

MainActivity.java

```
package com.example.a1bm17cs054;

import androidx.appcompat.app.AppCompatActivity;

import android.location.LocationManager;
import android.os.Bundle;
import android.content.Context;
import android.content.Intent;
import android.location.Location;
import android.location.LocationListener;
import android.provider.Settings;
import android.view.View;
import android.app.AlertDialog.Builder;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements OnClickListener, LocationListener {
    EditText id, address;
    Button Insert, Delete, View, Sync;
    SQLiteDatabase db;

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        id = (EditText) findViewById(R.id.ide);
        address = (EditText) findViewById(R.id.adde);
        Insert = (Button) findViewById(R.id.ins);
        Delete = (Button) findViewById(R.id.del);
        View = (Button) findViewById(R.id.vie);
        Sync = (Button) findViewById(R.id.syn);
        Insert.setOnClickListener(this);
        Delete.setOnClickListener(this);
        View.setOnClickListener(this);
        Sync.setOnClickListener(this);

        db = openOrCreateDatabase("FacultyDB", Context.MODE_PRIVATE, null);
        db.execSQL("Create Table if not exists faculty54(id VARCHAR,address VARCHAR);");

    }

    @Override
    public void onLocationChanged(Location location) {
```

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String msg = "Lat: " + location.getLatitude() + "\nLong: " + location.getLongitude();
address.setText(msg);
Toast.makeText(getApplicationContext(), msg, Toast.LENGTH_LONG).show();
}
@Override
public void onStatusChanged(String provider, int status, Bundle extras) {

}

@Override
public void onProviderEnabled(String provider) {
    Toast.makeText(getApplicationContext(), "GPS is turned on!!!",
        Toast.LENGTH_SHORT).show();
}

@Override
public void onProviderDisabled(String provider) {
    Intent intent = new Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
    startActivity(intent);
    Toast.makeText(getApplicationContext(), "GPS is turned off!!!",
        Toast.LENGTH_SHORT).show();
}

public void onClick(View view) {
    if (view == Sync){
        LocationManager locationManager;
        locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);
        locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 2000, 1, this);
    }
    if (view == Insert) {
        if(id.getText().toString().trim().length()==0 || address.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter all values (To add address click on location)");
            return;
        }
        db.execSQL("INSERT INTO faculty54 VALUES('"+id.getText()+"','"+address.getText()+"');");
        showMessage("Success", "Record added");
        clearText();
    }
    if(view==Delete)
    {
        if(id.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter ID");
            return;
        }
        Cursor c=db.rawQuery("SELECT * FROM faculty54 WHERE id='"+id.getText()+"'", null);
        if(c.moveToFirst()) {
            db.execSQL("DELETE FROM faculty54 WHERE id='"+id.getText()+"'");
            showMessage("Success", "Record Deleted");
        }
        else {
            showMessage("Error", "Invalid ID");
        }
    }
}

```

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    }
    clearText();
}

if(view==View) {
    if(id.getText().toString().trim().length()==0 && address.getText().toString().trim().length()==0) {
        showMessage("Error", "Please enter ID or Address");
        return;
    }
    if(id.getText().toString().trim().length()!=0) {
        Cursor c = db.rawQuery("SELECT * FROM faculty54 WHERE id='" + id.getText() + "'", null);
        if (c.moveToFirst()) {
            showMessage("Details", "ID: " + c.getString(0) + "\nAddress: " + c.getString(1));
        } else {
            showMessage("Error", "Invalid ID");
            clearText();
        }
    }
    else if(address.getText().toString().trim().length()!=0) {
        Cursor c = db.rawQuery("SELECT * FROM faculty54 WHERE address='" + address.getText() + "'", null);
        if (c.moveToFirst()) {
            showMessage("Details", "ID: " + c.getString(0) + "\nAddress: " + c.getString(1));
        } else {
            showMessage("Error", "Invalid address");
            clearText();
        }
    }
}

}

}

public void showMessage(String title,String message)
{
    Builder builder=new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}

public void clearText()
{
    id.setText("");
    address.setText("");
    id.requestFocus();
}
}

```

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:id="@+id/constraintlayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/id"
        android:layout_width="66dp"
        android:layout_height="26dp"
        android:layout_marginStart="72dp"
        android:layout_marginTop="120dp"
        android:text="ID"
        android:textSize="24sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/ide"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="110dp"
        android:layout_marginEnd="48dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="60dp"
        android:layout_marginBottom="500dp"
        android:inputType="textMultiLine"
        android:text="Address"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <EditText
        android:id="@+id/adde"
        android:layout_width="208dp"
        android:layout_height="46dp"
        android:layout_marginEnd="44dp"
        android:layout_marginBottom="503dp"
        android:ellipsize="none"
```

```
android:ems="10"  
android:inputType="textPersonName"  
android:scrollHorizontally="false"  
app:layout_constraintBottom_toBottomOf="parent"  
app:layout_constraintEnd_toEndOf="parent" />
```

```
<Button  
    android:id="@+id/ins"  
    android:layout_width="304dp"  
    android:layout_height="61dp"  
    android:layout_marginStart="52dp"  
    android:layout_marginBottom="34dp"  
    android:text="Insert"  
    app:layout_constraintBottom_toTopOf="@+id/del"  
    app:layout_constraintStart_toStartOf="parent" />
```

```
<Button  
    android:id="@+id/del"  
    android:layout_width="299dp"  
    android:layout_height="64dp"  
    android:layout_marginStart="54dp"  
    android:layout_marginBottom="27dp"  
    android:text="Delete"  
    app:layout_constraintBottom_toTopOf="@+id/vie"  
    app:layout_constraintStart_toStartOf="parent" />
```

```
<Button  
    android:id="@+id/vie"  
    android:layout_width="296dp"  
    android:layout_height="64dp"  
    android:layout_marginStart="60dp"  
    android:layout_marginBottom="148dp"  
    android:text="view"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintStart_toStartOf="parent" />
```

```
<Button  
    android:id="@+id/syn"  
    android:layout_width="142dp"  
    android:layout_height="42dp"  
    android:layout_marginTop="20dp"  
    android:layout_marginEnd="72dp"  
    android:text="location"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintTop_toBottomOf="@+id/adde" />
```

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

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.a1bm17cs054">

    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```