

Lab2 – Feb/16/2024

Intelligent Device Applications (ITMD-555)

PROJECT	Temperature Converter (part deux)	50 points
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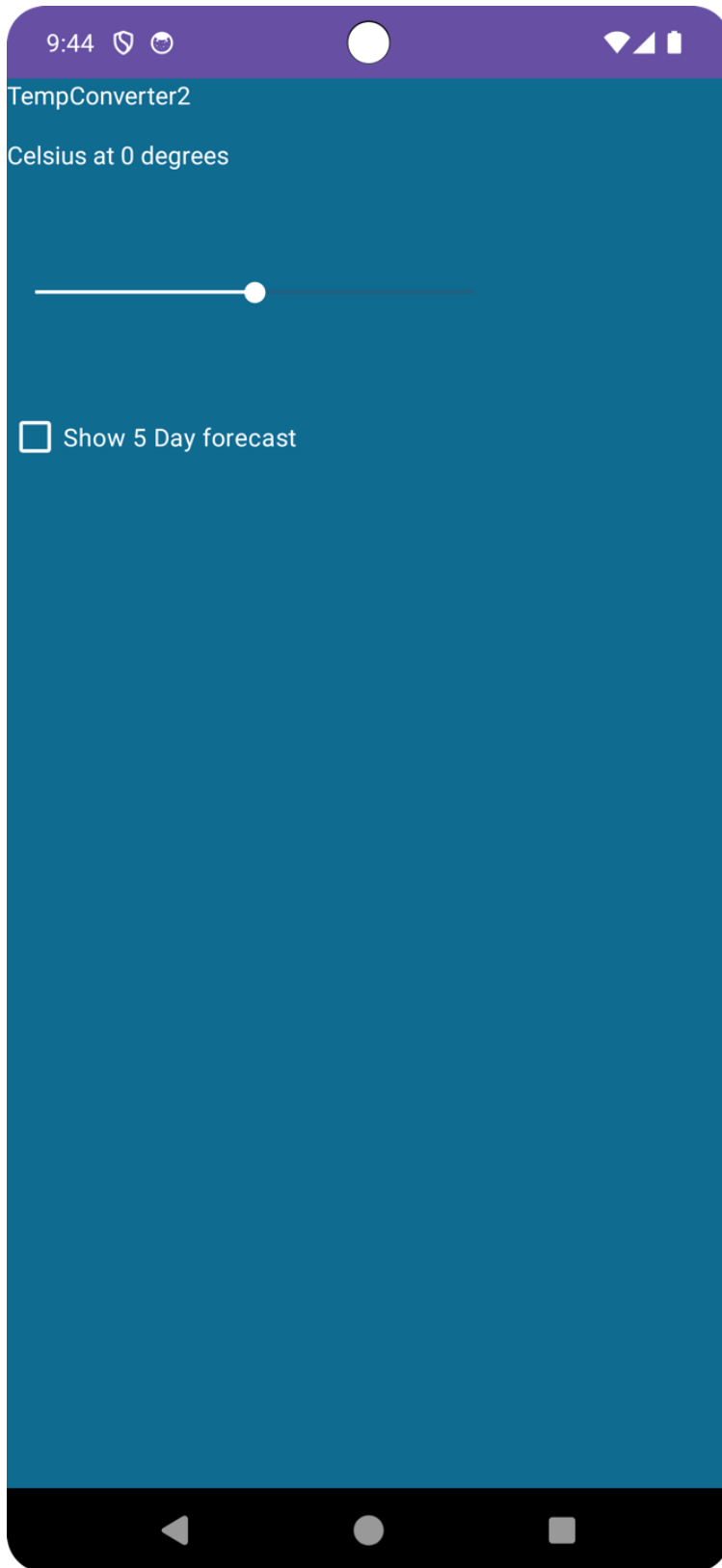
<u>Objective:</u> To practice seekBar, checkbox, listview with an arrayAdapter and a Viewstub.
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PROJECT DESCRIPTION

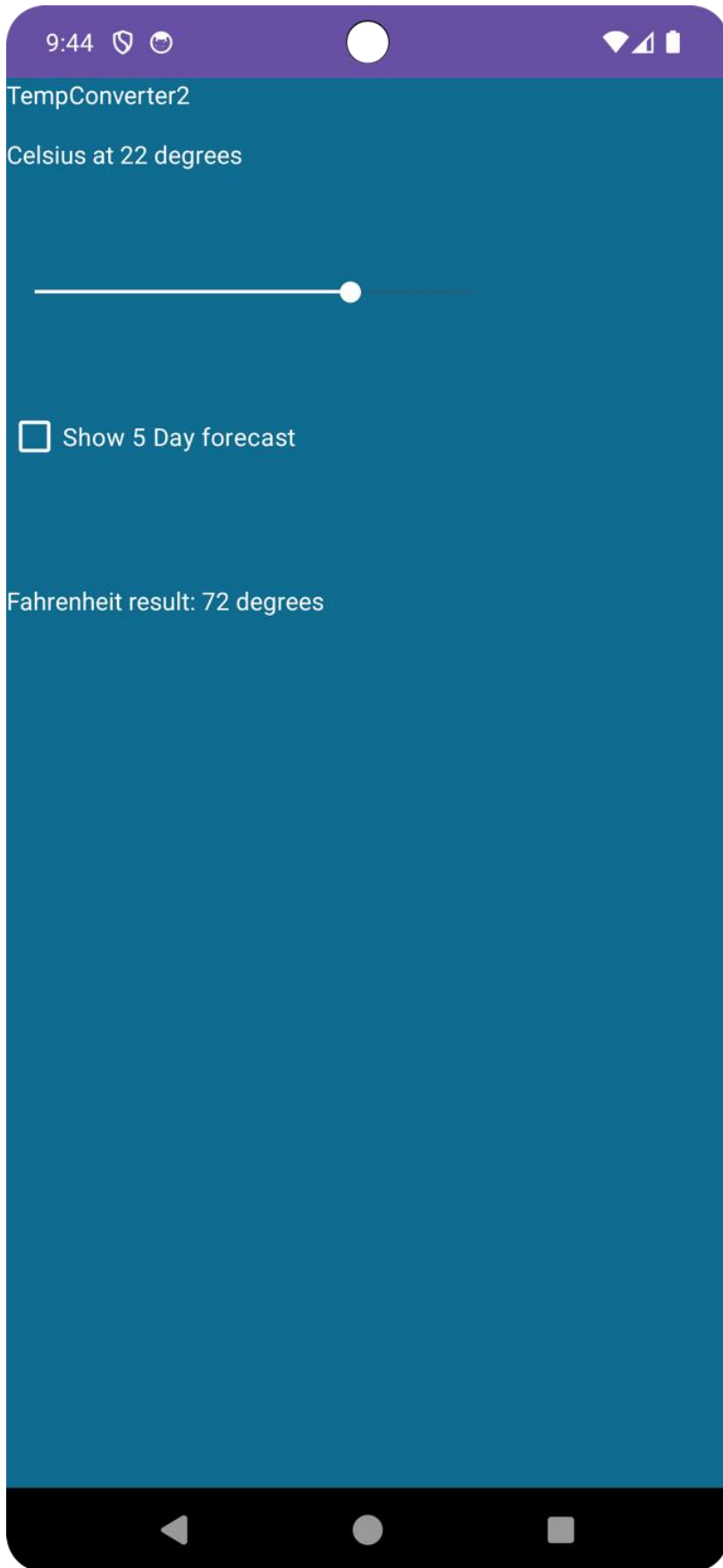
<p>Introduction. This lab continues with lab 1 logic but throws in a few more goodies namely a seekBar, checkbox, listview with an arrayAdapter and a Viewstub.</p>
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<p>The code is well laid out replete with comments. Study over the code syntax, the logic (esp. the objects used), the import statements of the Java and XML files VERY carefully, line by line if necessary as that's one way to learn big time!</p>
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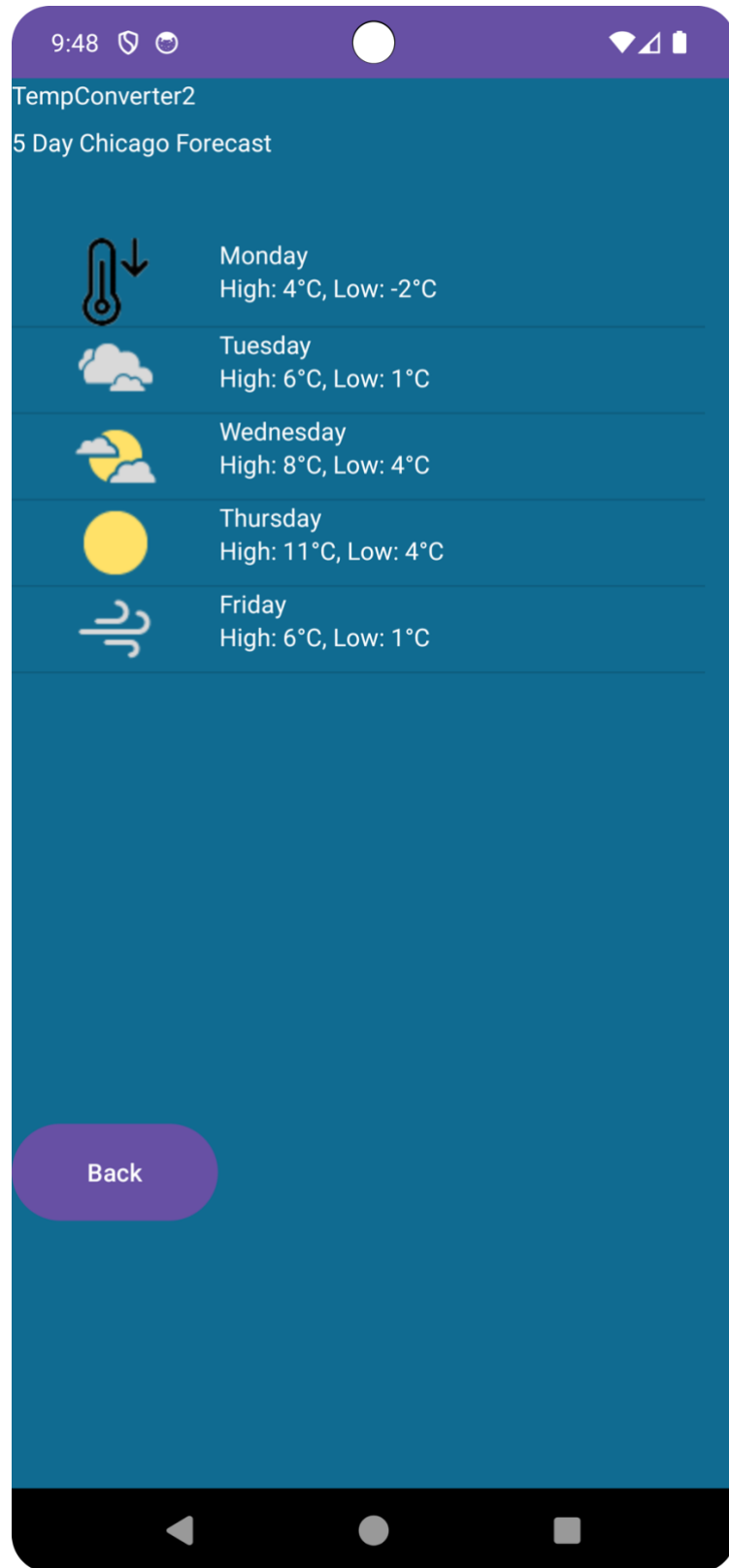
Snapshot 1 – Home Screen



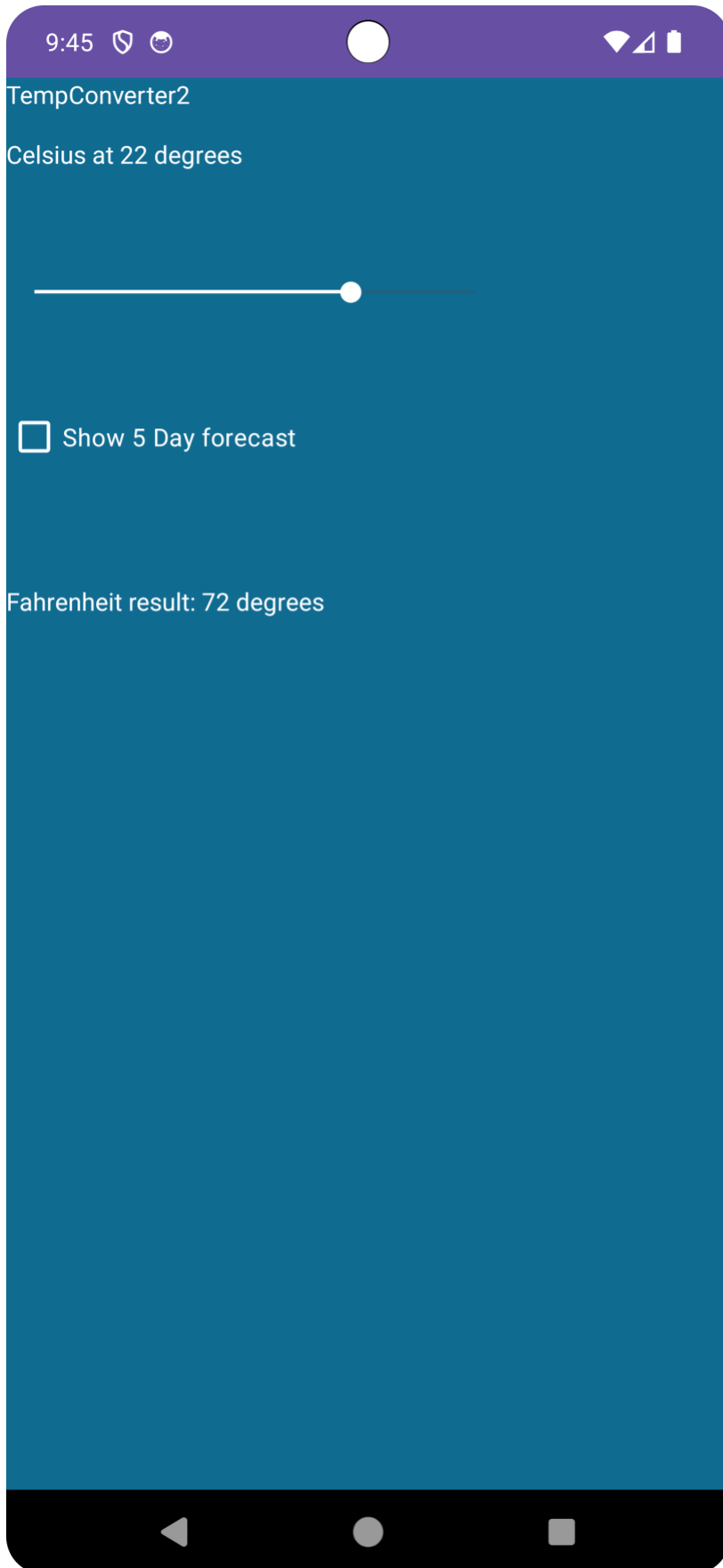
Snapshot 2: Showing 22 Degree Celsius in Fahrenheit



Snapshot 3. 5 day Weather Forecast with Appropriate images for Weather



Snapshot 4. Back to Home Page with same values



Source Code:

MainActivity.java

```
package com.example.tempconverter2;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.view.View;
import android.view.ViewStub;
import android.widget.AdapterView;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.CompoundButton;
import android.widget.ListView;
import android.widget.SeekBar;
import android.widget.SeekBar.OnSeekBarChangeListener;
import android.widget.TextView;
import android.widget.Toast;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    SeekBar seekBar; //declare seekbar object
    TextView textView;
    //declare member variables for SeekBar
    int discrete = 0;
    int start = 50;
    int start_position = 50; //progress tracker
    int temp = 0;
    //declare objects for ViewStub
    ViewStub stub;
    CheckBox checkBox;
    ListView lv; //declare Listview object

    View heading;

    Button backButton;

    TextView convertText;

    View weekForecast;

    @SuppressLint("MissingInflatedId")
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        //declare viewstub object
        stub = findViewById(R.id.viewStub1);
        @SuppressWarnings("unused")
        View inflated = stub.inflate();
        stub.setVisibility(View.INVISIBLE);
    }
}
```

```

//ViewStub logic
checkBox = findViewById(R.id.checkBox1);

heading=findViewById(R.id.projectName);

convertText=findViewById(R.id.convertText);

weekForecast=findViewById(R.id.simply);

weekForecast.setVisibility(View.GONE);

//handle checkbox click event
checkBox.setOnCheckedChangeListener(new
CheckBox.OnCheckedChangeListener() {
    public void onCheckedChanged(CompoundButton arg0, boolean
isChecked) {
        if (isChecked) {
            //remove objs from parent view to allow for child view
objs
            checkBox.setVisibility(View.GONE);
            seekBar.setVisibility(View.GONE);
            textView.setVisibility(View.GONE);
            //heading.setVisibility(View.VISIBLE);
            stub.setVisibility(View.VISIBLE);
            lv.setVisibility(View.VISIBLE);
            backButton.setVisibility(View.VISIBLE);
            convertText.setVisibility(View.GONE);
            heading.setVisibility(View.VISIBLE);
            weekForecast.setVisibility(View.VISIBLE);
        }
    }
});

//seekbar logic
textView = findViewById(R.id.textview);
textView.setText("Celsius at 0 degrees");
//set default view
seekBar = findViewById(R.id.seekbar);
seekBar.setProgress(start_position);

//create event handler for SeekBar
seekBar.setOnSeekBarChangeListener(new OnSeekBarChangeListener() {
    @Override
    public void onStopTrackingTouch(SeekBar seekBar) {
        if (temp == 0) //for initial view result
//
        Toast.makeText(getApplicationContext(), "Fahrenheit result:
" +
//
        "32 degrees", Toast.LENGTH_SHORT).show();
        convertText.setText("Fahrenheit result: " +
        "32 degrees");
    else
//
        Toast.makeText(getApplicationContext(), "Fahrenheit result:
"
//
        + String.valueOf(discrete) +
//
        " degrees", Toast.LENGTH_SHORT).show();
        convertText.setText("Fahrenheit result: "
        + String.valueOf(discrete) +
        " degrees");
    }
});

```

```

    }

    @Override
    public void onStartTrackingTouch(SeekBar seekBar) {
    }

    @Override
    public void onProgressChanged(SeekBar seekBar,
                                  int progress, boolean fromUser)
{
    // To convert progress passed as discrete (Fahrenheit)
value
    temp = progress - start;
    discrete = (int) Math.round(((temp * 9.0) /
                                  5.0) + 32)); //convert C to F temp
    textView.setText("Celsius at " + temp + " degrees");
}
});

// Initialize backButton
backButton = findViewById(R.id.backButton);

// Set OnClickListener for backButton
backButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        // Show the hidden views
        textView.setVisibility(View.VISIBLE);
        seekBar.setVisibility(View.VISIBLE);
        checkBox.setVisibility(View.VISIBLE);
        stub.setVisibility(View.INVISIBLE);

        // Uncheck the checkbox
        checkBox.setChecked(false);

        // Hide the backButton and listView
        backButton.setVisibility(View.GONE);
        lv.setVisibility(View.GONE);

        convertText.setVisibility(View.VISIBLE);

        weekForecast.setVisibility(View.GONE);

    }
});

//ListView logic
//String[] wkTemps = new String[]{"1", "-10", "0", "30", "10"};

String[] wkTempsLow = new String[]{"-2", "1", "4", "4", "1"};
String[] wkTempsHigh = new String[]{"4", "6", "8", "11", "6"};
String[] wkDays=new
String[]{"Sunday","Monday","Tuesday","Wednesday","Thursday"};

lv = findViewById(R.id.listView);
@SuppressWarnings({"unchecked", "rawtypes"})
/*
 * To use a basic ArrayAdapter, you just need to initialize the

```



```

adapter and
    * attach the adapter to the ListView. First, initialize the
adapter...:
    *
    */
//          ArrayAdapter adapter = new ArrayAdapter(this,
//          android.R.layout.simple_list_item_1,
//          android.R.id.text1, wkTemps);
//          // Assign adapter to ListView
//          lv.setAdapter(adapter);
//
//          String[] wkTemps = new String[5];
//          for (int i = 0; i < 5; i++) {
//              wkTemps[i] = "High: " + wkTempsHigh[i] + "°C, Low: " +
wkTempsLow[i] + "°C";
//          }
//          int weatherImages []={R.drawable.below,R.drawable.clouds,
R.drawable.sun_clouds,R.drawable.sun,R.drawable.wind};
//
//          ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
//          android.R.layout.simple_list_item_1, android.R.id.text1, wkTemps);
//          lv.setAdapter(adapter);
//
//          CustomBaseAdapter customBaseAdapter=new
CustomBaseAdapter(getApplicationContext(),wkDays,wkTemps,weatherImages);
//          lv.setAdapter(customBaseAdapter);
//          }//end onCreate method
}

```

CustomListView.java

```

package com.example.tempconverter2;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class CustomListView extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_custom_list_view);
    }
}

```

CustomBaseAdapter.java

```

package com.example.tempconverter2;

```

```

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;

public class CustomBaseAdapter extends BaseAdapter {

    Context context;
    String[] temp;
    int[] images;

    String[] days;
    LayoutInflater inflater;

    public CustomBaseAdapter() {
    }
    public CustomBaseAdapter(Context ctx,String[] days,String[] temp,
int[] images) {
        this.context=ctx;
        this.images=images;
        this.temp=temp;
        this.days=days;
        inflater=LayoutInflater.from(ctx);
    }

    @Override
    public int getCount() {
        return temp.length;
    }

    @Override
    public Object getItem(int position) {
        return null;
    }

    @Override
    public long getItemId(int position) {
        return 0;
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent)
    {
        convertView=inflater.inflate(R.layout.activity_custom_list_view,null);
        TextView listTextView=convertView.findViewById(R.id.listTextView);
        TextView
listTextView2=convertView.findViewById(R.id.listTextView2);
        ImageView tempImage=convertView.findViewById(R.id.imageIcon);
        listTextView.setText(days[position]);
        listTextView2.setText(temp[position]);
        tempImage.setImageResource(images[position]);
        return convertView;
    }
}

```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:id="@+id/activity_main"
    android:background="@color/light_blue"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.example.tempconverter2.MainActivity">

    <TextView
        android:id="@+id/projectName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentStart="true"
        android:text="TempConverter2"/>

    <View
        android:id="@+id/view2"
        android:layout_width="match_parent"
        android:layout_height="15dp"
        android:layout_below="@id/projectName"/>

    <TextView
        android:id="@+id/simply"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/projectName"
        android:layout_alignParentStart="true"
        android:layout_marginTop="8dp"
        android:text="5 Day Chicago Forecast"/>

    <!-- Original alignments preserved below -->

    <TextView
        android:id="@+id/textview"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/view2"
        android:text="Main Content" />

    <View
        android:id="@+id/view"
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:layout_below="@id/textview"/>

    <SeekBar
        android:id="@+id/seekbar"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:max="100"
        android:minWidth="250dp"
        android:layout_below="@+id/view">
```

```

        style="@style/SeekBarStyle"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true" />

<CheckBox
    android:id="@+id/checkBox1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Show 5 Day forecast"
    android:layout_below="@+id/seekbar"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_marginTop="49dp"
    android:textColor="@android:color/white"
    android:buttonTint="@android:color/white"/>

<View
    android:id="@+id/view44"
    android:layout_width="match_parent"
    android:layout_height="60dp"
    android:layout_below="@id/checkBox1"/>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/view44"
    android:id="@+id/convertText">

</TextView>

<View
    android:layout_width="wrap_content"
    android:layout_height="45dp"
    android:id="@+id/aboveListView"
    android:layout_below="@+id/simply">

</View>
<ViewStub
    android:id="@+id/viewStub1"
    android:layout="@layout/stubview"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/aboveListView"/>

</RelativeLayout>

```

Stubview.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="wrap_content"

```

```

        android:layout_height="match_parent"
        android:orientation="vertical">

        <ListView
            android:id="@+id/listView"
            android:layout_width="394dp"
            android:layout_height="484dp" />

        <Button
            android:id="@+id/backButton"
            android:layout_width="117dp"
            android:layout_height="63dp"
            android:layout_below="@id/listView"
            android:layout_alignParentEnd="true"
            android:layout_marginTop="16dp"
            android:layout_marginEnd="16dp"
            android:text="Back" />

    </LinearLayout>

```

Activity_custom_list_view.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="wrap_content"
    android:orientation="horizontal"
    android:background="@color/light_blue"
    tools:context=".CustomListView">

    <ImageView
        android:id="@+id/imageIcon"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="0.3"
        android:layout_gravity="start|center_vertical"
        android:scaleType="fitCenter"/>

    <LinearLayout
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="0.7"
        android:orientation="vertical">

        <TextView
            android:id="@+id/listTextView"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="start|center_vertical"
            android:textColor="@android:color/white"
            android:text="My Text Here"/>
    </LinearLayout>
</LinearLayout>

```

```
<TextView
    android:id="@+id/listTextView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="start|center_vertical"
    android:textColor="@android:color/white"
    android:text="My Text Here"/>

</LinearLayout>

</LinearLayout>
```