Objectives

- A Long Press is a standard feature available on an Android. On an Android, you can detect the difference between a short click and a long press. From a programming point of view we call this a Context Menu. Objects like buttons, text, etc. can register to be notified when a Long Press has occurred. This section of notes/video explores this feature.

Video

Context Menus

In this section we are going to explore moreView features related to menus.

Many of the key interfaces for Button, TextView, etc. live in the View class(the parent class of all Views). So for example, we have been using buttons for the OnClickListener interface. **Well it turns out that even a TextView can process an OnClickListener interface**.

On the Android, you can do a `long press` on many Views and you will often find a context menu pop up. ***This feature is available to all Views***. It turns out that the related class `ContextMenu` is derived from `Menu`, so there is a lot of similarity to the `Option Menus` code that we created in a previous lecture.

To enable ContextMenus, you need to register them with the method `registerForContextMenu` in your onCreate routine. These calls will tell the system that you want your 2 TextView classes to participate in ContextMenus.

When?	Option Menu	Context Menu
Activity Startup	Overide onCreateOptionsMenu	For each participating View: registerForContextMenu(View)
Before each Press	onPrepareOptionsMenu	onCreateContextMenu
After each Selection	onOptionsItemSelected	onContextItemSelected

`res/layout/activity_main.xml`

```xml
<?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"
    >
    <TextView
        android:id="@+id/state"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="State"
        />

    <TextView
        android:id="@+id/capital"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Capital"
        />
</LinearLayout>
```

`MainActivity.java`

```java
package net.wcc.ajcrutchfield.contextmenu;
import android.app.Activity;
import android.os.Bundle;
import android.util.Log;
import android.view.ContextMenu;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends Activity implements OnClickListener{
```

```java
    TextView state, capital;
    static final int STATE_ID=0;
    static final int CAPITAL_ID=100;
    String[] stateNames={"Michigan", "Ohio", "California", "Wisconsin"};
    String[] capitalNames={"Lansing", "Columbus", "Sacramento", "Madison"};


    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        state = (TextView)findViewById(R.id.state);
        capital = (TextView)findViewById(R.id.capital);
        state.setOnClickListener(this);
        capital.setOnClickListener(this);



        registerForContextMenu(state);
        registerForContextMenu(capital);



    }
    // Nothing new in the OnClick routine except to point out that
// anything derived from View class (Even TextView) can work
// with the OnClickListener Interface.
    @Override
    public void onClick(View v) {
        Toast toast=null;
        switch(v.getId())
        {
            case R.id.state:
                toast = Toast.makeText(this /*Needs a Context*/, state.getText(), Toast.LENGTH_SHORT);
                break;
            case R.id.capital:
                toast = Toast.makeText(this /*Needs a Context*/, capital.getText(), Toast.LENGTH_SHORT);
                break;
            default:
                toast = Toast.makeText(this /*Needs a Context*/, "??????", Toast.LENGTH_SHORT);
                break;
        }
        toast.show();
    }
    // Note that onlike onCreateOptionsMenu this call is made for every long press of the associated View.
    @Override
    public void onCreateContextMenu(ContextMenu menu,
                                    View v,
                                    ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);

        Toast.makeText(this, "onCreateContextMenu", Toast.LENGTH_SHORT).show();


        switch(v.getId())
        {
            case R.id.state:
                menu.setHeaderTitle("Click on State to Add");
                for (int i=0; i < stateNames.length; i++)
                    menu.add(Menu.NONE, STATE_ID+i, Menu.NONE, stateNames[i]);
                break;
            case R.id.capital:
                menu.setHeaderTitle("Click on Capital to Add");
                for (int i=0; i < capitalNames.length; i++)
                    menu.add(Menu.NONE, CAPITAL_ID+i, Menu.NONE, capitalNames[i]);
                break;
            default:
                Log.d("Mine", "???? onCreateContextMenu"); // Shouldn't get here
                break;
        }
        Log.d("Mine", "onCreateContextMenu");
    }
    @Override
    public boolean onContextItemSelected(MenuItem item) {
        super.onContextItemSelected(item);
        Toast.makeText(this, "onContextItemSelected", Toast.LENGTH_SHORT).show();
```

```
        int index = item.getItemId();
        String text = item.getTitle().toString();
        if (index < CAPITAL_ID)
            state.setText(text);
        else
            capital.setText(text);


        return true;
    }
}
```

Using Resources for the Menus

In the Options Menu case, we could use resources instead of hard-wired numbers. We can do that here as well.
To make this happen, add the following resource files:

state_menu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/michigan"
        android:title="Michigan" />

    <item android:id="@+id/ohio"
        android:title="Ohio" />

    <item android:id="@+id/california"
        android:title="California"  />

    <item android:id="@+id/wisconsin"
        android:title="Wisconsin"
        />

</menu>
```

capital_menu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/lansing"
        android:title="Lansing" />

    <item android:id="@+id/columbus"
        android:title="Columbus" />

    <item android:id="@+id/sacramento"
        android:title="Sacramento"  />

    <item android:id="@+id/madison"
        android:title="Madison"
        />

</menu>
```

Replace the onCreateContextMenu and onContextItemSelected methods with the following replacements:

```java
@Override
public void onCreateContextMenu(ContextMenu menu,
                                View v,
                                ContextMenu.ContextMenuInfo menuInfo) {
    super.onCreateContextMenu(menu, v, menuInfo);
    Toast.makeText(this, "onCreateContextMenu", Toast.LENGTH_SHORT).show();
    MenuInflater inflater;
    switch(v.getId())
    {
        case R.id.state:
            inflater = getMenuInflater();
            inflater.inflate(R.menu.state_menu, menu);
            break;
        case R.id.capital:
            inflater = getMenuInflater();
            inflater.inflate(R.menu.capital_menu, menu);
            break;
```

```java
            default:
                Log.d("Mine", "???? onCreateContextMenu"); // Shouldn't get here
                break;
        }
        Log.d("Mine", "onCreateContextMenu");
    }
    @Override
    public boolean onContextItemSelected(MenuItem item) {
        super.onContextItemSelected(item);
        Toast.makeText(this, "onContextItemSelected", Toast.LENGTH_SHORT).show();
        int index = item.getItemId();
        String text = item.getTitle().toString();
        switch (item.getItemId()){
            case R.id.michigan:
            case R.id.california:
            case R.id.ohio:
            case R.id.wisconsin:
                state.setText(text);
                break;
            default:
                capital.setText(text);
                break;
        }
        return true;
    }
```

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