SUGGESTION BOT FOR INTERVIEW SKILLS MANAGEMENT

A Report

Submitted in partial fulfilment of the

BE IV SEMESTER DATABASE MANAGEMENT SYSTEMS LAB

INFORMATION TECHNOLOGY

BY

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2020

BONAFIDE CERTIFICATE

This is to certify that this project entitles **"SUGGESTION BOT FOR INTERVIEW SKILLS MANAGEMENT"** is a bonafide mini project work of Ms. **J Gayatri** bearing the hall ticket number **1602-18-737-068** who carried out the project under my supervision in the year **2020** certified further my best knowledge.

Signature of the examiner

B. LEELAVATHY

Assistant professor

Department of Information Technology

ABSTRACT

This project is called “Suggestion Bot for Interview Skills Management”. In today’s competitive world, there are various skills that one requires in order to be a part of the competing group. With the number of engineers increasing each passing day, companies often look for students with unique and diverse talents when hiring. Everyone has a dream to crack a job in one of the top companies yet are often unaware of the different requirements different companies have. Thus, this suggestion bot is here to save you and your dreams. This bot takes all your skills into consideration and lets you choose your dream company. It then provides suggestions related to the areas you need to improve and onto which level you need to improve.

INTRODUCTION

1. Requirements about project domain in general

Aim:

To do this project, insight into java and Structured Query Language are required. The project is creation of Java GUI based Suggestion Bot which takes values like user details, company details, skills of the user and suggest the user required skills for a particular company. These values are to be taken through Java GUI and updated into the database using JDBC connectivity.

2. Information about the project

The project aims at providing a platform made from Java GUI, to the user where he/she can enter their details, choose a company of their choice, and get the suggestions based on their skill levels. The main objective of the project is to understand the procedure of Java Database Connectivity.

3. Architecture and Technology used

Technology:

The software used is Java Eclipse and SQL * Plus- Oracle 11g Enterprise Edition.

Java AWT:

Java AWT (Abstract Window Toolkit) is an API to develop graphical user interface 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 which means that its components are using the resources of OS.

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 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 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.

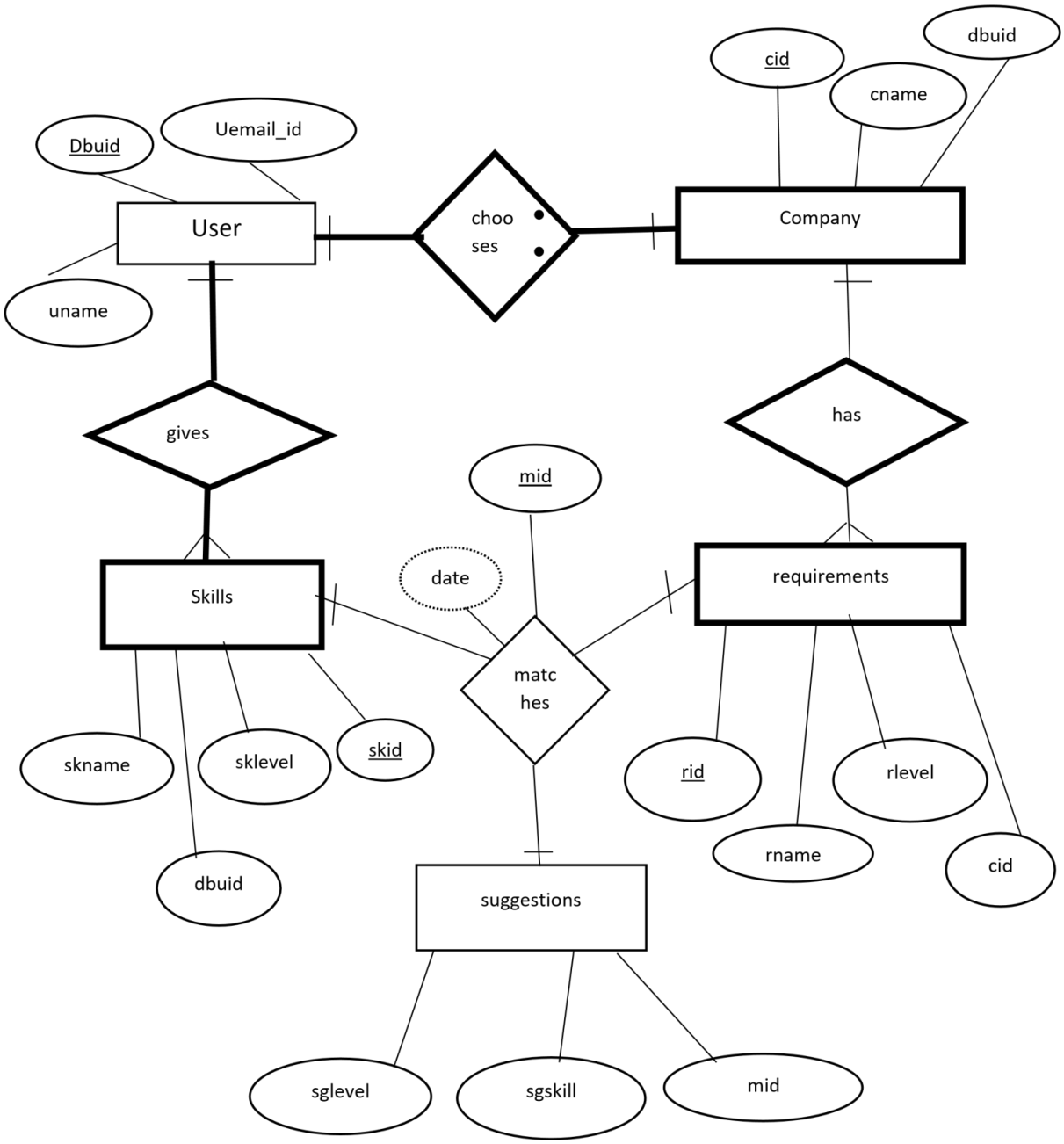
4. Design

Requirement Analysis:

Table	**Attributes**
EndUser	euid number(5) euname varchar2(20) euemail_id varchar(20)
Skill	skid number(5) skname varchar2(20) sklevel varchar2(20)
Companies	cid number(5) cname varchar2(20)
User_company	cid number(5)

	user_id number(5) preference varchar2(10)
Requirements	rid number(5) rname varchar2(20) rlevel varchar2(20)
User_skill	Euid number(5) Skid number(5) Since date
Company_reuirements	Cmp_id number(5) Req_id number(5) since date
Suggestions	sgskill varchar2(20) sglevel varchar2(20) mid number(5) euid number(5)
Requirement_suggestion	Sugg_id number(5) Req_id number(5) Skills_id number(5) Since date

Entity-Relation Diagram:



J Gayatri
1602-18-737-068

Mapping Cardinalities and Constraints:

One user can choose one company. Thus, company and user has one to one mapping cardinalities.

One user can give many skills. Thus, skills and user has one to many mapping cardinalities.

Each company/ one company can have any number (many) requirements. Thus, company and requirements has one to many mapping cardinalities.

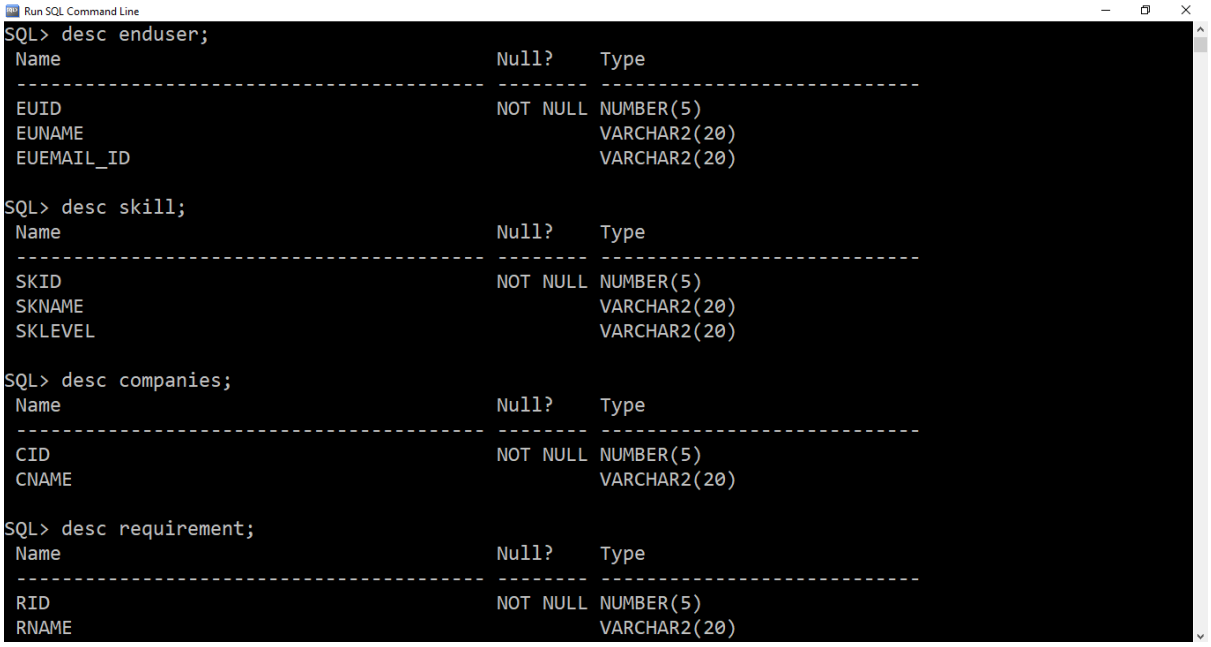
Each skill has one respective requirement which will be given by a suggestion. Thus, skills, requirements and suggestion have a one to one mapping cardinalities.

Since, user is participating completely, user has total participation, which is indicated by the bold line.

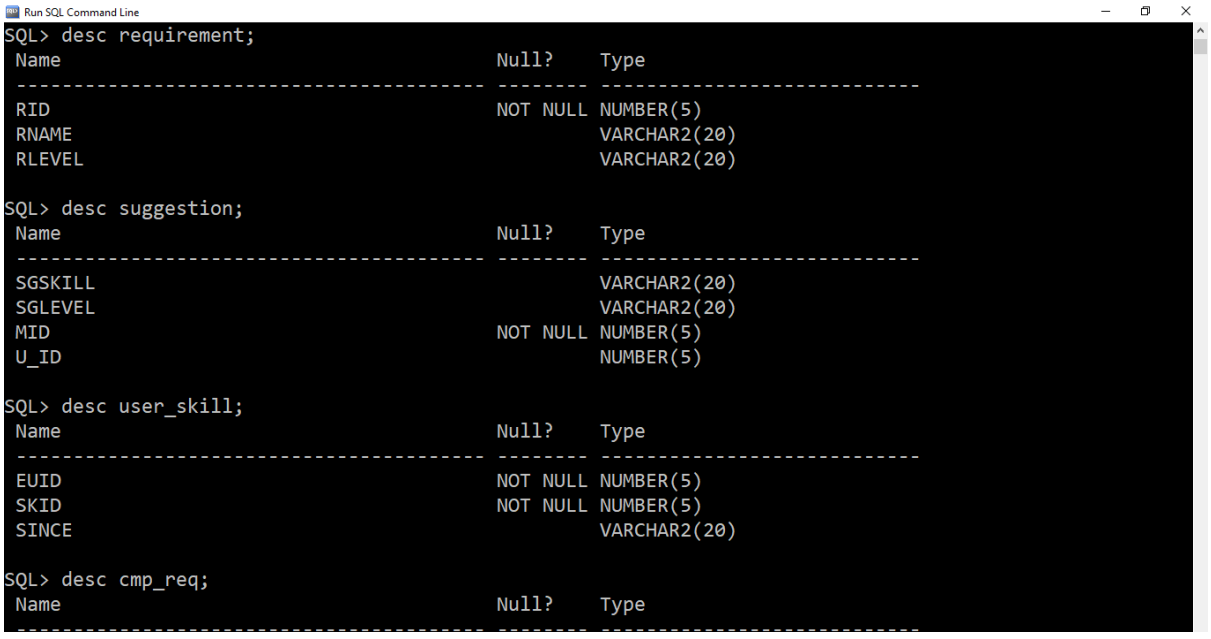
Table Creation: {DDL Commands}

```
Create table enduser( euid number(5), euname varchar2(20), euemail_id varchar2(20), primary key(euid));

Create table skill( skid number(5), skname varchar2(20), sklevel varchar2(20), primary key(skid));

Create table companies( cid number(5), cname varchar2(20), primary key(cid));

Create table requirement( rid number(5), rname varchar2(20), rlevel varchar2(20), primary key(rid));

Create table suggestion(sgskill varchar2(20), sglevel varchar2(20), mid number(5), u_id number(5), primary key(mid));

Create table user_skill( euid number(5), skid number(5), since varchar2(20));
```

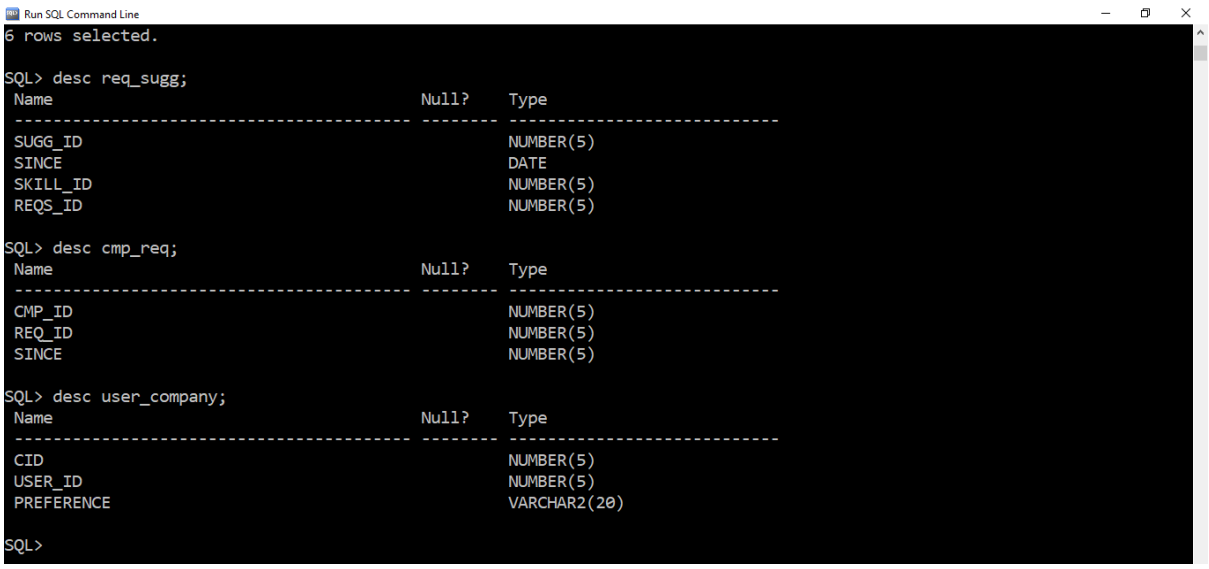
```
Create table cmp_req( cmp_id number(5), req_id number(5), since varchar2(20));

Create table user_company( cid number(5), user_id number(5), preference varchar2(20));

Create table req_sugg( sugg_id number(5), since varchar2(20), skill_id number(5), reqs_id number(5));
```



```
Run SQL Command Line
SQL> desc enduser;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EUID                                      NOT NULL NUMBER(5)
 EUNAME                                             VARCHAR2(20)
 EUEMAIL_ID                                         VARCHAR2(20)

SQL> desc skill;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SKID                                      NOT NULL NUMBER(5)
 SKNAME                                             VARCHAR2(20)
 SKLEVEL                                            VARCHAR2(20)

SQL> desc companies;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(5)
 CNAME                                              VARCHAR2(20)

SQL> desc requirement;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 RID                                       NOT NULL NUMBER(5)
 RNAME                                              VARCHAR2(20)
```



```
Run SQL Command Line
SQL> desc requirement;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 RID                                       NOT NULL NUMBER(5)
 RNAME                                              VARCHAR2(20)
 RLEVEL                                             VARCHAR2(20)

SQL> desc suggestion;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SGSKILL                                            VARCHAR2(20)
 SGLEVEL                                            VARCHAR2(20)
 MID                                       NOT NULL NUMBER(5)
 U_ID                                               NUMBER(5)

SQL> desc user_skill;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EUID                                      NOT NULL NUMBER(5)
 SKID                                      NOT NULL NUMBER(5)
 SINCE                                              VARCHAR2(20)

SQL> desc cmp_req;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
```



Adding foreign keys to the tables:

Table 1: Suggestion

```
Alter table suggestion add constraint u_id foreign key(u_id) references enduser(euid) on delete cascade;
```

Table 2: User_company

```
Alter table user_company add constraint cid foreign key(cid) references companies(cid) on delete cascade;

Alter table user_company add constraint user_id foreign key(user_id) references enduser(user_id) on delete cascade;
```

Table 3: User_skill

```
Alter table user_skill add constraint (euid) foreign key(euid) references enduser(euid) on delete cascade;

Alter table user_skill add constraint (skid) foreign key(skid) references skill on delete cascade;
```

Table 4: company_requirement

```
Alter table cmp_req add constraint(cmp_id) foreign key(cmp_id) references companies(cid) on delete cascade;

Alter table cmp_req add constraint (req_id) foreign key(req_id) references requirement(rid) on delete cascade;
```

Table 5: requirements_suggestions

```
Alter table  req_sugg add constraint(sugg_id) foreign key(sugg_id) references suggestion(mid) on delete cascade;

Alter table  req_sugg add constraint(req_id) foreign key(req_id) references requirement(rid) on delete cascade;

Alter table  req_sugg add constraint(skill_id) foreign key(skill_id) references skill(skid) on delete cascade;
```

5. Implementation

Front end programs and connectivity:

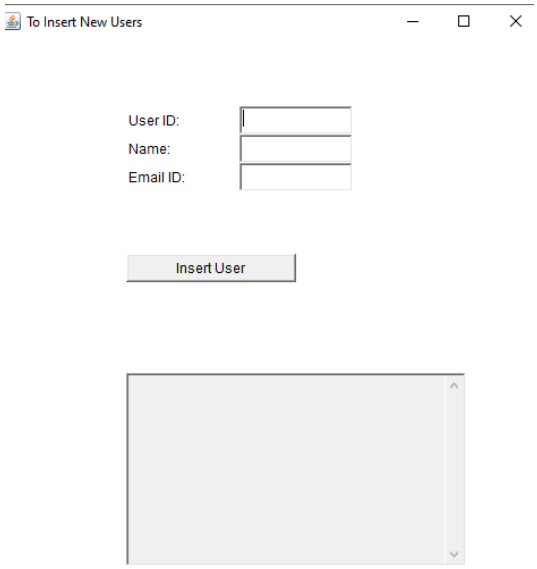
Program to Insert Users into the "User" table of the database:

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class InsertUser extends Frame
{
      Button UserB;
      TextField euidTf, eunameTf, emailidTf;
      TextArea errorText;
      Connection conn;
      Statement st;
            public InsertUser()
      {
            try
            {
                  Class.forName("oracle.jdbc.driver.OracleDriver");
            }
            catch (Exception e)
            {
                  System.err.println("Cannot find and load driver");
                  System.exit(1);
            }
            connectToDB();
      }

      public void buildGUI()
      {
            UserB = new Button("Insert User");
            UserB.addActionListener(new ActionListener()
            {
                  public void actionPerformed(ActionEvent e)
                  {
                        try
                        {
```

```
                        String query= "INSERT INTO enduser VALUES(" +
euidTf.getText() + ",  " + "'" + eunameTf.getText() + "'," +"'"+
emailidTf.getText() +"'"+ ")";
                        int i = st.executeUpdate(query);
                        errorText.append("\nInserted " + i + " rows
successfully");
                    }
                    catch (SQLException insertException)
                    {
                      displaySQLErrors(insertException);
                    }
                }
            });


            euidTf = new TextField(15);
            eunameTf = new TextField(15);
            emailidTf = 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("User ID:"));
            first.add(euidTf);
            first.add(new Label("Name:"));
            first.add(eunameTf);
            first.add(new Label("Email ID:"));
            first.add(emailidTf);
            first.setBounds(125,90,200,100);

            Panel second = new Panel(new GridLayout(4, 1));
            second.add(UserB);
          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("To Insert New Users");
            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");
	}

	public void connectToDB()
    {
		try
		{
		  conn                                                  =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","g
ayatri","manager");
		  st = conn.createStatement();

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

	public static void main(String[] args)
	{
		InsertUser user = new InsertUser();

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

		user.buildGUI();
	}
}
```

OUTPUT:



Program to Update Users into the “User” table of the database:

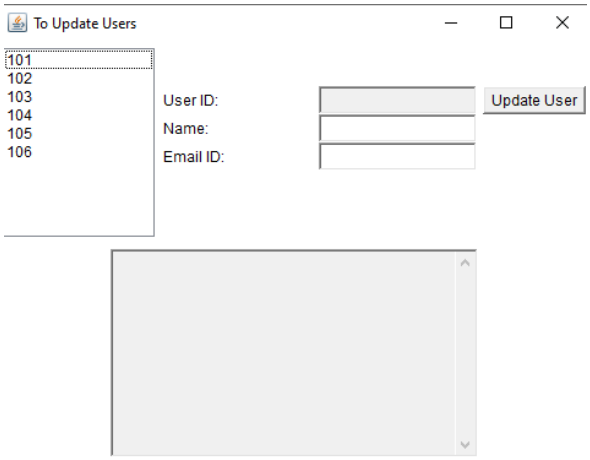
```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class UpdateUser extends Frame
{
	Button UserB;
	List userList;
	TextField euidTf, eunameTf, emailidTf;
	TextArea errorText;
	Connection conn;
	Statement st;
	ResultSet rs;

	public UpdateUser()
	{
		try
		{
			Class.forName("oracle.jdbc.driver.OracleDriver");
		}
		catch (Exception e)
		{
			System.err.println("Cannot find and load driver");
			System.exit(1);
		}
		connectToDB();
	}

	private void loadUser()
	{
		try
```

```
            {
              rs = st.executeQuery("SELECT EUID FROM enduser");
              while (rs.next())
              {
                  userList.add(rs.getString("EUID"));
              }
            }
            catch (SQLException e)
            {
              displaySQLErrors(e);
            }
      }

      public void buildGUI()
      {
          userList = new List(10);
            loadUser();
            add(userList);

            userList.addItemListener(new ItemListener()
            {
                  public void itemStateChanged(ItemEvent e)
                  {
                        try
                        {
                              rs   =   st.executeQuery("SELECT   *   FROM
enduser where EUID ="+userList.getSelectedItem());
                              rs.next();
                              euidTf.setText(rs.getString("EUID"));
                              eunameTf.setText(rs.getString("EUNAME"));

      emailidTf.setText(rs.getString("EUEMAIL_ID"));

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


            UserB= new Button("Update User");
            UserB.addActionListener(new ActionListener()
            {
                  public void actionPerformed(ActionEvent e)
                  {
                        try
                        {
```

```
                              Statement           statement           =
conn.createStatement();
                              int  i  =  statement.executeUpdate("UPDATE
enduser "
                              + "SET  euname='" + eunameTf.getText() +
"', "
                              + "euemail_id='" + emailidTf.getText() +
"'WHERE euid = "
                              + userList.getSelectedItem());
                              errorText.append("\nUpdated " + i + " rows
successfully");
                              userList.removeAll();
                              loadUser();
                        }
                        catch (SQLException insertException)
                        {
                              displaySQLErrors(insertException);
                        }
                  }
            });

            euidTf = new TextField(15);
            euidTf.setEditable(false);
            eunameTf = new TextField(15);
            emailidTf = 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("User ID:"));
            first.add(euidTf);
            first.add(new Label("Name:"));
            first.add(eunameTf);
            first.add(new Label("Email ID:"));
            first.add(emailidTf);

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

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

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

            setTitle("To Update Users");
```

```
            setSize(500, 600);
            setLayout(new FlowLayout());
            setVisible(true);

      }
      public void connectToDB()
    {
            try
            {
              conn                                                    =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","g
ayatri","manager");
              st = conn.createStatement();

            }
            catch (SQLException connectException)
            {
              System.out.println(connectException.getMessage());
              System.out.println(connectException.getSQLState());
              System.out.println(connectException.getErrorCode());
              System.exit(1);
            }
    }
      private void displaySQLErrors(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)
      {
            UpdateUser upUs = new UpdateUser();

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

            upUs.buildGUI();
      }
}
```

OUTPUT:



Program to Delete Users from the "User" table of the database:

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class DeleteUser extends Frame
{
	Button UserB;
	List userList;
	TextField euidTf, eunameTf, emailidTf;
	TextArea errorText;
	Connection conn;
	Statement st;
	ResultSet rs;

	public DeleteUser()
	{
		try
		{
			Class.forName("oracle.jdbc.driver.OracleDriver");
		}
		catch (Exception e)
		{
			System.err.println("Cannot find and load driver");
			System.exit(1);
		}
		connectToDB();
	}

	private void loadUsers()
	{
		try
		{
		  rs = st.executeQuery("SELECT * FROM enduser");
```

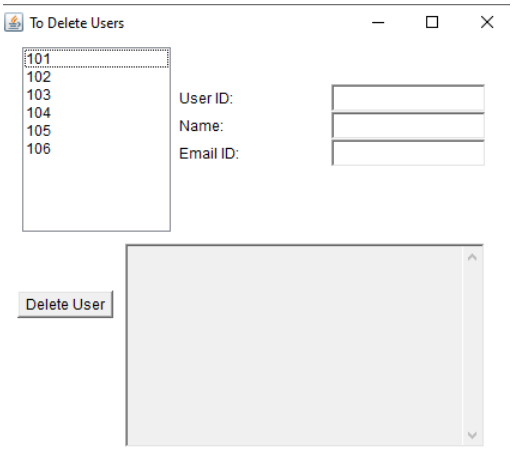
```
            while (rs.next())
            {
                userList.add(rs.getString("EUID"));
            }
          }
          catch (SQLException e)
          {
            displaySQLErrors(e);
          }
      }

      public void buildGUI()
      {
          userList = new List(10);
            loadUsers();
            add(userList);

            userList.addItemListener(new ItemListener()
            {
                  public void itemStateChanged(ItemEvent e)
                  {
                        try
                        {
                              rs   =   st.executeQuery("SELECT   *   FROM
enduser");
                              while (rs.next())
                              {
                                    if
(rs.getString("EUID").equals(userList.getSelectedItem()))
                                    break;
                              }
                              if (!rs.isAfterLast())
                              {

      euidTf.setText(rs.getString("EUID"));

      eunameTf.setText(rs.getString("EUNAME"));

      emailidTf.setText(rs.getString("EUEMAIL_ID"));
                              }
                        }
                        catch (SQLException selectException)
                        {
                              displaySQLErrors(selectException);
                        }
                  }
            });

            UserB = new Button("Delete User");
```

```
            UserB.addActionListener(new ActionListener()
            {
                  public void actionPerformed(ActionEvent e)
                  {
                        try
                        {
                              Statement           statement           =
conn.createStatement();
                              int  i  =  statement.executeUpdate("DELETE
FROM enduser WHERE EUID = "
                                          + userList.getSelectedItem());
                              errorText.append("\nDeleted " + i + " rows
successfully");
                              euidTf.setText(null);
                              eunameTf.setText(null);
                              emailidTf.setText(null);
                              userList.removeAll();
                              loadUsers();
                        }
                        catch (SQLException insertException)
                        {
                              displaySQLErrors(insertException);
                        }
                  }
            });

            euidTf = new TextField(15);
            eunameTf = new TextField(15);
            emailidTf = 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("User ID:"));
            first.add(euidTf);
            first.add(new Label("Name:"));
            first.add(eunameTf);
            first.add(new Label("Email ID:"));
            first.add(emailidTf);

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

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

            add(first);
```

```
            add(second);
            add(third);

            setTitle("To Delete Users");
            setSize(450, 600);
            setLayout(new FlowLayout());
            setVisible(true);

      }

      public void connectToDB()
    {
            try
            {
              conn                                                    =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","g
ayatri","manager");
              st = conn.createStatement();

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

      private void displaySQLErrors(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)
      {
            DeleteUser dels = new DeleteUser();

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

```
            }
        });

        dels.buildGUI();
    }
}
```

OUTPUT:



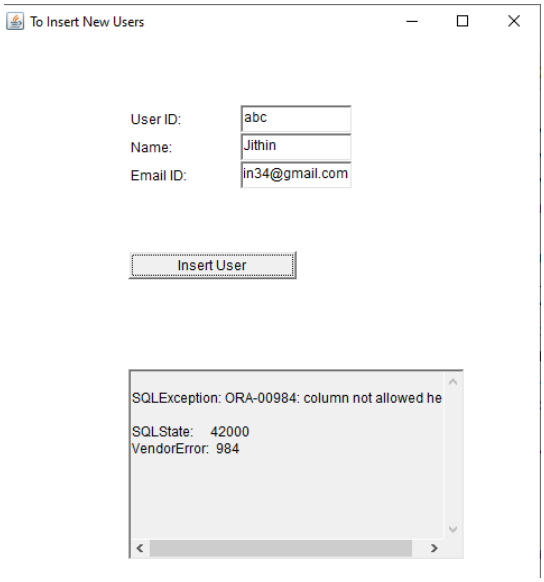
GitHub Link

https://github.com/jgayatri068/Suggestion-Bot-dbms-project-

6. Testing

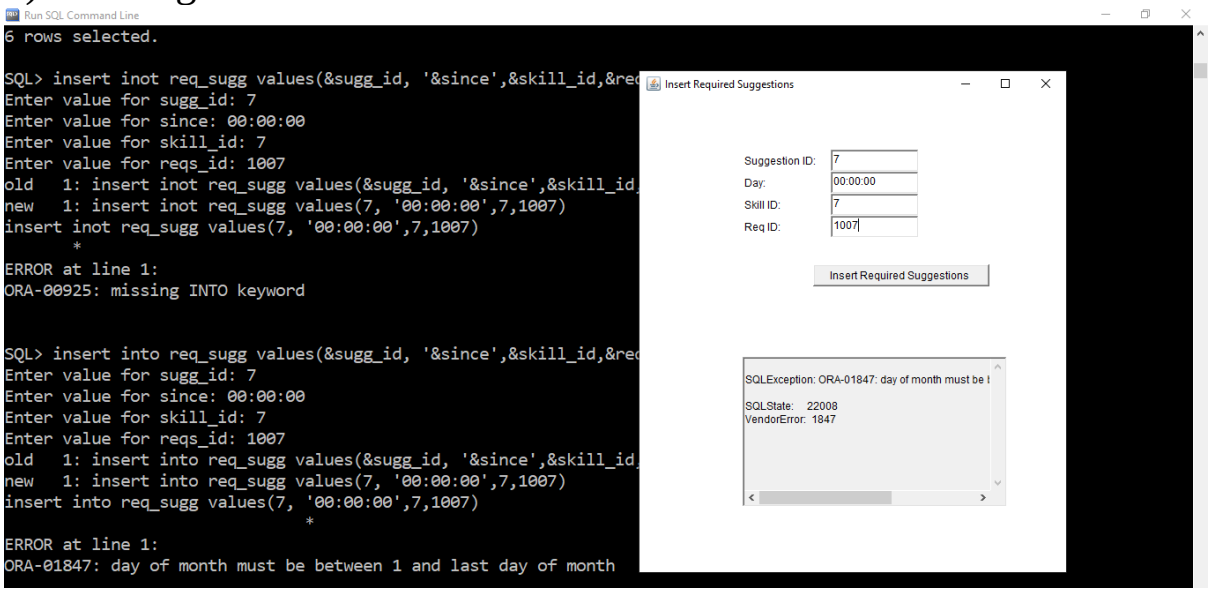
This section of the report deals with the testing of the connection between java GUI and the database established previously.

1. Testing for incorrect format/data type of details entered when inserting values into the database of user table using the GUI designed.
a) In case of ID, entering a non-number value.




```
SQL> insert into enduser values(&euid, '&euname','&euemail_id');
Enter value for euid: abc
Enter value for euname: Jithin
Enter value for euemail_id: jithin34@gmail.com
old   1: insert into enduser values(&euid, '&euname','&euemail_id')
new   1: insert into enduser values(abc, 'Jithin','jithin34@gmail.com')
insert into enduser values(abc, 'Jithin','jithin34@gmail.com')
                           *
ERROR at line 1:
ORA-00984: column not allowed here
```

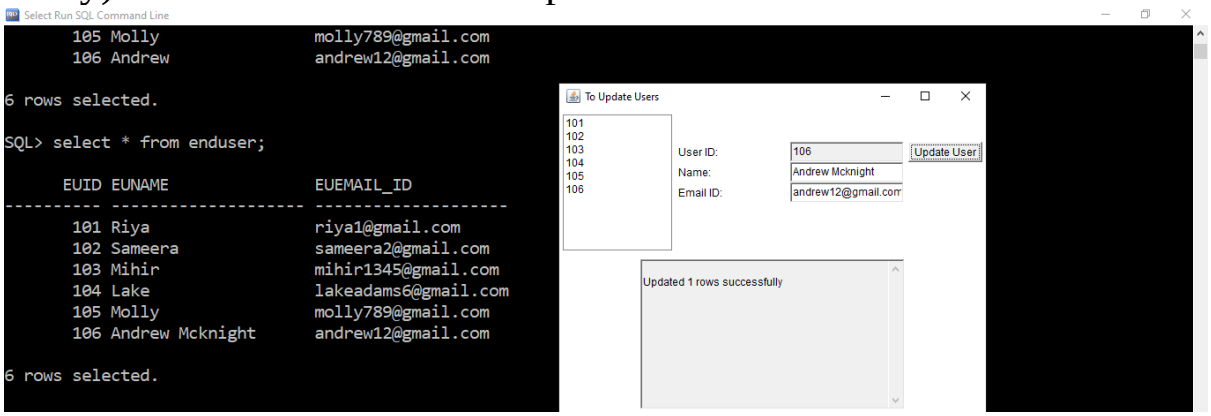
b) Entering date in incorrect format



2. Testing for updating a non-existent value in the database.

This feature has been omitted while coding. That is, the primary key that uniquely identifies a row has been set to un-editable while coding

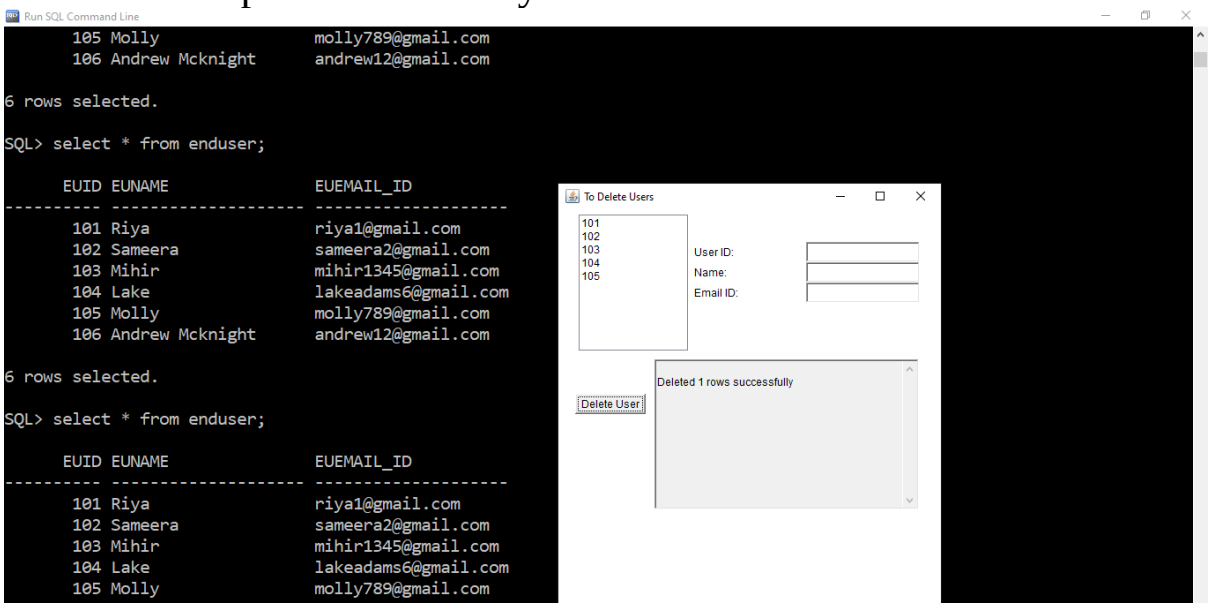
to ensure updating primary key is not possible and to avoid further confusion.
Updating other details such as name and email id (attributes of user entity) in case of user's table is possible.



The user id text field in the GUI coloured in grey indicates that it is un-editable.

3. Testing for a deleting a non-existent value from the database

The delete GUI is designed in such a way that it provides the user with a view of all the values inserted into the table and lets the user choose from one of them to delete the values. Thus, deleting a non-existent value is not a problem to worry about.

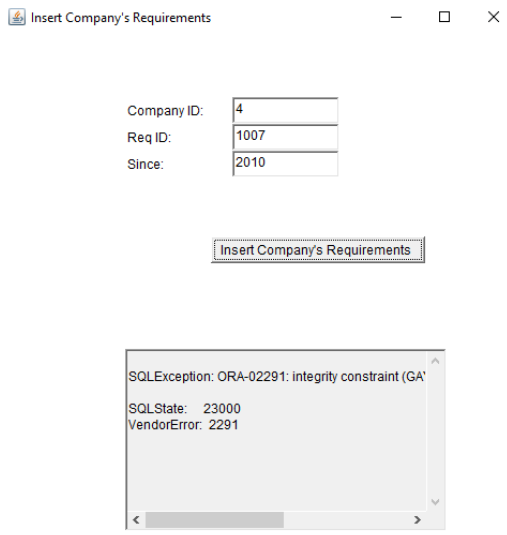


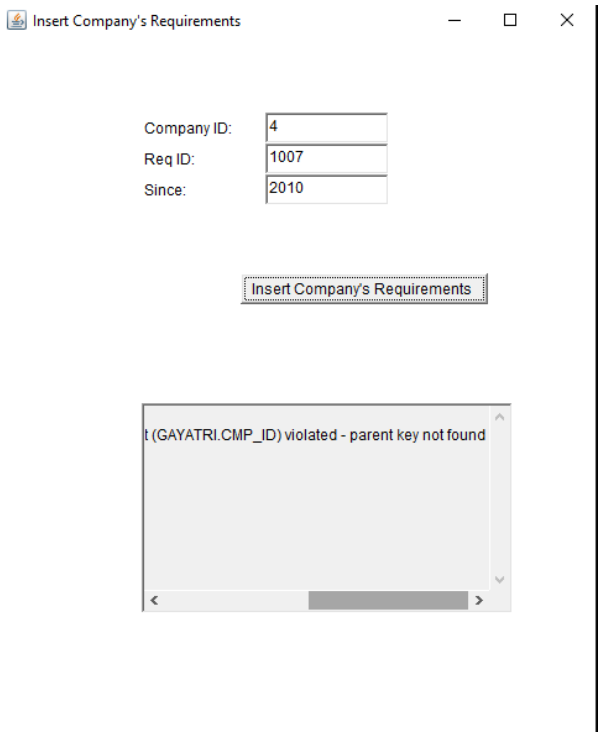
4. Testing for inserting values into child table those of which are not present in the parent table.

DBMS Mini Project
TOPIC: Suggestion Bot for Interview Skills Management

Run SQL Command Line

```
SQL> select * from companies;

       CID CNAME
---------- --------------------
         1 Oracle
         2 Microsoft
         3 Google

SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert

7 rows selected.
```





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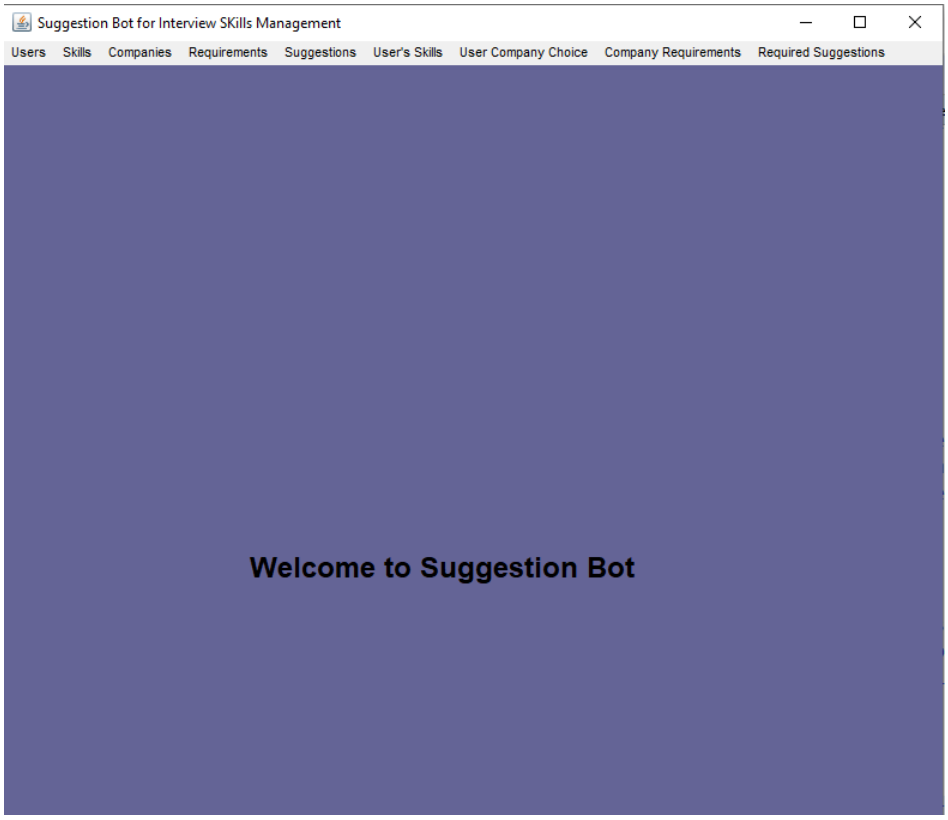
RESULTS

Main GUI:



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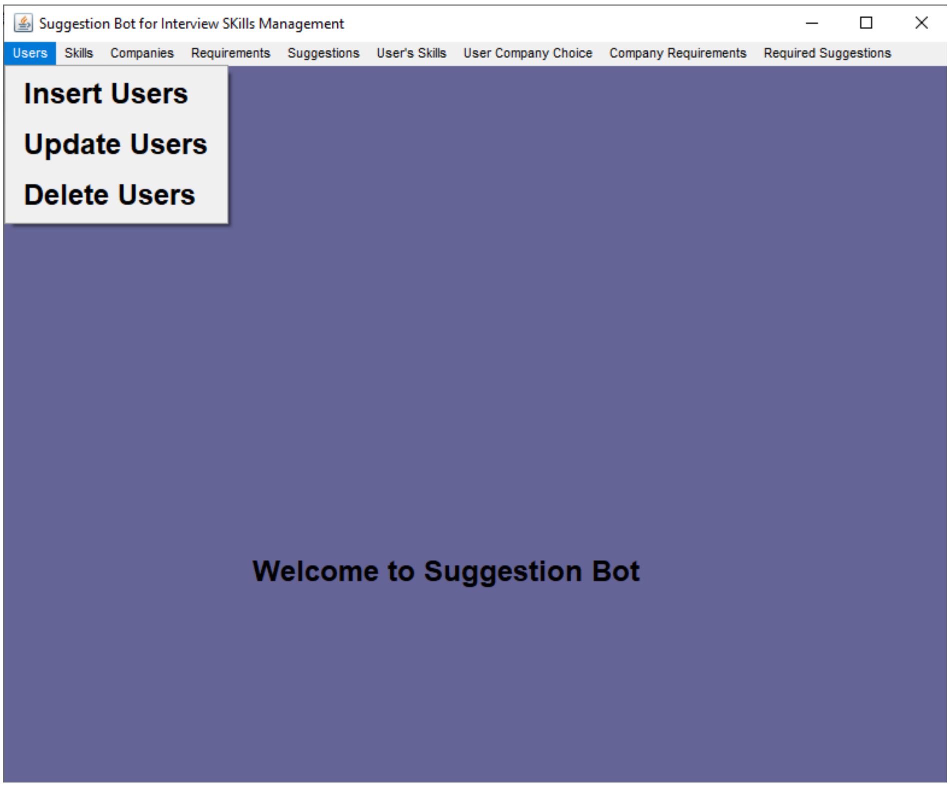
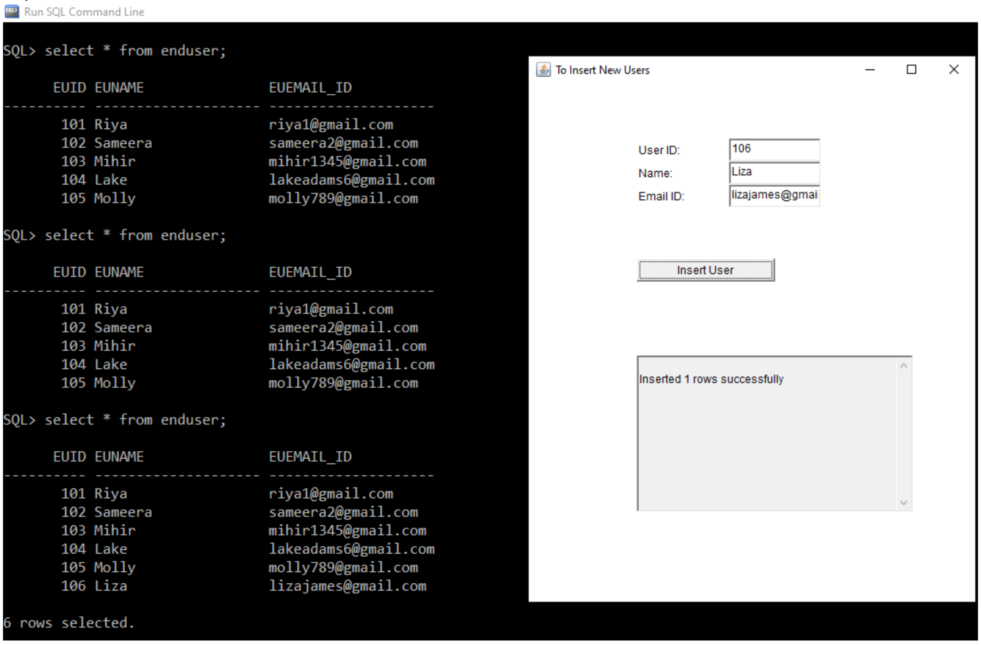
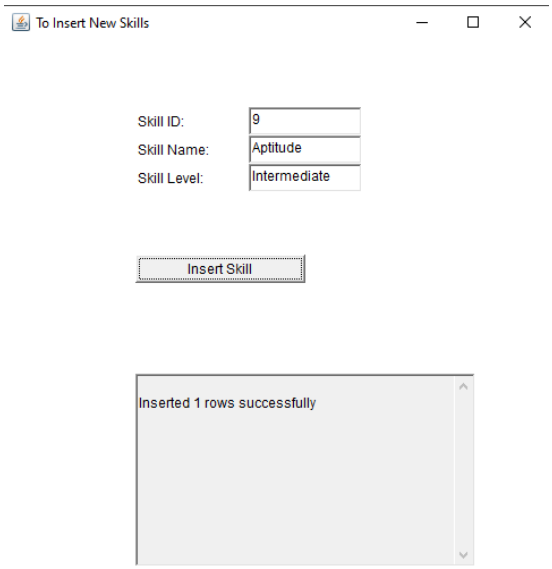


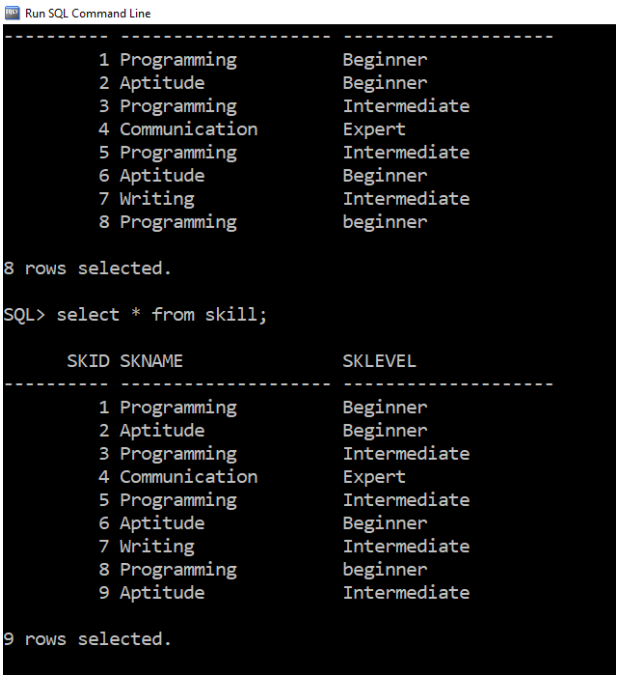
Inserting values into tables:

1) Into User's table

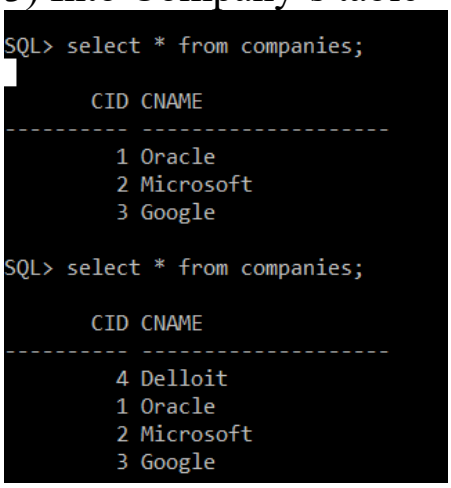


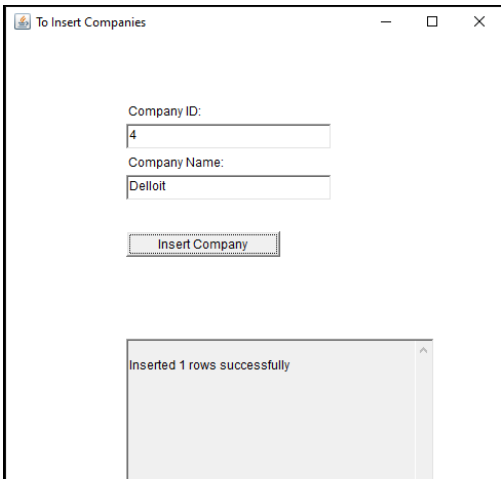
2) Into Skill table





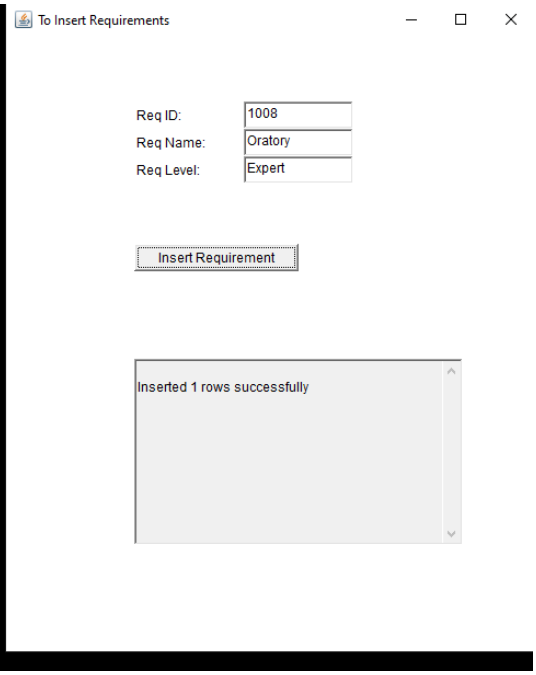
3) Into Company's table





4) Into Requirements table

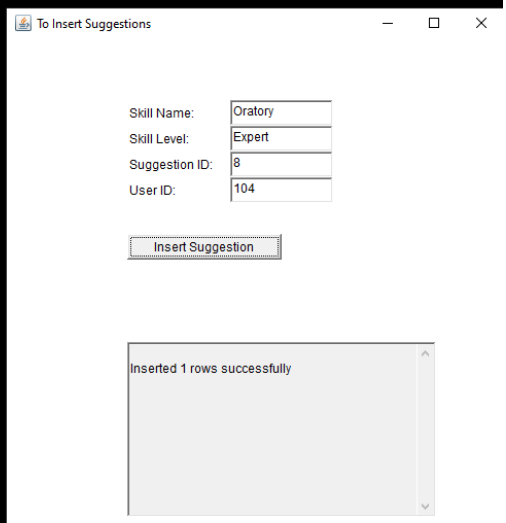
```
SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert

7 rows selected.

SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert
      1008 Oratory              Expert

8 rows selected.
```



5) Into Suggestions table

Select Run SQL Command Line

```
SQL> select * from  suggestion;

SGSKILL              SGLEVEL                   MID       U_ID
-------------------- -------------------- ---------- ----------
Programming          Expert                     1        101
Aptitude             Expert                     2        101
Programming          Expert                     3        102
Programming          Expert                     5        103
Aptitude             Expert                     6        103
Communication        Expert                     4        102
Writing              Expert                     7        103

7 rows selected.

SQL> select * from  suggestion;

SGSKILL              SGLEVEL                   MID       U_ID
-------------------- -------------------- ---------- ----------
Programming          Expert                     1        101
Aptitude             Expert                     2        101
Programming          Expert                     3        102
Programming          Expert                     5        103
Aptitude             Expert                     6        103
Communication        Expert                     4        102
Writing              Expert                     7        103
Oratory              Expert                     8        104

8 rows selected.
```



6) Into User's Skills table

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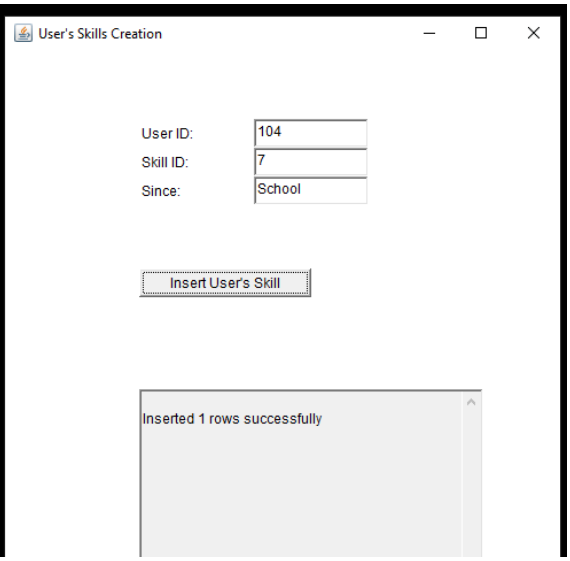
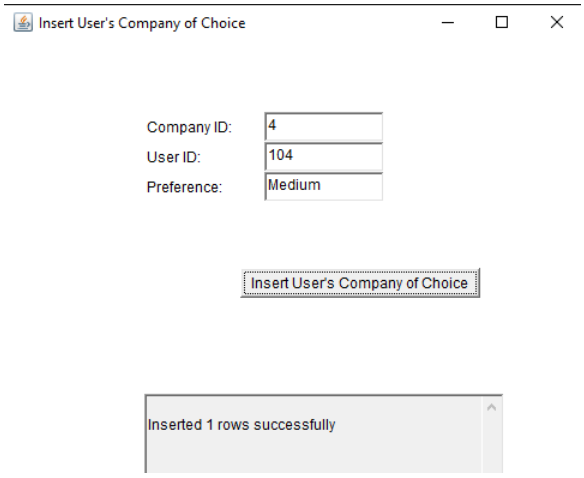
```
SQL> select * from user_skill;

      EUID       SKID SINCE
---------- ---------- --------------------
       101          1 Enginnering
       101          2 12th grade
       102          3 Engineering
       102          4 School
       103          5 Engineering
       103          6 12th grade

6 rows selected.

SQL> select * from user_skill;

      EUID       SKID SINCE
---------- ---------- --------------------
       101          1 Enginnering
       101          2 12th grade
       102          3 Engineering
       102          4 School
       103          5 Engineering
       103          6 12th grade
       104          7 School

7 rows selected.
```

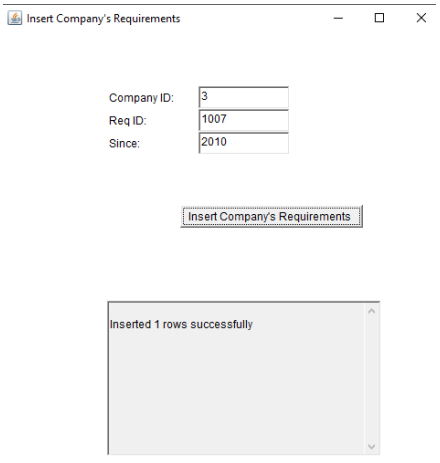


7) Into User's Company table

```
SQL> select * from user_company;

       CID    USER_ID PREFERENCE
---------- ---------- --------------------
         1        101 High
         2        102 High
         3        103 Medium

SQL> select * from user_company;

       CID    USER_ID PREFERENCE
---------- ---------- --------------------
         1        101 High
         2        102 High
         3        103 Medium
         4        104 Medium
```



8) Into Company's Requirements Table




```
SQL> select* from cmp_req;

    CMP_ID     REQ_ID      SINCE
---------- ---------- ----------
         1       1001       2008
         1       1002       2005
         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001

6 rows selected.

SQL> select* from cmp_req;

    CMP_ID     REQ_ID      SINCE
---------- ---------- ----------
         1       1001       2008
         1       1002       2005
         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001
         3       1007       2010

7 rows selected.
```

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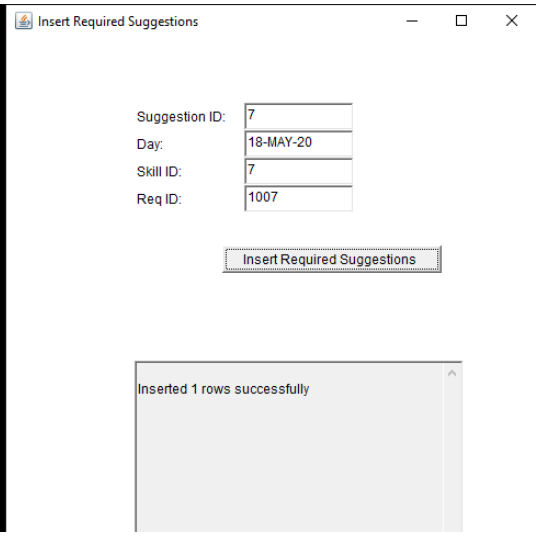
9) Into Required Suggestions table

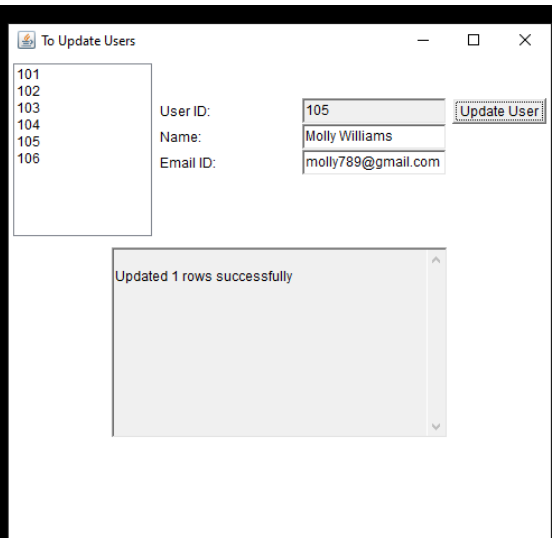
```
SQL> select * from req_sugg;

   SUGG_ID SINCE       SKILL_ID    REQS_ID
---------- --------- ---------- ----------
         1 13-FEB-20          1       1001
         2 13-FEB-20          2       1002
         3 13-FEB-20          3       1003
         4 14-FEB-20          4       1004
         5 13-FEB-20          5       1005
         6 13-FEB-20          6       1006

6 rows selected.

SQL> select * from req_sugg;

   SUGG_ID SINCE       SKILL_ID    REQS_ID
---------- --------- ---------- ----------
         1 13-FEB-20          1       1001
         2 13-FEB-20          2       1002
         3 13-FEB-20          3       1003
         4 14-FEB-20          4       1004
         5 13-FEB-20          5       1005
         6 13-FEB-20          6       1006
         7 18-MAY-20          7       1007

7 rows selected.
```



Updating values into tables:

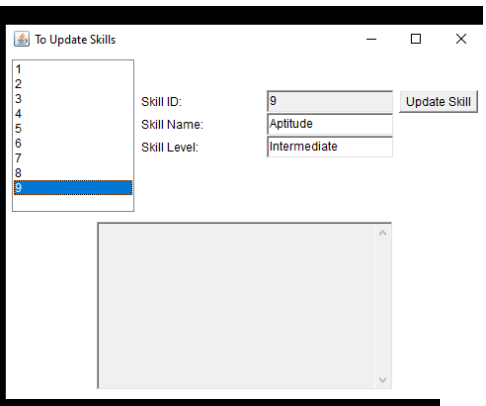
1) Updating into User's Table

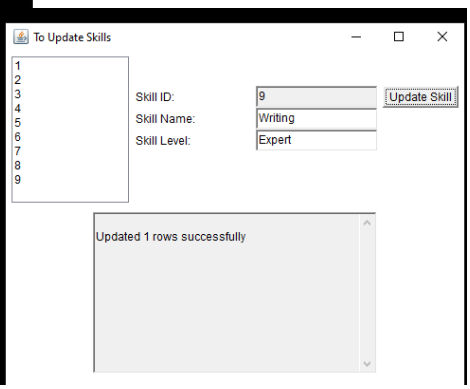
```
SQL> select * from enduser;

      EUID EUNAME               EUEMAIL_ID
---------- -------------------- --------------------
       101 Riya                 riya1@gmail.com
       102 Sameera              sameera2@gmail.com
       103 Mihir                mihir1345@gmail.com
       104 Lake                 lakeadams6@gmail.com
       105 Molly                molly789@gmail.com
       106 Liza                 lizajames@gmail.com

6 rows selected.

SQL> select * from enduser;

      EUID EUNAME               EUEMAIL_ID
---------- -------------------- --------------------
       101 Riya                 riya1@gmail.com
       102 Sameera              sameera2@gmail.com
       103 Mihir                mihir1345@gmail.com
       104 Lake                 lakeadams6@gmail.com
       105 Molly Williams       molly789@gmail.com
       106 Liza                 lizajames@gmail.com

6 rows selected.
```



2) Updating into Skills Table

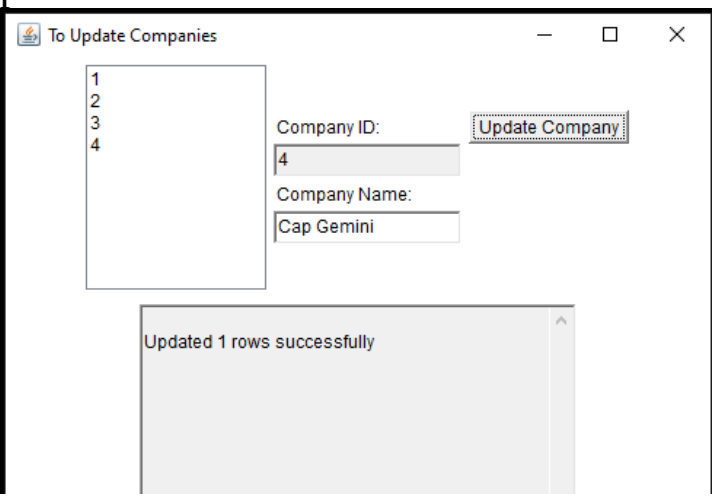
```
SQL> select * from skill;

      SKID SKNAME               SKLEVEL
---------- -------------------- --------------------
         1 Programming          Beginner
         2 Aptitude             Beginner
         3 Programming          Intermediate
         4 Communication        Expert
         5 Programming          Intermediate
         6 Aptitude             Beginner
         7 Writing              Intermediate
         8 Programming          beginner
         9 Aptitude             Intermediate

9 rows selected.

SQL> select * from skill;

      SKID SKNAME               SKLEVEL
---------- -------------------- --------------------
         1 Programming          Beginner
         2 Aptitude             Beginner
         3 Programming          Intermediate
         4 Communication        Expert
         5 Programming          Intermediate
         6 Aptitude             Beginner
         7 Writing              Intermediate
         8 Programming          beginner
         9 Writing              Expert

9 rows selected.
```





3) Updating into Companies Table

```
SQL> select * from companies;

       CID CNAME
---------- --------------------
         4 Delloit
         1 Oracle
         2 Microsoft
         3 Google

SQL> select * from companies;

       CID CNAME
---------- --------------------
         4 Cap Gemini
         1 Oracle
         2 Microsoft
         3 Google
```



4) Updating into Requirements table

J Gayatri
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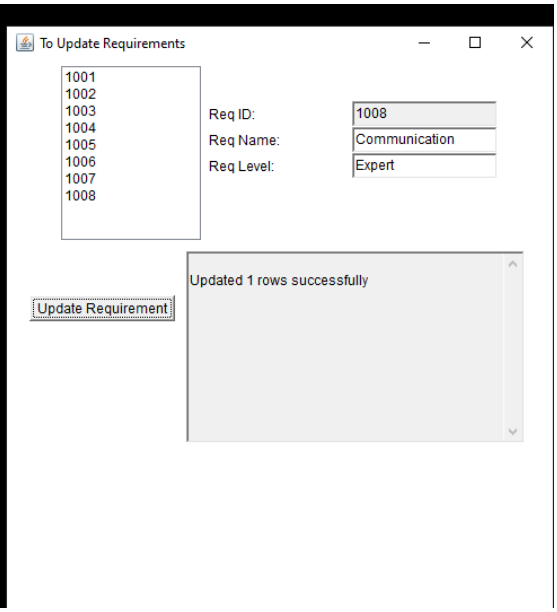
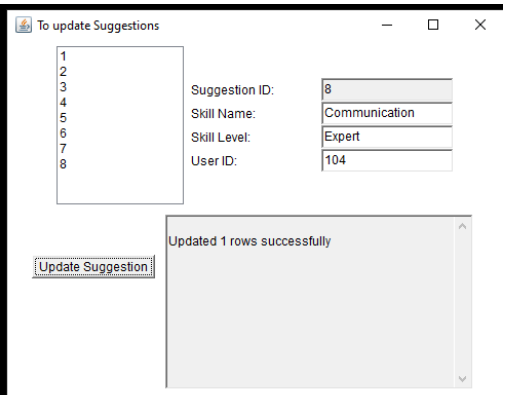
```
SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert
      1008 Oratory              Expert

8 rows selected.

SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert
      1008 Communication        Expert

8 rows selected.
```



5) Updating into Suggestions Table

```
SQL> select * from suggestion;

SGSKILL              SGLEVEL                   MID       U_ID
-------------------- -------------------- ---------- ----------
Programming          Expert                     1        101
Aptitude             Expert                     2        101
Programming          Expert                     3        102
Programming          Expert                     5        103
Aptitude             Expert                     6        103
Communication        Expert                     4        102
Writing              Expert                     7        103
Oratory              Expert                     8        104

8 rows selected.

SQL> select * from suggestion;

SGSKILL              SGLEVEL                   MID       U_ID
-------------------- -------------------- ---------- ----------
Programming          Expert                     1        101
Aptitude             Expert                     2        101
Programming          Expert                     3        102
Programming          Expert                     5        103
Aptitude             Expert                     6        103
Communication        Expert                     4        102
Writing              Expert                     7        103
Communication        Expert                     8        104

8 rows selected.
```



6) Updating into User's Skills table

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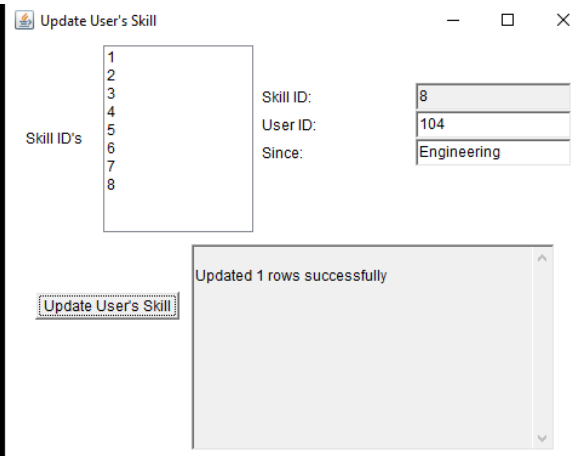
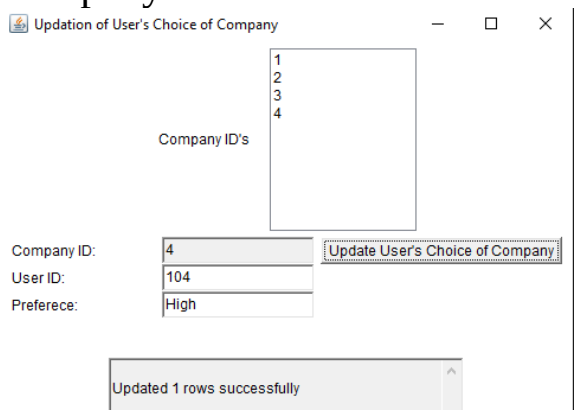
```
SQL> select * from user_skill;

      EUID       SKID SINCE
---------- ---------- --------------------
       101          1 Enginnering
       101          2 12th grade
       102          3 Engineering
       102          4 School
       103          5 Engineering
       103          6 12th grade
       104          7 School
       104          8 School

8 rows selected.

SQL> select * from user_skill;

      EUID       SKID SINCE
---------- ---------- --------------------
       101          1 Enginnering
       101          2 12th grade
       102          3 Engineering
       102          4 School
       103          5 Engineering
       103          6 12th grade
       104          7 School
       104          8 Engineering

8 rows selected.
```



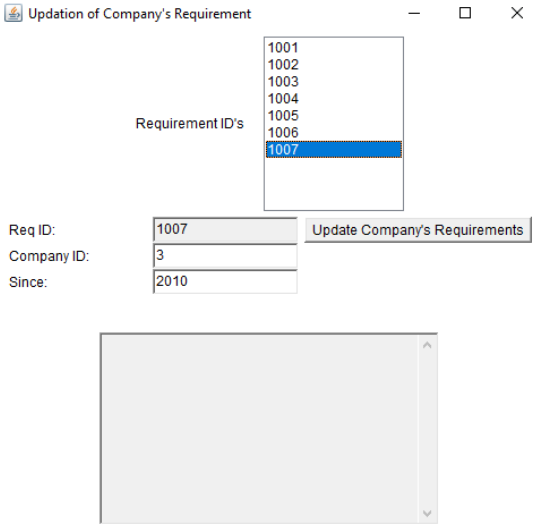
7) Updating into User's Company table

```
SQL> select * from user_company;

       CID    USER_ID PREFERENCE
---------- ---------- --------------------
         1        101 High
         2        102 High
         3        103 Medium
         4        104 Medium

SQL> select * from user_company;

       CID    USER_ID PREFERENCE
---------- ---------- --------------------
         1        101 High
         2        102 High
         3        103 Medium
         4        104 High

SQL>
```



8) Updating into Company's Requirements table

```
         8 Programming          beginner
         9 Writing              Expert

9 rows selected.

SQL> select * from cmp_req;

    CMP_ID     REQ_ID      SINCE
---------- ---------- ----------
         1       1001       2008
         1       1002       2005
         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001
         3       1007       2010

7 rows selected.

SQL>
```



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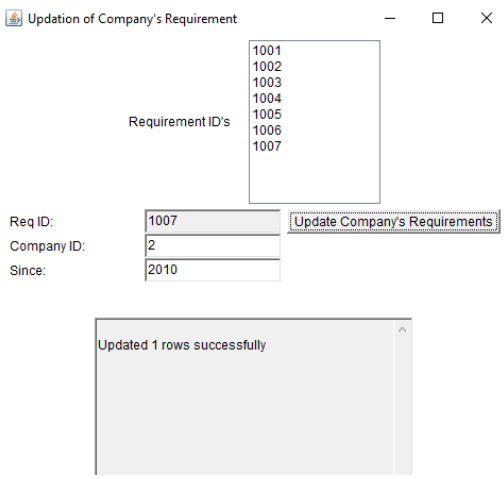
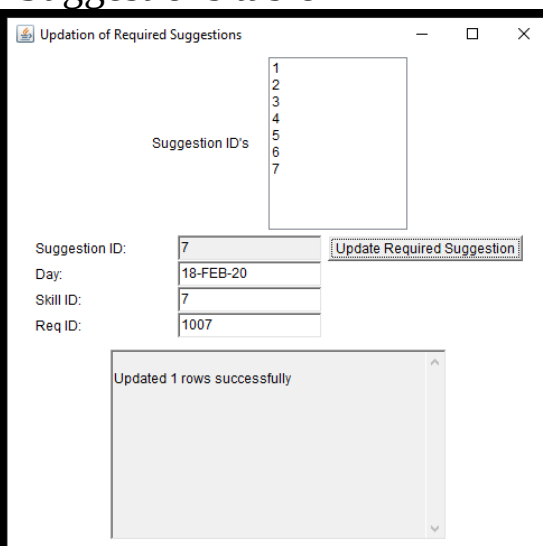
```
         3       1006       2001
         3       1007       2010

7 rows selected.

SQL> select * from cmp_req;

    CMP_ID     REQ_ID      SINCE
---------- ---------- ----------
         1       1001       2008
         1       1002       2005
         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001
         2       1007       2010

7 rows selected.
```



9) Updating into Required Suggestions table

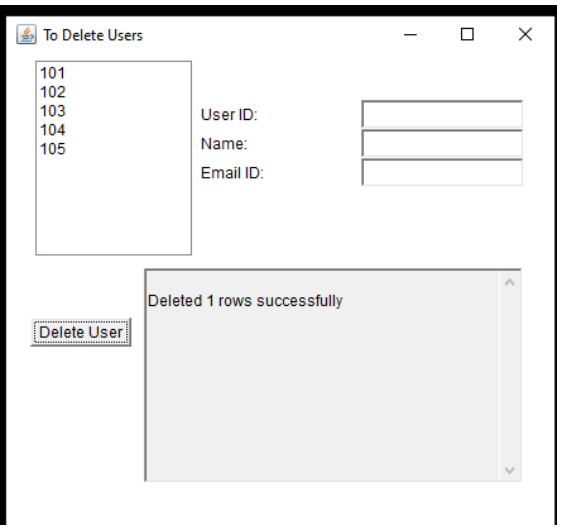
```
SQL> select * from req_sugg;

   SUGG_ID SINCE       SKILL_ID    REQS_ID
---------- --------- ---------- ----------
         1 13-FEB-20          1       1001
         2 13-FEB-20          2       1002
         3 13-FEB-20          3       1003
         4 14-FEB-20          4       1004
         5 13-FEB-20          5       1005
         6 13-FEB-20          6       1006
         7 18-MAY-20          7       1007

7 rows selected.

SQL> select * from req_sugg;

   SUGG_ID SINCE       SKILL_ID    REQS_ID
---------- --------- ---------- ----------
         1 13-FEB-20          1       1001
         2 13-FEB-20          2       1002
         3 13-FEB-20          3       1003
         4 14-FEB-20          4       1004
         5 13-FEB-20          5       1005
         6 13-FEB-20          6       1006
         7 18-FEB-20          7       1007

7 rows selected.
```



Deleting values from tables:

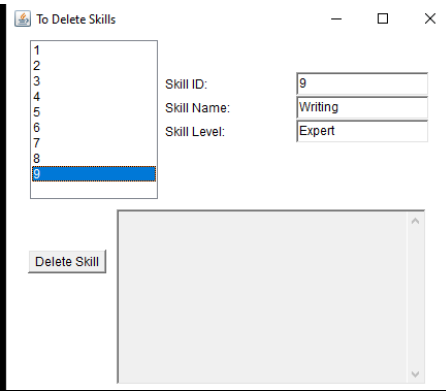
1) Deleting from User's table:

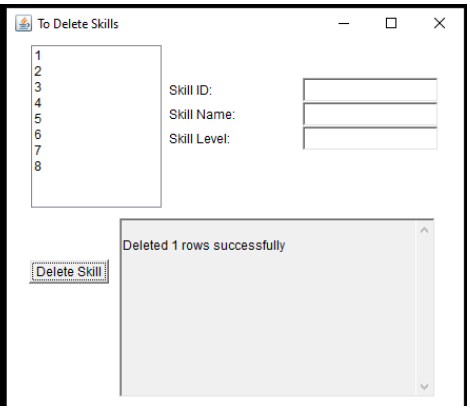
```
SQL> select * from enduser;

      EUID EUNAME               EUEMAIL_ID
---------- -------------------- --------------------
       101 Riya                 riya1@gmail.com
       102 Sameera              sameera2@gmail.com
       103 Mihir                mihir1345@gmail.com
       104 Lake                 lakeadams6@gmail.com
       105 Molly Williams       molly789@gmail.com
       106 Liza                 lizajames@gmail.com

6 rows selected.

SQL> select * from enduser;

      EUID EUNAME               EUEMAIL_ID
---------- -------------------- --------------------
       101 Riya                 riya1@gmail.com
       102 Sameera              sameera2@gmail.com
       103 Mihir                mihir1345@gmail.com
       104 Lake                 lakeadams6@gmail.com
       105 Molly Williams       molly789@gmail.com
```



2) Deleting from Skills table:

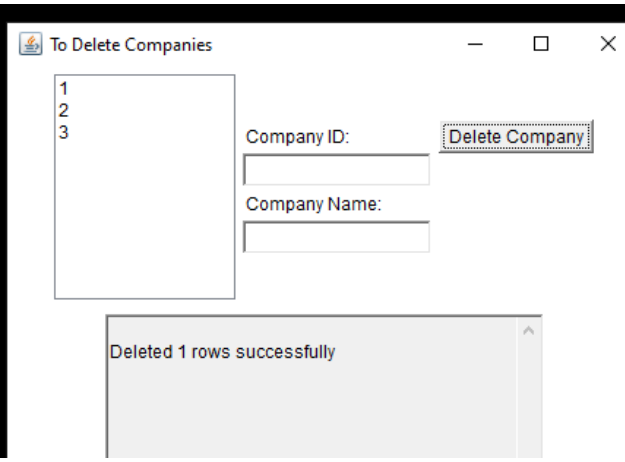
```
SQL> select * from skill;

      SKID SKNAME               SKLEVEL
---------- -------------------- --------------------
         1 Programming          Beginner
         2 Aptitude             Beginner
         3 Programming          Intermediate
         4 Communication        Expert
         5 Programming          Intermediate
         6 Aptitude             Beginner
         7 Writing              Intermediate
         8 Programming          beginner
         9 Writing              Expert

9 rows selected.

SQL> select * from skill;

      SKID SKNAME               SKLEVEL
---------- -------------------- --------------------
         1 Programming          Beginner
         2 Aptitude             Beginner
         3 Programming          Intermediate
         4 Communication        Expert
         5 Programming          Intermediate
         6 Aptitude             Beginner
         7 Writing              Intermediate
         8 Programming          beginner

8 rows selected.
```





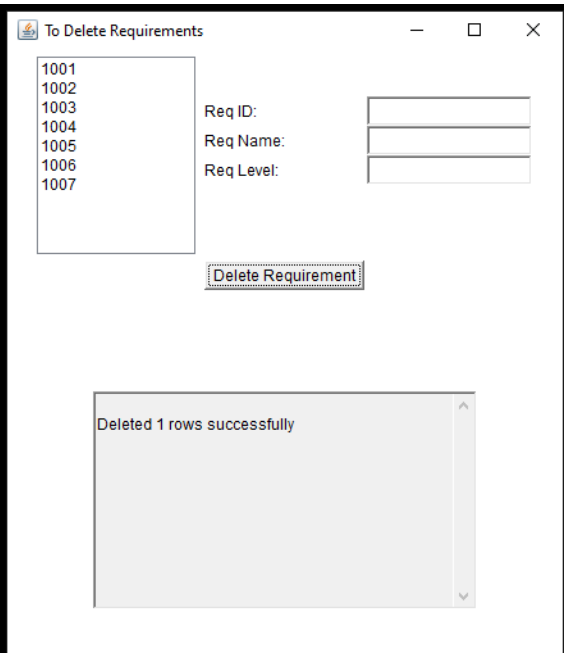
3) Deleting from Companies table

```
SQL> select * from companies;

       CID CNAME
---------- --------------------
         4 Cap Gemini
         1 Oracle
         2 Microsoft
         3 Google

SQL> select * from companies;

       CID CNAME
---------- --------------------
         1 Oracle
         2 Microsoft
         3 Google
```



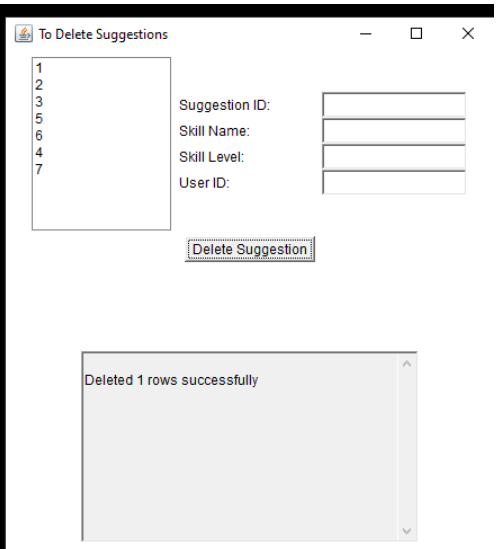
4) Deleting from Requirements table

```
SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert
      1008 Communication        Expert

8 rows selected.

SQL> select * from requirement;

       RID RNAME                RLEVEL
---------- -------------------- --------------------
      1001 Programming          Expert
      1002 Aptitude             Expert
      1003 Programming          Expert
      1004 Communication        Expert
      1005 Programming          Expert
      1006 Aptitude             Expert
      1007 Writing              Expert

7 rows selected.
```



5) Deleting from Suggestions table

```
SQL> select * from suggestion;

SGSKILL              SGLEVEL                   MID       U_ID
-------------------- -------------------- ---------- ----------
Programming          Expert                      1        101
Aptitude             Expert                      2        101
Programming          Expert                      3        102
Programming          Expert                      5        103
Aptitude             Expert                      6        103
Communication        Expert                      4        102
Writing              Expert                      7        103
Communication        Expert                      8        104

8 rows selected.

SQL> select * from suggestion;

SGSKILL              SGLEVEL                   MID       U_ID
-------------------- -------------------- ---------- ----------
Programming          Expert                      1        101
Aptitude             Expert                      2        101
Programming          Expert                      3        102
Programming          Expert                      5        103
Aptitude             Expert                      6        103
Communication        Expert                      4        102
Writing              Expert                      7        103

7 rows selected.
```



6) Deleting from User's Skill table

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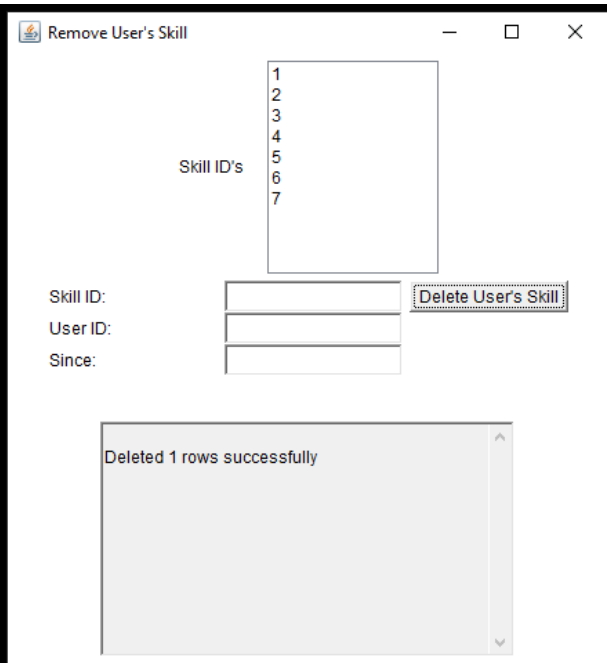
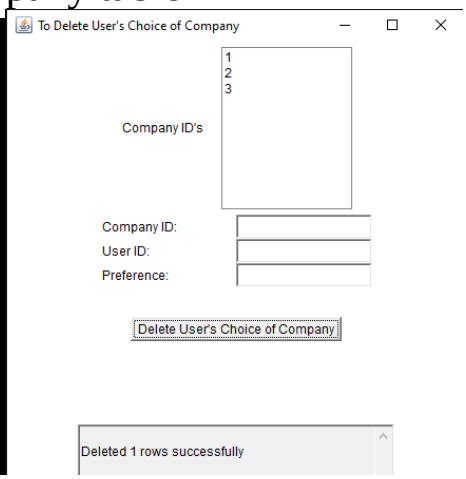
```
SQL> select * from user_skill;

      EUID       SKID SINCE
---------- ---------- --------------------
       101          1 Enginnering
       101          2 12th grade
       102          3 Engineering
       102          4 School
       103          5 Engineering
       103          6 12th grade
       104          7 School
       104          8 Engineering

8 rows selected.

SQL> select * from user_skill;

      EUID       SKID SINCE
---------- ---------- --------------------
       101          1 Enginnering
       101          2 12th grade
       102          3 Engineering
       102          4 School
       103          5 Engineering
       103          6 12th grade
       104          7 School

7 rows selected.
```



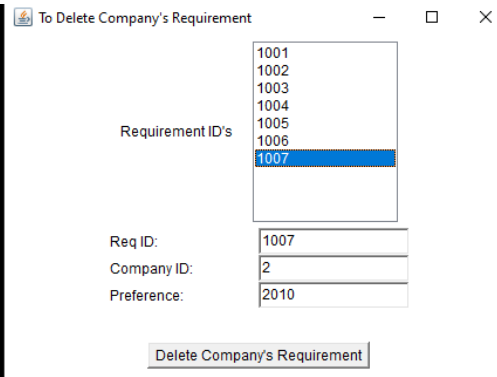
7) Deleting from User's company table

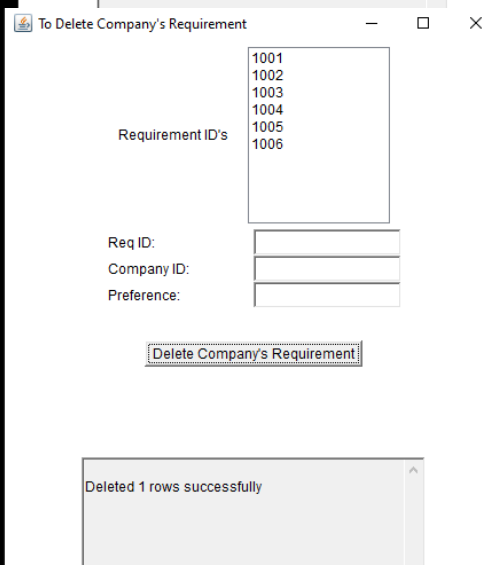
```
SQL> select * from user_company;

       CID    USER_ID PREFERENCE
---------- ---------- --------------------
         1        101 High
         2        102 High
         3        103 Medium
         4        104 High

SQL> select * from user_company;

       CID    USER_ID PREFERENCE
---------- ---------- --------------------
         1        101 High
         2        102 High
         3        103 Medium
```



8) Deleting from Company's Requirements table

```
         5 Programming          Intermediate
         6 Aptitude             Beginner
         7 Writing              Intermediate
         8 Programming          beginner

8 rows selected.

SQL> select * from cmp_req;

    CMP_ID     REQ_ID      SINCE
---------- ---------- ----------
         1       1001       2008
         1       1002       2005
         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001
         2       1007       2010

7 rows selected.

         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001
         2       1007       2010

7 rows selected.

SQL> select * from cmp_req;

    CMP_ID     REQ_ID      SINCE
---------- ---------- ----------
         1       1001       2008
         1       1002       2005
         2       1003       2007
         2       1004       2007
         3       1005       2001
         3       1006       2001

6 rows selected.
```





9) Deleting from Required Suggestions table

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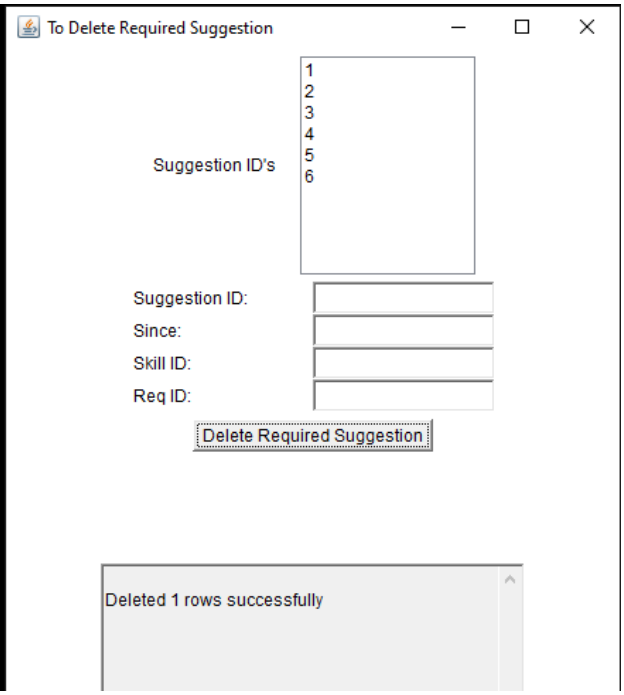
```
SQL> select * from req_sugg;

   SUGG_ID SINCE       SKILL_ID    REQS_ID
---------- --------- ---------- ----------
         1 13-FEB-20          1       1001
         2 13-FEB-20          2       1002
         3 13-FEB-20          3       1003
         4 14-FEB-20          4       1004
         5 13-FEB-20          5       1005
         6 13-FEB-20          6       1006
         7 18-FEB-20          7       1007

7 rows selected.

SQL> select * from req_sugg;

   SUGG_ID SINCE       SKILL_ID    REQS_ID
---------- --------- ---------- ----------
         1 13-FEB-20          1       1001
         2 13-FEB-20          2       1002
         3 13-FEB-20          3       1003
         4 14-FEB-20          4       1004
         5 13-FEB-20          5       1005
         6 13-FEB-20          6       1006

6 rows selected.
```



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DISCUSSION AND FUTURE WORK

This project can be further developed into a software or an app depending on the clients need. In the cut-throat environment of today's day and age, a suggestion bot that gives you tips on area and /or skills that an individual may need to improve always comes in handy.

We can also further develop the project by introducing other modules such as platforms that teach the required skills, providing video lectures of certain concepts and also a module that provides assistance in campus recruitment training and other such areas.

REFERENCES

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- Raghu Ramakrishnan *Database Management System*, Third Edition.
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