

UCS6611 - MOBILE APPLICATION DEVELOPMENT LABORATORY

Ex. No. 4 Develop an application that makes use of databases

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Question:

Develop an application that makes use of databases

Code:

Dbhelper.java:

```
package com.example.database;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.widget.Toast;

public class DBHelper extends SQLiteOpenHelper {

    private static final String DB_NAME = "employee_db";

    private static final int DB_VERSION = 1;

    private static final String TABLE_NAME = "employee";

    private static final String EMP_CODE = "code";

    private static final String EMP_NAME = "name";

    private static final String GENDER = "gender";

    private static final String DEPARTMENT = "department";

    private static final String SALARY = "salary";

    public DBHelper(Context context) {
        super(context, DB_NAME, null, DB_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        // on below line we are creating
```

```

        // an sqlite query and we are
        // setting our column names
        // along with their data types.
        String query = "CREATE TABLE IF NOT EXISTS " + TABLE_NAME + " ("
            + EMP_CODE + " TEXT PRIMARY KEY, "
            + EMP_NAME + " TEXT,"
            + GENDER + " TEXT,"
            + DEPARTMENT + " TEXT,"
            + SALARY + " TEXT)";

        // at last we are calling a exec sql
        // method to execute above sql query
        db.execSQL(query);
    }

    public void insertEmployee(String code, String name, String gender, String
dept, String salary) {

        SQLiteDatabase db = this.getWritableDatabase();

        ContentValues values = new ContentValues();

        values.put(EMP_CODE, code);
        values.put(EMP_NAME, name);
        values.put(GENDER, gender);
        values.put(DEPARTMENT, dept);
        values.put(SALARY, salary);

        db.insertOrThrow(TABLE_NAME, null, values);

        //      db.close();
    }

    public void updateEmployee(String code, String name, String gender, String
dept, String salary){
        SQLiteDatabase db = this.getWritableDatabase();

        ContentValues values = new ContentValues();

        values.put(EMP_NAME, name);
        values.put(GENDER, gender);
        values.put(DEPARTMENT, dept);
        values.put(SALARY, salary);

        db.update(TABLE_NAME, values, "code = ?", new String[]{code});

        //      db.close();
    }

```

```

        public void deleteEmployee(String code){
            SQLiteDatabase db = this.getWritableDatabase();

            db.delete(TABLE_NAME, "code = ?", new String[]{code});

            //        db.close();
        }

        public String[] retrieveEmployee(String code){
            SQLiteDatabase db = this.getReadableDatabase();
            String[] vals = new String[4];
            //        Cursor cursor = db.query( TABLE_NAME , new String [] { EMP_NAME ,
            GENDER , DEPARTMENT , SALARY } , "code = ?" , new String [] {code} ,
            //        null , null , null );
            Cursor cursor = db.rawQuery("SELECT * FROM "+TABLE_NAME+" WHERE code =
            '"+code+"'",null);

            if(cursor.moveToNext()){
            //        Toast.makeText(DBHelper.class, cursor.toString(),
            Toast.LENGTH_LONG).show();
                vals[0] = cursor.getString(1);
                vals[1] = cursor.getString(2);
                vals[2] = cursor.getString(3);
                vals[3] = cursor.getString(4);
                return vals;
            }
            else{
                return null;
            }

            //        db.close();
        }

        @Override
        public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
            // this method is called to check if the table exists already.
            db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
            onCreate(db);
        }
    }
}

```

mainactivity.java:

```

package com.example.database;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

```

```

import android.content.DialogInterface;
import android.content.Intent;
import android.os.Bundle;

import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    private DBHelper dbHelper;
    private Button btn_create, btn_insert, btn_update, btn_delete,
    btn_retrieve;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        btn_create = findViewById(R.id.btn_create);
        btn_insert = findViewById(R.id.btn_insert);
        btn_update = findViewById(R.id.btn_update);
        btn_delete = findViewById(R.id.btn_delete);
        btn_retrieve = findViewById(R.id.btn_retrieve);

        btn_create.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                dbHelper = new DBHelper(MainActivity.this);

                AlertDialog.Builder builder1 = new
AlertDialog.Builder(MainActivity.this);
                builder1.setMessage("Table has been created");
                builder1.setCancelable(true);

                builder1.setPositiveButton(
                    "OK",
                    new DialogInterface.OnClickListener() {
                        public void onClick(DialogInterface dialog, int
id) {
                            dialog.cancel();
                        }
                    });
                AlertDialog alert11 = builder1.create();
                alert11.show();
            }
        });

        btn_insert.setOnClickListener(new View.OnClickListener() {

```

```

        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,
InsertActivity.class);
            startActivity(intent);
        }
    });

    btn_update.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,
UpdateActivity.class);
            startActivity(intent);
        }
    });

    btn_delete.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,
DeleteActivity.class);
            startActivity(intent);
        }
    });

    btn_retrieve.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,
RetrieveActivity.class);
            startActivity(intent);
        }
    });
}
}

```

insertactivity.java:

```

package com.example.database;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.content.Intent;
import android.database.sqlite.SQLiteException;
import android.os.Bundle;

```

```

import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.Spinner;
import android.widget.Toast;

public class InsertActivity extends AppCompatActivity {

    EditText code, name, salary;
    RadioButton male, female, other;
    Spinner spin;
    Button insert;
    private DBHelper dbHelper;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_insert);

        Intent intent = getIntent();

        code = findViewById(R.id.empcode_upd);
        name = findViewById(R.id.empname_upd);
        salary = findViewById(R.id.empsalary_upd);
        male = findViewById(R.id.radioButtonMale);
        female = findViewById(R.id.radioButtonFemale);
        other = findViewById(R.id.radioButtonOther);
        spin = findViewById(R.id.spinner);
        insert = findViewById(R.id.button_search);

        male.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                female.setChecked(false);
                other.setChecked(false);
            }
        });
        female.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                male.setChecked(false);
                other.setChecked(false);
            }
        });
        other.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

```

```

        male.setChecked(false);
        female.setChecked(false);
    }
});

insert.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String empcode = code.getText().toString();
        String empname = name.getText().toString();
        String gender;
        if (male.isChecked()) {
            gender = male.getText().toString();
        } else if (female.isChecked()) {
            gender = female.getText().toString();
        } else {
            gender = other.getText().toString();
        }
        String dept = spin.getSelectedItem().toString();
        String sal = salary.getText().toString();

        if (empname.length() == 0) {
            name.requestFocus();
            name.setError("Cant be empty");
        } else if (!empname.matches("[a-zA-Z ]+")) {
            name.requestFocus();
            name.setError("Only alphabets");
        } else if (empcode.length() == 0) {
            code.requestFocus();
            code.setError("Cant be empty");
        } else if (!empcode.matches("[a-zA-Z0-9 ]+")) {
            code.requestFocus();
            code.setError("Only alphanumeric");
        } else if (sal.length() == 0) {
            code.requestFocus();
            code.setError("Cant be empty");
        } else if (!sal.matches("[0-9. ]+")) {
            code.requestFocus();
            code.setError("Only alphanumeric");
        } else {
            DBHelper = new DBHelper(InsertActivity.this);
            try {
                DBHelper.insertEmployee(empcode, empname, gender,
dept, sal);

                AlertDialog.Builder builder1 = new
AlertDialog.Builder(InsertActivity.this);
                builder1.setMessage("Record inserted");

```

```

        builder1.setCancelable(true);

        builder1.setPositiveButton(
            "OK",
            new DialogInterface.OnClickListener() {
                public void onClick(DialogInterface
dialog, int id) {
                    dialog.cancel();
                }
            });
        AlertDialog alert11 = builder1.create();
        alert11.show();

        code.setText("");
        name.setText("");
        male.setChecked(false);female.setChecked(false);other.
setChecked(false);

        spin.setSelection(0);
        salary.setText("");
    }
    catch(SQLiteException e){
        Toast.makeText(InsertActivity.this,e.toString(),
Toast.LENGTH_LONG).show();
    }
    }
    });
}
}

```

deleteactivity.java:

```

package com.example.database;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.content.Intent;
import android.database.sqlite.SQLiteException;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class DeleteActivity extends AppCompatActivity {

```



```

EditText code;
Button delete;
private DBHelper dbHelper;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_delete);

    Intent intent = getIntent();

    code = findViewById(R.id.empcode_upd);
    delete = findViewById(R.id.button_search);

    delete.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String empcode = code.getText().toString();

            if (empcode.length() == 0) {
                code.requestFocus();
                code.setError("Cant be empty");
            } else if (!empcode.matches("[a-zA-Z0-9 ]+")) {
                code.requestFocus();
                code.setError("Only alphanumeric");
            }

            dbHelper = new DBHelper(DeleteActivity.this);
            try{
                dbHelper.deleteEmployee(empcode);

                AlertDialog.Builder builder1 = new
AlertDialog.Builder(DeleteActivity.this);
                builder1.setMessage("Record deleted");
                builder1.setCancelable(true);

                builder1.setPositiveButton(
                    "OK",
                    new DialogInterface.OnClickListener() {
                        public void onClick(DialogInterface dialog,
int id) {

                            dialog.cancel();
                        }
                    });
                AlertDialog alert11 = builder1.create();
                alert11.show();
                code.setText("");

```

```

    }
    catch(SQLiteException e){
        Toast.makeText(DeleteActivity.this,e.toString(),
Toast.LENGTH_LONG).show();
    }
}
});
}
}

```

updateactivity.java:

```

package com.example.database;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.content.Intent;
import android.database.sqlite.SQLiteException;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.Spinner;
import android.widget.Toast;

public class UpdateActivity extends AppCompatActivity {

    EditText code, name, salary;
    RadioButton male, female, other;
    Spinner spin;
    Button insert;
    private DBHelper dbHelper;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_update);

        Intent intent = getIntent();

        code = findViewById(R.id.empcode_upd);
        name = findViewById(R.id.empname_upd);
        salary = findViewById(R.id.empsalary_upd);
        male = findViewById(R.id.radioButtonMale);
        female = findViewById(R.id.radioButtonFemale);
        other = findViewById(R.id.radioButtonOther);
    }
}

```

```

spin = findViewById(R.id.spinner);
insert = findViewById(R.id.button_search);

male.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        female.setChecked(false);
        other.setChecked(false);
    }
});
female.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        male.setChecked(false);
        other.setChecked(false);
    }
});
other.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        male.setChecked(false);
        female.setChecked(false);
    }
});

insert.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String empcode = code.getText().toString();
        String empname = name.getText().toString();
        String gender;
        if (male.isChecked()) {
            gender = male.getText().toString();
        } else if (female.isChecked()) {
            gender = female.getText().toString();
        } else {
            gender = other.getText().toString();
        }
        String dept = spin.getSelectedItem().toString();
        String sal = salary.getText().toString();

        if (empname.length() == 0) {
            name.requestFocus();
            name.setError("Cant be empty");
        } else if (!empname.matches("[a-zA-Z ]+")) {
            name.requestFocus();
            name.setError("Only alphanumeric");
        } else if (empcode.length() == 0) {

```

```

        code.requestFocus();
        code.setError("Cant be empty");
    } else if (!empcode.matches("[a-zA-Z0-9 ]+")) {
        code.requestFocus();
        code.setError("Only alphanumeric");
    } else if (sal.length() == 0) {
        code.requestFocus();
        code.setError("Cant be empty");
    } else if (!sal.matches("[0-9. ]+")) {
        code.requestFocus();
        code.setError("Only alphanumeric");
    } else {
        try{
            dbHelper = new DBHelper(UpdateActivity.this);
            dbHelper.updateEmployee(empcode, empname, gender,
dept, sal);

            AlertDialog.Builder builder1 = new
AlertDialog.Builder(UpdateActivity.this);
            builder1.setMessage("Record updated");
            builder1.setCancelable(true);

            builder1.setPositiveButton(
                "OK",
                new DialogInterface.OnClickListener() {
                    public void onClick(DialogInterface
dialog, int id) {

                        dialog.cancel();
                    }
                });
            AlertDialog alert11 = builder1.create();
            alert11.show();

            code.setText("");
            name.setText("");
            male.setChecked(false);female.setChecked(false);other.
setChecked(false);

            spin.setSelection(0);
            salary.setText("");
        }
        catch (SQLException e){
            Toast.makeText(UpdateActivity.this,e.toString(),
Toast.LENGTH_LONG).show();
        }
    }
}
});

```

```
}  
}
```

retreiveactivity.java:

```
package com.example.database;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteException;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class RetrieveActivity extends AppCompatActivity {  
  
    EditText code;  
    TextView name, gender, dept, salary;  
    Button search;  
    private DBHelper dbHelper;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_retrieve);  
  
        Intent intent = getIntent();  
  
        code = findViewById(R.id.empcode_upd);  
        search = findViewById(R.id.button_search);  
  
        name = findViewById(R.id.empname_display);  
        gender = findViewById(R.id.gender_display);  
        dept = findViewById(R.id.dept_display);  
        salary = findViewById(R.id.salary_display);  
  
        search.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View v) {  
                String empcode = code.getText().toString();  
  
                if (empcode.length() == 0) {  
                    code.requestFocus();  
                    code.setError("Cant be empty");  
                } else if (!empcode.matches("[a-zA-Z0-9 ]+")) {
```

```

        code.requestFocus();
        code.setError("Only alphanumeric");
    }

    dbHelper = new DBHelper(RetrieveActivity.this);

    String[] vals = dbHelper.retrieveEmployee(empcode);
    //      Cursor c = dbHelper.retrieveEmployee(empcode);
    //      if(c.moveToNext()){
    //          name.setText(c.getString(0));
    //      }
    if(vals == null) {
        Toast.makeText(RetrieveActivity.this, "Nothing found",
Toast.LENGTH_LONG).show();
        return;
    }
    else {
        String empname = vals[0];
        String sex = vals[1];
        String department = vals[2];
        String sal = vals[3];

        name.setText(empname);
        gender.setText(sex);
        dept.setText(department);
        salary.setText(sal);

        code.setText("");
    }
    }
    });
}
}

```

activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btn_insert"
        android:layout_width="137dp"

```

```
    android:layout_height="50dp"
    android:layout_marginStart="44dp"
    android:layout_marginLeft="44dp"
    android:layout_marginTop="212dp"
    android:text="INSERT"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
```

<Button

```
    android:id="@+id/btn_update"
    android:layout_width="137dp"
    android:layout_height="50dp"
    android:layout_marginStart="204dp"
    android:layout_marginLeft="204dp"
    android:layout_marginTop="212dp"
    android:text="UPDATE"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
```

<Button

```
    android:id="@+id/btn_delete"
    android:layout_width="137dp"
    android:layout_height="50dp"
    android:layout_marginStart="44dp"
    android:layout_marginLeft="44dp"
    android:layout_marginTop="308dp"
    android:text="DELETE"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
```

<Button

```
    android:id="@+id/btn_retrieve"
    android:layout_width="137dp"
    android:layout_height="50dp"
    android:layout_marginStart="204dp"
    android:layout_marginLeft="204dp"
    android:layout_marginTop="308dp"
    android:text="RETRIEVE"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
```

<TextView

```
    android:id="@+id/textView"
    android:layout_width="221dp"
    android:layout_height="45dp"
    android:text="Employee Database"
    android:textAppearance="@style/TextAppearance.AppCompat.Large"
    android:textSize="24sp"
```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.449"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.084" />

```

<Button

```

    android:id="@+id/btn_create"
    android:layout_width="137dp"
    android:layout_height="50dp"
    android:layout_marginStart="124dp"
    android:layout_marginLeft="124dp"
    android:layout_marginTop="104dp"
    android:text="CREATE"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />

```

</androidx.constraintlayout.widget.ConstraintLayout>

Activity_insert.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:context=".MainActivity">

    <RadioButton
        android:id="@+id/radioButtonOther"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="4dp"
        android:layout_marginLeft="4dp"
        android:layout_marginTop="216dp"
        android:text="Other"
        app:layout_constraintStart_toEndOf="@+id/radioButtonFemale"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView10"
        android:layout_width="87dp"
        android:layout_height="45dp"
        android:layout_marginStart="40dp"
        android:layout_marginLeft="40dp"

```



```
    android:layout_marginTop="360dp"
    android:text="Salary"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView7"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="40dp"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="288dp"
    android:text="Department"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView6"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="40dp"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="220dp"
    android:text="Gender"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView3"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="36dp"
    android:layout_marginLeft="36dp"
    android:layout_marginTop="144dp"
    android:text="Employee Name"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<androidx.appcompat.widget.Toolbar

```
    android:id="@+id/toolbar"
    android:layout_width="match_parent"
    android:layout_height="?attr/actionBarSize"
    android:background="?attr/colorPrimary"
    app:layout_anchor="@+id/toolbar"
    app:layout_anchorGravity="center"
    tools:layout_editor_absoluteX="0dp"
    tools:layout_editor_absoluteY="0dp" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="36dp"
    android:layout_marginLeft="36dp"
    android:layout_marginTop="80dp"
    android:text="Employee Code"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<EditText
    android:id="@+id/empcode_upd"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="24dp"
    android:layout_marginLeft="24dp"
    android:layout_marginTop="25dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toEndOf="@+id/textView"
    app:layout_constraintTop_toBottomOf="@+id/toolbar" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="410dp"
    android:layout_height="54dp"
    android:fontFamily="sans-serif-condensed-medium"
    android:gravity="center"
    android:text="Insert Page"
    android:textAppearance="@style/TextAppearance.AppCompat.Body1"
    android:textSize="20sp"
    app:autoSizeTextType="uniform"
    tools:layout_editor_absoluteX="0dp"
    tools:layout_editor_absoluteY="1dp" />
```

```
<Spinner
    android:id="@+id/spinner"
    android:layout_width="208dp"
    android:layout_height="31dp"
    android:layout_marginStart="20dp"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="288dp"
    android:entries="@array/department"
    app:layout_constraintStart_toEndOf="@+id/textView7"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<EditText
```

```
android:id="@+id/empsalary_upd"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="20dp"
android:layout_marginLeft="20dp"
android:layout_marginTop="364dp"
android:ems="10"
android:inputType="time"
app:layout_constraintStart_toEndOf="@+id/textView10"
app:layout_constraintTop_toTopOf="parent" />
```

<Button

```
android:id="@+id/button_search"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="144dp"
android:layout_marginLeft="144dp"
android:layout_marginTop="464dp"
android:onClick="submitFields"
android:text="Insert"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

<EditText

```
android:id="@+id/empname_upd"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="24dp"
android:layout_marginLeft="24dp"
android:layout_marginTop="144dp"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintStart_toEndOf="@+id/textView3"
app:layout_constraintTop_toTopOf="parent" />
```

<RadioButton

```
android:id="@+id/radioButtonMale"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="20dp"
android:layout_marginLeft="20dp"
android:layout_marginTop="216dp"
android:text="Male"
app:layout_constraintStart_toEndOf="@+id/textView6"
app:layout_constraintTop_toTopOf="@+id/toolbar" />
```

<RadioButton

```
android:id="@+id/radioButtonFemale"
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="8dp"
        android:layout_marginLeft="8dp"
        android:layout_marginTop="216dp"
        android:text="Female"
        app:layout_constraintStart_toEndOf="@+id/radioButtonMale"
        app:layout_constraintTop_toTopOf="parent" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

Activity_delete.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:context=".MainActivity">

```

```

    <androidx.appcompat.widget.Toolbar
        android:id="@+id/toolbar"
        android:layout_width="match_parent"
        android:layout_height="?attr/actionBarSize"
        android:background="?attr/colorPrimary"
        app:layout_anchor="@+id/toolbar"
        app:layout_anchorGravity="center"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="0dp" />

```

```

    <TextView
        android:id="@+id/textView"
        android:layout_width="87dp"
        android:layout_height="45dp"
        android:layout_marginStart="36dp"
        android:layout_marginLeft="36dp"
        android:layout_marginTop="80dp"
        android:text="Employee Code"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

```

    <EditText
        android:id="@+id/empcode_upd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```

        android:layout_marginStart="24dp"
        android:layout_marginLeft="24dp"
        android:layout_marginTop="25dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintStart_toEndOf="@+id/textView"
        app:layout_constraintTop_toBottomOf="@+id/toolbar" />

```

```
<TextView
```

```

        android:id="@+id/textView4"
        android:layout_width="410dp"
        android:layout_height="54dp"
        android:fontFamily="sans-serif-condensed-medium"
        android:gravity="center"
        android:text="Delete Page"
        android:textAppearance="@style/TextAppearance.AppCompat.Body1"
        android:textSize="20sp"
        app:autoSizeTextType="uniform"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="1dp" />

```

```
<Button
```

```

        android:id="@+id/button_search"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="128dp"
        android:layout_marginLeft="128dp"
        android:layout_marginTop="184dp"
        android:text="Delete"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

Activity_update.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:context=".MainActivity">

    <RadioButton
        android:id="@+id/radioButtonOther"

```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="4dp"
    android:layout_marginLeft="4dp"
    android:layout_marginTop="216dp"
    android:text="Other"
    app:layout_constraintStart_toEndOf="@+id/radioButtonFemale"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView10"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="40dp"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="360dp"
    android:text="Salary"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView7"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="40dp"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="288dp"
    android:text="Department"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView6"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="40dp"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="220dp"
    android:text="Gender"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:id="@+id/textView3"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="36dp"
    android:layout_marginLeft="36dp"
```

```
    android:layout_marginTop="144dp"
    android:text="Employee Name"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<androidx.appcompat.widget.Toolbar
    android:id="@+id/toolbar"
    android:layout_width="match_parent"
    android:layout_height="?attr/actionBarSize"
    android:background="?attr/colorPrimary"
    app:layout_anchor="@+id/toolbar"
    app:layout_anchorGravity="center"
    tools:layout_editor_absoluteX="0dp"
    tools:layout_editor_absoluteY="0dp" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="36dp"
    android:layout_marginLeft="36dp"
    android:layout_marginTop="80dp"
    android:text="Employee Code"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<EditText
    android:id="@+id/empcode_upd"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="24dp"
    android:layout_marginLeft="24dp"
    android:layout_marginTop="25dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toEndOf="@+id/textView"
    app:layout_constraintTop_toBottomOf="@+id/toolbar" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="410dp"
    android:layout_height="54dp"
    android:fontFamily="sans-serif-condensed-medium"
    android:gravity="center"
    android:text="Update Page"
    android:textAppearance="@style/TextAppearance.AppCompat.Body1"
    android:textSize="20sp"
    app:autoSizeTextType="uniform"
```

```
tools:layout_editor_absoluteX="0dp"
tools:layout_editor_absoluteY="1dp" />
```

<Spinner

```
    android:id="@+id/spinner"
    android:layout_width="208dp"
    android:layout_height="31dp"
    android:layout_marginStart="20dp"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="288dp"
    android:entries="@array/department"
    app:layout_constraintStart_toEndOf="@+id/textView7"
    app:layout_constraintTop_toTopOf="parent" />
```

<EditText

```
    android:id="@+id/empsalary_upd"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="364dp"
    android:ems="10"
    android:inputType="time"
    app:layout_constraintStart_toEndOf="@+id/textView10"
    app:layout_constraintTop_toTopOf="parent" />
```

<Button

```
    android:id="@+id/button_search"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="144dp"
    android:layout_marginLeft="144dp"
    android:layout_marginTop="464dp"
    android:onClick="submitFields"
    android:text="Update"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<EditText

```
    android:id="@+id/empname_upd"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="24dp"
    android:layout_marginLeft="24dp"
    android:layout_marginTop="144dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintStart_toEndOf="@+id/textView3"
```



```

        app:layout_constraintTop_toTopOf="parent" />

<RadioButton
    android:id="@+id/radioButtonMale"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="216dp"
    android:text="Male"
    app:layout_constraintStart_toEndOf="@+id/textView6"
    app:layout_constraintTop_toTopOf="@+id/toolbar" />

<RadioButton
    android:id="@+id/radioButtonFemale"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="8dp"
    android:layout_marginLeft="8dp"
    android:layout_marginTop="216dp"
    android:text="Female"
    app:layout_constraintStart_toEndOf="@+id/radioButtonMale"
    app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Activity_retreive.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/salary_display"
        android:layout_width="193dp"
        android:layout_height="46dp"
        android:layout_marginStart="144dp"
        android:layout_marginLeft="144dp"
        android:layout_marginTop="520dp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

```
<TextView
    android:id="@+id/dept_display"
    android:layout_width="193dp"
    android:layout_height="46dp"
    android:layout_marginStart="144dp"
    android:layout_marginLeft="144dp"
    android:layout_marginTop="464dp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/gender_display"
    android:layout_width="193dp"
    android:layout_height="46dp"
    android:layout_marginStart="144dp"
    android:layout_marginLeft="144dp"
    android:layout_marginTop="400dp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/empname_display"
    android:layout_width="193dp"
    android:layout_height="46dp"
    android:layout_marginStart="152dp"
    android:layout_marginLeft="152dp"
    android:layout_marginTop="336dp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/textView10"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="44dp"
    android:layout_marginLeft="44dp"
    android:layout_marginTop="520dp"
    android:text="Salary"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/textView7"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="44dp"
    android:layout_marginLeft="44dp"
    android:layout_marginTop="464dp"
```

```
        android:text="Department"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/textView6"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="44dp"
    android:layout_marginLeft="44dp"
    android:layout_marginTop="404dp"
    android:text="Gender"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/textView3"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="44dp"
    android:layout_marginLeft="44dp"
    android:layout_marginTop="340dp"
    android:text="Employee Name"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<androidx.appcompat.widget.Toolbar
    android:id="@+id/toolbar"
    android:layout_width="match_parent"
    android:layout_height="?attr/actionBarSize"
    android:background="?attr/colorPrimary"
    app:layout_anchor="@+id/toolbar"
    app:layout_anchorGravity="center"
    tools:layout_editor_absoluteX="0dp"
    tools:layout_editor_absoluteY="0dp" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="87dp"
    android:layout_height="45dp"
    android:layout_marginStart="36dp"
    android:layout_marginLeft="36dp"
    android:layout_marginTop="80dp"
    android:text="Employee Code"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<EditText
```

```

        android:id="@+id/empcode_upd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="24dp"
        android:layout_marginLeft="24dp"
        android:layout_marginTop="25dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintStart_toEndOf="@+id/textView"
        app:layout_constraintTop_toBottomOf="@+id/toolbar" />

```

```
<TextView
```

```

        android:id="@+id/textView4"
        android:layout_width="410dp"
        android:layout_height="54dp"
        android:fontFamily="sans-serif-condensed-medium"
        android:gravity="center"
        android:text="Retrieve Page"
        android:textAppearance="@style/TextAppearance.AppCompat.Body1"
        android:textSize="20sp"
        app:autoSizeTextType="uniform"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="1dp" />

```

```
<Button
```

```

        android:id="@+id/button_search"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="128dp"
        android:layout_marginLeft="128dp"
        android:layout_marginTop="184dp"
        android:text="Search"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

Outputs:

◀ ● ◻



The screenshot shows the 'Employee Database' application. At the top, a purple header bar contains the title 'Database'. Below this, the main title 'Employee Database' is centered on a gray background. A purple button labeled 'CREATE' is positioned in the center. Below the button, a white dialog box with a purple border displays the message 'Table has been created' and an 'OK' button. At the bottom, two purple buttons labeled 'DELETE' and 'RETRIEVE' are shown side-by-side. The top status bar indicates the time as 10:13 and shows icons for settings, location, and battery.

10:16

←

Database

Retrieve Page

Employee Code

SEARCH

Employee Name

suresh

Gender

Male

Department

CHEM

Salary

40000

