Software Development for Mobile Devices

# Submission for Assignment A4.1P

## App Screenshot

### Main screen

|  |  |
| --- | --- |
| Portrait | Landscape |
| /var/folders/q5/j2tp7pld71v2ydythymfcpdc0000gn/T/com.apple.Preview/com.apple.Preview.PasteboardItems/PKGi4.png | /var/folders/q5/j2tp7pld71v2ydythymfcpdc0000gn/T/com.apple.Preview/com.apple.Preview.PasteboardItems/csSLo.png |

Convert temperature from Celsius to Fahrenheit

|  |  |
| --- | --- |
| Portrait | Landscape |
| /var/folders/q5/j2tp7pld71v2ydythymfcpdc0000gn/T/com.apple.Preview/com.apple.Preview.PasteboardItems/Screenshot_1533892651.png | /var/folders/q5/j2tp7pld71v2ydythymfcpdc0000gn/T/com.apple.Preview/com.apple.Preview.PasteboardItems/ebpAU.png |

### Convert distance measurements provided as either inches, feet or miles into either cm or metres

|  |  |
| --- | --- |
| Portrait | Landscape |
| /var/folders/q5/j2tp7pld71v2ydythymfcpdc0000gn/T/com.apple.Preview/com.apple.Preview.PasteboardItems/Screenshot_1533892656.png | /var/folders/q5/j2tp7pld71v2ydythymfcpdc0000gn/T/com.apple.Preview/com.apple.Preview.PasteboardItems/RiivJ.png |

### Main Layout (activity\_main.xml)

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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="com.example.swinburne.w3\_conversion.MainActivity">  
  
  
 <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" >  
  
 <ListView  
 android:id="@+id/conversion\_list"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content" >  
 </ListView>  
  
 </LinearLayout>  
  
  
</android.support.constraint.ConstraintLayout>

### Temperature Layout (activity\_temperature\_conversion.xml)

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android" android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <LinearLayout  
 android:layout\_marginTop="5dp"  
 android:layout\_marginEnd="5dp"  
 android:layout\_marginStart="5dp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical">  
  
 <EditText  
 android:id="@+id/edtCelcius"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Celcius"  
 android:inputType="numberDecimal"  
 />  
  
 <Button  
 android:id="@+id/btnConvertTemp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="@string/btn\_convert"/>  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="@string/result"/>  
 <TextView  
 android:id="@+id/txtFahrenheit"  
 android:layout\_marginStart="5dp"  
 android:layout\_marginEnd="5dp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 />  
  
 </LinearLayout>  
  
  
 </LinearLayout>  
  
</android.support.constraint.ConstraintLayout>

### Distance layout (activity\_distance\_conversion.xml)

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android" android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <TableLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:layout\_marginTop="8dp">  
 <TableRow >  
  
 <EditText  
 android:id="@+id/edtMiles"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginEnd="5dp"  
 android:layout\_marginStart="5dp"  
 android:layout\_weight="1"  
 android:hint="Miles"  
 android:inputType="numberDecimal" />  
  
 <EditText  
 android:id="@+id/edtFeet"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Feet"  
 android:inputType="numberDecimal"  
 android:layout\_marginStart="5dp"  
 android:layout\_marginEnd="5dp"  
 android:layout\_weight="1"  
 />  
  
 <EditText  
 android:id="@+id/edtInches"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Inches"  
 android:inputType="numberDecimal"  
 android:layout\_marginStart="5dp"  
 android:layout\_marginEnd="5dp"  
 android:layout\_weight="1">  
 </EditText>  
  
 </TableRow>  
  
 <TableRow>  
 <Button  
 android:id="@+id/btnConvert"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="@string/btn\_convert"  
 android:layout\_weight="1"  
 />  
 </TableRow>  
  
 <LinearLayout  
 android:layout\_marginTop="5dp"  
 >  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="5dp"  
 android:text="@string/result"  
 android:textStyle="bold" />  
 <TextView  
 android:id="@+id/txtViewResult"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="5dp"  
 android:text=""  
 android:textStyle="bold"  
 android:layout\_weight="1"/>  
  
 <CheckBox  
 android:id="@+id/chkboxDisplayMetres"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginEnd="5dp"  
 android:text="@string/checkbox\_metres"/>  
 </LinearLayout>  
  
 </TableLayout>  
  
</android.support.constraint.ConstraintLayout>

### MainActivity

package com.example.swinburne.w3\_conversion;  
  
import android.content.Intent;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ListView;  
import android.widget.Toast;  
  
import com.example.swinburne.w3\_conversion.Adapter.ConvertAdapter;  
  
public class MainActivity extends AppCompatActivity {  
  
 String[] convertName = {"Convert Temperature", "Convert Distance"};  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 ConvertAdapter convertAdapter = new ConvertAdapter(this, convertName);  
 ListView listView = findViewById(R.id.*conversion\_list*);  
 listView.setAdapter(convertAdapter);  
 listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
 @Override  
 public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {  
 Toast.*makeText*(getApplicationContext(), convertName[i],Toast.*LENGTH\_SHORT*).show();  
 if (i == 0) {  
 // Starting temperature conversion activity  
 Intent intent = new Intent(getApplicationContext(), TemperatureConversionActivity.class);  
 startActivity(intent);  
 } else {  
 // Starting Distance Conversion activity  
 Intent intent = new Intent(getApplicationContext(), DistanceConversionActivity.class);  
 startActivity(intent);  
 }  
 }  
 });  
 }  
}

### TemperatureConversionActivity

package com.example.swinburne.w3\_conversion;  
  
import android.os.Bundle;  
import android.support.design.widget.FloatingActionButton;  
import android.support.design.widget.Snackbar;  
import android.support.v7.app.AppCompatActivity;  
import android.support.v7.widget.Toolbar;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
import com.example.swinburne.w3\_conversion.Conversion.TemperatureConversion;  
  
public class TemperatureConversionActivity extends AppCompatActivity {  
  
 EditText edtCelcius;  
 TextView txtFahrenheit;  
  
 private static String *RESTORE\_CELSIUS\_KEY* = "CelsiusText";  
 private static String *RESULT\_KEY* = "ResultText";  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_temperature\_conversion*);  
 initializeUI(savedInstanceState);  
 }  
  
 */\*\*  
 \* This method uses to restore the state  
 \** ***@param*** *state  
 \*/* private void restoretState(Bundle state) {  
 if (state == null) return;  
 edtCelcius.setText(state.getString(*RESTORE\_CELSIUS\_KEY*));  
 txtFahrenheit.setText(state.getString(*RESULT\_KEY*));  
 }  
  
 @Override  
 protected void onSaveInstanceState(Bundle outState) {  
 outState.putString(*RESTORE\_CELSIUS\_KEY*, edtCelcius.getText().toString());  
 outState.putString(*RESULT\_KEY*, txtFahrenheit.getText().toString());  
 super.onSaveInstanceState(outState);  
 }  
  
 private boolean isValid() {  
 return edtCelcius.getText().toString().length() > 0;  
 }  
  
 private void initializeUI(Bundle state) {  
 edtCelcius = findViewById(R.id.*edtCelcius*);  
 txtFahrenheit = findViewById(R.id.*txtFahrenheit*);  
 Button convertButton = findViewById(R.id.*btnConvertTemp*);  
 restoretState(state);  
 convertButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if (isValid()) {  
 TemperatureConversion temperatureConversion = new TemperatureConversion(Double.*valueOf*(edtCelcius.getText().toString()));  
 double result = temperatureConversion.toFahrenheit();  
 txtFahrenheit.setText(String.*format*("%.2f °F", result));  
 } else {  
 Toast.*makeText*(getApplicationContext(), "Please enter valid number", Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 });  
 }  
  
}

### DistanceConversionActivity

### How different activity are connected

Firstly, depends on the selection of the user, the app chooses the Activity to work with. It uses Intent to start the next Activity

listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
 @Override  
 public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {  
 if (i == 0) {  
 // Starting temperature conversion activity  
 Intent intent = new Intent(getApplicationContext(), TemperatureConversionActivity.class);  
 startActivity(intent);  
 } else {  
 // Starting Distance Conversion activity  
 Intent intent = new Intent(getApplicationContext(), DistanceConversionActivity.class);  
 startActivity(intent);  
 }  
 }  
});

To ensure the application can return to the parent activity correctly, we then add these code in AndroidManifest.xml

<activity  
 android:name=".TemperatureConversionActivity"  
 android:label="@string/title\_activity\_temperature\_conversion"  
 android:theme="@style/AppTheme.NoActionBar"  
 android:parentActivityName=".MainActivity"/>  
<activity  
 android:name=".DistanceConversionActivity"  
 android:label="@string/title\_activity\_distance\_conversion"  
 android:parentActivityName=".MainActivity"  
 android:theme="@style/AppTheme.NoActionBar">  
</activity>