**Imports, Variables, and the onCreate Method**

**package** com.example.waqas.myapplication;  
*//The IDE asks you to press alt-Enter a few times. This adds to the imports.*  
import android.os.Bundle;  
import android.support.v7.app.ActionBarActivity;  
import android.view.Menu;  
import android.view.MenuItem;  
import android.widget.EditText;  
import android.widget.SeekBar;  
import android.widget.TextView;  
  
import java.text.NumberFormat;  
  
public class MainActivity **extends** ActionBarActivity {  
  
 **private static final** NumberFormat ***currencyFormat*** = NumberFormat.*getCurrencyInstance*();  
 **private static final** NumberFormat ***percentFormat*** = NumberFormat.*getPercentInstance*();  
  
 **private double billAmount** = 0.0; *//Amount entered by user*  
**private double customPercent** = 0.18; *//Initial custom tip percentage*  
**private** TextView **amountDisplayTextView**; *//Formatted bill amount*  
**private** TextView **percentCustomTextView**; *//Custom tip percentage*  
**private** TextView **tip15TextView**; *//Shows 15% tip*  
**private** TextView **total15TextView**; *//Total with 15% tip*  
**private** TextView **tipCustomTextView**; *//Shows custom tip*  
**private** TextView **totalCustomTextView**; *//Total with custom tip*  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
   
/\*When the system calls onCreate it passes a Bundle argument  
 containing the Activity's saved state\*/  
 **super**.onCreate(savedInstanceState);  
   
/\*setContentView: Inflating the GUI.  
 \* This method loads the xml document,  
 \* parses it, and converts it into the app's GUI\*/  
 setContentView(R.layout.***activity\_main***);

*/\* R is an automatically generated class.*  
 *It contains nested classes which represent*  
 *each type of resource in the res folder.*  
 *It is accessed by using R.className, such as R.id\*/*  
  
 *//Get the references to the Text Views*  
**amountDisplayTextView** = (TextView) findViewById(R.id.***amountDisplayText***);  
 **percentCustomTextView** = (TextView) findViewById(R.id.***percentCustomTextView***);  
 **tip15TextView** = (TextView) findViewById(R.id.***tip15TextView***);  
 **total15TextView** = (TextView) findViewById(R.id.***total15TextView***);  
 **tipCustomTextView** = (TextView) findViewById(R.id.***tipCustomTextView***);  
 **totalCustomTextView** = (TextView) findViewById(R.id.***totalCustomTextView***);  
  
 *//Set Text to change GUI values*  
**amountDisplayTextView**.setText(***currencyFormat***.format(**billAmount**));  
 updateStandard(); *//Defined below for 15% tip*  
updateCustom(); *//Defined below for custom tip*  
  
 *//Text Watcher for amountEditText*  
EditText amountEditText = (EditText) findViewById(R.id.***amountEditText***);  
 amountEditText.addTextChangedListener(amountEditTextWatcher);  
  
 *//Listener for SeekBar*  
SeekBar customTipSeekBar = (SeekBar) findViewById(R.id.***customTipSeekBar***);  
 customTipSeekBar.setOnSeekBarChangeListener(customSeekBarListener);  
 } *//end of onCreate method*

**Update Methods, Listener and Watcher**

**private void** updateStandard()  
{  
 **double** fifteenPercentTip = **billAmount** \* 0.15;  
 **double** fifteenPercentTotal = **billAmount** + fifteenPercentTip;  
  
 **tip15TextView**.setText(***currencyFormat***.format(fifteenPercentTip));  
 **total15TextView**.setText(***currencyFormat***.format(fifteenPercentTotal));  
} *//end method updateStandard*  
  
*private void* updateCustom()  
{  
 **percentCustomTextView**.setText(***percentFormat***.format(**customPercent**));  
  
 **double** customTip = **billAmount** \* **customPercent**;  
 **double** customTotal = **billAmount** + customTip;  
  
 **tipCustomTextView**.setText(***currencyFormat***.format(customTip));  
 **totalCustomTextView**.setText(***currencyFormat***.format(customTotal));  
} *//end method updateCustom*  
  
*private* SeekBar.OnSeekBarChangeListener **customSeekBarListener** = **new** SeekBar.OnSeekBarChangeListener() {  
 @Override  
 **public void** onProgressChanged(SeekBar seekBar, **int** progress, **boolean** fromUser) {  
 **customPercent** = progress / 100.0;  
 updateCustom();  
 } *//end method onProgressChanged*  
  
@Override  
 **public void** onStartTrackingTouch(SeekBar seekBar) {  
  
 } *//end method onStartTrackingTouch*  
  
@Override  
 **public void** onStopTrackingTouch(SeekBar seekBar) {  
  
 } *//end method onStopTrackingTouch*  
*}; //end onSeekBarChangeListener*

*private* TextWatcher **amountEditTextWatcher** = **new** TextWatcher() {  
 @Override  
 **public void** beforeTextChanged(CharSequence s, **int** start, **int** count, **int** after) {  
  
 } *//end method beforeTextChanged*  
  
 *//Called when the user enters a number, and whenever text is changed*  
@Override  
 **public void** onTextChanged(CharSequence s, **int** start, **int** before, **int** count) {  
 *//converts amountEditText's text to a double*  
**try**  
{  
 **billAmount** = Double.*parseDouble*(s.toString()) / 100.0;  
 } *//end try*  
**catch** (NumberFormatException e){  
 **billAmount** = 0.0; *//default if exception occurs*  
} *//end catch*  
 *//Displays the currency formatted bill amount*  
**amountDisplayTextView**.setText(***currencyFormat***.format(**billAmount**));  
 updateStandard();  
 updateCustom();  
 } *//end method onTextChanged*  
  
@Override  
 **public void** afterTextChanged(Editable s) {  
  
 } *//end method afterTextChanged*  
*}; //end amountEditTextWatcher*