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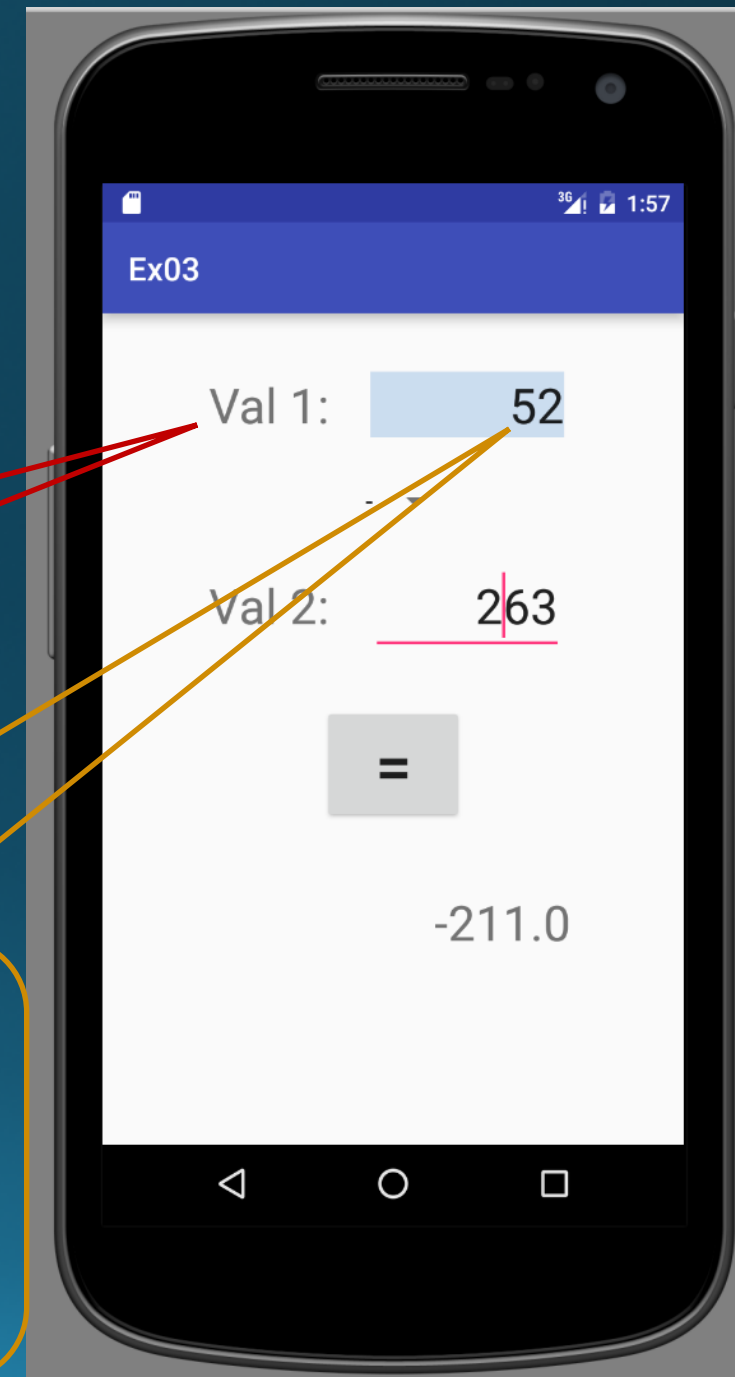
Android APP 開發—spinner元件介紹 (以兩數做四則運算為例)

```
main > res > layout > activity_main.xml
activity_main.xml x strings.xml x MainActivity.java x
RelativeLayout
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/parent"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.yungchen.ex03.MainActivity">
```

```
<TextView
    android:id="@+id/tv1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="30dp"
    android:width="100dp"
    android:text="Val 1: "
    android:layout_marginTop="20dp"
    android:layout_marginLeft="50dp"/>
```

```
<EditText
    android:id="@+id/etV1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="30dp"
    android:width="120dp"
    android:background="#ccddee"
    android:inputType="numberSigned"
    android:textAlignment="textEnd"
    android:layout_toEndOf="@id/tv1"
    android:layout_alignBaseline="@id/tv1"/>
```

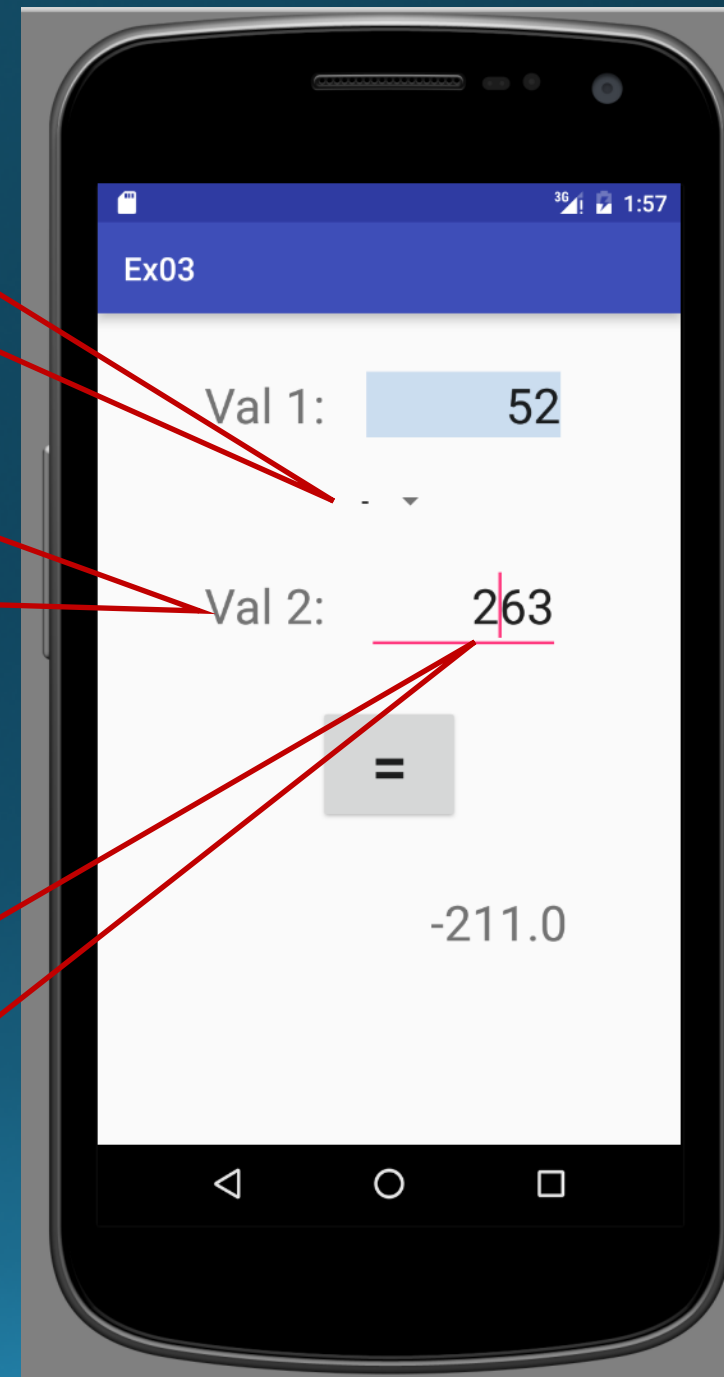
APP 的 UI 佈局



```
<Spinner  
    android:id="@+id/spin0P"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_centerHorizontal="true"  
    android:layout_marginTop="15dp"  
    android:layout_below="@id/etV1">  
</Spinner>
```

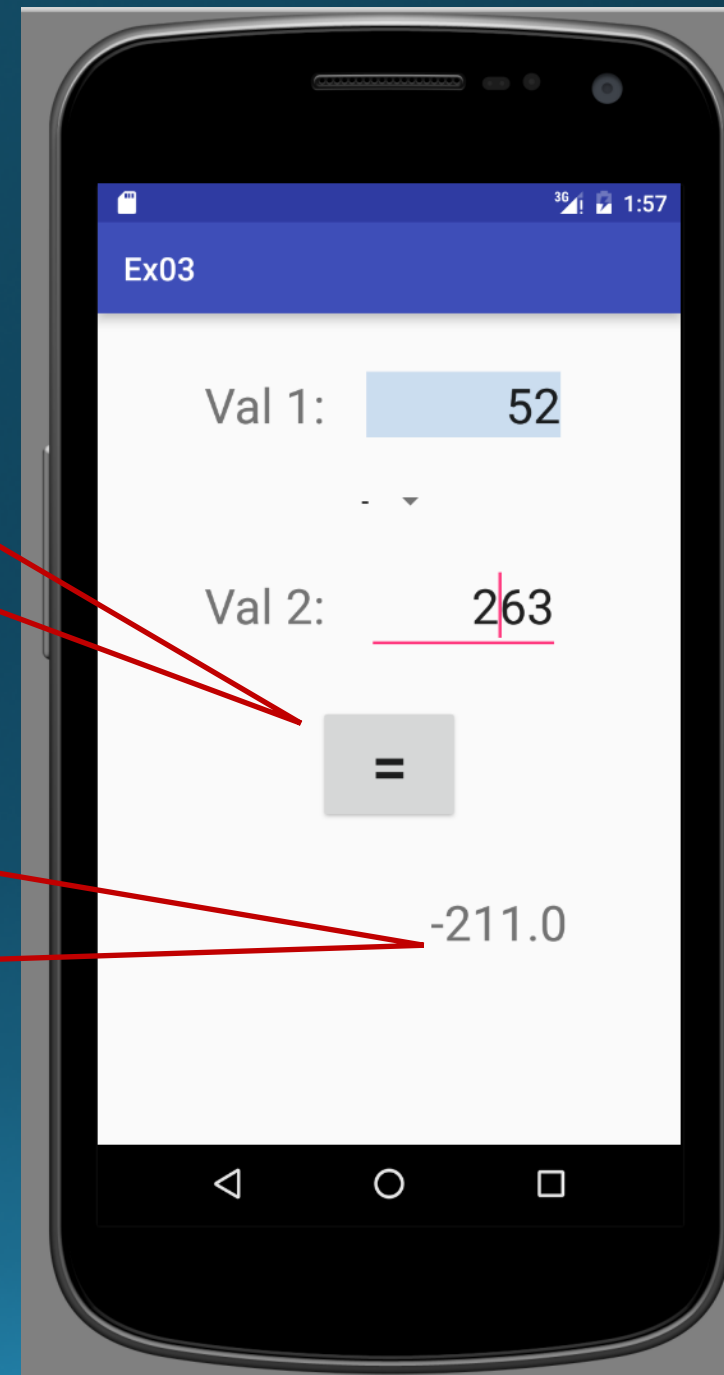
```
<TextView  
    android:id="@+id/tv2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textSize="30dp"  
    android:width="100dp"  
    android:text="Val 2: "  
    android:layout_below="@id/spin0P"  
    android:layout_marginTop="20dp"  
    android:layout_marginLeft="50dp"/>
```

```
<EditText  
    android:id="@+id/etV2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textSize="30dp"  
    android:width="120dp"  
    android:textAlignment="textEnd"  
    android:inputType="numberSigned"  
    android:layout_below="@id/spin0P"  
    android:layout_toEndOf="@id/tv2"  
    android:layout_alignBaseline="@id/tv2"/>
```

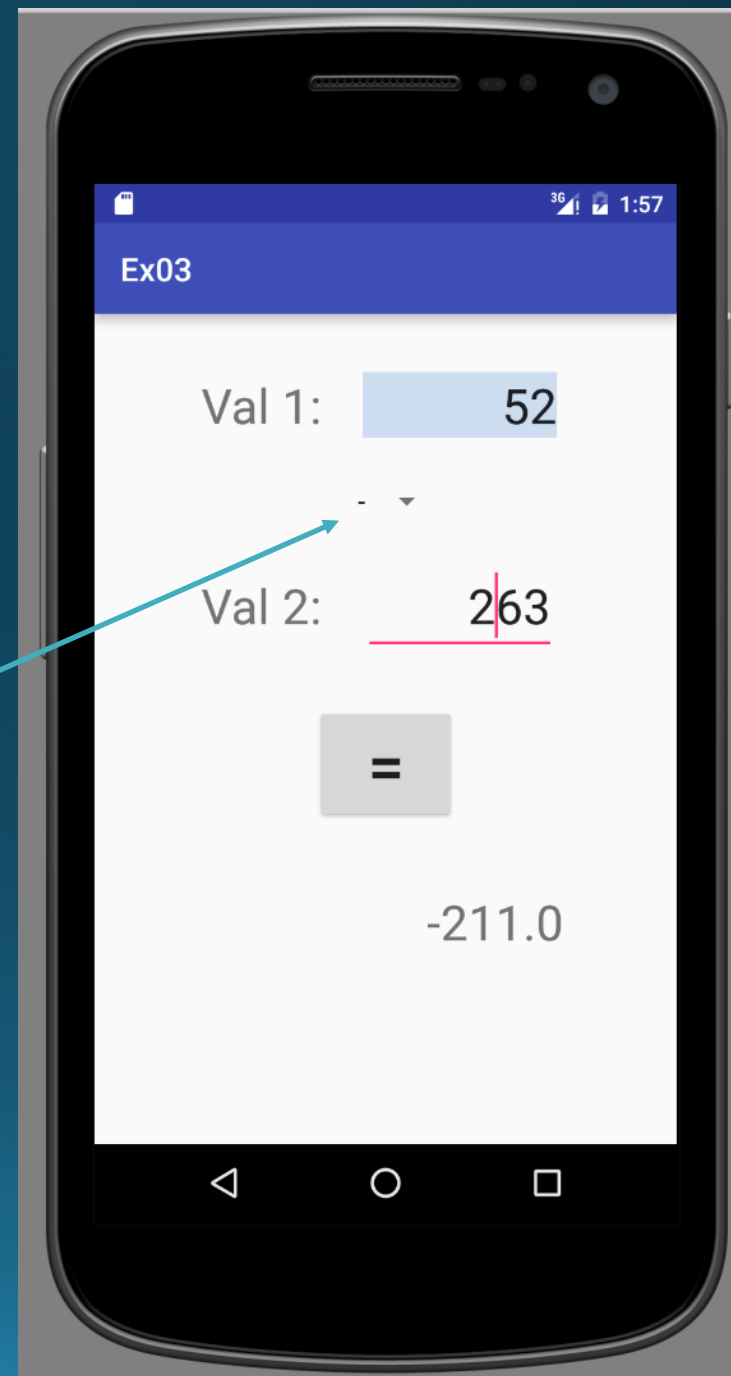
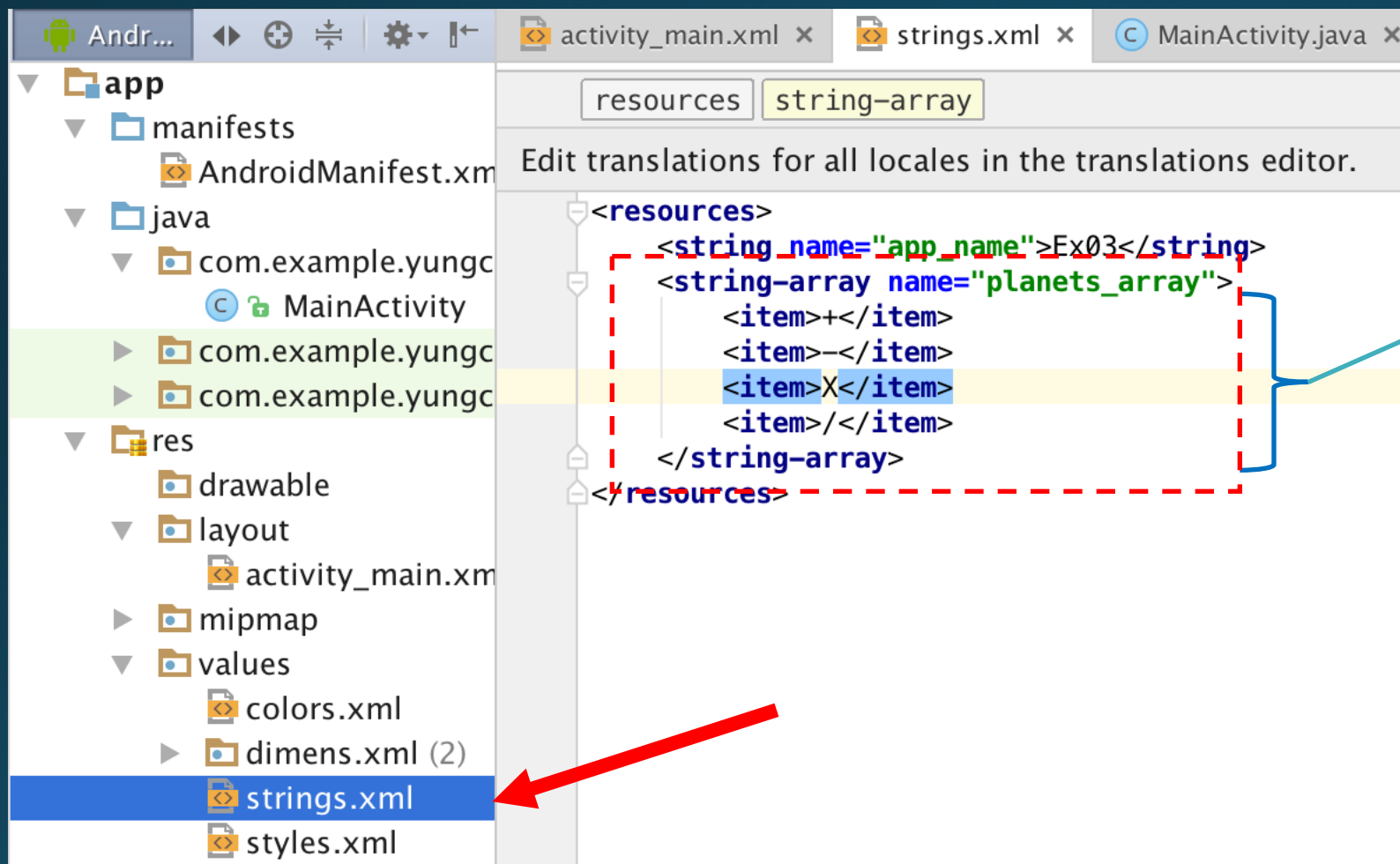


```
<Button
    android:id="@+id/runBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="="
    android:textSize="40dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/etV2"
    android:layout_marginTop="30dp"/>
```

```
<TextView
    android:id="@+id/tvResult"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:textSize="30dp"
    android:layout_marginTop="40dp"
    android:width="220dp"
    android:layout_below="@id/runBtn"
    android:textAlignment="textEnd"
    android:text="0" />
```



APP 的 UI 佈局



MainActivity.java

```
17 public class MainActivity extends AppCompatActivity {
18     protected Spinner spinOP1;
19     protected TextView tvResult1;
20     protected Button btnRun1;
21     protected EditText etVal1, etVal2;
22     protected int opType = 0; // 0 => +, 1 => -, 2 => *, 3 => /
23
24     @Override
25     protected void onCreate(Bundle savedInstanceState) {
26         super.onCreate(savedInstanceState);
27         setContentView(R.layout.activity_main);
28         setupUI(findViewById(R.id.parent));
29
30         tvResult1 = (TextView) findViewById(R.id.tvResult);
31
32         spinOP1 = (Spinner) findViewById(R.id.spinOP);
33         ArrayAdapter<CharSequence> adapter1 =
34             ArrayAdapter.createFromResource(this, R.array.planets_array, R.layout.support_simple_spinner_dropdown_item);
35         adapter1.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
36         spinOP1.setAdapter(adapter1);
37         spinOP1.setOnItemSelectedListener(new SpinnerActivity());
38
39         etVal1 = (EditText) findViewById(R.id.etV1);
40         etVal2 = (EditText) findViewById(R.id.etV2);
```

使用者在 EditText 裡 Key in 資料時, key 完後點擊其他地方時 希望鍵盤能自動隱藏, 需要呼叫 `setupUI()` 函式 (68~83列程式)

Spinner元件要加入 item的作法是先用一個 `ArrayAdapter` 將在 `strings.xml` 裡指定的資料導到 `ArrayAdapter` 裡再用它來定 spinner 裡用到的 adapter

用來傾聽 spinner 選項改變的事件

```
42 btnRun1 = (Button) findViewById(R.id.runBtn);
43 btnRun1.setOnClickListener(new View.OnClickListener() {
44     @Override
45     public void onClick(View v) {
46         float tmpVal = 0.0f,
47             v1 = Float.parseFloat(etVal1.getText().toString()),
48             v2 = Float.parseFloat(etVal2.getText().toString());
49         switch (opType){
50             case 0:
51                 tmpVal = v1 + v2;
52                 break;
53             case 1:
54                 tmpVal = v1 - v2;
55                 break;
56             case 2:
57                 tmpVal = v1 * v2;
58                 break;
59             case 3:
60                 tmpVal = v1 / v2;
61                 break;
62         }
63         tvResult1.setText(Float.toString(tmpVal));
64     }
65 });
66 }
```

用來隱藏鍵盤的

```
68 public static void hideSoftKeyboard(Activity activity) {
69     InputMethodManager inputMethodManager =
70         (InputMethodManager) activity.getSystemService(Activity.INPUT_METHOD_SERVICE);
71     inputMethodManager.hideSoftInputFromWindow(activity.getCurrentFocus().getWindowToken(), 0);
72 }
```

```
73
74 public void setupUI(View view) {
75     //Set up touch listener for non-text box views to hide keyboard.
76     if(!(view instanceof EditText)) {
77         view.setOnTouchListener(new View.OnTouchListener() {
78             public boolean onTouch(View v, MotionEvent event) {
79                 hideSoftKeyboard(MainActivity.this);
80                 return false;
81             }
82         });
83     }
84
85     //If a layout container, iterate over children and seed recursion.
86     if (view instanceof ViewGroup) {
87         for (int i = 0; i < ((ViewGroup) view).getChildCount(); i++) {
88             View innerView = ((ViewGroup) view).getChildAt(i);
89             setupUI(innerView);
90         }
91     }
92 }
```

用來判斷是不是離開
EditText 的元件, 如果
是, 就去呼叫上方的鍵
盤隱藏函數

```
94 class SpinnerActivity extends Activity implements AdapterView.OnItemClickListener {
95     public void onItemClick(AdapterView<?> parent, View view, int pos, long id) {
96         // An item was selected. You can retrieve the selected item using
97         // parent.getItemAtPosition(pos)
98         opType = pos;
99     }
100
101     public void onNothingSelected(AdapterView<?> parent) {
102         // Another interface callback
103     }
104 }
105 }
```

用來判斷 spinner 元件選項是不是改變了, 如果改變了就去更新 opType 變數的值, pos 是 spinner 裡項目的序號