Android Development Tutorial

Chapter – III

Contents

- Events
- Events Handling Mechanism
- Types of Listener

Events

Events are a useful way to collect data about a user's interaction with interactive components of Applications. Like button presses or screen touch etc. The Android framework maintains an event queue as first-in, first-out (FIFO) basis. You can capture these events in your program and take appropriate action as per requirements.

Android Event Management

- **Event Listeners** – An event listener is an interface in the View class that contains a single callback method. These methods will be called by the Android framework when the View to which the listener has been registered is triggered by user interaction with the item in the UI.
- **Event Listeners Registration** – Event Registration is the process by which an Event Handler gets registered with an Event Listener so that the handler is called when the Event Listener fires the event.
- **Event Handlers** – When an event happens and we have registered an event listener for the event, the event listener calls the Event Handlers, which is the method that actually handles the event.

Event Listeners Registration

- Using an Anonymous Inner Class
- Activity class implements the Listener interface.
- Using Layout file activity_main.xml to specify event handler directly.

Example Method I

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    Button b1=(Button)findViewById(R.id.button);
     b1.setOnClickListener(new View.OnClickListener() {

       @Override
       public void onClick(View v) {
         TextView txtView = (TextView) findViewById(R.id.textView);
         txtView.setText("hi how are you");
       }
    });
}
```

Example Method II

Step 1 :

```
public class MainActivity extends Activity implements OnClickListener
```

Step 2 :

```
protected void onCreate(Bundle savedInstanceState) {
        {
        Button b1 = (Button) findViewById(R.id.button);
        b1.setOnClickListener(this);
        }
```

Step 3 :

```
public void onClick(View v) {
      TextView txtView = (TextView) findViewById(R.id.textView);
       txtView.setText("hi how are you");
}
```

Example Method III

```
<Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="onbuttonClick"
        android:text="Click me" />

public void onbuttonClick v)
{
            TextView txtView = (TextView) findViewById(R.id.textView);
            txtView.setText("hi how are you");
}
```

This provides a simple way to capture click events. It does not, however, provide the range of options offered by event handlers

Event Listeners

OnClickListener(): This event listener is called when a user clicks on any UI element like button, text or image. OnClick() event handler is used to handle this listener.

OnLongClickListener(): This method is called when a user clicks on any UI element for a long time or hold a UI element for few seconds. OnLongClick() event handler is used to handle this listener.

OnFocusChangeListener(): This method is called when a UI element or a widget losses its focus. Simply user navigates forward. OnFocusChange() event handler is used to handle this listener.

OnKeyListener(): This method is called when a user presses a key on keyboard. OnKey() event handler is used to handle this event.

Event Listeners Cont.

OnTouchListener(): This method is called when a user touches any UI element on the screen like press or release a button. OnTouch() event handler is used to handle this listener.

OnMenuItemClickListener(): This method is used when a user clicks or selects a menu item.OnMenuItemClick() event handler is used to handle this listener.

OnCreateContextMenuListener(): OnCreateContextMenu() event handler is used to handle this listener.

Widget : Views that have events

- For a list of the widgets provided by Android, see the android.widget package.
- Some Examples
  - Button
  - CheckBox
  - DatePicker
  - EditText
  - ImageView
  - SearchView
  - Spinner

Thank You