7A

Android
Date – Time - Tabs

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Notes are based on:

The Busy Coder's Guide to Android Development
by Mark L. Murphy
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&
Android Developers
http://developer.android.com/index.html

Date/Time Selection Widgets

Date

Android also supports widgets (**DatePicker**, **TimePicker**) and dialogs (**DatePickerDialog**, **TimePickerDialog**) for helping users enter dates and times.

The **DatePicker** and **DatePickerDialog** allow you to set the starting date for the selection, in the form of a ***year, month***, and ***day.***

Value of ***month*** runs from **0** for *January* through **11** for *December*.

Each widget provides a *callback* object (**OnDateChangedListener** or **OnDateSetListener**) where you are informed of a new date selected by the user.

Date/Time Selection Widgets

Time Selection

The widgets **TimePicker** and **TimePickerDialog** let you:

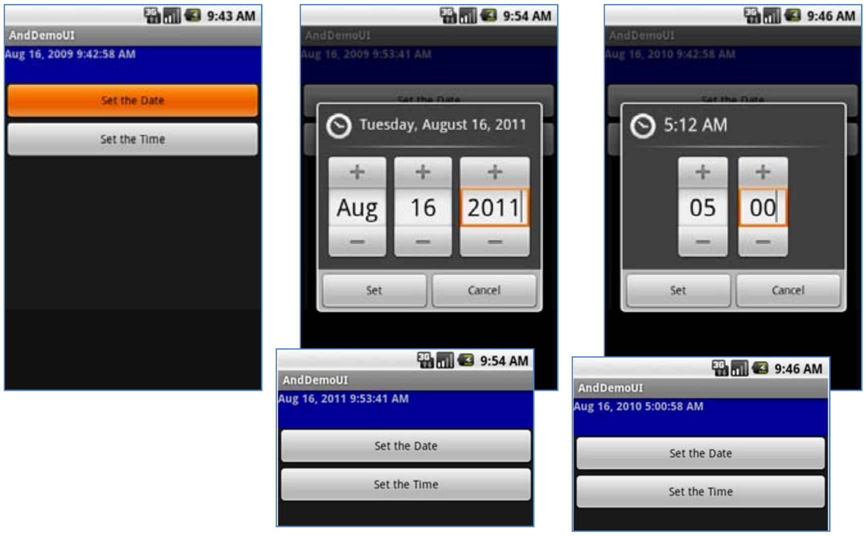
1. set the initial time the user can adjust, in the form of an ***hour*** (***0*** through ***23***) and a ***minute*** (***0*** through ***59***)

2. indicate if the selection should be in *12-hour mode* (with an AM/PM toggle), or in *24-hour mode*.

3. provide a callback object (**OnTimeChangedListener** or **OnTimeSetListener**) to be notified of when the user has chosen a new time (which is supplied to you in the form of an hour and minute)

Date/Time Selection Widgets

Example: Using Calendar Widgets



9:43 AM
AndDemoUI
Aug 16, 2009 9:42:58 AM
Set the Date
Set the Time

9:54 AM
AndDemoUI
Aug 16, 2009 9:53:41 AM
Tuesday, August 16, 2011
Aug 16 2011
Set Cancel

9:46 AM
AndDemoUI
Aug 16, 2010 9:42:58 AM
5:12 AM
05 00
Set Cancel

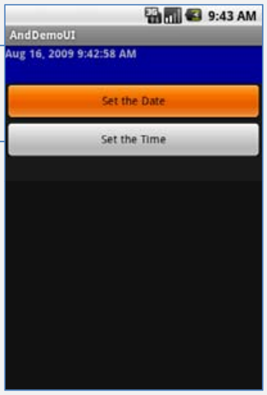
9:54 AM
AndDemoUI
Aug 16, 2011 9:53:41 AM
Set the Date
Set the Time

9:46 AM
AndDemoUI
Aug 16, 2010 5:00:58 AM
Set the Date
Set the Time

Date/Time Selection Widgets

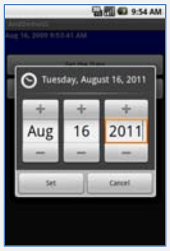
Example: Using Calendar Widgets

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
android:id="@+id/widget28"
android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:orientation="vertical"
xmlns:android="http://schemas.android.com/apk/res/android"
>
<TextView
android:id="@+id/lblDateAndTime"
android:layout_width="fill_parent"
android:layout_height="47px"
android:background="#ff000099"
android:textStyle="bold"
>
</TextView>
<Button
android:id="@+id/btnDate"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Set the Date"
>
</Button>
<Button
android:id="@+id/btnTime"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Set the Time"
>
</Button>
</LinearLayout>
```



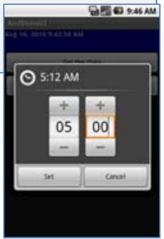
Date/Time Selection Widgets

```
package cis493.demoui;
import android.app.Activity;
import android.os.Bundle;
import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.view.View;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.TimePicker;
import android.widget.TextView;
import java.text.DateFormat;
import java.util.Calendar;

public class AndDemoUI extends Activity {
      DateFormat fmtDateAndTime = DateFormat.getDateTimeInstance();
      TextView lblDateAndTime;
      Calendar myCalendar = Calendar.getInstance();

      DatePickerDialog.OnDateSetListener d = new DatePickerDialog.OnDateSetListener()
      {
            public void onDateSet(DatePicker view,
                                 int year, int monthOfYear, int dayOfMonth) {
            myCalendar.set(Calendar.YEAR, year);
            myCalendar.set(Calendar.MONTH, monthOfYear);
            myCalendar.set(Calendar.DAY_OF_MONTH, dayOfMonth);
            updateLabel();
            }
      };
```



Date/Time Selection Widgets

```
TimePickerDialog.OnTimeSetListener t = new TimePickerDialog.OnTimeSetListener()
{
      public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
            myCalendar.set(Calendar.HOUR_OF_DAY, hourOfDay);
            myCalendar.set(Calendar.MINUTE, minute);
            updateLabel();
      }
};


private void updateLabel() {
      lblDateAndTime.setText(fmtDateAndTime.format(myCalendar.getTime()));
}
```



7

Date/Time Selection Widgets

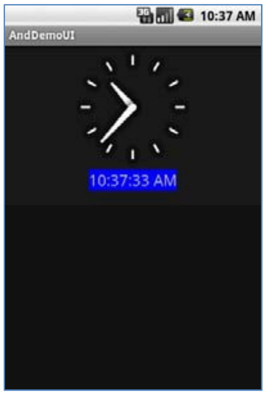
```
      @Override
      public void onCreate(Bundle icicle) {
            super.onCreate(icicle);
            setContentView(R.layout.main);
            lblDateAndTime = (TextView) findViewById(R.id.lblDateAndTime);
            Button btnDate = (Button) findViewById(R.id.btnDate);
            btnDate.setOnClickListener(new View.OnClickListener() {
                  public void onClick(View v) {
                        new DatePickerDialog(AndDemoUI.this, d,
                                    myCalendar.get(Calendar.YEAR),
                                    myCalendar.get(Calendar.MONTH),
                                    myCalendar.get(Calendar.DAY_OF_MONTH)).show();
                  }
            });

            Button btnTime = (Button) findViewById(R.id.btnTime);
            btnTime.setOnClickListener(new View.OnClickListener() {
                  public void onClick(View v) {
                        new TimePickerDialog(AndDemoUI.this, t,
                                    myCalendar.get(Calendar.HOUR_OF_DAY),
                                    myCalendar.get(Calendar.MINUTE), true).show();
                  }
            });

            updateLabel();
      }// onCreate
} //class
```

Date/Time Selection Widgets

Other Time Widgets

Android provides a **DigitalClock** and **AnalogClock** widgets.
Automatically update with the passage of time (no user intervention is required).

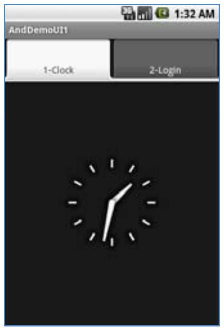
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
android:id="@+id/widget34"
android:layout_width="fill_parent"
android:layout_height="fill_parent"
xmlns:android="http://schemas.android.com/apk/res/android"
>
<DigitalClock
android:id="@+id/digital"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:background="#ff0000ff"
android:textSize="20px"
android:layout_below="@+id/analog"
android:layout_centerHorizontal="true"
>
</DigitalClock>
<AnalogClock
android:id="@+id/analog"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:layout_alignParentTop="true"
android:layout_alignParentLeft="true"
>
</AnalogClock>
</RelativeLayout>
```

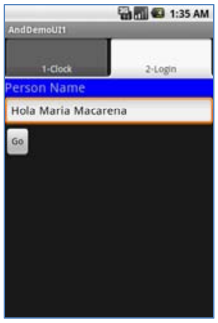


Tab Selection Widget

Tab Selector

1. Android UIs should be kept simple at all costs.
2. When many pieces of information must be displayed in a single app, the **Tab Widget** could be used to make the user aware of the pieces but show only a portion at the time.





Person Name

Hola Maria Macarena

Tab Selection Widget

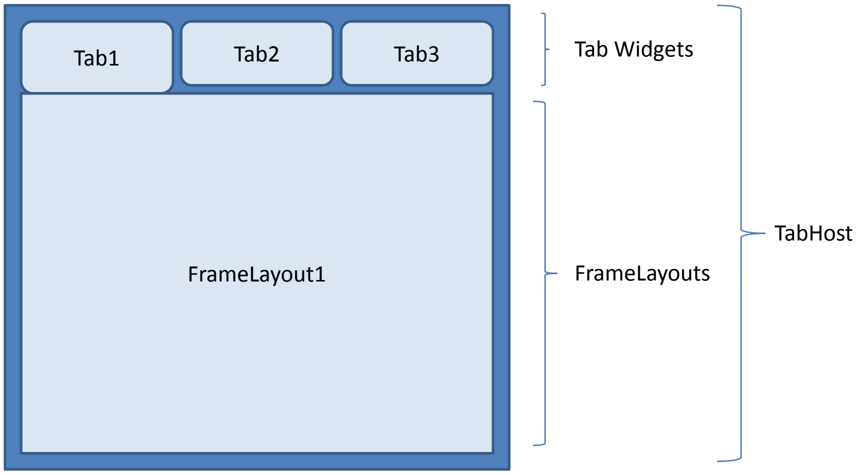
Tabs – Components

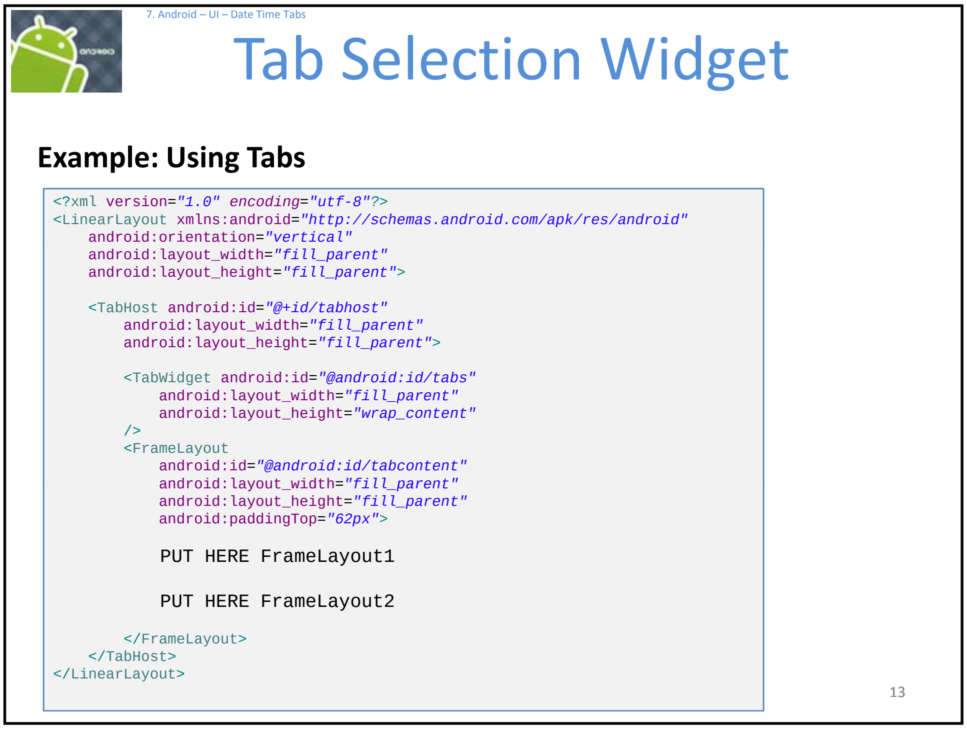
There are a few widgets and containers you need to use in order to set up a tabbed portion of a view:

1. **TabHost** is the main container for the tab buttons and tab contents
2. **TabWidget** implements the row of tab buttons, which contain text labels and optionally contain icons
3. **FrameLayout** is the container for the tab contents

Tab Selection Widget

Components





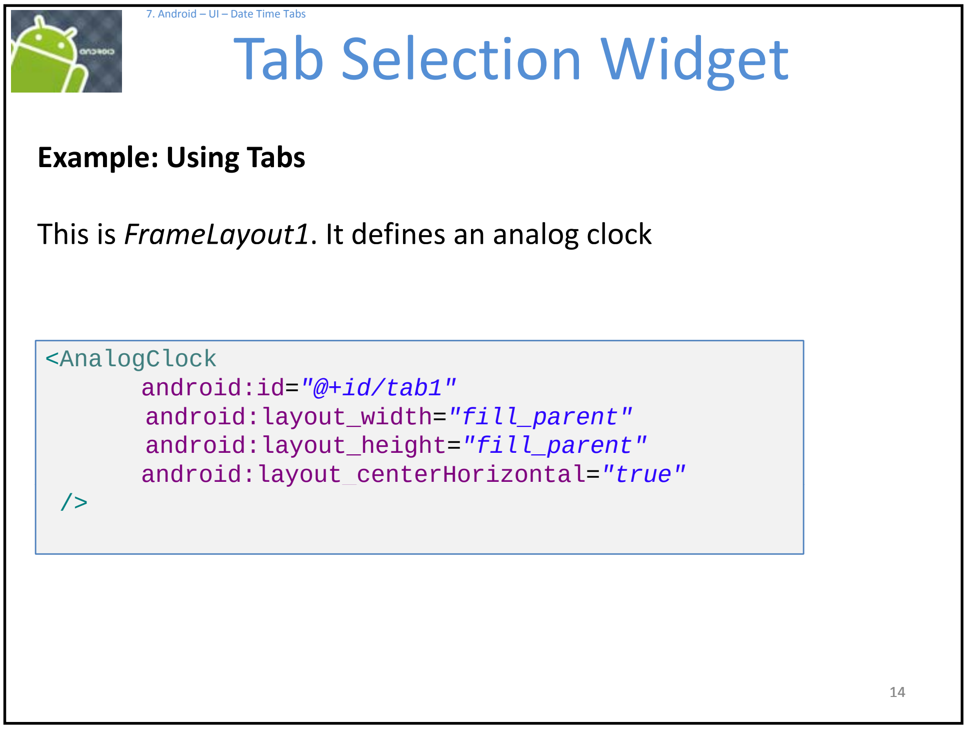
7. Android – UI – Date Time Tabs

Tab Selection Widget

Example: Using Tabs

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

    <TabHost android:id="@+id/tabhost"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent">

        <TabWidget android:id="@android:id/tabs"
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
        />
        <FrameLayout
            android:id="@android:id/tabcontent"
            android:layout_width="fill_parent"
            android:layout_height="fill_parent"
            android:paddingTop="62px">

            PUT HERE FrameLayout1

            PUT HERE FrameLayout2

        </FrameLayout>
    </TabHost>
</LinearLayout>
```

13



7. Android – UI – Date Time Tabs

Tab Selection Widget

Example: Using Tabs

This is *FrameLayout1*. It defines an analog clock

```
<AnalogClock
        android:id="@+id/tab1"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:layout_centerHorizontal="true"
 />
```

14

Tab Selection Widget

Example: Using Tabs

This is FrameLayout2. It defines a *LinearLayout* holding a *label*, a textBox, and a *button*.

```
<LinearLayout
android:id="@+id/tab2"
android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:orientation="vertical"
xmlns:android="http://schemas.android.com/apk/res/android"
>
<TextView
       android:id="@+id/caption1"
       android:layout_width="fill_parent"
       android:layout_height="wrap_content"
       android:background="#ff0000ff"
       android:text="Person Name"
       android:textSize="20px"
>
</TextView>
<EditText
       android:id="@+id/txtPerson"
       android:layout_width="fill_parent"
       android:layout_height="wrap_content"
       android:text="txtPerson"
       android:textSize="18sp"
>
</EditText>
<Button
       android:id="@+id/btnGo"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:text="Go"
>
</Button>
</LinearLayout>
```

Tab Selection Widget

Example: Using Tabs

```
package cis493.selectionwidgets;

import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TabHost;


public class AndDemoUI1 extends Activity {
```

Tab Selection Widget

Example: Using Tabs

```
@Override
public void onCreate(Bundle icicle) {
        super.onCreate(icicle);
        setContentView(R.layout.main);

        TabHost tabs=(TabHost)findViewById(R.id.tabhost);

        tabs.setup();

        TabHost.TabSpec spec;

        spec =tabs.newTabSpec("tag1");
        spec.setContent(R.id.tab1);
        spec.setIndicator("1-Clock");
        tabs.addTab(spec);

        spec=tabs.newTabSpec("tag2");
        spec.setContent(R.id.tab2);
        spec.setIndicator("2-Login");
        tabs.addTab(spec);

        tabs.setCurrentTab(0);
```

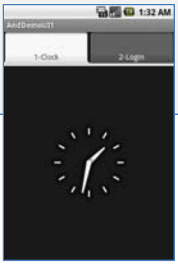
Set Tab1

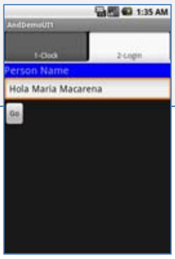
Set Tab2

Tab Selection Widget

Example: Using Tabs

```
   Button btnGo = (Button)findViewById(R.id.btnGo);
   btnGo.setOnClickListener(new OnClickListener() {
         @Override
         public void onClick(View arg0) {
                 EditText txtPerson =
                         (EditText)findViewById(R.id.txtPerson);
                 String theUser = txtPerson.getText().toString();
                 txtPerson.setText("Hola " + theUser);
                 }
         });
   }

 }
```





Hola Maria Macarena

SlidingDrawer Widget

SlidingDrawer hides content out of the screen and allows the user to drag a **handle** to bring the **content** on screen.

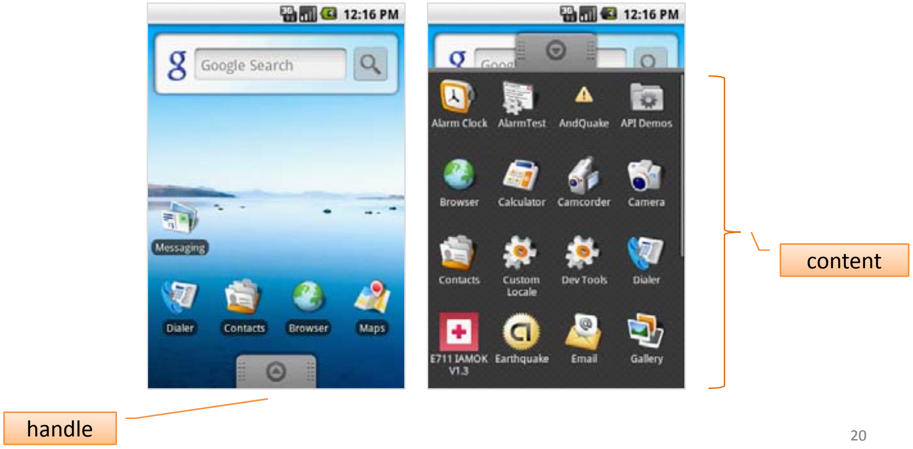
- SlidingDrawer can be used *vertically* or *horizontally*.
- SlidingDrawer should be used as an *overlay* inside layouts. This means SlidingDrawer should only be used inside of a **FrameLayout** or a **RelativeLayout** for instance.
- The size of the SlidingDrawer defines how much space the content will occupy once slid out so SlidingDrawer should usually use *fill_parent* for both its dimensions.

Taken from: http://developer.android.com/reference/android/widget/SlidingDrawer.html

SlidingDrawer Widget

Example:

This *SlidingDrawer* is used by the Android's interface to access applications installed in the device.



SlidingDrawer Widget

Taken from: http://developer.android.com/reference/android/widget/SlidingDrawer.html

Example1:
Inside an XML layout, SlidingDrawer must define the **id** of the *handle* and the *content*:

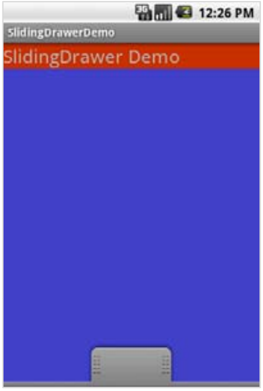
```
<SlidingDrawer
     android:id="@+id/drawer"
     android:layout_width="fill_parent"
     android:layout_height="fill_parent"

     android:handle="@+id/handle"
     android:content="@+id/content">

     <ImageView
         android:id="@id/handle"
         android:layout_width="88dip"
         android:layout_height="44dip" />

     <GridView
         android:id="@id/content"
         android:layout_width="fill_parent"
         android:layout_height="fill_parent" />

 </SlidingDrawer>
```

handle is just a small graphic to visually indicate the opening/closing control

content is usually some type of container holding the desired UI held by the drawer

SlidingDrawer Widget

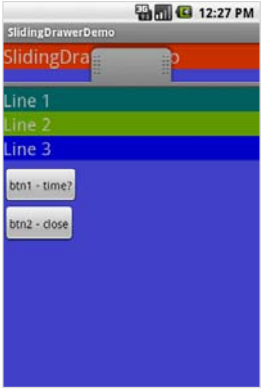
Example2. A more elaborated SlidingDrawer.



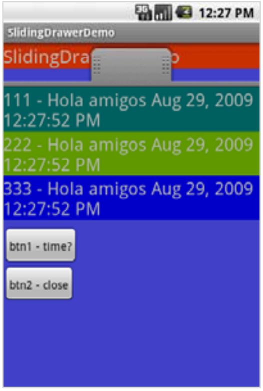
SlidingDrawer Demo

The red TextView simulates the main UI, the SlidingDrawer is an overlay, tapping the handle opens the new view

The background UI is overlapped by the contents of the drawer. Tapping the handle closes the drawer (but does not erase its data)



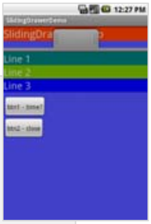
Line 1
Line 2
Line 3



111 - Hola amigos Aug 29, 2009 12:27:52 PM
222 - Hola amigos Aug 29, 2009 12:27:52 PM
333 - Hola amigos Aug 29, 2009 12:27:52 PM

SlidingDrawer Widget

Example 2: SlidingDrawer XML layout (main UI)



```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:background="#FF4444CC"
        >
  <TextView
     android:id="@+id/label0"
     android:layout_alignParentTop="true"
     android:layout_width="fill_parent"
     android:layout_height="wrap_content"
     android:background="#ffcc3300"
     android:text="SlidingDrawer Demo"
     android:textSize="24sp" />
```

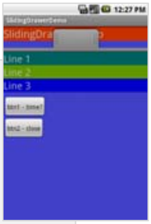
SlidingDrawer Widget

Example 2: SlidingDrawer XML layout (Drawer)

```
 <SlidingDrawer
        android:id="@+id/drawer"
        android:layout_alignParentBottom="true"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:handle="@+id/handle"
        android:content="@+id/content" >

        <ImageView
            android:id="@id/handle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@drawable/tray_handle_normal"  />
```

SlidingDrawer Widget

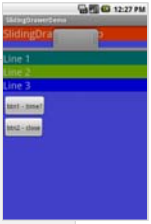
Example 2: SlidingDrawer XML layout (Drawer)



```
         <LinearLayout
                 android:id="@id/content"
                 android:layout_width="fill_parent"
                 android:layout_height="fill_parent"
                 android:orientation="vertical“ >

                 <TextView
                 android:id="@+id/label1"
                 android:layout_width="fill_parent"
                 android:layout_height="wrap_content"
                 android:background="#ff006666"
                 android:text="Line 1"
                 android:textSize="22sp"  />

                 <TextView
                 android:id="@+id/label2"
                 android:layout_width="fill_parent"
                 android:layout_height="wrap_content"
                 android:background="#ff669900"
                 android:text="Line 2"
                 android:textSize="22sp"  />
```

SlidingDrawer Widget

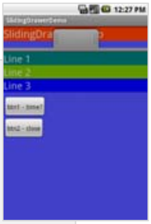
Example 2: SlidingDrawer XML layout (Drawer)



```
                 <TextView
                 android:id="@+id/label3"
                 android:layout_width="fill_parent"
                 android:layout_height="wrap_content"
                 android:background="#ff0000cc"
                 android:text="Line 3"
                 android:textSize="22sp"   />

                 <TextView
                 android:id="@+id/filler1"
                 android:layout_width="fill_parent"
                 android:layout height="wrap content"
                 android:textSize="6sp"   />

                 <Button
                 android:id="@+id/btn1"
                 android:layout_width="wrap_content"
                 android:layout_height="wrap_content"
                 android:padding="4px"
                 android:text=" btn1 - time? "   />
```

SlidingDrawer Widget

Example 2: SlidingDrawer XML layout (Drawer)



```
                  <Button
                  android:id="@+id/btn2"
                  android:layout_width="wrap_content"
                  android:layout_height="wrap_content"
                  android:padding="4px"
                  android:text=" btn2 - close "   />

         </LinearLayout>

   </SlidingDrawer>

</RelativeLayout>
```

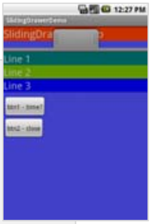
SlidingDrawer Widget

Example 2: SlidingDrawer. Android Activity

```
package cis493.slidingdreawerdemo;

import java.util.Date;

import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.*;

public class SlidingDrawerDemo extends Activity
{
    Button btn1;
    Button btn2;
    TextView label1;
    TextView label2;
    TextView label3;
    SlidingDrawer myDrawer;
```

SlidingDrawer Widget

Example 2: SlidingDrawer. Android Activity

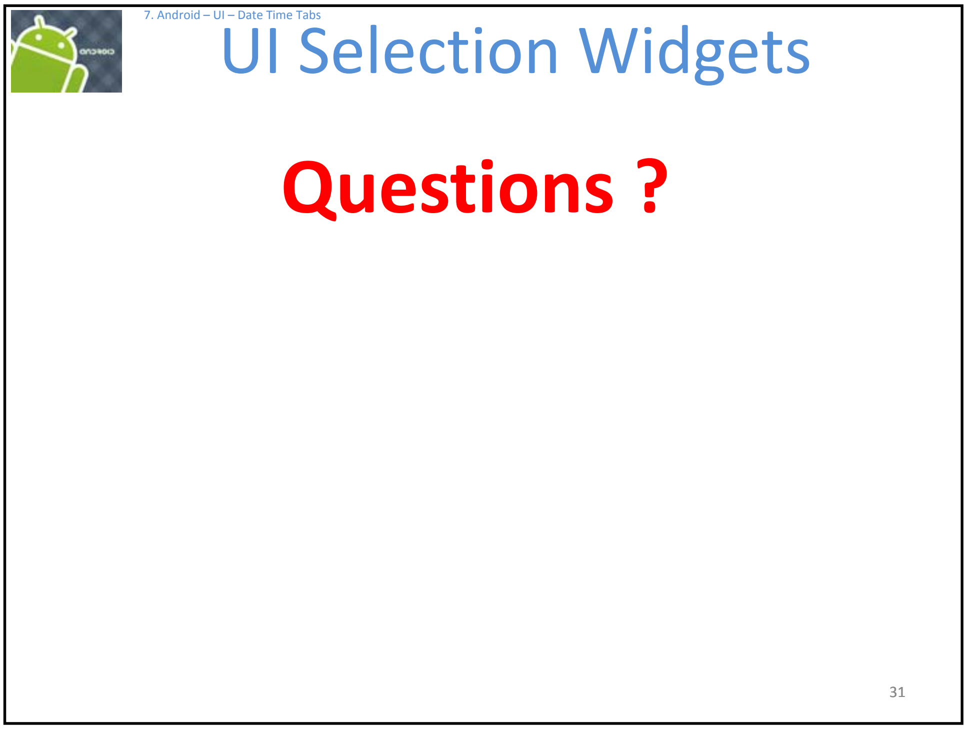


```
@Override
public void onCreate(Bundle savedInstanceState)
{
    super.onCreate(savedInstanceState);
    setContentView(R.layout.main);

    myDrawer = (SlidingDrawer)findViewById(R.id.drawer);

    btn1 = (Button)findViewById(R.id.btn1);
    btn2 = (Button)findViewById(R.id.btn2);

    label1 = (TextView)findViewById(R.id.label1);
    label2 = (TextView)findViewById(R.id.label2);
    label3 = (TextView)findViewById(R.id.label3);
```

SlidingDrawer Widget

Example 2: SlidingDrawer. Android Activity

```
    btn1.setOnClickListener(new OnClickListener() {
    @Override
    public void onClick(View v) {
        Date dt = new Date();
        String now = dt.toLocaleString();
        label1.setText("111 - Hola amigos " + now);
        label2.setText("222 - Hola amigos " + now) ;
        label3.setText("333 - Hola amigos " + now);
    }
    });

    btn2.setOnClickListener(new OnClickListener() {
        @Override
        public void onClick(View v) {
            myDrawer.animateClose();
        }
    });

  } //onCreate

} // class
```



UI Selection Widgets

Questions ?