**Practical – 8**

Practical 8A

Aim: To implement the list view to change text GUI.

*Activity\_main.java file:*

package com.example.practical\_8a;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.graphics.Color;  
import android.graphics.Typeface;  
import android.os.Bundle;  
import android.util.Log;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ListView;  
import android.widget.TextView;  
import android.widget.Toast;  
  
import java.util.ArrayList;  
  
public class MainActivity extends AppCompatActivity {  
  
 ListView listView;  
 TextView t1;  
 ArrayList<String> mainlist;  
 ArrayList<String> sublist1,sublist2,sublist3;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
  
 t1 = findViewById(R.id.textView);  
 listView = findViewById(R.id.listView);  
  
 mainlist = new ArrayList<String>();  
  
 mainlist.add("Color");  
 mainlist.add("Font Size");  
 mainlist.add("Font Style");

sublist1 = new ArrayList<String>();  
 sublist1.add("Blue");  
 sublist1.add("Green");  
 sublist1.add("Red");  
  
 sublist2 = new ArrayList<String>();  
 sublist2.add("10");  
 sublist2.add("20");  
 sublist2.add("30");  
  
 sublist3 = new ArrayList<String>();  
 sublist3.add("Bahnschrift");  
 sublist3.add("Lucida Console");  
 sublist3.add("Comic Sans MS");  
  
 BasicSpinnerAdapter adp = new BasicSpinnerAdapter(mainlist, sublist1,sublist2,sublist3,this);  
 listView.setAdapter(adp);  
  
  
 listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
 @Override  
 public void onItemClick(AdapterView<?> parent, View view, int position, long id) {  
 Log.d("TAGterm", "onItemClick: "+position);  
 switch (position){  
 case 0:  
 String qq = adp.returntxt();  
 Log.d("TAGterm", "onItemClick: "+qq);  
 try {  
 t1.setTextColor(Color.parseColor(qq));  
 }  
 catch (Exception e){  
 Log.d("TAGterm", "ERROR: "+e);  
 Toast.makeText(MainActivity.this, "ERROR: "+e, Toast.LENGTH\_SHORT).show();  
 }  
// t1.setTextColor(Color.parseColor(qq));  
 break;  
 case 1:  
 String ww = adp.returntxt();  
 Log.d("TAGterm", "onItemClick: "+ww);  
 try {  
 t1.setTextSize(Float.parseFloat(ww));  
 }  
 catch (Exception e){  
 Log.d("TAGterm", "ERROR: "+e);  
 Toast.makeText(MainActivity.this, "ERROR: "+e, Toast.LENGTH\_SHORT).show();  
 }  
// t1.setTextSize(Float.parseFloat(ww));  
 break;  
 case 2:  
 String ee = adp.returntxt();  
 Log.d("TAGterm", "onItemClick: "+ee);  
 try {  
 Typeface typeface;  
 if(ee.equals("Bahnschrift"))  
 typeface = getResources().getFont(R.font.bahnschrift);  
 else if(ee.equals("Lucida Console"))  
 typeface = getResources().getFont(R.font.lucon);  
 else  
 typeface = getResources().getFont(R.font.comic);  
 t1.setTypeface(typeface);  
 }  
 catch (Exception e){  
 Log.d("TAGterm", "ERROR: "+e);  
 Toast.makeText(MainActivity.this, "ERROR: "+e, Toast.LENGTH\_SHORT).show();  
 }  
 break;  
 }  
 }  
 });  
 }  
}

*BasicSpinnerAdapter.java*

package com.example.practical\_8a;  
  
import android.content.Context;  
import android.util.Log;  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.BaseAdapter;  
import android.widget.Spinner;  
import android.widget.TextView;  
  
import java.util.ArrayList;  
  
public class BasicSpinnerAdapter extends BaseAdapter {  
  
 private ArrayList<String> mSpinnerItem1, mSpinnerItem2, mSpinnerItem3;  
 private ArrayList<String> mData;  
 private Context mContext;  
 Spinner spinner;  
 String zz;  
  
 public BasicSpinnerAdapter(ArrayList<String> data, ArrayList<String> spinnerItem1,ArrayList<String> spinnerItem2,ArrayList<String> spinnerItem3, Context context) {  
 mData = data;  
 mContext = context;  
 mSpinnerItem1 = spinnerItem1;  
 mSpinnerItem2 = spinnerItem2;  
 mSpinnerItem3 = spinnerItem3;  
 }  
  
 @Override  
 public int getCount() {  
 return mData.size();  
 }  
  
 @Override  
 public Object getItem(int position) {  
 return mData.get(position);  
 }  
  
 @Override  
 public long getItemId(int position) {  
 return 0;  
 }  
  
 @Override  
 public View getView(int position, View convertView, ViewGroup parent) {  
 View view = convertView;  
 if (view == null) {  
 LayoutInflater inflater = (LayoutInflater) mContext.getSystemService(Context.LAYOUT\_INFLATER\_SERVICE);  
 view = inflater.inflate(R.layout.txtspi, null);  
 }  
  
 TextView textView = (TextView) view.findViewById(R.id.row\_item\_textview);  
 spinner = (Spinner) view.findViewById(R.id.row\_item\_spinner);  
  
 textView.setText(mData.get(position));  
  
 if(position==0) {  
 ArrayAdapter<String> adapter = new ArrayAdapter<String>(mContext, android.R.layout.simple\_spinner\_item, mSpinnerItem1);  
 spinner.setAdapter(adapter);  
 }  
 else if(position==1) {  
 ArrayAdapter<String> adapter = new ArrayAdapter<String>(mContext, android.R.layout.simple\_spinner\_item, mSpinnerItem2);  
 spinner.setAdapter(adapter);  
 }  
 else if(position==2) {  
 ArrayAdapter<String> adapter = new ArrayAdapter<String>(mContext, android.R.layout.simple\_spinner\_item, mSpinnerItem3);  
 spinner.setAdapter(adapter);  
 }  
  
 spinner.setFocusable(false);  
 spinner.setFocusableInTouchMode(false);  
  
 textView.setFocusable(false);  
 textView.setFocusableInTouchMode(false);  
  
 spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {  
 @Override  
 public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {  
 zz = parent.getItemAtPosition(position).toString();  
 Log.d("TAG", "onItemSelected: "+zz);  
 }  
  
 @Override  
 public void onNothingSelected(AdapterView<?> parent) {  
  
 }  
 });  
  
 return view;  
 }  
  
 public String returntxt(){  
 return zz;  
 }  
}

*activity\_main.xml file:*

<?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">  
  
 <ListView  
 android:id="@+id/listView"  
 android:layout\_width="360dp"  
 android:layout\_height="563dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.49"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.702" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="SampleText"  
 app:layout\_constraintBottom\_toTopOf="@+id/listView"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 />  
</androidx.constraintlayout.widget.ConstraintLayout>

*txtspi.xml file:*

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:orientation="vertical"  
 android:layout\_width="match\_parent"  
 android:layout\_height="50dp"  
 android:gravity="center\_vertical"  
 android:padding="20dp">  
  
 <TextView  
 android:id="@+id/row\_item\_textview"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 />  
  
 <Spinner  
 android:id="@+id/row\_item\_spinner"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentEnd="true"  
 android:layout\_alignParentRight="true"  
 android:padding="2dp"  
 />  
  
</RelativeLayout>

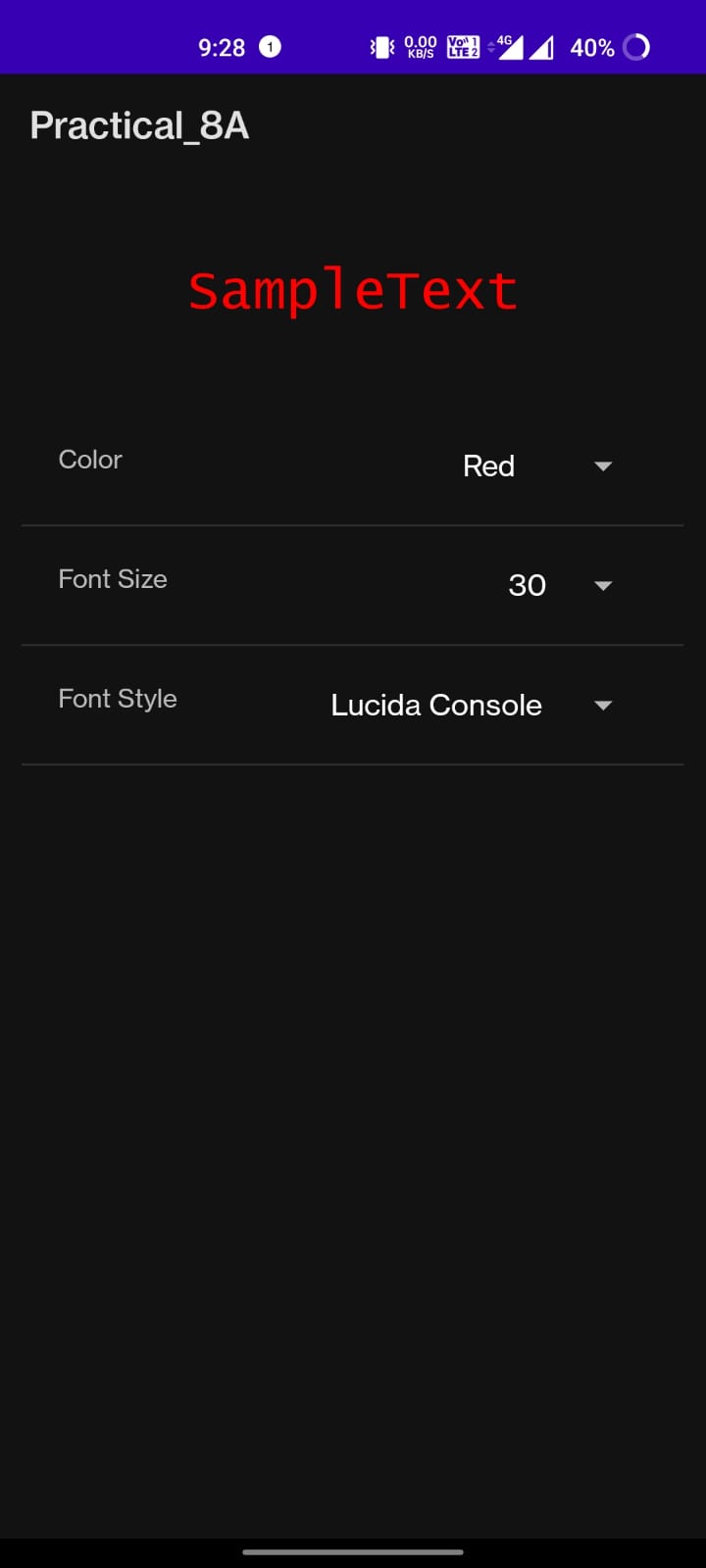
*fontt.xml file:*

<?xml version="1.0" encoding="utf-8"?>  
<font-family xmlns:android="http://schemas.android.com/apk/res/android">  
 <font  
 android:fontStyle="normal"  
 android:fontWeight="400"  
 android:font="@font/bahnschrift" />  
 <font  
 android:fontStyle="normal"  
 android:fontWeight="400"  
 android:font="@font/comic" />  
 <font  
 android:fontStyle="normal"  
 android:fontWeight="400"  
 android:font="@font/lucon" />  
</font-family>

*AndroidManifest.xml*

<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools">  
  
 <application  
 android:allowBackup="true"  
 android:dataExtractionRules="@xml/data\_extraction\_rules"  
 android:fullBackupContent="@xml/backup\_rules"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:theme="@style/Theme.Practical\_8A"  
 tools:targetApi="31">  
 <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>  
  
 <meta-data  
 android:name="android.app.lib\_name"  
 android:value="" />  
 </activity>  
 </application>  
  
</manifest>

*Screenshot:*



Practical 8B

Aim: To implement the recycler view to display images and text.

*Activity\_main.java file:*

package com.example.practical8b;  
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 {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 List<Data> data = fill\_with\_data();  
  
 RecyclerView recyclerView = (RecyclerView) findViewById(R.id.*recyclerView*);  
 RecyclerView\_Adapter adapter = new RecyclerView\_Adapter(data, getApplication());  
 recyclerView.setAdapter(adapter);  
 recyclerView.setLayoutManager(new LinearLayoutManager(this));  
  
 }  
  
 public List<Data> fill\_with\_data() {  
  
 List<Data> data = new ArrayList<>();  
 data.add(new Data("C", R.drawable.*c*));  
 data.add(new Data("Java", R.drawable.*java*));  
 data.add(new Data("Android", R.drawable.*android*));  
 data.add(new Data("Kotlin", R.drawable.*kotlin*));  
 data.add(new Data("Html", R.drawable.*html*));  
 data.add(new Data("CSS", R.drawable.*css*));  
  
 return data;  
 }  
}

*Data.java file:*

package com.example.practical8b;  
  
public class Data {  
  
 public String name;  
  
 public String getName() {  
 return name;  
 }  
  
 public void setName(String name) {  
 this.name = name;  
 }  
  
 public int getImageId() {  
 return imageId;  
 }  
  
 public void setImageId(int imageId) {  
 this.imageId = imageId;  
 }  
  
 public int imageId;  
  
 Data(String name, int imageId) {  
 this.name = name;  
 this.imageId = imageId;  
 }  
}

*RecyclerView\_Adapter.java file:*

package com.example.practical8b;  
  
import android.app.Application;  
import android.content.Context;  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
  
import androidx.annotation.NonNull;  
import androidx.recyclerview.widget.RecyclerView;  
import java.util.Collections;  
import java.util.List;  
  
public class RecyclerView\_Adapter extends RecyclerView.Adapter<View\_Holder> {  
  
 List<Data> list = Collections.*emptyList*();  
 Context context;  
  
 public RecyclerView\_Adapter(List<Data> data, Application application) {  
 this.list = data;  
 this.context = application;  
 }  
  
 @NonNull  
 @Override  
 public View\_Holder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {  
 //Inflate the layout, initialize the View Holder  
 View v = LayoutInflater.*from*(parent.getContext()).inflate(R.layout.*row\_layout*, parent, false);  
 View\_Holder holder = new View\_Holder(v);  
 return holder;  
 }  
  
 @Override  
 public void onBindViewHolder(@NonNull View\_Holder holder, int position) {  
  
 //Use the provided View Holder on the onCreateViewHolder method to populate the current row on the RecyclerView  
 holder.name.setText(list.get(position).name);  
 holder.imageView.setImageResource(list.get(position).imageId);  
  
 }  
  
 @Override  
 public int getItemCount() {  
 return list.size();  
 }  
}

*View\_Holder.java file:*

package com.example.practical8b;  
  
import android.view.View;  
import android.widget.ImageView;  
import android.widget.TextView;  
import androidx.recyclerview.widget.RecyclerView;  
  
public class View\_Holder extends RecyclerView.ViewHolder {  
  
 TextView name;  
 ImageView imageView;  
  
 View\_Holder(View itemView) {  
 super(itemView);  
 name = (TextView) itemView.findViewById(R.id.*description*);  
 imageView = (ImageView) itemView.findViewById(R.id.*image*);  
 }  
}

*row\_layout.xml file:*

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="horizontal">  
  
 <ImageView  
 android:id="@+id/image"  
 android:layout\_width="300px"  
 android:layout\_height="300px"  
 android:layout\_marginLeft="10dp"  
 android:layout\_marginTop="10dp"  
 android:src="@color/purple\_200" />  
  
 <TextView  
 android:id="@+id/description"  
 android:layout\_width="250dp"  
 android:layout\_height="55dp"  
 android:layout\_toRightOf="@id/image"  
 android:layout\_marginLeft="15dp"  
 android:layout\_marginTop="35dp"  
 android:text="abcd"  
 android:textColor="#000"  
 android:textSize="30sp" />  
  
</RelativeLayout>

*Activity\_main.xml file:*

<?xml version="1.0" encoding="utf-8"?>  
  
<RelativeLayout 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">  
  
 <androidx.recyclerview.widget.RecyclerView  
 android:id="@+id/recyclerView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent" />  
</RelativeLayout>

*Screenshot:*

