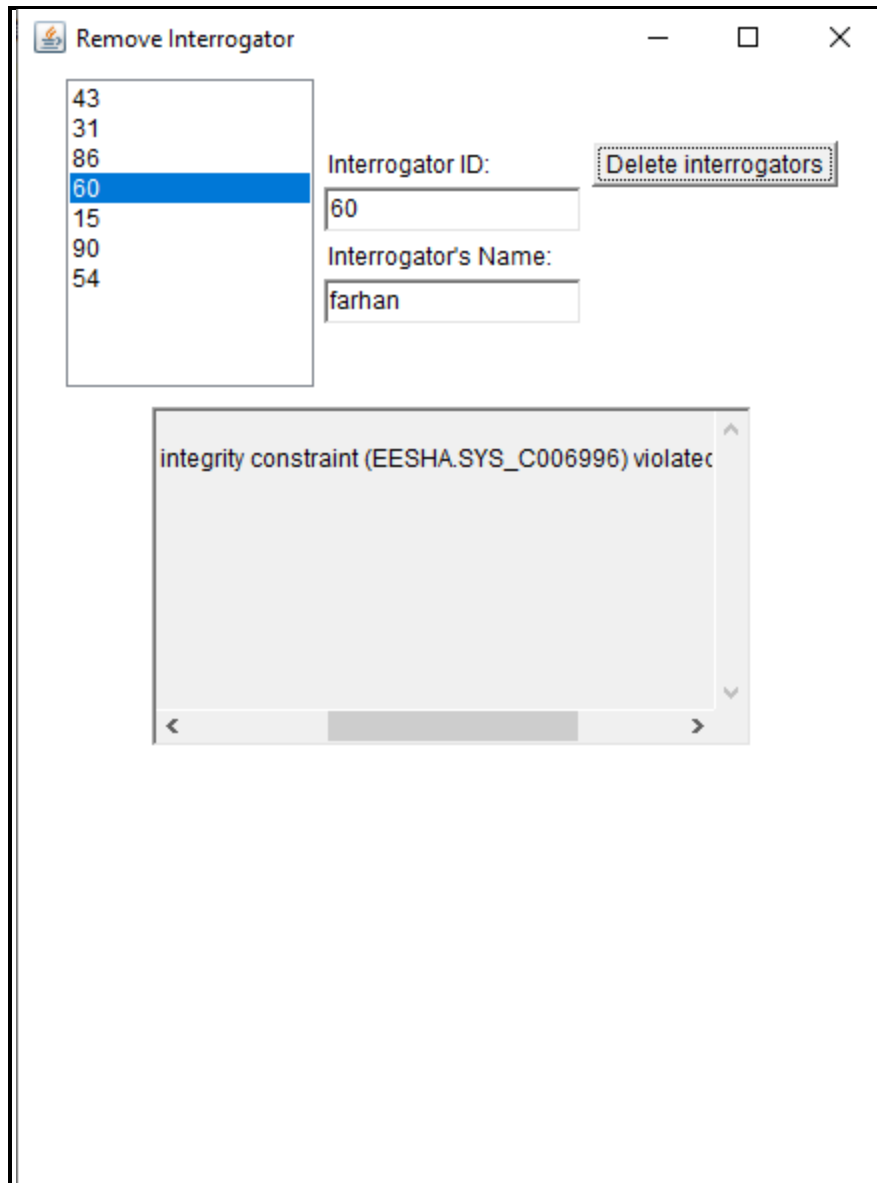
Interrogator Name:

aashi

Update interrogator

Updated 1 rows successfully

The interrogator is associated with a particular query via a relationship ‘info-retrieval’, hence it cannot be deleted.



Analyzers:

New Analyzer Creation

Analyzer ID:

67

Analyzer Name:

Bakul

Insert Analyzer

Inserted 1 rows successfully

Update Analyzer

10
20
30
45
67
89

Analyzer ID:

30

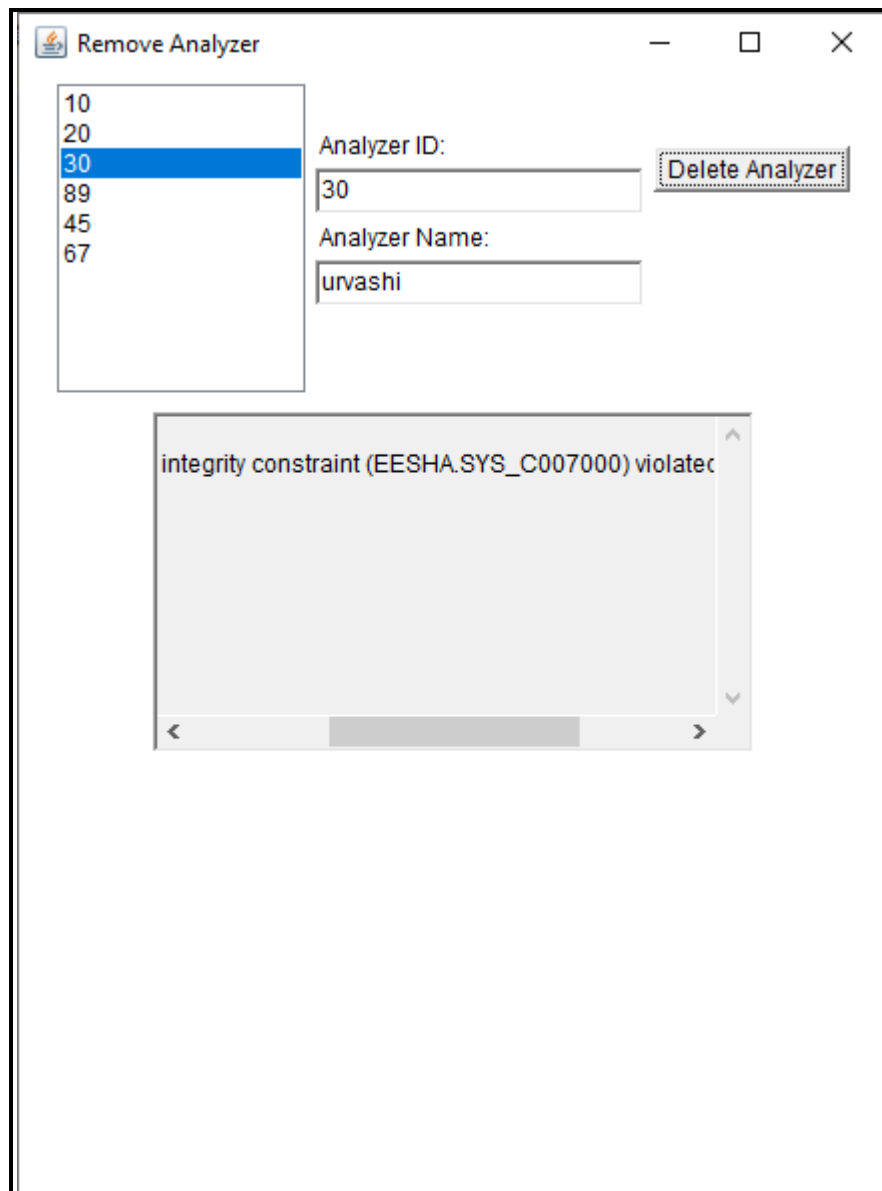
Analyzer Name:

urvashi

Update analyzer

Updated 1 rows successfully

The analyzer is associated with a particular query via a relationship ‘rating’, hence it cannot be deleted.



Queries:



The screenshot shows a window titled "New Query Creation" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there are two input fields. The first is labeled "Query ID:" and contains the text "75". The second is labeled "Query name:" and contains the text "plsql_triggers". Below these fields is a button labeled "Insert Query". At the bottom of the window, there is a message box that says "Inserted 1 rows successfully".

Query ID:
75

Query name:
plsql_triggers

Insert Query

Inserted 1 rows successfully



Update Queries



29
35
47
67
70
75
105

Query ID:

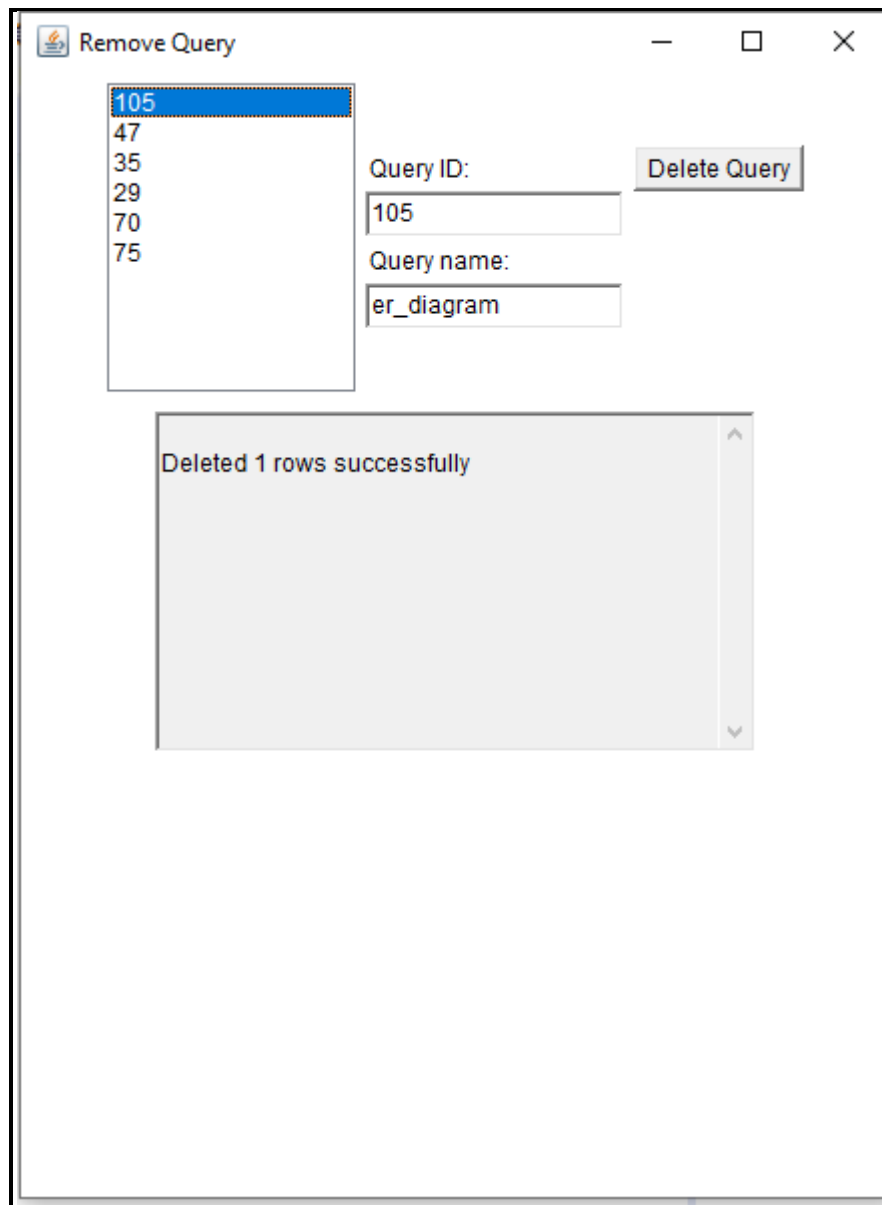
Update Queries

67


Query name:

normalization

Updated 1 rows successfully



Info Retrieval:

 New info Creation — □ ×

Interrogator ID:

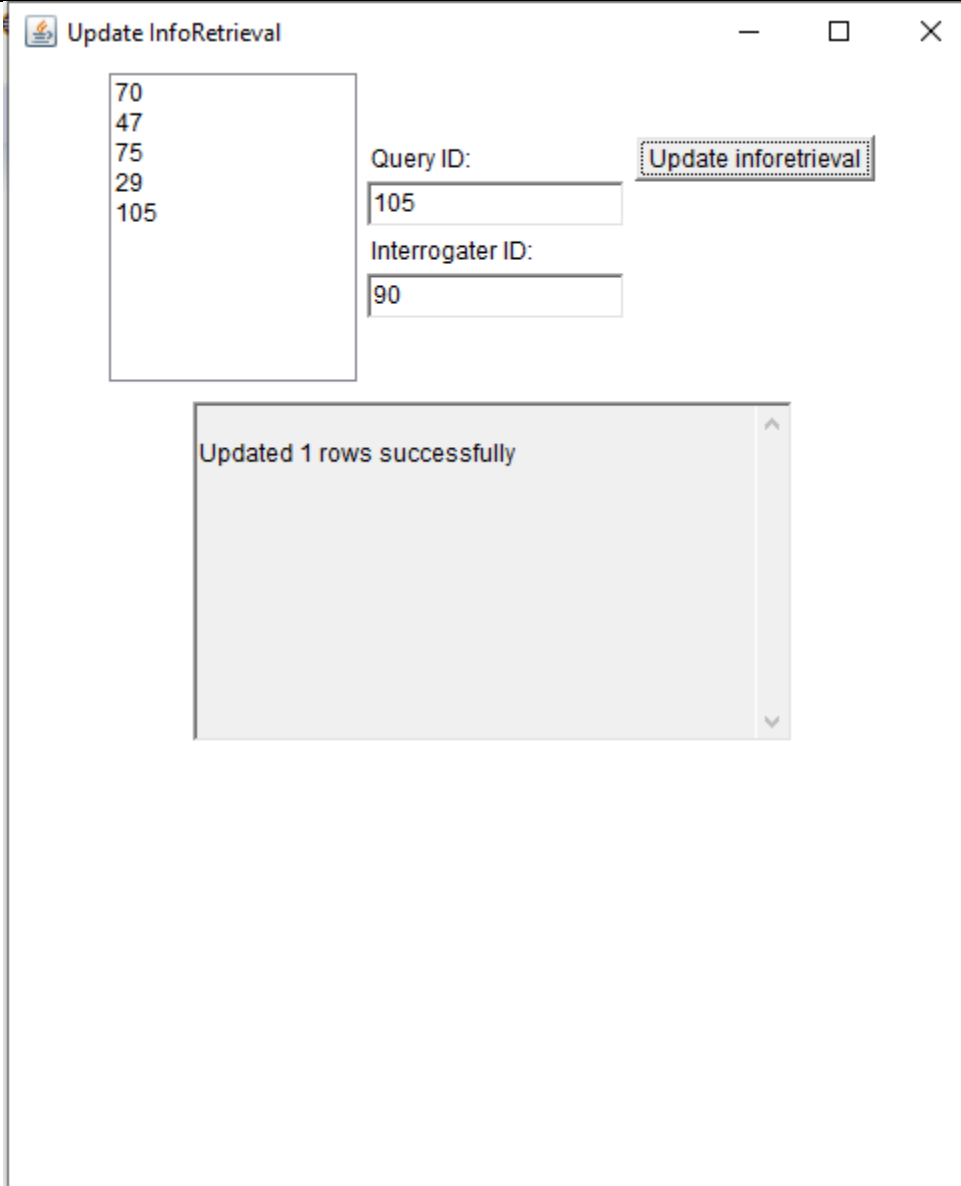
54

Query ID:

75

Insert info retrieval

Inserted 1 rows successfully



The screenshot shows a web application window titled "Update InfoRetrieval". On the left, there is a list of query IDs: 70, 47, 75, 29, and 105. To the right of this list are two input fields: "Query ID:" with the value "105" and "Interrogator ID:" with the value "90". A button labeled "Update info retrieval" is positioned to the right of the "Query ID:" field. Below these fields, a message box displays "Updated 1 rows successfully".

Query ID	Interrogator ID
70	
47	
75	
29	
105	

Query ID: 105

Interrogator ID: 90

Update info retrieval

Updated 1 rows successfully

Remove InfoRetrieval

70
47
75
29

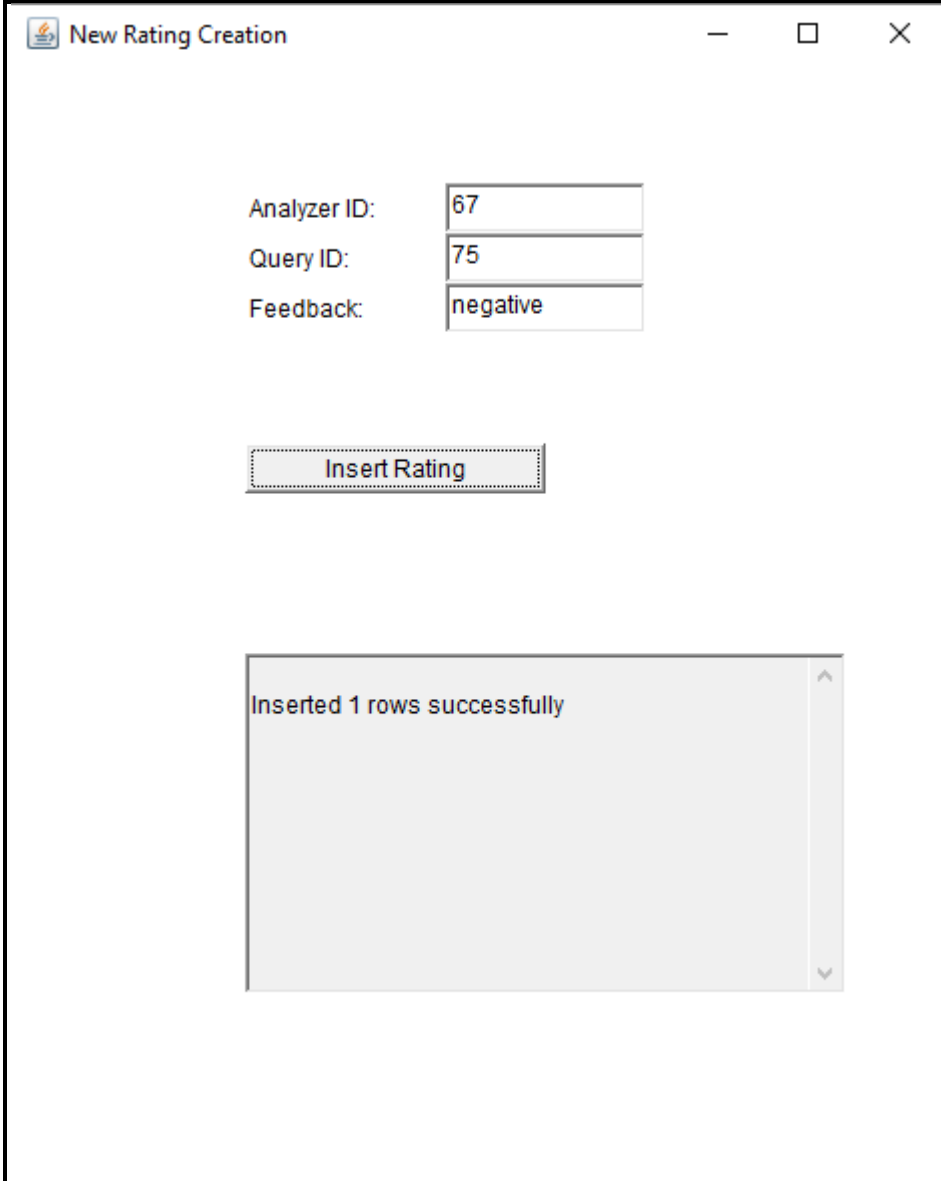
query ID:

interrogator ID:

Delete InfoRetrieval

Deleted 1 rows successfully

Rating:



The screenshot shows a window titled "New Rating Creation" with standard window controls (minimize, maximize, close). Inside the window, there are three input fields arranged vertically:

- Analyzer ID: 67
- Query ID: 75
- Feedback: negative

Below these fields is a button labeled "Insert Rating". At the bottom of the window, there is a message box that says "Inserted 1 rows successfully".

Update Rating

—

□

×

10

20

30

45

67

89

Analyzer ID:

45


Query ID:

70

Feedback :

positive

Update rating

 Remove Rating

10

20

30

45

67

Analyzer ID:

Query ID:

Feedback:

Delete Rating

Deleted 1 rows successfully

DISCUSSION AND FUTURE WORK

So far this project has helped us retrieve the information about Google queries through the feedback and rating given by the users. The feedback eventually is the crucial aspect here as it is the parameter that rates the query and its solution. Qualitative feedbacks give a room for improvising things so that one can come up with a better solution.

In future the most probable aspects could be involving analyzers with a high intellect merely to improve the feedback quality. The query also could be analyzed based on how difficult or easy its solution could be. The feedback system could be made more comprehensive rather than just being stuck to either positive or negative feedbacks. Lastly, there could be a room for including advanced software and other technologies that could make the project more purposeful and better for future use.

REFERENCES

<https://www.oracle.com/in/database/technologies/112010-win64soft.html>

<https://www.youtube.com/watch?v=fMp63HsIRbc&t=107s>

<https://mail.google.com/mail/u/0/#all/FMfcgxwHMGDxGBJRHPNwxkZSqQDLgPMR>

<https://mail.google.com/mail/u/0/#search/sam/FMfcgxwHMZGcqMdcjVXHfcLtWgdqPZdK>

THANK YOU

