

CODE:**MainActivity.java**

```
package com.example.databaseapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

import java.io.Serializable;

public class MainActivity extends AppCompatActivity {
    Button b1, b2, b3, b4, b5, b6;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1 = findViewById(R.id.button1);
        b2 = findViewById(R.id.button2);
        b3 = findViewById(R.id.button3);
        b4 = findViewById(R.id.button4);
        b5 = findViewById(R.id.button5);
        b6 = findViewById(R.id.button6);
        db = openOrCreateDatabase("db", MODE_PRIVATE, null);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                db.execSQL("DROP TABLE IF EXISTS EMPLOYEES;");
                db.execSQL("CREATE TABLE EMPLOYEES(NAME VARCHAR(20), GENDER VARCHAR(20), ID VARCHAR(20), DEPT VARCHAR(20), SALARY VARCHAR(20));");
                Toast.makeText(getApplicationContext(), "Created!",
                    Toast.LENGTH_SHORT).show();
            }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent myIntent = new Intent(getApplicationContext(),
                    InsertActivity.class);
                MainActivity.this.startActivity(myIntent);
            }
        });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent myIntent = new Intent(getApplicationContext(),
                    UpdateActivity.class);
                MainActivity.this.startActivity(myIntent);
            }
        });
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
```

```

        public void onClick(View v) {
            Intent myIntent = new Intent(getApplicationContext(),
DeleteActivity.class);
            MainActivity.this.startActivity(myIntent);
        }
    });
    b5.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent myIntent = new Intent(getApplicationContext(),
RetrieveActivity.class);
            MainActivity.this.startActivity(myIntent);
        }
    });
    b6.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent myIntent = new Intent(getApplicationContext(),
RetrieveDeptActivity.class);
            MainActivity.this.startActivity(myIntent);
        }
    });
}
}

```

DeleteActivity.java

```

package com.example.databaseapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class DeleteActivity extends AppCompatActivity {
    Button d;
    EditText e;
    SQLiteDatabase db;
    Cursor c;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_delete);
        db = openOrCreateDatabase("db", MODE_PRIVATE, null);
        d = findViewById(R.id.buttond);
        e = findViewById(R.id.editTextd);
        d.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String id = e.getText().toString();
                c = db.rawQuery("SELECT * FROM EMPLOYEES WHERE ID = ?",
new String[]{id});
                if (!c.moveToNext())

```

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        Toast.makeText(getApplicationContext(), "Doesn't
exist!", Toast.LENGTH_SHORT).show();
    } else {
        db.execSQL("DELETE FROM EMPLOYEES WHERE ID = ?;", new
String[]{id});
        Toast.makeText(getApplicationContext(), "Deleted " +
id, Toast.LENGTH_SHORT).show();
    }
}
});
}
}
}

```

InsertActivity.java

```

package com.example.databaseapplication;

import androidx.appcompat.app.AppCompatActivity;

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

public class InsertActivity extends AppCompatActivity {
    Button insert;
    EditText id, name, salary;
    RadioGroup gender;
    RadioButton sel;
    Spinner dept;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_insert);
        db = openOrCreateDatabase("db", MODE_PRIVATE, null);
        insert = findViewById(R.id.insert);
        id = findViewById(R.id.id);
        name = findViewById(R.id.name);
        salary = findViewById(R.id.salary);
        gender = findViewById(R.id.rg);
        dept = findViewById(R.id.spinner);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String msg = "";
                if(!id.getText().toString().matches("[A-Za-z0-9]+")) msg +=
"ID error! ";
                if(!name.getText().toString().matches("[A-Za-z]+")) msg +=
"Name error! ";
                if(!salary.getText().toString().matches("[0-9]+")) msg +=
"Salary error! ";
                if(gender.getCheckedRadioButtonId() == -1) msg += "Select
gender! ";
            }
        });
    }
}

```

```

        else sel = findViewById(gender.getCheckedRadioButtonId());
        if(msg.equals("")) {
            msg = "Inserted!";
            db.execSQL("INSERT INTO EMPLOYEES VALUES(?, ?, ?, ?,
?);", new String[]{name.getText().toString(), sel.getText().toString(),
id.getText().toString(), dept.getSelectedItem().toString(),
salary.getText().toString()});
        }
        Toast.makeText(getApplicationContext(), msg,
Toast.LENGTH_SHORT).show();
    }
    });
}
}

```

RetriveActivity.java

```

package com.example.databaseapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

import java.sql.ResultSet;
import java.sql.SQLException;

public class RetrieveActivity extends AppCompatActivity {
    Button b;
    EditText e;
    TextView t;
    String id;
    SQLiteDatabase db;
    Cursor rs;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_retrieve);
        db = openOrCreateDatabase("db", MODE_PRIVATE, null);
        b = findViewById(R.id.buttonr);
        e = findViewById(R.id.editText);
        t = findViewById(R.id.resultr);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                id = e.getText().toString();
                rs = db.rawQuery("SELECT * FROM EMPLOYEES WHERE ID = ?;",
new String[]{id});
                rs.moveToFirst();
                try {
                    t.setText(rs.getString(0) + " " + rs.getString(1) + " "
+ rs.getString(2) + " " + rs.getString(3) + " " + rs.getString(4));
                } catch (Exception ex) {
                    t.setText("No such employee");
                    ex.printStackTrace();
                }
            }
        });
    }
}

```

```

        }
    }
});
}
}

```

RetriveDeptActivity

```

package com.example.databaseapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.TextView;

import java.sql.ResultSet;
import java.sql.SQLException;

public class RetrieveDeptActivity extends AppCompatActivity {
    Button b;
    Spinner d;
    TextView t;
    String dept, msg;
    SQLiteDatabase db;
    Cursor rs;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_retrievedept);
        db = openOrCreateDatabase("db", MODE_PRIVATE, null);
        b = findViewById(R.id.buttonrd);
        d = findViewById(R.id.depts spinner);
        t = findViewById(R.id.resultrd);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                dept = d.getSelectedItem().toString();
                rs = db.rawQuery("SELECT * FROM EMPLOYEES WHERE DEPT = ?",
new String[]{dept});
                msg = "";
                try {
                    while(rs.moveToNext()) {
                        msg += rs.getString(0) + " " + rs.getString(1) + "
" + rs.getString(2) + " " + rs.getString(3) + " " + rs.getString(4) + "\n";
                    }
                    t.setText(msg);
                    if(msg.equals("")) {
                        t.setText("No such employee");
                    }
                } catch (Exception ex) {
                    ex.printStackTrace();
                }
            }
        });
    }
}

```

```
}
```

UpdateActivity

```
package com.example.databaseapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.Toast;

public class UpdateActivity extends AppCompatActivity {
    Button insert;
    EditText id, name, salary;
    RadioGroup gender;
    RadioButton sel;
    Spinner dept;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_update);
        db = openOrCreateDatabase("db", MODE_PRIVATE, null);
        insert = findViewById(R.id.uinsert);
        id = findViewById(R.id.uid);
        name = findViewById(R.id.uname);
        salary = findViewById(R.id.usalary);
        gender = findViewById(R.id.urg);
        dept = findViewById(R.id.uspinner);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String msg = "";
                if(!name.getText().toString().matches("[A-Za-z]+")) msg +=
                "Name error! ";
                if(!salary.getText().toString().matches("[0-9]+")) msg +=
                "Salary error! ";
                if(gender.getCheckedRadioButtonId() == -1) msg += "Select
                gender! ";
                else sel = findViewById(gender.getCheckedRadioButtonId());
                Cursor c = db.rawQuery("SELECT * FROM EMPLOYEES WHERE ID =
                ?;", new String[]{id.getText().toString()});
                if(!id.getText().toString().matches("[A-Za-z0-9]+") ||
                !c.moveToNext()) {
                    msg = "ID error or doesn't exist!";
                }
                else if(msg.equals("")) {
                    msg = "Updated!";
                    db.execSQL("UPDATE EMPLOYEES SET NAME = ?, GENDER = ?,
                    DEPT = ?, SALARY = ? WHERE ID = ?;", new
                    String[]{name.getText().toString(), sel.getText().toString(),
```

```

dept.getSelectedItem().toString(), salary.getText().toString(),
id.getText().toString()});
    }
    Toast.makeText(getApplicationContext(), msg,
Toast.LENGTH_SHORT).show();
    }
    });
}
}

```

Activity_delete.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".DeleteActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:gravity="center|center_horizontal|center_vertical"
        android:text="Delete Employee Record"
        android:textColor="@android:color/black"
        android:textSize="30sp" />

    <EditText
        android:id="@+id/editTextd"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:ems="10"
        android:gravity="center|center_horizontal|center_vertical"
        android:hint="Employee ID"
        android:inputType="textPersonName" />

    <Button
        android:id="@+id/buttond"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:text="Delete" />

</LinearLayout>

```

Activity_insert.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".InsertActivity">

```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:layout_marginBottom="100px"
    android:gravity="center|center_horizontal|center_vertical"
    android:text="Insert Data"
    android:textColor="@android:color/black"
    android:textSize="30sp" />

<EditText
    android:id="@+id/id"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:gravity="center"
    android:hint="ID"
    android:inputType="textPersonName" />

<EditText
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:gravity="center"
    android:hint="Name"
    android:inputType="textPersonName" />

<EditText
    android:id="@+id/salary"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:gravity="center"
    android:hint="Salary"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50px"
    android:gravity="center"
    android:text="Gender" />

<RadioGroup
    android:id="@+id/rg"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center|center_horizontal"
    android:orientation="horizontal">

    <RadioButton
        android:id="@+id/male"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male" />

    <RadioButton
        android:id="@+id/female"
```



```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female" />

<RadioButton
    android:id="@+id/other"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Other" />

</RadioGroup>

<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50px"
    android:gravity="center"
    android:text="Department" />

<Spinner
    android:id="@+id/spinner"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="150dp"
    android:entries="@array/dept" />

<Button
    android:id="@+id/insert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Insert" />

</LinearLayout>

```

Activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    tools:context=".MainActivity" >

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:autoText="false"
        android:gravity="center"
        android:text="Database Application"
        android:textColor="@android:color/black"
        android:textSize="30sp" />

    <Button
        android:id="@+id/button1"

```

```

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:text="Create" />

<Button
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Insert" />

<Button
    android:id="@+id/button3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Update" />

<Button
    android:id="@+id/button4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Delete" />

<Button
    android:id="@+id/button5"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Retrieve by ID" />

<Button
    android:id="@+id/button6"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Retrieve by Dept" />
</LinearLayout>

```

Activity_retrieve.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".RetrieveActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:gravity="center|center_horizontal|center_vertical"
        android:text="Retrieve Employee Record"
        android:textColor="@android:color/black"
        android:textSize="30sp" />

```

```

<EditText
    android:id="@+id/editText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:ems="10"
    android:gravity="center|center_horizontal|center_vertical"
    android:hint="Employee ID"
    android:inputType="textPersonName" />

<Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:text="Retrieve" />

<TextView
    android:id="@+id/result"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="100px"
    android:gravity="center|center_horizontal|center_vertical"
    android:textColor="@android:color/black"
    android:textSize="18sp" />
</LinearLayout>

```

Update_activity.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".UpdateActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="100px"
        android:layout_marginBottom="100px"
        android:gravity="center|center_horizontal|center_vertical"
        android:text="Update Data"
        android:textColor="@android:color/black"
        android:textSize="30sp" />

    <EditText
        android:id="@+id/uid"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="center"
        android:hint="ID"
        android:inputType="textPersonName" />

    <EditText
        android:id="@+id/uname"

```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="center"
        android:hint="Name"
        android:inputType="textPersonName" />

<EditText
    android:id="@+id/usalary"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:gravity="center"
    android:hint="Salary"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50px"
    android:gravity="center"
    android:text="Gender" />

<RadioGroup
    android:id="@+id/urg"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center|center_horizontal"
    android:orientation="horizontal">

    <RadioButton
        android:id="@+id/umale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male" />

    <RadioButton
        android:id="@+id/ufemale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female" />

    <RadioButton
        android:id="@+id/uother"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Other" />

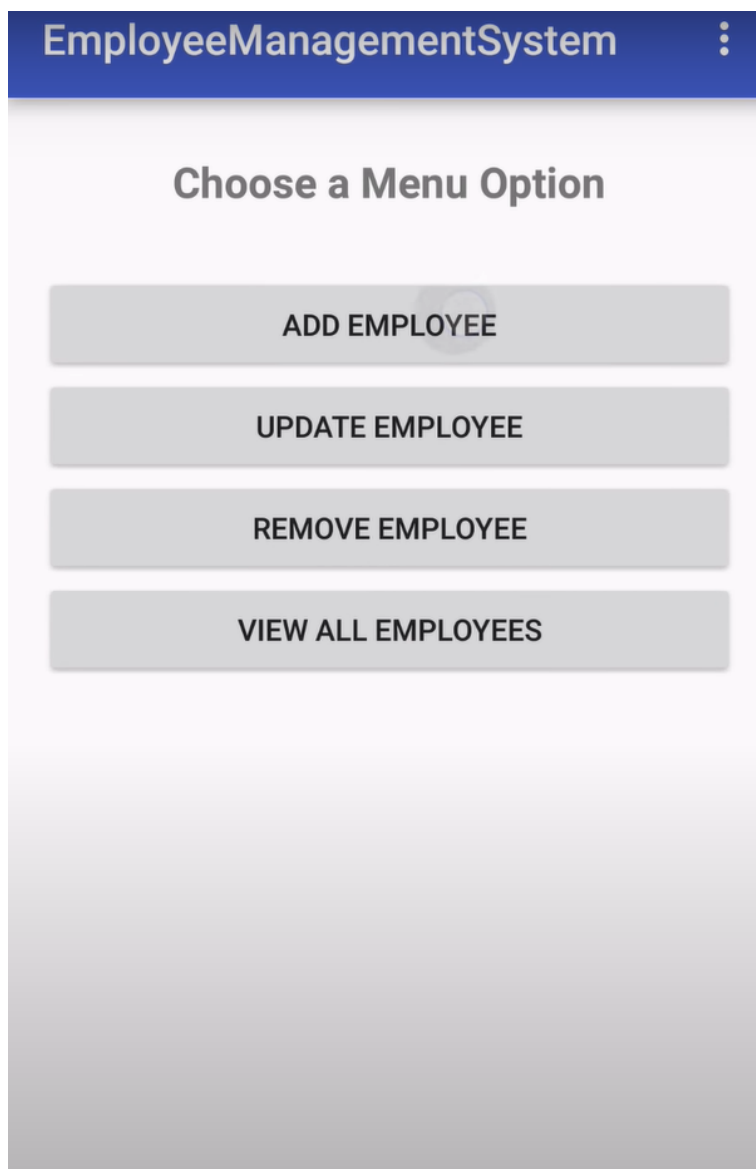
</RadioGroup>

<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50px"
    android:gravity="center"
    android:text="Department" />

<Spinner
    android:id="@+id/uspinner"
```

```
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_marginLeft="150dp"  
        android:entries="@array/dept" />  
  
        <Button  
            android:id="@+id/uinsert"  
            android:layout_width="match_parent"  
            android:layout_height="wrap_content"  
            android:layout_marginTop="100px"  
            android:text="Update" />  
  
</LinearLayout>
```

OUTPUT:




EmployeeManagementSystem

First Name

Last Name

Gender ☒ Male ☐ Female

Hire Date (DD/MM/YYYY) 

Department

the | | hi



...

1 2 3 4 5 6 7 8 9 0

q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m ✕

?123 ,  . 

Hire Date

2016

Wed, 16 Mar

2014

2015

2016

2017

2018

2019

2020

OK

