public class **Student** {

private int mID;

private String mName;

private String mAddress;

private String mPhoneNumber;

private String mEmail;

public Student() { }

public Student(String mName, String mAddress, String mPhoneNumber, String mEmail) { }

public Student(int mID, String mName, String mAddress, String mPhoneNumber, String mEmail) { } }

**public class CustomAdapter** **extends** ArrayAdapter<Student> {  
 **private** Context **context**;  
 **private int resource**;  
 **private** List<Student> **liststudent**;  
 **public** CustomAdapter(@NonNull Context context, **int** resource, @NonNull List<Student> objects) {  
 **super**(context, resource, objects);  
 **this**.**context**=context;  
 **this**.**resource**=resource;  
 **this**.**liststudent**=objects;  
 }  
  
 @NonNull  
 @Override  
 **public** View getView(**int** position, @Nullable View convertView, @NonNull ViewGroup parent) {  
 ViewHolder viewHolder;  
 **if**(convertView==**null**)  
 {  
 convertView= LayoutInflater.*from*(**context**).inflate(R.layout.***item\_sv***,parent,**false**);  
 viewHolder=**new** ViewHolder();  
 viewHolder.**tvID**=convertView.findViewById(R.id.***tv\_id***);  
 viewHolder.**tvName**=convertView.findViewById(R.id.***tv\_name***);  
 viewHolder.**tvPhone**=convertView.findViewById(R.id.***tv\_phone***);  
 viewHolder.**tvAddress**=convertView.findViewById(R.id.***tv\_address***);  
 viewHolder.**tvEmail**=convertView.findViewById(R.id.***tv\_email***);  
 convertView.setTag(viewHolder);  
 }**else** viewHolder= (ViewHolder) convertView.getTag();  
  
 Student student=**liststudent**.get(position);  
 viewHolder.**tvID**.setText(String.*valueOf*(student.getmID()));  
 viewHolder.**tvName**.setText(student.getmName());  
 viewHolder.**tvEmail**.setText(student.getmEmail());  
 viewHolder.**tvPhone**.setText(student.getmPhoneNumber());  
 viewHolder.**tvAddress**.setText(student.getmAddress());  
 **return** convertView;  
 }  
 **public class** ViewHolder{  
 **private** TextView **tvID**;  
 **private** TextView **tvName**;  
 **private** TextView **tvEmail**;  
 **private** TextView **tvPhone**;  
 **private** TextView **tvAddress**;  
 }  
}

**public class DBManager** **extends** SQLiteOpenHelper {**private static final** String ***DATABASE\_NAME*** =**"student\_list"**;  
 **private static final** String ***TABLE\_NAME*** =**"student"**;  
 **private static final** String ***ID*** =**"id"**;  
 **private static final** String ***NAME*** =**"name"**;  
 **private static final** String ***EMAIL*** =**"email"**;  
 **private static final** String ***NUMBER*** =**"number"**;  
 **private static final** String ***ADDRESS*** =**"address"**;  
 **private static int** *VERSION*=1;**private** String **SQLQuery**=**"CREATE TABLE "**+***TABLE\_NAME***+**" ("**+  
 ***ID*** +**" integer primary key, "**+  
 ***NAME*** +**" TEXT, "**+  
 ***EMAIL*** + **" TEXT, "**+  
 ***NUMBER***+ **" TEXT, "**+  
 ***ADDRESS*** + **" TEXT)"**;  
  
 **public** DBManager(Context context) {  
 **super**(context, ***DATABASE\_NAME***, **null**,*VERSION*);  
}  
  
 @Override  
 **public void** onCreate(SQLiteDatabase db) {  
 db.execSQL(**SQLQuery**);  
 }  
  
 @Override  
 **public void** onUpgrade(SQLiteDatabase db, **int** i, **int** i1) {}

**public void** addStudent(Student student){  
 SQLiteDatabase db = **this**.getWritableDatabase();  
 ContentValues values = **new** ContentValues();  
 values.put(***ID***,student.getmID());*//nếu trùng mã nó sẽ ko thêm vào listview* values.put(***NAME***, student.getmName());  
 values.put(***NUMBER***, student.getmPhoneNumber());  
 values.put(***EMAIL***, student.getmEmail());  
 values.put(***ADDRESS***, student.getmAddress());  
 *//Neu de null thi khi value bang null thi loi* db.insert(***TABLE\_NAME***,**null**,values);  
 db.close();  
 }  
 **public** List<Student> getAllStudent(){  
 List<Student> listStudent = **new** ArrayList<Student>();  
 *// Select All Query* String selectQuery = **"SELECT \* FROM "** + ***TABLE\_NAME***;  
  
 SQLiteDatabase db = **this**.getWritableDatabase();  
 Cursor cursor = db.rawQuery(selectQuery, **null**);  
  
 **if** (cursor.moveToFirst()) {  
 **do** {  
 Student student = **new** Student();  
 student.setmID(cursor.getInt(0));  
 student.setmName(cursor.getString(1));  
 student.setmEmail(cursor.getString(2));  
 student.setmPhoneNumber(cursor.getString(3));  
 student.setmAddress(cursor.getString(4));  
 listStudent.add(student);  
 } **while** (cursor.moveToNext());  
 }  
 cursor.close();  
 db.close();  
 **return** listStudent;  
 }  
 **public int** updateStudent(Student student)  
 {  
 SQLiteDatabase db = **this**.getWritableDatabase();  
 ContentValues contentValues = **new** ContentValues();  
 contentValues.put(***NAME***, student.getmName());  
 contentValues.put(***NUMBER***, student.getmPhoneNumber());  
 contentValues.put(***ADDRESS***, student.getmAddress());  
 contentValues.put(***EMAIL***, student.getmEmail());  
  
 **return** db.update(***TABLE\_NAME***,contentValues,***ID*** +**"=?"**,**new** String[] { String.*valueOf*(student.getmID())});  
 }  
 **public int** deleteStudent(**int** id){  
 SQLiteDatabase db=**this**.getWritableDatabase();  
 **return** db.delete(***TABLE\_NAME***,***ID***+**"=?"**,**new** String[]{String.*valueOf*(id)});  
 }  
}

**public class MainActivity** **extends** AppCompatActivity {  
 **private** EditText **edtID**;  
 **private** EditText **edtName**;  
 **private** EditText **edtAddress**;  
 **private** EditText **edtPhoneNumber**;  
 **private** EditText **edtEmail**;  
 **private** Button **btnSave**;  
 **private** Button **btnUpdate**;  
 **private** Button **btnXoa**;  
 **private** ListView **lvStudent**;  
 **private** DBManager **dbManager**;  
 **private** CustomAdapter **customAdapter**;  
 **private** List<Student> **studentList**;  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 **dbManager**=**new** DBManager(**this**);  
 anhxa();  
 **studentList**=**dbManager**.getAllStudent();  
 setAdapter();  
 **btnSave**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 Student student=createStudent();  
 **if**(student!=**null**){  
 **dbManager**.addStudent(student);  
 }  
 **studentList**.clear();  
 **studentList**.addAll(**dbManager**.getAllStudent());  
 setAdapter();  
 **btnUpdate**.setEnabled(**false**);  
 *// Toast.makeText(MainActivity.this,"Add Success!!",Toast.LENGTH\_SHORT).show();* }  
 });  
 **lvStudent**.setOnItemClickListener(**new** AdapterView.OnItemClickListener() {  
 @Override  
 **public void** onItemClick(AdapterView<?> parent, View view, **final int** position, **long** id) {  
 Student student=**studentList**.get(position);  
 **edtID**.setText(String.*valueOf*(student.getmID()));  
 **edtName**.setText(student.getmName());  
 **edtEmail**.setText(student.getmEmail());  
 **edtPhoneNumber**.setText(student.getmPhoneNumber());  
 **edtAddress**.setText(student.getmAddress());  
 **btnUpdate**.setEnabled(**true**);  
 **btnXoa**.setEnabled(**true**);  
 **btnUpdate**.setClickable(**true**);  
 **edtID**.setEnabled(**false**);  
 **btnXoa**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **btnUpdate**.setEnabled(**false**);  
 **edtID**.setEnabled(**true**);  
 **btnXoa**.setEnabled(**false**);  
 Student student=**studentList**.get(position);  
 **int** result= **dbManager**.deleteStudent(student.getmID());  
 **if**(result>0)  
 {  
 Toast.*makeText*(MainActivity.**this**,**"Delete Success"**,Toast.***LENGTH\_SHORT***).show();  
 updateListStudent();  
 }**else** {  
 Toast.*makeText*(MainActivity.**this**,**"Delete Fail"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 }  
 });  
 }  
 });  
 **btnUpdate**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 Student student=**new** Student();  
 student.setmID(Integer.*parseInt*(String.*valueOf*(**edtID**.getText())));  
 student.setmName(**edtName**.getText()+**""**);  
 student.setmPhoneNumber(**edtPhoneNumber**.getText()+**""**);  
 student.setmAddress(**edtAddress**.getText()+**""**);  
 student.setmEmail(**edtEmail**.getText()+**""**);  
 **int** result= **dbManager**.updateStudent(student);  
 **if**(result>0){  
 **if**(**customAdapter**!=**null**)  
 {  
 **customAdapter**.notifyDataSetChanged();  
 }  
 **studentList**.clear();  
 **studentList**.addAll(**dbManager**.getAllStudent());  
 updateListStudent();  
 Toast.*makeText*(MainActivity.**this**,**"Update Success!!"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 **edtID**.setEnabled(**true**);  
 **btnXoa**.setEnabled(**false**);  
 **btnSave**.setEnabled(**true**);  
 **btnUpdate**.setEnabled(**false**);  
 }  
 });}  
 @Nullable  
 **private** Student createStudent(){  
 **int** id=Integer.*parseInt*(**edtID**.getText().toString());  
 String name=**edtName**.getText().toString();  
 String address=**edtAddress**.getText().toString();  
 String phoneNumber=**edtPhoneNumber**.getText().toString();  
 String email=**edtEmail**.getText().toString();  
 Student student=**new** Student(id,name,address,phoneNumber,email);  
 **return** student;  
 }  
 **private void** setAdapter(){  
 **if**(**customAdapter**==**null**){  
 CustomAdapter customAdapter= **new** CustomAdapter(MainActivity.**this**,R.layout.***item\_sv***, **studentList**);  
 **lvStudent**.setAdapter(customAdapter);  
 }**else** {  
 **customAdapter**.notifyDataSetChanged();  
 **lvStudent**.setSelection(**customAdapter**.getCount());  
 }  
  
 }  
 **public void** anhxa(){  
 **edtID**=findViewById(R.id.***edt\_id***);  
 **edtName**=findViewById(R.id.***edt\_name***);  
 **edtAddress**=findViewById(R.id.***edt\_address***);  
 **edtPhoneNumber**=findViewById(R.id.***edt\_number***);  
 **edtEmail**=findViewById(R.id.***edt\_email***);  
 **btnSave**=findViewById(R.id.***btn\_save***);  
 **btnUpdate**=findViewById(R.id.***btn\_update***);  
 **btnXoa**=findViewById(R.id.***btn\_xoa***);  
 **lvStudent**=findViewById(R.id.***lv\_student***);  
 }  
 **public void** updateListStudent()  
 {  
 **if**(**customAdapter**!=**null**)  
 {  
 **customAdapter**.notifyDataSetChanged();  
 }  
 **studentList**.clear();  
 **studentList**.addAll(**dbManager**.getAllStudent());  
 setAdapter();  
 }  
}

**LAYOUT**

<**LinearLayout android:layout\_height="match\_parent"  
 android:layout\_width="match\_parent"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:orientation="vertical"  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 tools:context=".MainActivity"**>  
 <**EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="ID" android:id="@+id/edt\_id"**/>  
<**EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Name" android:id="@+id/edt\_name"**/>  
 <**EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Number" android:id="@+id/edt\_number"**/>  
 <**EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Address" android:id="@+id/edt\_address"**/>  
 <**EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Email" android:id="@+id/edt\_email"**/>  
<**LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"**>  
 <**Button  
 android:id="@+id/btn\_save"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:text="Save"** />  
 <**Button  
 android:id="@+id/btn\_update"  
 android:enabled="false"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:text="Update"** />  
 <**Button  
 android:id="@+id/btn\_xoa"  
 android:enabled="false"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:text="Delete"** />  
</**LinearLayout**>  
 <**ListView  
 android:listSelector="@color/colorAccent"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent" android:id="@+id/lv\_student"**/>  
</**LinearLayout**>

**LAYOUTITEM**

<**LinearLayout android:layout\_height="wrap\_content" android:layout\_width="match\_parent" android:orientation="horizontal"  
 xmlns:android="http://schemas.android.com/apk/res/android"**>  
 <**TextView  
 android:layout\_width="70dp"  
 android:layout\_height="match\_parent"  
 android:background="@color/colorPrimaryDark"  
 android:id="@+id/tv\_id" android:text="1" android:textColor="#fff"  
 android:textSize="25sp" android:gravity="center" android:layout\_weight="1"**/>  
 <**LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical" android:layout\_weight="1"**>  
 <**TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/tv\_name" android:textStyle="bold"**/>  
 <**TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/tv\_email"**/>  
 <**TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/tv\_phone"**/>  
 <**TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/tv\_address"**/>  
 </**LinearLayout**>  
</**LinearLayout**>