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# Practical: 5

**1. Problem Statement :** Develop an android app which displays a form to get following information from user. Username, Password, Gender(RadioButton), Hobby(Checkbox), Are you student?(Toggle Button). Form should be followed by a Button with label "Submit".

Implement Above using following layouts:

1. Linear Layout
2. Relative Layout
3. Table Layout

When user clicks the Submit button, a message should be displayed to user describing the information entered on next page.

## MainActivity.java :

```java
package com.example.p5;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Switch;
import android.widget.Toast;
import java.util.ArrayList; // Import ArrayList
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        EditText username = findViewById(R.id.user);
        EditText password = findViewById(R.id.pass);
        Button submit = findViewById(R.id.button);
        CheckBox checkBox1 = findViewById(R.id.checkBox);
        CheckBox checkBox2 = findViewById(R.id.checkBox2);
```

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```java
        CheckBox checkBox3 = findViewById(R.id.checkBox3);
        Switch student = findViewById(R.id.switch1);
        submit.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            RadioGroup radioGroup = findViewById(R.id.radio_group);
            int selectedId = radioGroup.getCheckedRadioButtonId();
            if (selectedId != -1) {
              RadioButton selectedRadioButton = findViewById(selectedId);
              String gender = selectedRadioButton.getText().toString();
              Intent intent = new Intent(MainActivity.this, MainActivity2.class);
              intent.putExtra("username", username.getText().toString());
              intent.putExtra("password", password.getText().toString());
              intent.putExtra("gender", gender);
              intent.putExtra("student", student.getText().toString());
              // Create an ArrayList to store selected checkbox items
              ArrayList<String> selectedItems = new ArrayList<>();
              // Check each checkbox and add its label to the list if it's selected
              if (checkBox1.isChecked()) {
                selectedItems.add(checkBox1.getText().toString());
              }
              if (checkBox2.isChecked()) {
                selectedItems.add(checkBox2.getText().toString());
              }
              if (checkBox3.isChecked()) {
                selectedItems.add(checkBox3.getText().toString());
              }
              // Put the selected items list as an extra intent
              intent.putStringArrayListExtra("selected_items", selectedItems);
              startActivity(intent);
            } else {
              Toast.makeText(getApplicationContext(), "Please select your gender!",
  Toast.LENGTH_LONG).show();
            }
          }
        });
    }
  }
```

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## MainActivity2.java :

```java
package com.example.p5;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.widget.TextView;
import java.util.ArrayList;
public class MainActivity2 extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        Intent intent = getIntent();
        String username = intent.getStringExtra("username");
        String password = intent.getStringExtra("password");
        String gen = intent.getStringExtra("gender");
        String student1 = intent.getStringExtra("student");
        // Retrieve the selected items list from the Intent
        ArrayList<String> selectedItems =
getIntent().getStringArrayListExtra("selected_items");
        // Check if the list is not null
        if (selectedItems != null) {
            // Concatenate the selected hobby items
            StringBuilder hobbiesBuilder = new StringBuilder();
            for (String item : selectedItems) {
                hobbiesBuilder.append(item).append(", ");
            }
            // Remove the trailing ", " from the concatenated string
            String hobbies = hobbiesBuilder.toString();
            if (hobbies.endsWith(", ")) {
                hobbies = hobbies.substring(0, hobbies.length() - 2);
            }
            // Set the concatenated string in the TextView for hobbies
            TextView hobbyTextView = findViewById(R.id.hobby);
            hobbyTextView.setText(hobbies);      }
        // Set username, password, and gender in their respective TextViews
```

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```
        TextView user = findViewById(R.id.user);
        user.setText(username);
        TextView pass = findViewById(R.id.pass);
        pass.setText(password);
        TextView gender = findViewById(R.id.gender);
        gender.setText(gen);
        TextView student = findViewById(R.id.student);
        student.setText(student1);
    }
}
```

## Activity_Main.xml :

```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">
    <LinearLayout    android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="100dp"
            android:layout_marginLeft="60dp"
            android:textSize="20dp"
            android:text="Username :">
        </TextView>
        <EditText
            android:layout_width="150dp"
            android:layout_marginTop="100dp"
            android:layout_marginLeft="30dp"
            android:id="@+id/user"
            android:layout_height="wrap_content" />
    </LinearLayout>
    <LinearLayout
```

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```xml
    android:layout_width="wrap_content"
    android:layout_height="wrap_content">
    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="10dp"
      android:layout_marginLeft="60dp"
      android:textSize="20dp"
      android:text="Password :">
    </TextView>
    <EditText
      android:layout_width="150dp"
      android:layout_marginTop="10dp"
      android:layout_marginLeft="32dp"
      android:inputType="textPassword"
      android:id="@+id/pass"
      android:layout_height="wrap_content" />
  </LinearLayout>
  <LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content">
    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="10dp"
      android:layout_marginLeft="60dp"
      android:textSize="20dp"
      android:text="Gender :">
    </TextView>
    <RadioGroup
      android:id="@+id/radio_group"
      android:layout_width="wrap_content"
      android:orientation="horizontal"
      android:layout_height="wrap_content">
      <RadioButton
        android:id="@+id/radioButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
                android:layout_marginTop="10dp"
                android:layout_marginLeft="50dp"
                android:text="Male" />
            <RadioButton
                android:id="@+id/radioButton2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_marginLeft="10dp"
                android:layout_marginTop="10dp"
                android:text="Female" />
        </RadioGroup>
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="60dp"
            android:textSize="20dp"
            android:text="Hobby :">
        </TextView>
        <LinearLayout
            android:layout_width="wrap_content"
            android:orientation="vertical"
            android:layout_marginLeft="55dp"
            android:layout_height="wrap_content">
            <CheckBox android:id="@+id/checkBox"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="Reading Books" />
            <CheckBox  android:id="@+id/checkBox2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="Cricket" />
```

```xml
        <CheckBox android:id="@+id/checkBox3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Watching Movies" />
      </LinearLayout>
    </LinearLayout>
    <LinearLayout
      android:layout_width="wrap_content"
      android:layout_height="wrap_content">
      <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:layout_marginLeft="60dp"
        android:textSize="12dp"
        android:text="Are you a Student ? ">
      </TextView>
      <Switch
        android:id="@+id/switch1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="12dp"
        android:layout_marginLeft="20dp"
        android:text="Yes"
        tools:ignore="UseSwitchCompatOrMaterialXml" />
    </LinearLayout>
    <LinearLayout android:layout_width="wrap_content"
      android:layout_gravity="center"
      android:layout_height="wrap_content">
      <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Submit" />
    </LinearLayout>
  </LinearLayout>
```

### Activity_Main2.xml :

```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=".MainActivity2">
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="100dp"
            android:layout_marginLeft="60dp"
            android:textSize="20dp"
            android:text="Username :">
        </TextView>
        <TextView
            android:layout_width="150dp"
            android:layout_marginTop="100dp"
            android:layout_marginLeft="30dp"
            android:id="@+id/user"
            android:layout_height="wrap_content" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="60dp"
            android:textSize="20dp"
            android:text="Password :">
        </TextView>
        <TextView
            android:layout_width="150dp"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="32dp"
```

```
            android:id="@+id/pass"
            android:layout_height="wrap_content" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="60dp"
            android:textSize="20dp"
            android:text="Gender :">
        </TextView>

        <TextView
            android:layout_width="150dp"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="58dp"
            android:id="@+id/gender"
            android:layout_height="wrap_content" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="60dp"
            android:textSize="20dp"
            android:text="Hobby :">
        </TextView>
        <TextView android:layout_width="150dp"
            android:layout_marginTop="10dp"
            android:layout_marginLeft="64dp"
            android:layout_marginBottom="40dp"
            android:id="@+id/hobby"
            android:layout_height="wrap_content" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
```

```
    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:layout_marginLeft="60dp"
        android:textSize="20dp"
        android:text="Are you a Student ? ">
    </TextView>
    <TextView android:layout_width="80dp"
        android:layout_marginTop="10dp"
        android:layout_marginLeft="25dp"
        android:id="@+id/student"
        android:layout_height="wrap_content" />
   </LinearLayout>
 </LinearLayout>
```

**Output :**

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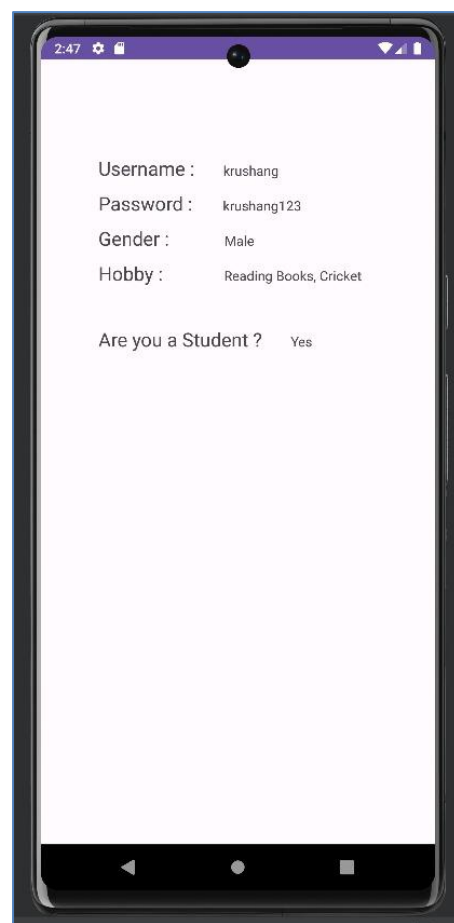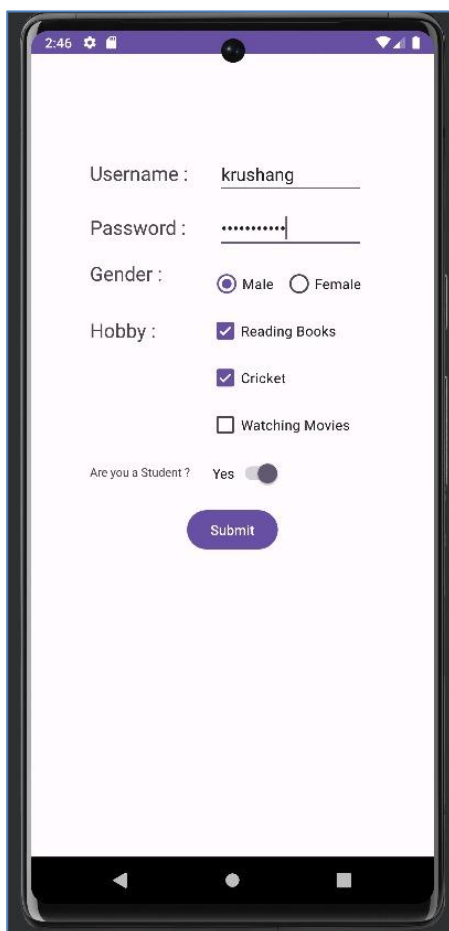
# Practical : 6

**1. Problem Statement :** Create a Recycler View and list the details of
student using following fields:

- Name
- Roll Number
- Photo (Image)
  Clicking on any student details Toast should display student name.

### MainActivity.java :

```java
package com.example.pra_6;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import android.os.Bundle;
import java.util.ArrayList;
import java.util.List;
public class MainActivity extends AppCompatActivity {
    private RecyclerView recyclerView;
    private StudentAdapter studentAdapter;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_student_list);
        recyclerView = findViewById(R.id.recycler_view);
        List<Student> studentList = new ArrayList<>();
        // Add student data to the list
        studentList.add(new Student("James bond", "200044411007",
    R.drawable.pra6_1));
        studentList.add(new Student("Spider Man", "200044411008",
    R.drawable.pra6_2));
        studentList.add(new Student("Ben Tennyson", "200044411010",
    R.drawable.pra6_3));
        studentAdapter = new StudentAdapter(studentList, this);
        recyclerView.setAdapter(studentAdapter);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));
    }
}
```

## Student_item.xml :

```xml
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="wrap_content"
  android:orientation="horizontal"
  android:padding="16dp">
  <ImageView
    android:id="@+id/student_photo"
    android:layout_width="50dp"
    android:layout_height="50dp"
    android:src="@drawable/pra6_1" />
  <TextView
    android:id="@+id/student_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Student Name"
    android:textSize="16sp"
    android:layout_marginStart="16dp" />
  <TextView
    android:id="@+id/student_roll"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Roll Number"
    android:textSize="14sp"
    android:layout_marginStart="16dp" />
</LinearLayout>
```

## Activity_student_list.xml :

```xml
<!-- activity_student_list.xml -->
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">
  <!-- RecyclerView to display the list of students -->
  <androidx.recyclerview.widget.RecyclerView
    android:id="@+id/recycler_view"
    android:layout_width="match_parent"
    android:layout_height="match_parent" />
</LinearLayout>
```

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## StudentAdapter.java :

```java
package com.example.pra_6;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;
public class StudentAdapter extends
RecyclerView.Adapter<StudentAdapter.ViewHolder> {
    private List<Student> studentList;
    private Context context;
    public StudentAdapter(List<Student> studentList, Context context) {
        this.studentList = studentList;
        this.context = context;
    }
    @NonNull
    @Override
    public ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int
viewType) {
        View view = LayoutInflater.from(parent.getContext())
            .inflate(R.layout.student_item, parent, false);
        return new ViewHolder(view);
    }
    @Override
    public void onBindViewHolder(@NonNull ViewHolder holder, int position) {
        Student student = studentList.get(position);
        holder.studentName.setText(student.getName());
        holder.studentRoll.setText(student.getRollNumber());
        holder.studentPhoto.setImageResource(student.getPhoto());
        holder.itemView.setOnClickListener(v -> {
            Toast.makeText(context, student.getName(), Toast.LENGTH_SHORT).show();
        });
    }
    @Override
    public int getItemCount() {
        return studentList.size();
    }
```

```java
public class ViewHolder extends RecyclerView.ViewHolder {
    ImageView studentPhoto;
    TextView studentName;
    TextView studentRoll;
    public ViewHolder(View itemView) {
        super(itemView);
        studentPhoto = itemView.findViewById(R.id.student_photo);
        studentName = itemView.findViewById(R.id.student_name);
        studentRoll = itemView.findViewById(R.id.student_roll);
    }
}
}
```

## Student.java :

```java
package com.example.pra_6;
public class Student {
    private String name;
    private String rollNumber;
    private int photo;
    public Student(String name, String rollNumber, int photo) {
        this.name = name;
        this.rollNumber = rollNumber;
        this.photo = photo;
    }
    public String getName() {
        return name;
    }
    public String getRollNumber() {
        return rollNumber;
    }
    public int getPhoto() {
        return photo;
    }
}
```

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## 2.  **Problem Statement :**Modify Above Program to implement Card View.

### **StudentListActivity.java :**

```
package com.example.pra_6_2;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import java.util.ArrayList;
import java.util.List;
public class StudentListActivity extends AppCompatActivity {
    private RecyclerView recyclerView;
    private StudentAdapter studentAdapter;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_student_list);
        recyclerView = findViewById(R.id.recycler_view);
        List<Student> studentList = new ArrayList<>();
        // Add student data
        studentList.add(new Student("James bond", " 200044411007",
R.drawable.pra6_1));
        studentList.add(new Student("Spider Man", " 200044411008",
R.drawable.pra6_2));
        studentList.add(new Student("Ben Tennyson", " 200044411010",
R.drawable.pra6_3));
        // Add more students as needed
        studentAdapter = new StudentAdapter(studentList, this);
        recyclerView.setAdapter(studentAdapter);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));
    }
}
```

### **Student.java :**

```
package com.example.pra_6_2;
public class Student {
    private String name;
    private String rollNumber;
    private int photo;
    public Student(String name, String rollNumber, int photo) {
        this.name = name;
        this.rollNumber = rollNumber;
```

```
      this.photo = photo;
   }
   public String getName() {  return name;   }
   public String getRollNumber() {  return rollNumber;   }
   public int getPhoto() {   return photo;   }
}
```

## StudentAdapter.java :

```java
package com.example.pra_6_2;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.cardview.widget.CardView;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;
public class StudentAdapter extends
RecyclerView.Adapter<StudentAdapter.ViewHolder> {
   private List<Student> studentList;
   private Context context;
   public StudentAdapter(List<Student> studentList, Context context) {
      this.studentList = studentList;
      this.context = context;
   }
   @NonNull
   @Override
   public ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int
viewType) {
      View view = LayoutInflater.from(parent.getContext())
          .inflate(R.layout.student_item, parent, false);
      return new ViewHolder(view);
   }
   @Override
   public void onBindViewHolder(@NonNull ViewHolder holder, int position) {
      Student student = studentList.get(position);
      holder.studentName.setText(student.getName());
      holder.studentRoll.setText(student.getRollNumber());
      holder.studentPhoto.setImageResource(student.getPhoto());
```

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```java
      holder.cardView.setOnClickListener(v -> {
         Toast.makeText(context, student.getName(), Toast.LENGTH_SHORT).show();
      });
   }
   @Override
   public int getItemCount() {
      return studentList.size();
   }
   public class ViewHolder extends RecyclerView.ViewHolder {
      ImageView studentPhoto;
      TextView studentName;
      TextView studentRoll;
      CardView cardView;
      public ViewHolder(View itemView) {
         super(itemView);
         studentPhoto = itemView.findViewById(R.id.student_photo);
         studentName = itemView.findViewById(R.id.student_name);
         studentRoll = itemView.findViewById(R.id.student_roll);
         cardView = itemView.findViewById(R.id.card_view);
      }
   }
}
```

## Activity_student_list.xml :

```xml
<!-- activity_student_list.xml -->
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent" android:layout_height="match_parent"
   android:orientation="vertical" android:padding="16dp">
   <androidx.recyclerview.widget.RecyclerView android:id="@+id/recycler_view"
android:layout_width="match_parent" android:layout_height="match_parent" />
</LinearLayout>
```

## Student_item.xml :

```xml
<!-- student_item.xml -->
<androidx.cardview.widget.CardView
xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent" android:layout_height="wrap_content"
xmlns:app="http://schemas.android.com/apk/res-auto"
android:id="@+id/card_view" android:layout_margin="8dp"
app:cardCornerRadius="8dp" app:cardElevation="4dp">
   <LinearLayout android:layout_width="match_parent"
```

android:layout_height="wrap_content" android:orientation="vertical"
android:padding="16dp">
    <ImageView android:id="@+id/student_photo"
android:layout_width="100dp" android:layout_height="100dp"
android:src="@drawable/pra6_1" android:layout_gravity="center" />
    <TextView android:id="@+id/student_name"
android:layout_width="wrap_content" android:layout_height="wrap_content"
android:text="Student Name" android:textSize="18sp"
android:layout_gravity="center" android:layout_marginTop="8dp" />
    <TextView android:id="@+id/student_roll"
android:layout_width="wrap_content" android:layout_height="wrap_content"
android:text="Roll Number" android:textSize="16sp"
android:layout_gravity="center" android:layout_marginTop="4dp" />
  </LinearLayout>
</androidx.cardview.widget.CardView>

## Output :

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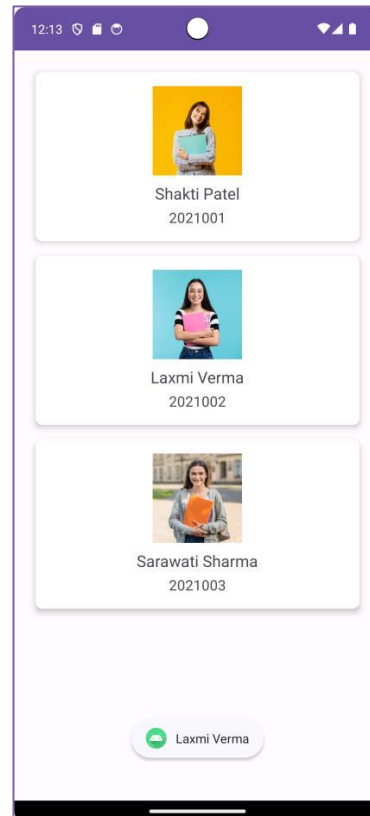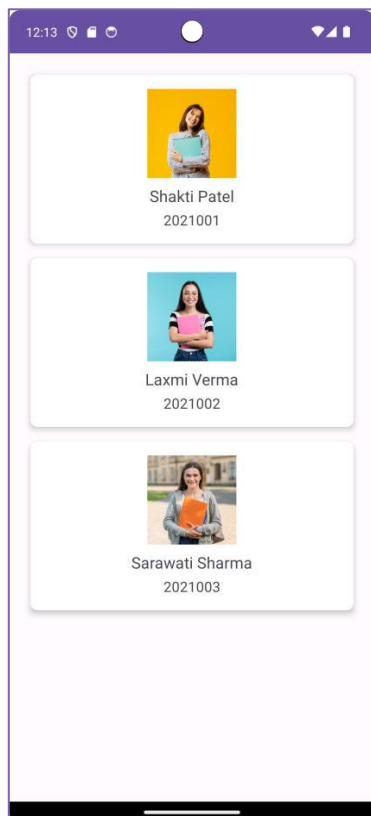
# **Practical : 7**

**1.     Problem Statement :** Create 3 menu items in the options menu named as FY, SY, TY. Clicking on TY , It will open another activity which contains three buttons having named as CO, IT, MCA. Clicking on CO will open pop up menu contains search, upload, copy, print, share etc.

## **MainActivity.java :**

```
package com.example.pra_7;

import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
  }
  @Override
  public boolean onCreateOptionsMenu(Menu menu) {
    getMenuInflater().inflate(R.menu.options_menu, menu);
    MenuItem tyItem = menu.findItem(R.id.ty_item);
    tyItem.setOnMenuItemClickListener(item -> {
      Intent intent = new Intent(MainActivity.this, TyActivity.class);
      startActivity(intent);
      return true;
    });
    return true;
  }
}
```

## **TyActivity.java :**

```
package com.example.pra_7;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```java
import android.widget.PopupMenu;
import androidx.appcompat.app.AppCompatActivity;
public class TyActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.tyactivity);
        Button coButton = findViewById(R.id.co);
        PopupMenu popupMenu = new PopupMenu(this, coButton);
        popupMenu.getMenuInflater().inflate(R.menu.pop_menu,
popupMenu.getMenu());
        coButton.setOnClickListener(v -> popupMenu.show());
    }
}
```

## CoActivity.java :

```java
package com.example.pra_7;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
public class CoActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.tyactivity);
    }
}
```

## Activity_main.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.appcompat.widget.LinearLayoutCompat
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:orientation="vertical"  android:layout_width="match_parent"
    android:layout_height="match_parent"  tools:context=".MainActivity">
    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="300dp"
        android:text="Menu Example"
        android:textStyle="bold"
        android:id="@+id/test"
        android:textSize="20dp"
        android:layout_gravity="center" />
</androidx.appcompat.widget.LinearLayoutCompat>
```

### Pop_menu.xml :

```xml
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item
    android:id="@+id/search_item"
    android:title="Search" />
  <item
    android:id="@+id/upload_item"
    android:title="Upload" />
  <item
    android:id="@+id/copy_item"
    android:title="Copy" />
  <item
    android:id="@+id/print_item"
    android:title="Print" />
  <item
    android:id="@+id/share_item"
    android:title="Share" />
</menu>
```

### Tyactivity.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical" >
  <Button
    android:id="@+id/co"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="CO"
    android:layout_marginTop="50dp"
    android:layout_gravity="center"/>
  <Button
    android:id="@+id/IT"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="IT"
    android:layout_marginTop="50dp"
    android:layout_gravity="center"/>
  <Button
    android:id="@+id/MCA"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```
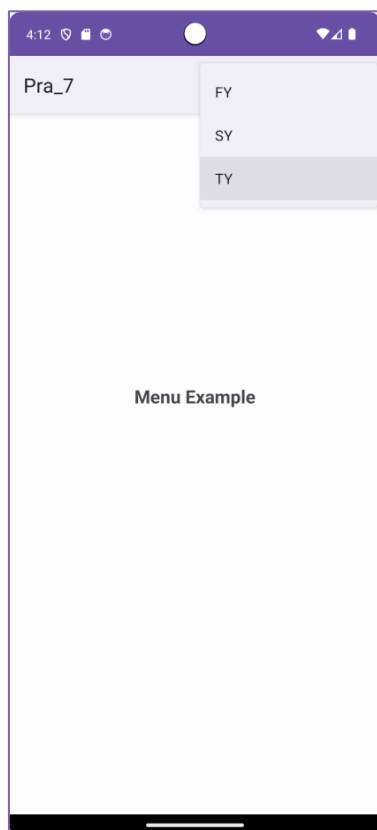
```
        android:text="MCA"
        android:layout_marginTop="50dp"
        android:layout_gravity="center"/>
</LinearLayout>
```

## Options_menu.xml :

```xml
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/fy_item"
        android:title="FY" />
    <item
        android:id="@+id/sy_item"
        android:title="SY" />
    <item
        android:id="@+id/ty_item"
        android:title="TY" />
</menu>
```

## Output :

_____
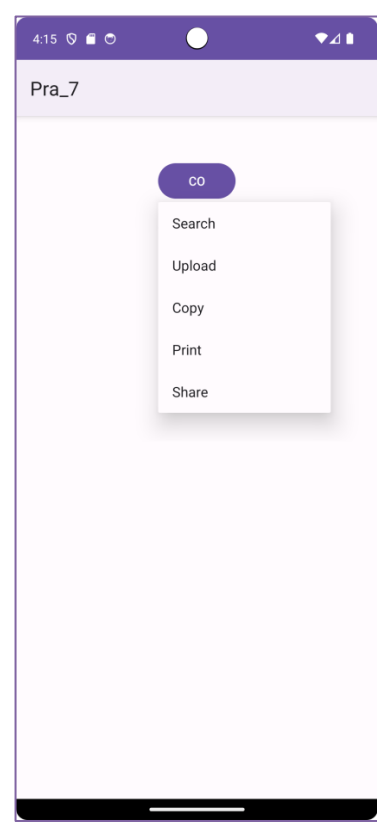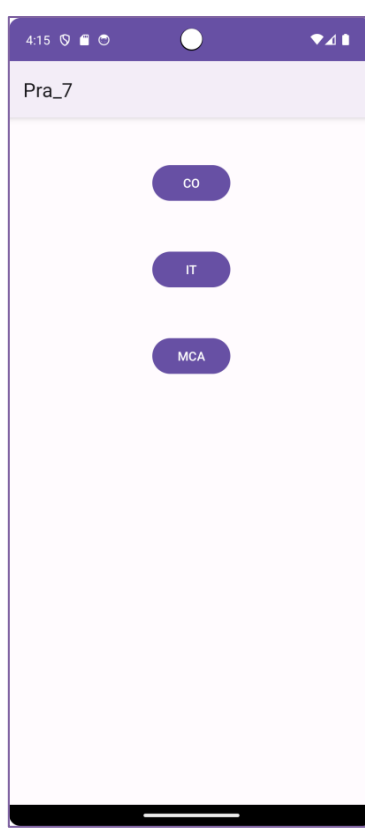
# **Practical : 8**

1.  **Problem Statement :** Create Android Mobile App which will perform INSERT, DELETE, SELECT, UPDATE, SEARCH Query for student records(Enrollment No, Name, SPI, CPI) stored in SQLite Database. PFA Employee App is given for your reference.

## **MainActivity.java :**

```java
package com.example.emp_database;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
public class MainActivity extends Activity implements OnClickListener {
    Button add_emp, get_all_emp, get_emp, update_emp, delete_emp;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        add_emp = findViewById(R.id.addEmp);
        add_emp.setOnClickListener(this);
        get_all_emp = findViewById(R.id.selectAllEmp);
        get_all_emp.setOnClickListener(this);
        get_emp = findViewById(R.id.selectEmp);
        get_emp.setOnClickListener(this);
        update_emp = findViewById(R.id.updateEmp);
        update_emp.setOnClickListener(this);
        delete_emp = findViewById(R.id.deleteEmp);
        delete_emp.setOnClickListener(this);
    }
    public void onClick(View v) {
        if (v == findViewById(R.id.addEmp)) {
            Intent i = new Intent(this, AddEmployee.class);
            startActivity(i);
        }
        if (v == findViewById(R.id.selectAllEmp)) {
            Intent i = new Intent(this, GetAllEmployee.class);
            startActivity(i);
```

```java
        }
        if (v == findViewById(R.id.selectEmp)) {
            Intent i = new Intent(this, GetEmployee.class);
            startActivity(i);
        }
        if (v == findViewById(R.id.updateEmp)) {
            Intent i = new Intent(this, UpdateEmployee.class);
            startActivity(i);
        }
        if (v == findViewById(R.id.deleteEmp)) {
            Intent i = new Intent(this, DeleteEmployee.class);
            startActivity(i);
        }
    }
}
```

## EmployeeDBHelper.java :

```java
package com.example.emp_database;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;
public class EmployeeDBHelper {
    public static final String EmpId = "EmpId";
    public static final String EmpName = "EmpName";
    public static final String EmpSPI = "EmpSPI";
    public static final String EmpCPI = "EmpCPI";
    private static final String databasename = "EmployeeDB";
    private static final String tablename = "Employee";
    private static final int databaseversion = 2;
        private static final String create_table = "create table Employee " +
            "(EmpId integer primary key autoincrement, " +
            "EmpName text not null, " +
            "EmpSPI real, " +
            "EmpCPI real)";
    private final Context ct;
    private DatabaseHelper dbHelper;
    private SQLiteDatabase database;
    public EmployeeDBHelper(Context context) {
        this.ct = context;
```

```java
        dbHelper = new DatabaseHelper(ct);
    }
    private static class DatabaseHelper extends SQLiteOpenHelper {
        DatabaseHelper(Context c) {
            super(c, databasename, null, databaseversion);
        }
        @Override
        public void onCreate(SQLiteDatabase database) {
            try {
                database.execSQL(create_table);
            } catch (SQLException ex) {
                ex.printStackTrace();
            }
        }
        @Override
        public void onUpgrade(SQLiteDatabase database, int arg1, int arg2) {
            database.execSQL("DROP TABLE IF EXISTS Employee");
            onCreate(database);
        }
    }
    public EmployeeDBHelper connect() throws SQLException {
        database = dbHelper.getWritableDatabase();
        return this;
    }
    public void disconnect() {
        dbHelper.close();
    }
    public long insertEmployee(String empname, float empspi, float empcpi) {
        ContentValues cv = new ContentValues();
        cv.put(EmpName, empname);
        cv.put(EmpSPI, empspi);
        cv.put(EmpCPI, empcpi);
        this.connect();
        return database.insert(tablename, null, cv);
    }
    public Cursor retrieveAllEmployees() {
        this.connect();
        return database.query(tablename, new String[]{EmpId, EmpName, EmpSPI,
    EmpCPI},
                null, null, null, null, null);
    }
    public Cursor retrieveEmployee(long id) throws SQLException {
        this.connect();
```

_____

```java
        Cursor c = database.query(true, tablename,
            new String[]{EmpId, EmpName, EmpSPI, EmpCPI},
            EmpId + "=" + id, null, null, null, null, null);
      if (c != null) {
        if (c.moveToFirst()) {
          do {
            int empId = c.getInt(c.getColumnIndex(EmpId));
            String empName = c.getString(c.getColumnIndex(EmpName));
            float empSPI = c.getFloat(c.getColumnIndex(EmpSPI));
            float empCPI = c.getFloat(c.getColumnIndex(EmpCPI));
            Log.d("CursorData", "ID: " + empId + ", Name: " + empName +
                ", SPI: " + empSPI + ", CPI: " + empCPI);
          } while (c.moveToNext());
        }
      }
      return c;
    }
    public boolean deleteEmployee(long id) {
      this.connect();
      return database.delete(tablename, EmpId + "=" + id, null) > 0;
    }
    public boolean updateEmployee(long id, String empname, float empspi, float
  empcpi) {
      this.connect();
      ContentValues cvalues = new ContentValues();
      cvalues.put(EmpName, empname);
      cvalues.put(EmpSPI, empspi);
      cvalues.put(EmpCPI, empcpi);
      return database.update(tablename, cvalues, EmpId + "=" + id, null) > 0;
    }
}
```

## AddEmployee.java :

```java
package com.example.emp_database;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class AddEmployee extends Activity {
    Button add_emp;
    EditText empname, empspi, empcpi;
    EmployeeDBHelper empdbhelper;
```

```java
    @Override
    public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.addemployee);
      empdbhelper = new EmployeeDBHelper(this);
      empname = findViewById(R.id.empname);
      empspi = findViewById(R.id.empspi);
      empcpi = findViewById(R.id.empcpi);
      add_emp = findViewById(R.id.addEmp);
      add_emp.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
          try {
            String name = empname.getText().toString();
            float spi = Float.parseFloat(empspi.getText().toString());
            float cpi = Float.parseFloat(empcpi.getText().toString());
            empdbhelper.connect();
            long id = empdbhelper.insertEmployee(name, spi, cpi);

            if (id != -1) {
              Toast.makeText(getBaseContext(), "Your record has been saved
  successfully, ID: " + id, Toast.LENGTH_LONG).show();
            } else {
              Toast.makeText(getBaseContext(), "Failed to save the record.",
  Toast.LENGTH_LONG).show();
            }
          } catch (Exception e) {
            e.printStackTrace();
            Toast.makeText(getBaseContext(), "An error occurred while saving the
  record.", Toast.LENGTH_LONG).show();
          } finally {
            empdbhelper.disconnect();
          }
        }
      });
    }
    @Override
    protected void onDestroy() {
      empdbhelper.disconnect();
      super.onDestroy();
    }
  }
```

_____

## GetAllEmployee.java :

```java
package com.example.emp_database;
import android.app.Activity;
import android.database.Cursor;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
import java.util.ArrayList;
public class GetAllEmployee extends Activity {
    ArrayList<String> Emp_info = new ArrayList<>();
    ListView listView;
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.getallemployee);
        listView = findViewById(R.id.listView);
        final EmployeeDBHelper emphelper = new EmployeeDBHelper(this);
        Cursor c = emphelper.retrieveAllEmployees();
        if (c.moveToFirst()) {
            do {
                String temp = "Student Id : " + c.getString(0) + "\n" +
                    "Student Name : " + c.getString(1) + "\n" +
                    "Student SPI : " + c.getString(2) + "\n" +
                    "Student CPI : " + c.getString(3);
                Emp_info.add(temp);
            } while (c.moveToNext());
            final ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
                android.R.layout.simple_list_item_1, android.R.id.text1, Emp_info);
            listView.setAdapter(adapter);
        } else {
            Toast.makeText(this, "No Records in the database",
Toast.LENGTH_LONG).show();
        }
    }
}
```

## GetEmployee.java :

```java
package com.example.emp_database;
import android.app.Activity;
import android.database.Cursor;
import android.os.Bundle;
```

```java
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class GetEmployee extends Activity {
    Button find_emp;
    EditText empid;
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.getemployee);
        final EmployeeDBHelper empdb = new EmployeeDBHelper(this);
        empid = findViewById(R.id.empid);
        find_emp = findViewById(R.id.btn_find);
        find_emp.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try {
                    int emp_id = Integer.parseInt(empid.getText().toString());
                    Cursor c = empdb.retrieveEmployee(emp_id);
                    if (c.moveToFirst()) {
                        int employeeId =
c.getInt(c.getColumnIndex(EmployeeDBHelper.EmpId));
                        String employeeName =
c.getString(c.getColumnIndex(EmployeeDBHelper.EmpName));
                        float employeeSPI =
c.getFloat(c.getColumnIndex(EmployeeDBHelper.EmpSPI));
                        float employeeCPI =
c.getFloat(c.getColumnIndex(EmployeeDBHelper.EmpCPI));
                        Toast.makeText(getBaseContext(), "Employee ID : " + employeeId +
                            "\nStudent Name : " + employeeName +
                            "\nStudent SPI : " + employeeSPI +
                            "\nStudent CPI : " + employeeCPI, Toast.LENGTH_LONG).show();
                    } else {
                        Toast.makeText(getBaseContext(), "No Student Record Found",
Toast.LENGTH_LONG).show();
                    }
                } catch (NumberFormatException e) {
                    e.printStackTrace();
                    Toast.makeText(getBaseContext(), "Invalid Student ID",
Toast.LENGTH_LONG).show();
                } } }); } }
```

## UpdateEmployee.java :

_____

```java
package com.example.emp_database;
import android.app.Activity;
import android.database.Cursor;
import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class UpdateEmployee extends Activity {
    EditText empid, empname, empspi, empcpi;
    Button update;
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.updateemployee);
        final EmployeeDBHelper empdb = new EmployeeDBHelper(this);
        empid = findViewById(R.id.empid);
        empname = findViewById(R.id.empname);
        empspi = findViewById(R.id.empspi);
        empcpi = findViewById(R.id.empcpi);
        update = findViewById(R.id.btn_update);
        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int emp_id = Integer.parseInt(empid.getText().toString());
                String empstr = empname.getText().toString();
                int intspi = Integer.parseInt(empspi.getText().toString());
                int intcpi = Integer.parseInt(empcpi.getText().toString());
                if (empdb.updateEmployee(emp_id, empstr, intspi, intcpi)) {
                    Toast.makeText(getBaseContext(), "Record has been updated",
                            Toast.LENGTH_LONG).show();
                } else {
                    Toast.makeText(getBaseContext(), "Record has not been updated",
Toast.LENGTH_LONG).show();
                }
            }
        });

        empid.addTextChangedListener(new TextWatcher() {
            @Override
```

_____

```java
        public void afterTextChanged(Editable e) {
        }
        @Override
        public void beforeTextChanged(CharSequence s, int start, int count, int after)
  {
        }
        @Override
        public void onTextChanged(CharSequence s, int start, int before, int count) {
          empid.setEnabled(false);
          int emp_id = Integer.parseInt(empid.getText().toString());
          Cursor c = empdb.retrieveEmployee(emp_id);
          if (c.moveToFirst()) {
            empname.setText(c.getString(1));
            empspi.setText(c.getString(2));
            empcpi.setText(c.getString(3));
          } else {
            Toast.makeText(getBaseContext(), "No Student Record Found",
  Toast.LENGTH_LONG).show();
          }
        }
      });
    }
}
```

## AndroidManifest.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">
    <uses-permission
android:name="android.permission.MANAGE_EXTERNAL_STORAGE" />
    <application
      android:allowBackup="true"
      android:icon="@mipmap/ic_launcher"
      android:label="@string/app_name"
      android:roundIcon="@mipmap/ic_launcher_round"
      android:supportsRtl="true"
      android:theme="@style/Theme.Emp_database">
      <activity
        android:name=".MainActivity"
        android:exported="true">
        <intent-filter>
          <action android:name="android.intent.action.MAIN" />
          <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
      </activity>
```

```xml
    <activity
      android:name="AddEmployee"
      android:label="Add Employee">
    </activity>
    <activity
      android:name="DeleteEmployee"
      android:label="Delete Employee">
    </activity>
    <activity
      android:name="GetAllEmployee"
      android:label="Get All Employee">
    </activity>
    <activity
      android:name="GetEmployee"
      android:label="Get Employee">
    </activity>
    <activity
      android:name="UpdateEmployee"
      android:label="Update Employee">
    </activity>
  </application>
</manifest>
```

## Activity_main.xml :

```xml
<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=".MainActivity">
  <Button android:id="@+id/addEmp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="180dp"
    android:text="Add an Student" />
  <Button android:id="@+id/updateEmp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="20dp"
    android:text="Update an Student" />
  <Button android:id="@+id/deleteEmp"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Delete an Student" />
    <Button android:id="@+id/selectEmp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Get an Student" />
    <Button android:id="@+id/selectAllEmp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Get All Student" />
</LinearLayout>
```

## AddEmployee.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <EditText android:id="@+id/empname"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:hint="Enter the Name of the Student" />

    <EditText android:id="@+id/empspi"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:hint="Enter the SPI of the Student" />
    <EditText android:id="@+id/empcpi"
        kandroid:rayout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
```

```
        android:layout_marginTop="20dp"
        android:hint="Enter the CPI of the Student" />
    <Button android:id="@+id/addEmp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Add Student" />
</LinearLayout>
```

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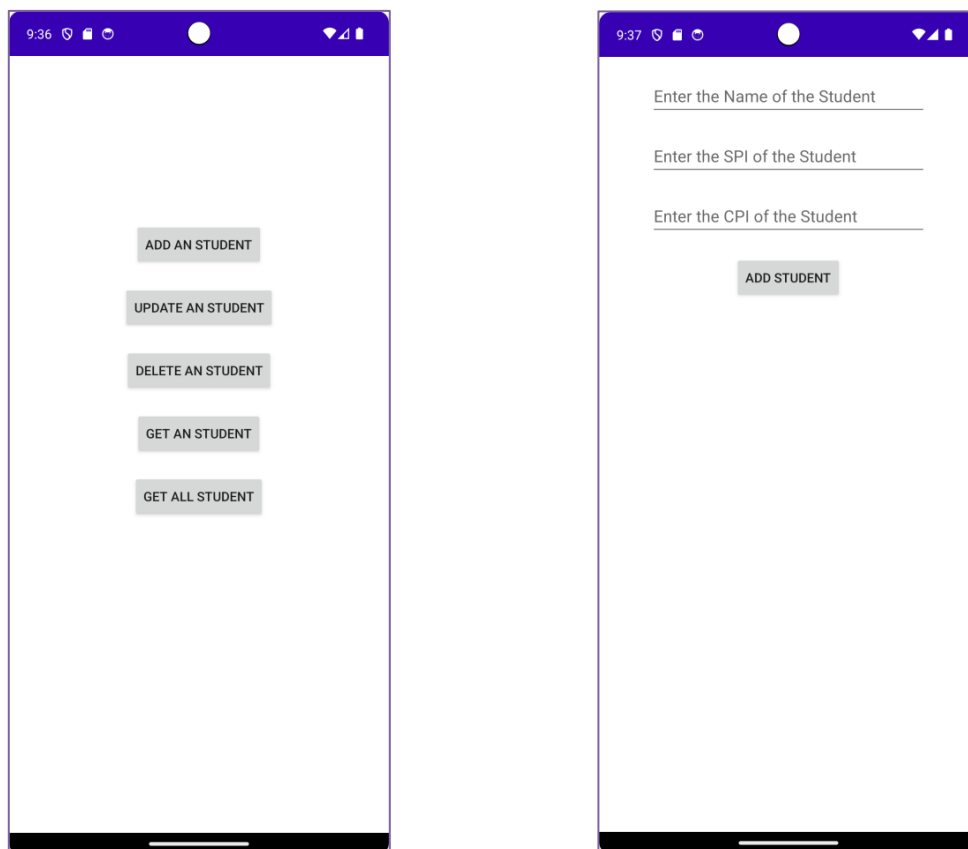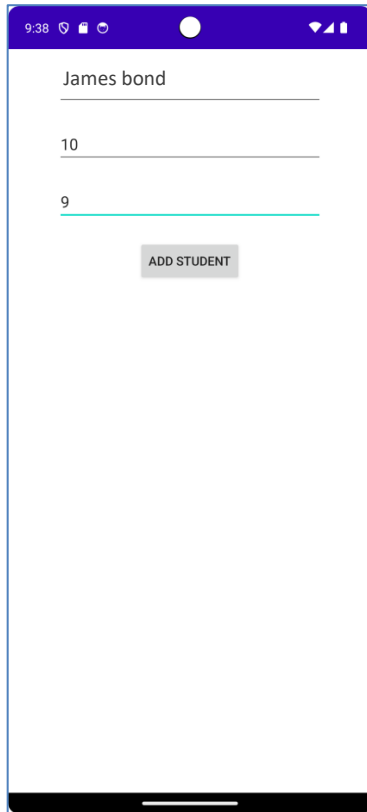
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <EditText android:id="@+id/empid"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:hint="Enter the Student id" />

    <Button android:id="@+id/btn_delete"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Delete Student" />
</LinearLayout>
```

## GetAllEmployee.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">
    <LinearLayout android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">
        <ListView android:id="@+id/listView"
```

_____

```xml
        android:layout_width="match_parent"
        android:layout_height="fill_parent">
    </ListView>
    <ListView android:id="@+id/listView2"
        android:layout_width="match_parent"
        android:layout_height="fill_parent">
    </ListView>
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

## GetEmployee.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent" android:layout_height="match_parent"
  android:orientation="vertical">
  <EditText android:id="@+id/empid" android:layout_width="300dp"
    android:layout_height="wrap_content" android:layout_gravity="center"
    android:layout_marginTop="20dp"
    android:hint="Enter the Student id" />
  <Button android:id="@+id/btn_find" android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:layout_gravity="center"
    android:layout_marginTop="20dp"
    android:text="Find Student" />
</LinearLayout>
```
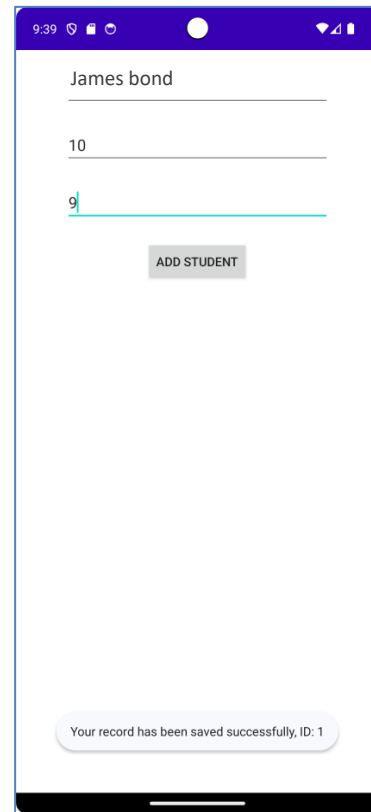
## UpdateEmployee.xml :

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"    android:layout_height="match_parent"
  android:orientation="vertical">
  <EditText android:id="@+id/empid"
    android:layout_width="300dp"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="20dp"
    android:hint="Enter the Student id" />
  <EditText android:id="@+id/empname"
    android:layout_width="300dp"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="20dp"
    android:hint="Student Name" />
  <EditText android:id="@+id/empspi"
    android:layout_width="300dp"
```

```
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:hint="Student SPI" />
    <EditText android:id="@+id/empcpi"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:hint="Student CPI" />
    <Button android:id="@+id/btn_update"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Update" />
 </LinearLayout>
```

## Output :



**Home Page**

**Add a Student**
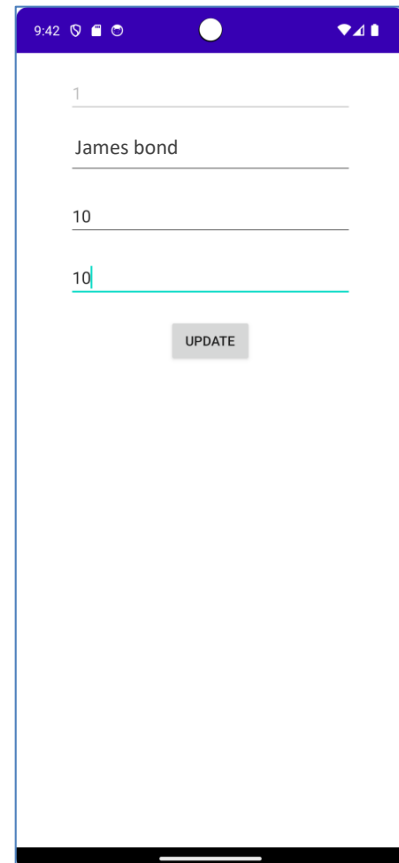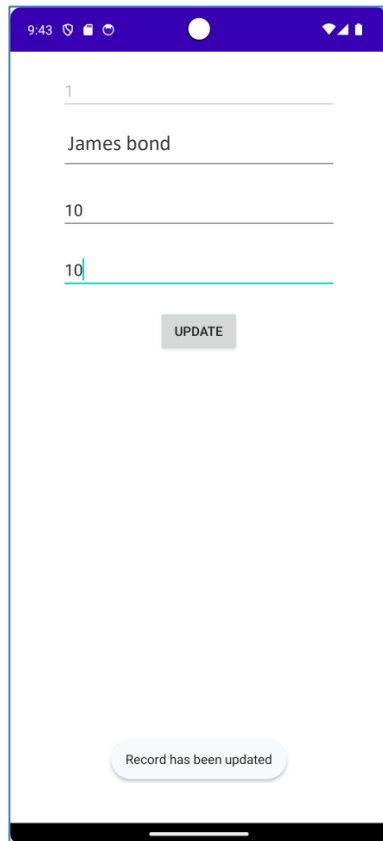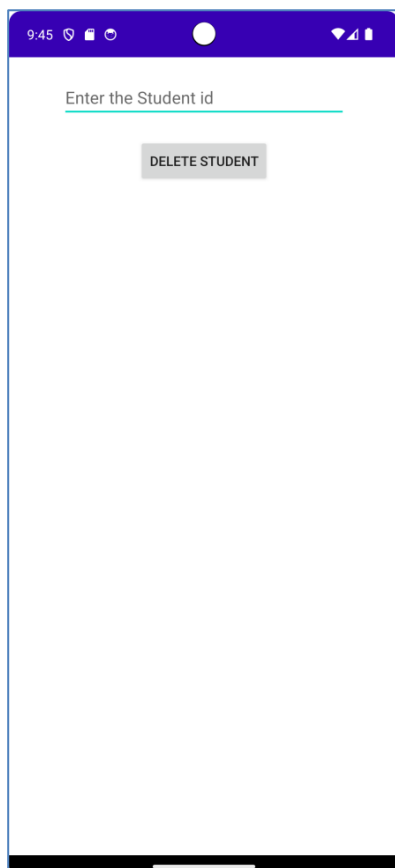


**Update Student**

**Update Student**

**Delete Student**

**Find Student**