Sommaire

Table of Contents

Tracer le cycle de vie d'une activity

```
package eu.centrale.myfirstapp;

import android.os.Bundle;
import android.app.Activity;
import android.util.Log;
import android.view.Menu;

public class MainActivity2 extends Activity {
```

```
    static final String TAG="centrale";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main_activity2);
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.main_activity2, menu);
        return true;
    }

    @Override
    protected void onDestroy() {
        Log.d(TAG,"onDestroy");
        super.onDestroy();
    }

    @Override
    protected void onPause() {
        Log.d(TAG,"onPause");
        super.onPause();
    }

    @Override
    protected void onRestart() {
        Log.d(TAG,"onRestart");
```

```
        super.onRestart();
    }

    @Override
    protected void onResume() {
        Log.d(TAG,"onResume");
        super.onResume();
    }

    @Override
    protected void onStart() {
        Log.d(TAG,"onStart");
        super.onStart();
    }

    @Override
    protected void onStop() {
        Log.d(TAG,"onStop");
        super.onStop();
    }

}
```

Lancer une activité

Activité principale

```java
package eu.centrale.myfirstapp;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;

public class LaunchActivity extends Activity {

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.activity_launch);

		Button btn1 = (Button)findViewById(R.id.button1);
		btn1.setOnClickListener(new OnClickListener() {

			@Override
			public void onClick(View v) {
				Intent monIntent = new Intent(LaunchActivity.this,SecondActivity.class);
				startActivity(monIntent);

			}
		});
	}

	@Override
```

```
	public boolean onCreateOptionsMenu(Menu menu) {
		// Inflate the menu; this adds items to the action bar if it is present.
		getMenuInflater().inflate(R.menu.launch, menu);
		return true;
	}

}
```

Activité lancée

```
package eu.centrale.myfirstapp;

import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;

public class SecondActivity extends Activity {

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.activity_second);
	}

	@Override
	public boolean onCreateOptionsMenu(Menu menu) {
		// Inflate the menu; this adds items to the action bar if it is present.
		getMenuInflater().inflate(R.menu.second, menu);
```

```
            return true;
      }

}
```

Lancer une activité en lui passant des paramètres

Activité principale

```
package eu.centrale.myfirstapp;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;

public class LaunchActivityWithData extends Activity {

      @Override
      protected void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            setContentView(R.layout.activity_launch);

            Button btn1 = (Button)findViewById(R.id.button1);
```

```
            btn1.setOnClickListener(new OnClickListener() {

                  @Override
                  public void onClick(View v) {


                        Intent monIntent = new Intent( LaunchActivityWithData.this,
SecondActivityWithData.class );
                        monIntent.putExtra("Value1", "This value one for ActivityTwo ");
                        monIntent.putExtra("Value2", "This value two ActivityTwo");
                        startActivity(monIntent);

                  }
            });
      }

      @Override
      public boolean onCreateOptionsMenu(Menu menu) {
            // Inflate the menu; this adds items to the action bar if it is present.
            getMenuInflater().inflate(R.menu.launch, menu);
            return true;
      }

}
```

Activité lancée

```
package eu.centrale.myfirstapp;
```

```java
import android.app.Activity;
import android.os.Bundle;
import android.util.Log;
import android.view.Menu;

public class SecondActivityWithData extends Activity {

     @Override
     protected void onCreate(Bundle savedInstanceState) {
          super.onCreate(savedInstanceState);
          setContentView(R.layout.activity_second);

        Bundle extras = getIntent().getExtras();
        if (extras != null) {
            // Get data via the key
            String value1 = extras.getString("Value1");
            if (value1 != null) {
                // Do something with the data
                Log.d("centrale",value1);
            }
        }
     }

     @Override
     public boolean onCreateOptionsMenu(Menu menu) {
          // Inflate the menu; this adds items to the action bar if it is present.
          getMenuInflater().inflate(R.menu.second, menu);
          return true;
     }
```

```
}
```

Lancer une activité pour récupérer un résultat

Activité principale

```
package eu.centrale.myfirstapp;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.Toast;

public class LaunchActivityForResult extends Activity {

     private static final int REQUEST_CODE = 9999;

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

```
          Button btn1 = (Button)findViewById(R.id.button1);
          btn1.setOnClickListener(new OnClickListener() {

               @Override
               public void onClick(View v) {
                    Intent monIntent = new Intent( LaunchActivityForResult.this,
SecondActivityForResult.class ) ;
                    startActivityForResult(monIntent, REQUEST_CODE);

               }
          });
     }

     @Override
     public boolean onCreateOptionsMenu(Menu menu) {
          // Inflate the menu; this adds items to the action bar if it is present.
          getMenuInflater().inflate(R.menu.launch, menu);
          return true;
     }

     @Override
     protected void onActivityResult(int requestCode, int resultCode, Intent data) {
          if (resultCode == RESULT_OK && requestCode == REQUEST_CODE) {
               if (data.hasExtra("returnKey1")) {
                    //Traitement
                    Log.d("centrale", data.getExtras().getString("returnKey1"));
                    Toast.makeText(this, data.getExtras().getString("returnKey1"),
                         Toast.LENGTH_SHORT).show();
               }
          }
```

```
    }

}
```

Activité lancée

```
package eu.centrale.myfirstapp;

import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;

public class SecondActivityForResult extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second_activity_for_result);

        Button btn1 = (Button)findViewById(R.id.button1);
        btn1.setOnClickListener(new OnClickListener() {

            @Override
            public void onClick(View v) {
```

```
                    Intent data = new Intent();
                    data.putExtra("returnKey1", "Test retour");
                    //data.putExtra("returnKey2", "You could be better then you are. ");
                    // Activity finished ok, return the data
                    setResult(RESULT_OK, data);
                    finish();
               }
          });
     }

     @Override
     public boolean onCreateOptionsMenu(Menu menu) {
          // Inflate the menu; this adds items to the action bar if it is present.
          getMenuInflater().inflate(R.menu.second_activity_for_result, menu);
          return true;
     }

}
```

Exécuter un service

Activité principale

```
package eu.centrale.myfirstapp;

import android.app.Activity;
import android.content.Intent;
```

```
import android.os.Bundle;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;

public class MainActivity3 extends Activity {

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.activity_main_activity3);

		Button btn1 = (Button) findViewById(R.id.button1);
		Button btn2 = (Button) findViewById(R.id.button2);

		btn1.setOnClickListener(new OnClickListener() {
			@Override
			public void onClick(View v) {
				//Start service
				Intent service = new Intent(MainActivity3.this, UpdaterService.class);
				startService(service);
			}
		});

		btn2.setOnClickListener(new OnClickListener() {
			@Override
			public void onClick(View arg0) {
				//Stop service
				Intent service = new Intent(MainActivity3.this, UpdaterService.class);
```

```
                    stopService(service);
                }
            });
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.main_activity3, menu);
        return true;
    }

}
```

Classe UpdaterService

```
package eu.centrale.myfirstapp;

import android.app.Service;
import android.content.Intent;
import android.os.IBinder;
import android.util.Log;

public class UpdaterService extends Service {

    static final String TAG = "centrale";

    public UpdaterService() {
```

```
	}

	@Override
	public IBinder onBind(Intent arg0) {
		// TODO: Return the communication channel to the service.
		throw new UnsupportedOperationException("Not yet implemented");
	}

	@Override
	public void onCreate() {
		Log.d(TAG,"Service onCreate");
		// TODO Auto-generated method stub
		super.onCreate();
	}

	@Override
	public void onDestroy() {
		Log.d(TAG,"Service onDestroy");
		// TODO Auto-generated method stub
		super.onDestroy();
	}

}
```

Broadcast Receiver

Exemple 1 : Lancer un service au démarrage

Attention, requiert la permission `android.permission.RECEIVE_BOOT_COMPLETED`

```
<receiver android:name="MyScheduleReceiver" >
    <intent-filter>
        <action android:name="android.intent.action.BOOT_COMPLETED" />
    </intent-filter>
</receiver>
```

Broadcast Receiver

```
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;

public class MyReceiver extends BroadcastReceiver {

  @Override
  public void onReceive(Context context, Intent intent) {
    Intent service = new Intent(context, WordService.class);
    context.startService(service);
  }
}
```

Exemple 2 : Afficher un Toast à la réception d'un SMS

Attention, il faut définir les permissions android.permission.RECEIVE_SMS

Déclaration du Broadcast Receiver

```
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.widget.Toast;

public class MySmsReceiver extends BroadcastReceiver {

	@Override
	public void onReceive(Context context, Intent intent) {
		// TODO Auto-generated method stub
		Toast.makeText(context, "Vous avez reçu un sms.",
				Toast.LENGTH_LONG).show();

	}

}
```

Déclaration du receiver dans le manifest

```
<receiver android:name="MySmsReceiver" android:enabled="true">
	<intent-filter>
		<action android:name="android.provider.Telephony.SMS_RECEIVED"/>
	</intent-filter>
</receiver>
```

Exemple 3 : Créer ses propres événements

Broadcast Receiver

```
package eu.central.test;

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.util.Log;

public class MyBroadcastReceiver extends BroadcastReceiver {

	@Override
	public void onReceive(Context context, Intent intent) {
		String value1 = intent.getStringExtra("Value1");
		Log.i("MyBroadcastReceiver","value:"+value1);
	}

}
```

Manifest

```
<receiver android:name="MyBroadcastReceiver" >
	<intent-filter>
		<action android:name="eu.corellis.action.NEW_EVENT" />
```

```
    </intent-filter>
</receiver>
```

Déclenchement d'un événement

```
Intent i = new Intent("eu.corellis.action.NEW_EVENT");
i.putExtra("Value1", "This value one for Broadcast ");
sendBroadcast(i);
```

Content Provider

Lister les contacts : attention il faut la permission : android.permission.READ_CONTACTS

```
import android.app.Activity;
import android.content.ContentResolver;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.util.Log;

public class ContentAdapter extends Activity {

    private static final String TAG = "ContentAdapter";

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

```
        Log.i(TAG, "Lancement activity");

        /*** Liste les colonnes dans contact ***/
        Uri uri = ContactsContract.Contacts.CONTENT_URI;
        String[] projection = null;
        String selection = null;
        String[] selectionArgs = null;
        String sortOrder = null;

        ContentResolver cr = getContentResolver();
        Cursor cur = cr.query(uri, projection, selection, selectionArgs,
                  sortOrder);

        if (cur.getCount() > 0) {

             while (cur.moveToNext()) {
                  String id = cur.getString(cur
                            .getColumnIndex(ContactsContract.Contacts._ID));
                  String displayName = cur
                            .getString(cur
                                      .getColumnIndex(ContactsContract.Contacts.DISPLAY_NAME));
                  Log.i(TAG, id + " : " + displayName);

             }
        } else {
             Log.i(TAG, "Cursor empty");
        }

        setContentView(R.layout.main);
    }
```

```
}
```

Intent

Lancer le navigateur :

```
                Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse("http://www.google.fr"));
                startActivity(intent);
```

Afficher les contacts :

```
            Intent contacts = new Intent(android.content.Intent.ACTION_VIEW,
                              ContactsContract.Contacts.CONTENT_URI);
            startActivity(contacts);
```

Lancer un appel :

```
                Intent intent = new Intent(Intent.ACTION_CALL, Uri.parse("tel:1234567890"));
                startActivity(intent);
```

Listener

Exemple simple

```java
import android.app.Activity;
import android.os.Bundle;
import android.util.Log;
import android.widget.Button;
import android.widget.Toast;
import android.view.View;
import android.view.View.OnClickListener;

public class TestButtonActivity extends Activity {

	private static final String TAG = "MyActivity";

	/** Called when the activity is first created. */
	@Override
	public void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.button_layout);
		Log.i(TAG, "Lancement activity");

		Button button1 = (Button) findViewById(R.id.button1);
		button1.setOnClickListener(new OnClickListener() {
			public void onClick(View v) {
				Toast.makeText(getApplicationContext(), "click button",
						Toast.LENGTH_SHORT).show();

			}
		});
	}

}
```

Exemple avec des boutons multiples

```
package eu.central.test;

import android.app.Activity;
import android.os.Bundle;
import android.util.Log;
import android.widget.Button;
import android.widget.Toast;
import android.view.View;
import android.view.View.OnClickListener;

public class TestButtonsActivity extends Activity implements OnClickListener {

     private static final String TAG = "MyActivity";
     Button monBouton1 = null;
     Button monBouton2 = null;
     Button monBouton3 = null;

     /** Called when the activity is first created. */
     @Override
     public void onCreate(Bundle savedInstanceState) {
          super.onCreate(savedInstanceState);
          setContentView(R.layout.buttons_layout);
          Log.i(TAG, "Lancement activity");

          monBouton1 = (Button) findViewById(R.id.button1);
          monBouton1.setOnClickListener(this);
```

```
        monBouton2 = (Button) findViewById(R.id.button2);
        monBouton2.setOnClickListener(this);
        monBouton3 = (Button) findViewById(R.id.button3);
        monBouton3.setOnClickListener(this);
    }

    @Override
    public void onClick(View v) {
        // TODO Auto-generated method stub
        if (v == monBouton1) {
            Toast.makeText(getApplicationContext(), "Bouton 1",
                    Toast.LENGTH_SHORT).show();
        }
        if (v == monBouton2) {
            Toast.makeText(getApplicationContext(), "Bouton 2",
                    Toast.LENGTH_SHORT).show();
        }
        if (v == monBouton3) {
            Toast.makeText(getApplicationContext(), "Bouton 3",
                    Toast.LENGTH_SHORT).show();
        }

    }

}
```

Boites de Dialog

Toast

Afficher une alerte

```
Toast.makeText(getApplicationContext(), "Boîte de Dialog",
                            Toast.LENGTH_SHORT).show();
```

Dialog

```
/*
   * Appelée qu'à la première création d'une boîte de dialogue
   * Les fois suivantes, on se contente de récupérer la boîte de dialogue déjà créée…
   * Sauf si la méthode « onPrepareDialog » modifie la boîte de dialogue.
  */
  @Override
  public Dialog onCreateDialog (int id) {
    Dialog box = null;
    switch(id) {
    // Quand on appelle avec l'identifiant de la boîte normale
    case ID_NORMAL_DIALOG:
      box = new Dialog(this);
      box.setTitle("Je viens tout juste de naître.");
      break;

    // Quand on appelle avec l'identifiant de la boîte qui s'énerve
    case ID_ENERVEE_DIALOG:
      box = new Dialog(this);
      box.setTitle("ET MOI ALORS ???");
```

```
    }
    return box;
  }

  @Override
  public void onPrepareDialog (int id, Dialog box) {
    if(id == ID_NORMAL_DIALOG && compteur > 1)
      box.setTitle("On est au " + compteur + "ème lancement !");
     //On ne s'intéresse pas au cas où l'identifiant vaut 1, puisque cette boîte affiche le même texte à
chaque lancement
  }
```

Custom Dialog

Layout

```
<?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">
  <LinearLayout
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
    <ImageView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:src="@drawable/ic_launcher"/>
```

```
    <TextView
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      android:text="Je suis une jolie boîte de dialogue !"/>
  </LinearLayout>
</LinearLayout>

Dialog box = new Dialog(this);
box.setContentView(R.layout.dialog);
box.setTitle("Une boîte de Dialog Custom!");
```

AlertDialog

```
  AlertDialog.Builder boite;
                    boite = new AlertDialog.Builder(this);
                    boite.setTitle("boite de dialogue 1");
                    boite.setIcon(R.drawable.ic_launcher);
                        boite.setMessage("Message de la 1ere boite");
                    boite.setPositiveButton("Oui", new DialogInterface.OnClickListener() {

                        public void onClick(DialogInterface dialog, int which) {
                       // ... action si réponse = Oui
                        }
                        }
                    );
                    boite.show();
```

Adapters

Array Adapter

```
package eu.central.test;

import android.app.ListActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

public class TestActivityArrayAdapterListView extends ListActivity {
     // public class TestActivityArrayAdapterListView extends Activity {

     private static final String TAG = "MyActivity";

     static final String[] COUNTRIES = new String[] { "Afghanistan", "Albania",
               "Algeria", "American Samoa", "Andorra", "Angola", "Anguilla",
               "Antarctica", "Antigua and Barbuda", "Argentina", "Armenia",
               "Aruba", "Australia", "Austria", "Azerbaijan", "Bahrain",
               "Bangladesh", "Barbados", "Belarus", "Belgium", "Belize", "Benin",
               "Bermuda", "Bhutan", "Bolivia", "Bosnia and Herzegovina",
               "Botswana", "Bouvet Island", "Brazil",
               "British Indian Ocean Territory", "British Virgin Islands",
```

```
"Brunei", "Bulgaria", "Burkina Faso", "Burundi", "Cote d'Ivoire",
"Cambodia", "Cameroon", "Canada", "Cape Verde", "Cayman Islands",
"Central African Republic", "Chad", "Chile", "China",
"Christmas Island", "Cocos (Keeling) Islands", "Colombia",
"Comoros", "Congo", "Cook Islands", "Costa Rica", "Croatia",
"Cuba", "Cyprus", "Czech Republic",
"Democratic Republic of the Congo", "Denmark", "Djibouti",
"Dominica", "Dominican Republic", "East Timor", "Ecuador", "Egypt",
"El Salvador", "Equatorial Guinea", "Eritrea", "Estonia",
"Ethiopia", "Faeroe Islands", "Falkland Islands", "Fiji",
"Finland", "Former Yugoslav Republic of Macedonia", "France",
"French Guiana", "French Polynesia", "French Southern Territories",
"Gabon", "Georgia", "Germany", "Ghana", "Gibraltar", "Greece",
"Greenland", "Grenada", "Guadeloupe", "Guam", "Guatemala",
"Guinea", "Guinea-Bissau", "Guyana", "Haiti",
"Heard Island and McDonald Islands", "Honduras", "Hong Kong",
"Hungary", "Iceland", "India", "Indonesia", "Iran", "Iraq",
"Ireland", "Israel", "Italy", "Jamaica", "Japan", "Jordan",
"Kazakhstan", "Kenya", "Kiribati", "Kuwait", "Kyrgyzstan", "Laos",
"Latvia", "Lebanon", "Lesotho", "Liberia", "Libya",
"Liechtenstein", "Lithuania", "Luxembourg", "Macau", "Madagascar",
"Malawi", "Malaysia", "Maldives", "Mali", "Malta",
"Marshall Islands", "Martinique", "Mauritania", "Mauritius",
"Mayotte", "Mexico", "Micronesia", "Moldova", "Monaco", "Mongolia",
"Montserrat", "Morocco", "Mozambique", "Myanmar", "Namibia",
"Nauru", "Nepal", "Netherlands", "Netherlands Antilles",
"New Caledonia", "New Zealand", "Nicaragua", "Niger", "Nigeria",
"Niue", "Norfolk Island", "North Korea", "Northern Marianas",
"Norway", "Oman", "Pakistan", "Palau", "Panama",
"Papua New Guinea", "Paraguay", "Peru", "Philippines",
```

```
            "Pitcairn Islands", "Poland", "Portugal", "Puerto Rico", "Qatar",
            "Reunion", "Romania", "Russia", "Rwanda", "Sqo Tome and Principe",
            "Saint Helena", "Saint Kitts and Nevis", "Saint Lucia",
            "Saint Pierre and Miquelon", "Saint Vincent and the Grenadines",
            "Samoa", "San Marino", "Saudi Arabia", "Senegal", "Seychelles",
            "Sierra Leone", "Singapore", "Slovakia", "Slovenia",
            "Solomon Islands", "Somalia", "South Africa",
            "South Georgia and the South Sandwich Islands", "South Korea",
            "Spain", "Sri Lanka", "Sudan", "Suriname",
            "Svalbard and Jan Mayen", "Swaziland", "Sweden", "Switzerland",
            "Syria", "Taiwan", "Tajikistan", "Tanzania", "Thailand",
            "The Bahamas", "The Gambia", "Togo", "Tokelau", "Tonga",
            "Trinidad and Tobago", "Tunisia", "Turkey", "Turkmenistan",
            "Turks and Caicos Islands", "Tuvalu", "Virgin Islands", "Uganda",
            "Ukraine", "United Arab Emirates", "United Kingdom",
            "United States", "United States Minor Outlying Islands", "Uruguay",
            "Uzbekistan", "Vanuatu", "Vatican City", "Venezuela", "Vietnam",
            "Wallis and Futuna", "Western Sahara", "Yemen", "Yugoslavia",
            "Zambia", "Zimbabwe" };

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

         ListView myListView = getListView(); //cas ou on n'utilise pas de Layout
         // setContentView(R.layout.listview_layout);
         // ListView myListView = (ListView) findViewById(R.id.myListView);
         ArrayAdapter<String> aa = new ArrayAdapter<String>(this,
                   R.layout.list_item, COUNTRIES);
```

```
            myListView.setAdapter(aa);

            // setTheme(R.style.WidgetBackground);

            myListView.setTextFilterEnabled(true);
            myListView.setOnItemClickListener(new OnItemClickListener() {
                  @Override
                  public void onItemClick(AdapterView<?> parent, View view,
                              int position, long id) {
                        // When clicked, show a toast with the TextView text
                        Toast.makeText(getApplicationContext(),
                                    ((TextView) view).getText(), Toast.LENGTH_SHORT).show();
                  }

            });

            Log.i(TAG, "Lancement activity");
      }

}
```

Simple Adapter

```
package eu.central.test;

import java.util.ArrayList;
import java.util.HashMap;

import android.app.ListActivity;
import android.os.Bundle;
```

```java
import android.util.Log;
import android.view.View;
import android.widget.ListView;
import android.widget.SimpleAdapter;
import android.widget.Toast;

public class TestActivitySimpleAdapterListView extends ListActivity {

     private static final String TAG = "MyActivity";



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

      //Création de la ArrayList qui nous permettra d'alimenter la listView
        ArrayList<HashMap<String, String>> listItem = new ArrayList<HashMap<String, String>>();

        //On déclare la HashMap qui contiendra les informations pour un item
        HashMap<String, String> map;

        //Création d'une HashMap pour insérer les informations du premier item de notre listView
        map = new HashMap<String, String>();

        map.put("title", "Android");
        map.put("description", "Hello Android");
        map.put("img", String.valueOf(R.drawable.logo_android));
```

```
        listItem.add(map);

        //On refait la même chose pour remplir le reste des items de la liste
        map = new HashMap<String, String>();

        map.put("title", "iOS");
        map.put("description", "Hello iOS");
        map.put("img", String.valueOf(R.drawable.logo_apple));
        listItem.add(map);

        map = new HashMap<String, String>();

        map.put("title", "Bada");
        map.put("description", "Hello Bada");
        map.put("img", String.valueOf(R.drawable.logo_samsung));
        listItem.add(map);

        map = new HashMap<String, String>();
        map.put("title", "Windows Phone 7");
        map.put("description", "Hello Windows Phone 7");
        map.put("img", String.valueOf(R.drawable.logo_windows));
        listItem.add(map);

        //Création d'un SimpleAdapter qui se chargera de mettre les items présent dans notre list
(listItem) dans la vue affichageitem
        SimpleAdapter mSchedule = new SimpleAdapter (this.getBaseContext(), listItem,
R.layout.layoutitem,
                new String[] {"img", "title", "description"}, new int[] {R.id.img, R.id.title,
R.id.description});
```

```
        //On attribut à notre listActivity l'adapter que l'on vient de créer
        setListAdapter(mSchedule);

        Log.i(TAG,"Lancement activity");
    }

     @Override
     protected void onListItemClick(ListView l, View v, int position, long id) {
          //Récupèrer la Map qui contient les informations de l'item (titre, decription et image)
          HashMap<String, String> map = (HashMap<String, String>) getListAdapter().getItem(position);
          Toast.makeText(this, map.get("title")+ " selected", Toast.LENGTH_LONG).show();
     }

}
```

Custom Adapter

Classe Livre

```
package eu.central.test;

public class Livre {
     private String titre;
     private String auteur;

     public String getTitre() {
          return titre;
     }

     public void setTitre(String titre) {
```

```
            this.titre = titre;
      }

      public String getAuteur() {
            return auteur;
      }

      public void setAuteur(String auteur) {
            this.auteur = auteur;
      }

      public Livre(String titre, String auteur) {
            this.titre = titre;
            this.auteur = auteur;
      }

}
```

Livre Activity

```
package eu.central.test;

import java.util.ArrayList;
import java.util.List;

import android.app.Activity;
import android.os.Bundle;
import android.widget.ListView;
```

```
public class LivreActivity extends Activity {

	List<Livre> maBibliotheque = new ArrayList<Livre>();

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.listview_layout);

		this.RemplirLaBibliotheque();

		ListView myListView = (ListView) findViewById(R.id.myListView);

		LivreAdapter adapter = new LivreAdapter(this, maBibliotheque);
		myListView.setAdapter(adapter);
		adapter.notifyDataSetChanged();

	}

	private void RemplirLaBibliotheque() {

		maBibliotheque.clear();
		maBibliotheque.add(new Livre("Starcraft 2 : Les diables du ciel",
				"William-C Dietz"));
		maBibliotheque.add(new Livre("L'art du développement Android",
				"Mark Murphy"));
		maBibliotheque.add(new Livre("Le seuil des ténèbres", "Karen Chance"));
		maBibliotheque.add(new Livre("Starcraft 2 : Les diables du ciel",
				"William-C Dietz"));
		maBibliotheque.add(new Livre("L'art du développement Android",
```

```
                    "Mark Murphy"));
            maBibliotheque.add(new Livre("Le seuil des ténèbres", "Karen Chance"));
            maBibliotheque.add(new Livre("Starcraft 2 : Les diables du ciel",
                    "William-C Dietz"));
            maBibliotheque.add(new Livre("L'art du développement Android",
                    "Mark Murphy"));
            maBibliotheque.add(new Livre("Le seuil des ténèbres", "Karen Chance"));

      }

}
```

Livre Adapter

```
package eu.central.test;

import java.util.List;

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.TextView;

/* On surcharge ArrayAdapter */
public class LivreAdapterBad extends BaseAdapter {
      List<Livre> biblio;
      // LayoutInflater aura pour mission de charger notre fichier XML
```

```
    LayoutInflater inflater;
    public LivreAdapterBad(Context context,List<Livre> objects) {
         inflater = LayoutInflater.from(context);
         this.biblio = objects;
    }
    /**
     * Génère la vue pour un objet
     */
    @Override
    public View getView(int position, View convertView, ViewGroup parent) {

         convertView = inflater.inflate(R.layout.livre_item, null);
         TextView tvTitre = (TextView) convertView.findViewById(R.id.txtTitre);
         TextView tvAuteur = (TextView) convertView.findViewById(R.id.txtAuteur);

         Livre livre = biblio.get(position);
         tvTitre.setText(livre.getTitre());
         tvAuteur.setText(livre.getAuteur());
         return convertView;
    }
    /**
     * Retourne le nombre d'éléments
     */
    @Override
    public int getCount() {
         return biblio.size();
    }
    /**
     * Retourne l'item à la position
     */
```

```
	@Override
	public Livre getItem(int position) {
		return biblio.get(position);
	}
	/**
	 * Retourne la position de l'item
	 */
	@Override
	public long getItemId(int position) {
		return position;
	}
}
```

Livre Adpater optimisé

```
package eu.central.test;

import java.util.List;

import android.content.Context;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.TextView;

/* On surcharge ArrayAdapter */
public class LivreAdapter extends BaseAdapter {
```

```
List<Livre> biblio;

// LayoutInflater aura pour mission de charger notre fichier XML
LayoutInflater inflater;

/**
 * Elle nous servira à mémoriser les éléments de la liste en mémoire pour
 * qu'à chaque rafraichissement l'écran ne scintille pas
 *
 * @author patrice
 */
private class ViewHolder {
      TextView tvTitre;
      TextView tvAuteur;
}

public LivreAdapter(Context context, List<Livre> objects) {
      inflater = LayoutInflater.from(context);
      this.biblio = objects;

}

/**
 * Génère la vue pour un objet
 */
@Override
public View getView(int position, View convertView, ViewGroup parent) {
      ViewHolder holder;
      if (convertView == null) {
```

```
                Log.v("test", "convertView is null");
                holder = new ViewHolder();
                convertView = inflater.inflate(R.layout.livre_item, null);
                holder.tvTitre = (TextView) convertView.findViewById(R.id.txtTitre);
                holder.tvAuteur = (TextView) convertView
                          .findViewById(R.id.txtAuteur);
                convertView.setTag(holder);
          } else {
                Log.v("test", "convertView is not null");
                holder = (ViewHolder) convertView.getTag();
          }
          Livre livre = biblio.get(position);
          holder.tvTitre.setText(livre.getTitre());
          holder.tvAuteur.setText(livre.getAuteur());
          return convertView;
    }

    /**
     * Retourne le nombre d'éléments
     */
    @Override
    public int getCount() {
          // TODO Auto-generated method stub
          return biblio.size();
    }

    /**
     * Retourne l'item à la position
     */
    @Override
```

```
	public Livre getItem(int position) {
		// TODO Auto-generated method stub
		return biblio.get(position);
	}

	/**
	 * Retourne la position de l'item
	 */
	@Override
	public long getItemId(int position) {
		// TODO Auto-generated method stub
		return position;
	}

}
```

Loading et parsing JSON

Récupération du flux

```
        HttpClient httpclient = new DefaultHttpClient();
        HttpGet httpget = new HttpGet("http://cci.corellis.eu/pois.php");
        try {
            HttpResponse response = httpclient.execute(httpget);
            if(response != null) {
                String line = "";
                InputStream inputstream = response.getEntity().getContent();
```

```
                line = convertStreamToString(inputstream);
                JSONObject theObject = new JSONObject(line);

                JSONArray jsonArray = theObject.getJSONArray("results");
                Log.i(TAG,
                        "Number of entries " + jsonArray.length());
            } else {
                Toast.makeText(this, "Unable to complete your request", Toast.LENGTH_LONG).show();
            }
        } catch (ClientProtocolException e) {
            Toast.makeText(this, "Caught ClientProtocolException", Toast.LENGTH_SHORT).show();
            Log.e("test",e.getMessage());
        } catch (IOException e) {
            Toast.makeText(this, "Caught IOException", Toast.LENGTH_SHORT).show();
            Log.e("test",e.getMessage());
        } catch (Exception e) {
            Toast.makeText(this, "Caught Exception", Toast.LENGTH_SHORT).show();
            Log.e("test",e.getMessage());
        }
```

Conversion du flux en String

```
    private String convertStreamToString(InputStream is) {
        String line = "";
        StringBuilder total = new StringBuilder();
        BufferedReader rd = new BufferedReader(new InputStreamReader(is));
        try {
            while ((line = rd.readLine()) != null) {
```

```
                total.append(line);
            }
        } catch (Exception e) {
            Toast.makeText(this, "Stream Exception", Toast.LENGTH_SHORT).show();
        }
        return total.toString();
    }
```

Autre méthode pour parser le document

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

        if (android.os.Build.VERSION.SDK_INT > 9) {
            StrictMode.ThreadPolicy policy = new StrictMode.ThreadPolicy.Builder().permitAll().build();
            StrictMode.setThreadPolicy(policy);
        }

        HttpClient httpclient = new DefaultHttpClient();
        HttpGet httpget = new HttpGet("http://www.rollingtown.com/?json=get_recent_posts");
        try {
            HttpResponse response = httpclient.execute(httpget);
            if(response != null) {
                String line = "";
                HttpEntity httpEntity = response.getEntity();
                line = EntityUtils.toString(httpEntity);
```

```
                Log.i(TAG, "lines " + line);
                JSONObject theObject = new JSONObject(line);
                TextView mTxtDisplay = (TextView) findViewById(R.id.txt);
                mTxtDisplay.setText("Response is: "+ line.substring(0,500));

            } else {
                Toast.makeText(this, "Unable to complete your request", Toast.LENGTH_LONG).show();
            }
        } catch (ClientProtocolException e) {
            Toast.makeText(this, "Caught ClientProtocolException", Toast.LENGTH_SHORT).show();
            Log.e("test",e.toString());
        } catch (IOException e) {
            Toast.makeText(this, "Caught IOException", Toast.LENGTH_SHORT).show();
            Log.e("test",e.toString());
        } catch (Exception e) {
            Toast.makeText(this, "Caught Exception", Toast.LENGTH_SHORT).show();
            Log.e("test",e.toString());
        }
    }
```

Asynctask

Appel du webservice

```
@Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_async_task);

        Button button1 = (Button) findViewById(R.id.button1);
        button1.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
                List<NameValuePair> params = new ArrayList<NameValuePair>();
                new
WebServiceRequestor("http://www.rollingtown.com/?json=get_recent_posts",params).execute();
            }
        });
    }
```

Création de l'Asyntask

```
private class WebServiceRequestor extends AsyncTask<String, Void, String> {

        private ProgressDialog pDialog;
        String URL;
        List<NameValuePair> parameters;

        public WebServiceRequestor(String url, List<NameValuePair> params)
        {
            this.URL = url;
            this.parameters = params;
        }
```

```
        @Override
        protected String doInBackground(String... params)
        {
            try
            {
                DefaultHttpClient httpClient = new DefaultHttpClient();
                HttpEntity httpEntity = null;
                HttpResponse httpResponse = null;

                HttpPost httpPost = new HttpPost(URL);

                if (parameters != null)
                {
                    httpPost.setEntity(new UrlEncodedFormEntity(parameters));
                }
                httpResponse = httpClient.execute(httpPost);

                httpEntity = httpResponse.getEntity();
                return EntityUtils.toString(httpEntity);

            }  catch (Exception e)
            {

            }
            return "";
        }

        @Override
        protected void onPostExecute(String result)
        {
```

```
            pDialog.dismiss();
            TextView txt = (TextView) findViewById(R.id.output);
//            txt.setText("Response is: "+ result.substring(0,500)); // txt.setText(result);

            try {
                JSONObject theObject = new JSONObject(result);
                txt.setText("Response is: "+theObject.getString("status")+"\n"+
                        theObject.getString("count")+"/"+theObject.getString("count_total"));
            } catch (Exception e){
                txt.setText("Error during process"); // txt.setText(result);
            }
            super.onPostExecute(result);
        }

        @Override
        protected void onPreExecute() {

            pDialog = new ProgressDialog(AsyncTaskActivity2.this);
            pDialog.setMessage("Processing Request...");
            pDialog.setIndeterminate(false);
            pDialog.setCancelable(false);
            pDialog.show();
            super.onPreExecute();
        }

        @Override
        protected void onProgressUpdate(Void... values) {
        }
    }
```

Utilisation de Volley

Il faut au préalable télécharger la librairie Volley : http://api.androidhive.info/volley/volley.jar et le copier dans le dossier libs.

Et modifier le fichier build.gradle

```
dependencies {
    compile fileTree(include: ['*.jar'], dir: 'libs')
    compile 'com.android.support:appcompat-v7:21.0.3'
     compile files('libs/volley.jar')
}
```

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

        ImageView mImageView;
        mTxtDisplay = (TextView) findViewById(R.id.txtDisplay);
        String url = "http://www.rollingtown.com/?json=get_recent_posts";

        // Instantiate the RequestQueue.
        RequestQueue queue = Volley.newRequestQueue(this);

        // Request a string response from the provided URL.
        StringRequest stringRequest = new StringRequest(Request.Method.GET, url,
```

```
                new Response.Listener() {
                    @Override
                    public void onResponse(Object o) {
                        // Display the first 500 characters of the response string.
                        String response = (String)o;
                        mTxtDisplay.setText("Response is: "+ response.substring(0,500));
                    }

                }, new Response.ErrorListener() {
            @Override
            public void onErrorResponse(VolleyError error) {
                mTxtDisplay.setText("That didn't work!");
            }
        });

        // Add the request to the RequestQueue.
        queue.add(stringRequest);

    }
```

Utiliser les fragments

Ajouter un fragment à une activity

```
    @Override
```

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

        ItemFragment itemFragment = new ItemFragment();

        if (savedInstanceState == null) {
            getSupportFragmentManager().beginTransaction()
                    .add(R.id.container, itemFragment)
                    .commit();
        }
    }


    /* Méthode à implementer permettant l'intéraction avec le fragment */
    @Override
    public void onFragmentInteraction(String id) {
        //Méthode appelée depuis le fragment
        Log.i(TAG, "onFragmentInteraction: "+id);
    }
```

activity_list_fragment.xml

```
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" android:id="@+id/container"
    android:layout_width="match_parent" android:layout_height="match_parent"
    tools:context="eu.corellis.patrice.serviceexemple.ListFragmentActivity"
```

```
    tools:ignore="MergeRootFrame" />
```

Fragment

```
public class ItemFragment extends Fragment implements AbsListView.OnItemClickListener {

    // TODO: Rename parameter arguments, choose names that match
    // the fragment initialization parameters, e.g. ARG_ITEM_NUMBER
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    // TODO: Rename and change types of parameters
    private String mParam1;
    private String mParam2;

    private OnFragmentInteractionListener mListener;

    /**
     * The fragment's ListView/GridView.
     */
    private AbsListView mListView;

    /**
     * The Adapter which will be used to populate the ListView/GridView with
     * Views.
     */
```

```
    private ListAdapter mAdapter;

    // TODO: Rename and change types of parameters
    public static ItemFragment newInstance(String param1, String param2) {
        ItemFragment fragment = new ItemFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    /**
     * Mandatory empty constructor for the fragment manager to instantiate the
     * fragment (e.g. upon screen orientation changes).
     */
    public ItemFragment() {
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }

        // TODO: Change Adapter to display your content
        mAdapter = new ArrayAdapter<DummyContent.DummyItem>(getActivity(),
```

```
            android.R.layout.simple_list_item_1, android.R.id.text1, DummyContent.ITEMS);
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        View view = inflater.inflate(R.layout.fragment_item, container, false);

        // Set the adapter
        mListView = (AbsListView) view.findViewById(android.R.id.list);
        ((AdapterView<ListAdapter>) mListView).setAdapter(mAdapter);

        // Set OnItemClickListener so we can be notified on item clicks
        mListView.setOnItemClickListener(this);

        return view;
    }

    @Override
    public void onAttach(Activity activity) {
        super.onAttach(activity);
        try {
            mListener = (OnFragmentInteractionListener) activity;
        } catch (ClassCastException e) {
            throw new ClassCastException(activity.toString()
                    + " must implement OnFragmentInteractionListener");
        }
    }

    @Override
```

```
    public void onDetach() {
        super.onDetach();
        mListener = null;
    }


    @Override
    public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
        if (null != mListener) {
            // Notify the active callbacks interface (the activity, if the
            // fragment is attached to one) that an item has been selected.
            mListener.onFragmentInteraction(DummyContent.ITEMS.get(position).id);
        }
    }

    /**
     * The default content for this Fragment has a TextView that is shown when
     * the list is empty. If you would like to change the text, call this method
     * to supply the text it should use.
     */
    public void setEmptyText(CharSequence emptyText) {
        View emptyView = mListView.getEmptyView();

        if (emptyView instanceof TextView) {
            ((TextView) emptyView).setText(emptyText);
        }
    }

    /**
     * This interface must be implemented by activities that contain this
```

```
     * fragment to allow an interaction in this fragment to be communicated
     * to the activity and potentially other fragments contained in that
     * activity.
     * <p/>
     * See the Android Training lesson <a href=
     * "http://developer.android.com/training/basics/fragments/communicating.html"
     * >Communicating with Other Fragments</a> for more information.
     */
    public interface OnFragmentInteractionListener {
        // TODO: Update argument type and name
        public void onFragmentInteraction(String id);
    }

}
```

DummyContent

```
public class DummyContent {

    /**
     * An array of sample (dummy) items.
     */
    public static List<DummyItem> ITEMS = new ArrayList<DummyItem>();

    /**
     * A map of sample (dummy) items, by ID.
     */
```

```
    public static Map<String, DummyItem> ITEM_MAP = new HashMap<String, DummyItem>();

    static {
        // Add 3 sample items.
        addItem(new DummyItem("1", "Item 1"));
        addItem(new DummyItem("2", "Item 2"));
        addItem(new DummyItem("3", "Item 3"));
    }

    private static void addItem(DummyItem item) {
        ITEMS.add(item);
        ITEM_MAP.put(item.id, item);
    }

    /**
     * A dummy item representing a piece of content.
     */
    public static class DummyItem {
        public String id;
        public String content;

        public DummyItem(String id, String content) {
            this.id = id;
            this.content = content;
        }

        @Override
        public String toString() {
            return content;
        }
```

```
        }
}
```