

# 智能手机应用软件开发技术教案

第 4 次课      第 2 章   **Android** 用户界面设计      用户界面设计续

授课班级:    计算机 21-1

教学方式:    **PPT** 教学+ 课堂实例教学 + 学生课堂练习 同步方式

教学要点:    进度条组件的应用    选项组件的应用   **ImageView** 组件及 **Toast**

教学过程:    需注意同学们实践中对环境的理解与掌握, 带领学生完成画廊实践。

实践源代码见 **Ex\_13.zip**    代码分享给同学。

【例 2-10】进度条应用示例。

(1) 布局文件 activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical" >
    <ProgressBar
        android:id="@+id/ProgressBar01"
        style="@android:style/Widget.ProgressBar.Horizontal"
        android:layout_width="250dp"
        android:layout_height="wrap_content"
        android:max="200"
        android:progress="50" >
    </ProgressBar>
    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/btn1" />
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/btn2" />
</LinearLayout>
```

(2) 控制程序 MainActivity.java

```

package com.ex2_10;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ProgressBar;

public class MainActivity extends Activity
{
    ProgressBar progressBar;
    Button btn1,btn2;
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        progressBar = (ProgressBar)findViewById(R.id.ProgressBar01);
        btn1=(Button)findViewById(R.id.button1);
        btn2=(Button)findViewById(R.id.button2);
        btn1.setOnClickListener(new click1());
        btn2.setOnClickListener(new click2());
    }
    class click1 implements OnClickListener
    {
        public void onClick(View v)
        { progressBar.incrementProgressBy(5); }
    }
    class click2 implements OnClickListener
    {
        public void onClick(View v)
        { progressBar.incrementProgressBy(-5); }
    }
}

```

**【例 2-11】** 复选按钮应用示例。

(1) 布局文件 activity\_main.xml

```

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

```

```

        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="@string/hello"
        android:textSize="20sp"/>
<CheckBox
    android:id="@+id/check1"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="@string/one" />
<CheckBox
    android:id="@+id/check2"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="@string/two" />
<CheckBox
    android:id="@+id/check3"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="@string/three" />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="@string/btn" />
<TextView
    android:id="@+id/textView2"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:text=""
    android:textSize="20sp"/>
</LinearLayout>

```

## (2) strings.xml 文件

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string name="hello">请选择播放歌曲: </string>
    <string name="app_name">ex2_11</string>
    <string name="one">荷塘月色———凤凰传奇</string>
    <string name="two">白狐———陈瑞</string>
    <string name="three">青花瓷———周杰伦</string>

```

```
        <string name="btn">获取选项值</string>
    </resources>
```

### (3) 控制程序 MainActivity.java

```
package com.ex2_11;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.TextView;
public class MainActivity extends Activity
{
    CheckBox ch1,ch2,ch3;
    Button okBtn;
    TextView txt;
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ch1=(CheckBox)findViewById(R.id.check1);
        ch2=(CheckBox)findViewById(R.id.check2);
        ch3=(CheckBox)findViewById(R.id.check3);
        okBtn=(Button)findViewById(R.id.button);
        txt=(TextView)findViewById(R.id.textView2);
        okBtn.setOnClickListener(new click());
    }

    class click implements OnClickListener
    {
        public void onClick(View v)
        {
            String str="";
            if(ch1.isChecked()) str=str+"\n"+ch1.getText();
            if(ch2.isChecked()) str=str+"\n"+ch2.getText();
            if(ch3.isChecked()) str=str+"\n"+ch3.getText();
            txt.setText("您选择了: "+str);
        }
    }
}
```

【例 2-12】单选按钮应用示例。

(1) 布局文件 activity\_main.xml

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     android:layout_width="fill_parent"
4     android:layout_height="fill_parent"
5     android:orientation="vertical" >
6     <TextView
7         android:layout_width="fill_parent"
8         android:layout_height="wrap_content"
9         android:textSize="20sp"
10        android:text="@string/hello" />
11    <EditText
12        android:id="@+id/edit1"
13        android:layout_width="fill_parent"
14        android:layout_height="wrap_content"
15        android:inputType="text"
16        android:textSize="20sp" />
17    <RadioGroup
18        android:layout_width="fill_parent"
19        android:layout_height="wrap_content">
20        <RadioButton
21            android:id="@+id/boy01"
22            android:text="@string/boy"/>
23        <RadioButton
24            android:id="@+id/girl01"
25            android:text="@string/girl" />
26    </RadioGroup>
27    <Button
28        android:id="@+id/myButton"
29        android:layout_width="wrap_content"
30        android:layout_height="wrap_content"
31        android:text="确定"
32        android:textSize="20sp"
33    />
34    <TextView
35        android:id="@+id/text02"
36        android:layout_width="fill_parent"
37        android:layout_height="wrap_content"
38        android:textSize="20sp"
39    />
40 </LinearLayout>
```

(2) strings.xml 文件

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string name="hello">请输入您的姓名: </string>
    <string name="app_name">ex2_12</string>
    <string name="boy">男</string>
    <string name="girl">女</string>
</resources>

```

### (3) 控制程序 MainActivity.java

```

package com.ex2_12;
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.RadioButton;
import android.widget.TextView;

public class MainActivity extends Activity
{
    Button okBtn;
    EditText edit;
    TextView txt;
    RadioButton r1, r2;
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        edit = (EditText) findViewById(R.id.edit1);
        okBtn = (Button) findViewById(R.id.myButton);
        txt = (TextView) findViewById(R.id.text02);
        r1 = (RadioButton) findViewById(R.id.boy01);
        r2 = (RadioButton) findViewById(R.id.girl01);
        okBtn.setOnClickListener(new mClick());
    }
    class mClick implements OnClickListener
    {
        public void onClick(View v)
        {
            CharSequence str = "", name = "";
            name = edit.getText();
            if (r1.isChecked())

```

```

        str = r1.getText();
        if (r2.isChecked())
            str = r2.getText();
        txt.setText("您输入的信息为:\n 姓名 " + name + "\t 性别 " + str);
    }
}
}

```

**【例 2-13】** 显示图片示例。

将事先准备好的多张图片序列、、……、复制到资源/res/drawable目录下。

(1)用户界面程序 activity\_main.xml

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3   android:layout_width="fill_parent"
4   android:layout_height="fill_parent"
5   android:gravity="center|fill"
6   android:orientation="vertical" >
7   <LinearLayout
8     android:layout_width="fill_parent"
9     android:layout_height="wrap_content"
10    android:gravity="center" >
11     <ImageView
12       android:id="@+id/img"
13       android:layout_width="240dp"
14       android:layout_height="240dp"
15       android:layout_centerVertical="true"
16       android:src="@drawable/img1" />
17   </LinearLayout>
18   <LinearLayout
19     android:layout_width="fill_parent"
20     android:layout_height="wrap_content" >
21     <Button
22       android:id="@+id/btn_last"
23       android:layout_width="150dp"
24       android:layout_height="wrap_content"
25       android:text="上一张" />
26     <Button android:id="@+id/btn_next"
27       android:layout_width="150dp"
28       android:layout_height="wrap_content"
29       android:text="下一张" />
30   </LinearLayout>

```

31 </LinearLayout>

(2) 控制程序 MainActivity.java

```
package com.ex2_13;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ImageView;
public class MainActivity extends Activity {
    ImageView img;
    Button btn_last, btn_next;
    //存放图片 id 的 int 数组
    private int[] imgs={
        R.drawable.img1,
        R.drawable.img2,
        R.drawable.img3,
        R.drawable.img4,
        R.drawable.img5,
        R.drawable.img6 };
    int index=1;
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        img = (ImageView)findViewById(R.id.img);
        btn_last = (Button)findViewById(R.id.btn_last);
        btn_next = (Button)findViewById(R.id.btn_next);
        btn_last.setOnClickListener(new mClick());
        btn_next.setOnClickListener(new mClick());
    }

    class mClick implements OnClickListener //定义一个类实现监听接口
    {
        public void onClick(View v)
        {
            if(v==btn_last)
            {
                if(index>0 && index<imgs.length)
                {
                    index--;
                    img.setImageResource(imgs[index]);
                } else {index=imgs.length+1; }
            }
        }
    }
}
```



```

    }
    if(v==btn_next)
    {
        if(index>0&&index<imgs.length-1)
        {
            index++;
            img.setImageResource(imgs[index]);
        }else {index=imgs.length-1;    }
    }
}
}
}

```

【例 2-14】画廊展示图片示例。

(1) 用户界面程序 activity\_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<TableLayout android:id="@+id/TableLayout01"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_gravity="center">
    <TextView
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:text="@string/hello" />
    <Gallery android:id="@+id/Gallery01"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:spacing="10dp"/>
    <ImageSwitcher android:id="@+id/ImageSwitcher01"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" >
        </ ImageSwitcher>
</TableLayout>

```

(2) 控制程序 MainActivity.java

```

1 package com.ex2_14;
2 import android.app.Activity;

```

```

3 import android.os.Bundle;
4 import android.view.View;
5 import android.view.ViewGroup;
6 import android.view.animation.AnimationUtils;
7 import android.widget.AdapterView;
8 import android.widget.BaseAdapter;
9 import android.widget.Gallery;
10 import android.widget.ImageSwitcher;
11 import android.widget.ImageView;
12 import android.widget.AdapterView.OnItemClickListener;
13 import android.widget.ViewSwitcher.ViewFactory;
14
15 public class MainActivity extends Activity
16 {
17     private ImageSwitcher imageSwitcher;
18     Gallery gallery;
19     private int[] imgs = {
20         R.drawable.img1,
21         R.drawable.img2,
22         R.drawable.img3,
23         R.drawable.img4,
24         R.drawable.img5,
25         R.drawable.img6,
26         R.drawable.img7,
27         R.drawable.img8,
28     };
29
30     @Override
31     public void onCreate(Bundle savedInstanceState)
32     {
33         super.onCreate(savedInstanceState);
34         setContentView(R.layout.activity_main);
35         imageSwitcher = (ImageSwitcher)findViewById(R.id.ImageSwitcher01);
36         imageSwitcher.setFactory(new viewFactory());
37         imageSwitcher.setInAnimation(AnimationUtils
38             .loadAnimation(this, android.R.anim.fade_in) );
39         imageSwitcher.setOutAnimation(AnimationUtils
40             .loadAnimation(this, android.R.anim.fade_out));
41         imageSwitcher.setImageResource(R.drawable.img1);
42         gallery = (Gallery) findViewById(R.id.Gallery01);
43         gallery.setOnItemClickListener(
44             new onItemClickListener());
45         gallery.setSpacing(10);

```

```

46     gallery.setAdapter(new baseAdapter());
47 }

48 //通过 ViewFactory 接口建立一个 imageView 图像视图
49 class viewFactory implements ViewFactory
50 {
51     @Override
52     public View makeView()
53     {
54         ImageView imageView = new ImageView(MainActivity.this);
55         imageView.setScaleType(ImageView.ScaleType.FIT_CENTER);
56         return imageView;
57     }
58 }

59 //实现选项监听接口，获取选择到的图片
60 class onItemSelectedListener implements OnItemSelectedListener
61 {
62     @Override
63     public void onItemSelected(AdapterView<?> parent,
64                               View view,int position, long id)
65     {
66         imageSwitcher.setImageResource(
67             (int)gallery.getItemIdAtPosition(position));
68     }
69     @Override
70     public void onNothingSelected(AdapterView<?> arg0) { }
71 }

72 //设置一个适配器，安排放在画廊 gallery 的图片文件及显示方式
73 class baseAdapter extends BaseAdapter
74 {
75     //取得 gallery 内的照片数量
76     public int getCount()
77     {return imgs.length;}
78     public Object getItem(int position)
79     { return null; }
80     //取得 gallery 内选择的某一张图片文件
81     public long getItemId(int position)
82     { return imgs[position]; }
83     //将选择到的图片放置在 imageView，且设定显示方式为居中，大小是 60x60
84     public View getView(int position, View convertView, ViewGroup parent)
85     {
86         ImageView imageView = new ImageView(MainActivity.this);

```

```

87         imageView.setImageResource(imgs[position]);
88         imageView.setScaleType(ImageView.ScaleType.FIT_CENTER);
89         imageView.setLayoutParams(new Gallery.LayoutParams(60, 60));
90         return imageView;
91     }
92 }
93 }

```

【例 2-15】消息提示 Toast 分别按默认方式、自定义方式和带图标方式显示的示例。

(1) 布局文件 activity\_main.xml

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="fill_parent"
4      android:layout_height="fill_parent"
5      android:orientation="vertical" >
6      <TextView
7          android:layout_width="fill_parent"
8          android:layout_height="wrap_content"
9          android:gravity="center"
10         android:text="消息提示 Tost"
11         android:textSize="24sp" />
12     <Button
13         android:id="@+id/btn1"
14         android:layout_height="wrap_content"
15         android:layout_width="fill_parent"
16         android:text="默认方式"
17         android:textSize="20sp" />
18     <Button
19         android:id="@+id/btn2"
20         android:layout_height="wrap_content"
21         android:layout_width="fill_parent"
22         android:text="自定义方式"
23         android:textSize="20sp" />
24     <Button
25         android:id="@+id/btn3"
26         android:layout_height="wrap_content"
27         android:layout_width="fill_parent"
28         android:text="带图标方式"
29         android:textSize="20sp" />
30 </LinearLayout>

```

(2) 事件处理文件 MainActivity.java

```
1  package com.ex2_15;
2  import android.app.Activity;
3  import android.os.Bundle;
4  import android.view.Gravity;
5  import android.view.View;
6  import android.view.View.OnClickListener;
7  import android.widget.Button;
8  import android.widget.ImageView;
9  import android.widget.LinearLayout;
10 import android.widget.ListView;
11 import android.widget.Toast;
12
13 public class MainActivity extends Activity
14 {
15     ListView list;
16     Button btn1,btn2,btn3;
17     @Override
18     public void onCreate(Bundle savedInstanceState)
19     {
20         super.onCreate(savedInstanceState);
21         setContentView(R.layout.activity_main);
22         btn1=(Button)findViewById(R.id.btn1);
23         btn2=(Button)findViewById(R.id.btn2);
24         btn3=(Button)findViewById(R.id.btn3);
25         btn1.setOnClickListener(new mClick());
26         btn2.setOnClickListener(new mClick());
27         btn3.setOnClickListener(new mClick());
28     }
29
30     class mClick implements OnClickListener
31     {
32         Toast toast;
33         LinearLayout toastView;
34         ImageView imageCodeProject;
35         @Override
36         public void onClick(View v)
37         {
38             if(v==btn1)
39             {
40                 Toast.makeText(getApplicationContext(),
41                     "默认 Toast 方式",
42                     Toast.LENGTH_SHORT).show();
43             }
44             else if(v==btn2)
```

```
45     {
46         toast = Toast.makeText(getApplicationContext(),
47             "自定义 Toast 的位置",
48             Toast.LENGTH_SHORT);
49         toast.setGravity(Gravity.CENTER, 0, 0);
50         toast.show();
51     }
52 else if(v==btn3)
53     {
54         toast = Toast.makeText(getApplicationContext(),
55             "带图标的 Toast",
56             Toast.LENGTH_SHORT);
57         toast.setGravity(Gravity.CENTER, 0, 80);
58         toastView = (LinearLayout) toast.getView();
59         imageCodeProject = new ImageView(MainActivity.this);
60         imageCodeProject.setImageResource(R.drawable.icon);
61         toastView.addView(imageCodeProject, 0);
62         toast.show();
63     }
64 }
65 }
66 }
```