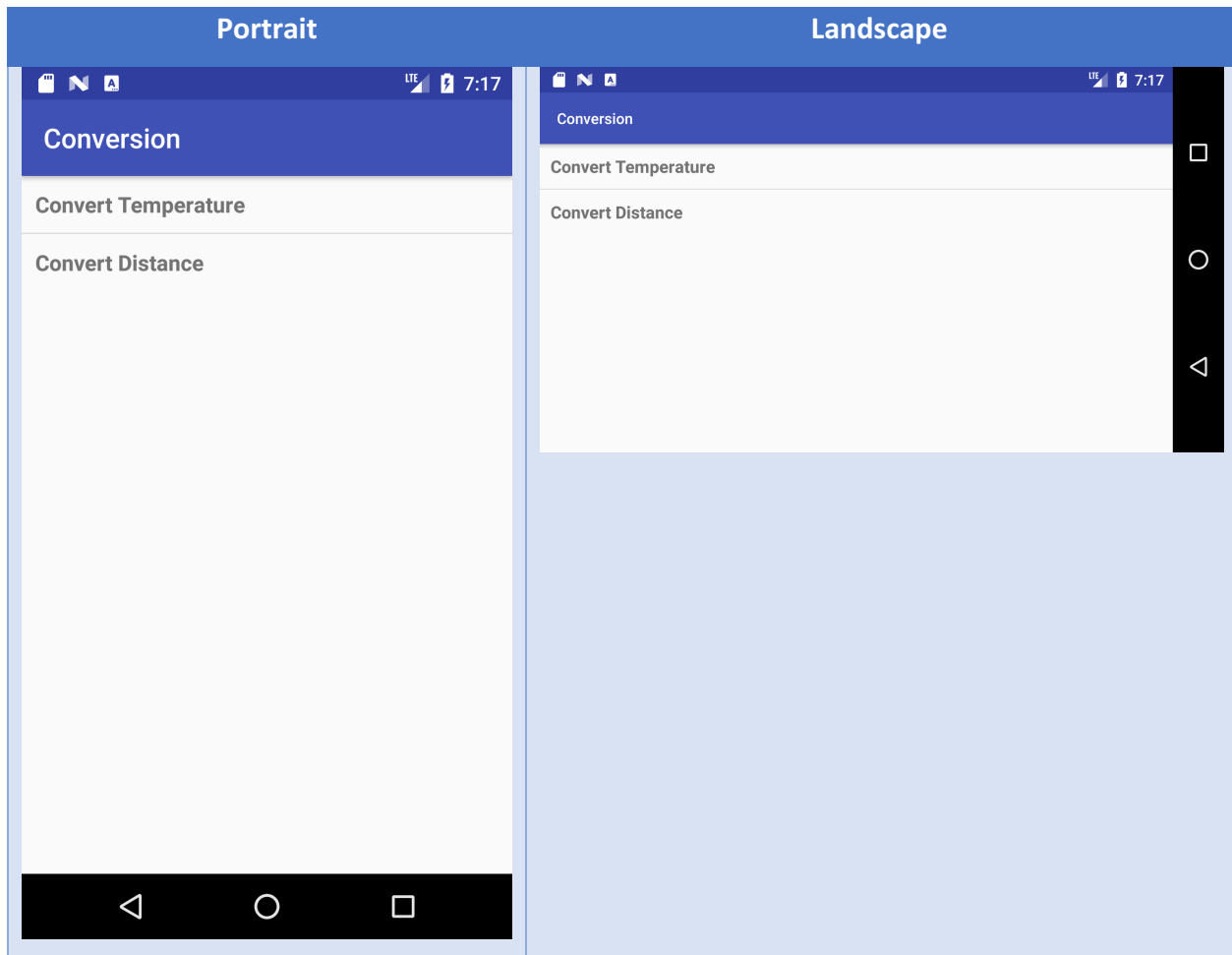


Software Development for Mobile Devices

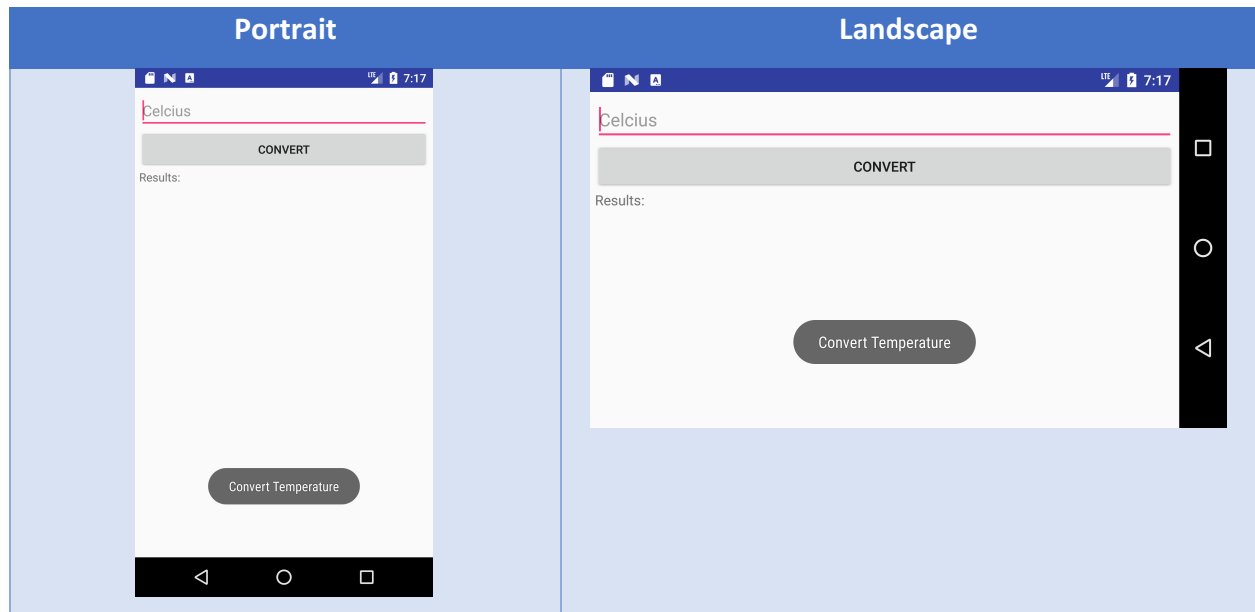
Submission for Assignment A4.1P

App Screenshot

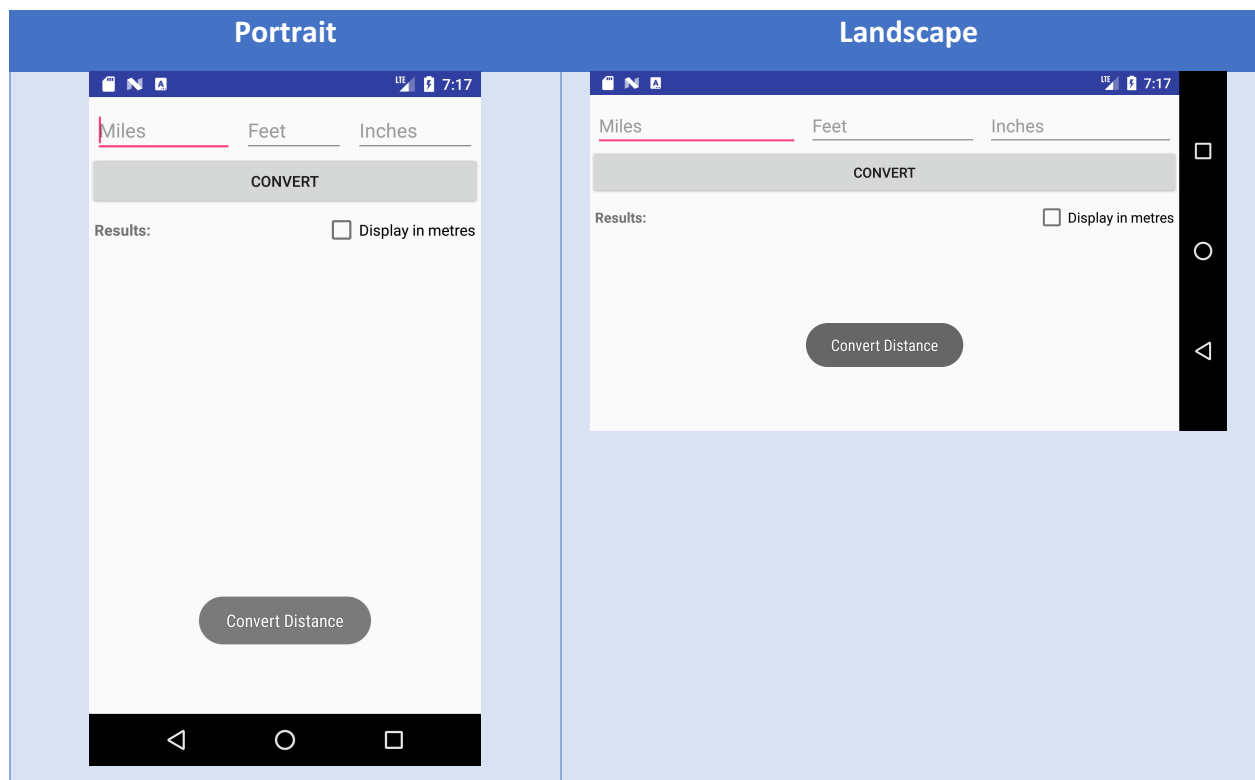
Main screen



Convert temperature from Celsius to Fahrenheit



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



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 edtCelsius;
    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>
```