TP - Application Android + Service REST JSON

Ce TP est divisé en trois parties :

- Le développement du service REST JSON en PHP
- Le développement de l'application Android
- Les tests finaux

Développement du service REST Json avec PHP

Création de l'utilisateur pour la base de données

```sql
USE 'mysql';
CREATE USER 'adminSwiss' IDENTIFIED BY 'adminSwiss';
GRANT ALL PRIVILEGES ON swissbourdin.* TO 'adminSwiss'@'%' IDENTIFIED BY
'adminSwiss'
WITH GRANT OPTION;
FLUSH PRIVILEGES;
```

connexionBdSwiss.php

```php
<?php
class ConnectionbdSwiss {
    static function connect()
    {
        try
        {
            $db = new PDO('mysql:host=127.0.0.1;dbname=swissbourdin',
'adminSwiss', 'adminSwiss', array(PDO::MYSQL_ATTR_INIT_COMMAND => "SET NAMES
utf8"));
            return $db;
        }
        catch(Exception $e)
        {
            die('Connexion impossible : ' . $e->getMessage());
            return null;
        }
    }
}
```

TousVisiteursSwissJson.php

```php
<?php
require_once('connexionBdSwiss.php');

$db = ConnectionbdSwiss::connect();
```

```php
$sql="SELECT VIS_MATRICULE, VIS_NOM, VIS_PRENOM, VIS_ADRESSE, VIS_VILLE, VIS_CP
from visiteur;";

$st = $db->prepare($sql);
$st->execute(array());
$rowset = $st->fetchAll();

$vide = count($rowset)==0;

print(json_encode($rowset));
```

Aperçu du service REST

localhost/json-android/TousVisiteursSwissJson.php

[{"VIS_MATRICULE":"a131","0":"a131","VIS_NOM":"Villechalane","1":"Villechalane","VIS_PRENOM":"Louis","2":"Louis","VIS_ADRESSE":"8 cours Lafontaine","3":"8 cours Lafontaine","VIS_VILLE":"BREST","4":"BREST","VIS_CP":"29000","5":"29000"},
{"VIS_MATRICULE":"a17","0":"a17","VIS_NOM":"Andre","1":"Andre","VIS_PRENOM":"David","2":"David","VIS_ADRESSE":"1 r Aimon de Chiss\u00e9e","3":"1 r Aimon de Chiss\u00e9e","VIS_VILLE":"GRENOBLE","4":"GRENOBLE","VIS_CP":"38100","5":"38100"},
{"VIS_MATRICULE":"a55","0":"a55","VIS_NOM":"Bedos","1":"Bedos","VIS_PRENOM":"Christian","2":"Christian","VIS_ADRESSE":"1 r B\u00e9n\u00e9dictins","3":"1 r B\u00e9n\u00e9dictins","VIS_VILLE":"TARBES","4":"TARBES","VIS_CP":"65000","5":"65000"},
{"VIS_MATRICULE":"a93","0":"a93","VIS_NOM":"Tusseau","1":"Tusseau","VIS_PRENOM":"Louis","2":"Louis","VIS_ADRESSE":"22 r Renou","3":"22 r Renou","VIS_VILLE":"POITIERS","4":"POITIERS","VIS_CP":"86000","5":"86000"},
{"VIS_MATRICULE":"b13","0":"b13","VIS_NOM":"Bentot","1":"Bentot","VIS_PRENOM":"Pascal","2":"Pascal","VIS_ADRESSE":"11 av 6 Juin","3":"11 av 6 Juin","VIS_VILLE":"STRASBOURG","4":"STRASBOURG","VIS_CP":"67000","5":"67000"},
{"VIS_MATRICULE":"b16","0":"b16","VIS_NOM":"Bioret","1":"Bioret","VIS_PRENOM":"Luc","2":"Luc","VIS_ADRESSE":"1 r Linne","3":"1 r Linne","VIS_VILLE":"RENNES","4":"RENNES","VIS_CP":"35000","5":"35000"},
{"VIS_MATRICULE":"b19","0":"b19","VIS_NOM":"Bunisset","1":"Bunisset","VIS_PRENOM":"Francis","2":"Francis","VIS_ADRESSE":"10 r Nicolas Chorier","3":"10 r Nicolas Chorier","VIS_VILLE":"LA ROCHE SUR YON","4":"LA ROCHE SUR YON","VIS_CP":"85000","5":"85000"},
{"VIS_MATRICULE":"b25","0":"b25","VIS_NOM":"Bunisset","1":"Bunisset","VIS_PRENOM":"Denise","2":"Denise","VIS_ADRESSE":"1 r Lionne","3":"1 r Lionne","VIS_VILLE":"ANGERS","4":"ANGERS","VIS_CP":"49100","5":"49100"},
{"VIS_MATRICULE":"b28","0":"b28","VIS_NOM":"Cacheux","1":"Cacheux","VIS_PRENOM":"Bernard","2":"Bernard","VIS_ADRESSE":"114 r Authie","3":"114 r Authie","VIS_VILLE":"MONTPELLIER","4":"MONTPELLIER","VIS_CP":"34000","5":"34000"},
{"VIS_MATRICULE":"b34","0":"b34","VIS_NOM":"Cadic","1":"Cadic","VIS_PRENOM":"Eric","2":"Eric","VIS_ADRESSE":"123 r Caponi\u00e8re","3":"123 r Caponi\u00e8re","VIS_VILLE":"BLOIS","4":"BLOIS","VIS_CP":"41000","5":"41000"},
{"VIS_MATRICULE":"b4","0":"b4","VIS_NOM":"Charoze","1":"Charoze","VIS_PRENOM":"Catherine","2":"Catherine","VIS_ADRESSE":"100 pl G\u00e9ants","3":"100 pl G\u00e9ants","VIS_VILLE":"BORDEAUX","4":"BORDEAUX","VIS_CP":"33000","5":"33000"},
{"VIS_MATRICULE":"b50","0":"b50","VIS_NOM":"Clepkens","1":"Clepkens","VIS_PRENOM":"Christophe","2":"Christophe","VIS_ADRESSE":"12 r F\u00e9d\u00e9rico Garcia Lorca","3":"12 r F\u00e9d\u00e9rico Garcia Lorca","VIS_VILLE":"MARSEILLE","4":"MARSEILLE","VIS_CP":"13000","5":"13000"},
{"VIS_MATRICULE":"b59","0":"b59","VIS_NOM":"Cottin","1":"Cottin","VIS_PRENOM":"Vincenne","2":"Vincenne","VIS_ADRESSE":"36 sq Capucins","3":"36 sq Capucins","VIS_VILLE":"GAP","4":"GAP","VIS_CP":"5000","5":"5000"},
{"VIS_MATRICULE":"c14","0":"c14","VIS_NOM":"Daburon","1":"Daburon","VIS_PRENOM":"Fran\u00e7ois","2":"Fran\u00e7ois","VIS_ADRESSE":"13 r Champs Elys\u00e9es","3":"13 r Champs Elys\u00e9es","VIS_VILLE":"NICE","4":"NICE","VIS_CP":"6000","5":"6000"},

Développement de l'application Android

Code en Java

Aperçu de `MainActivity.java`

```java
package com.example.json_rest;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.app.ProgressDialog;
import android.os.AsyncTask;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.ListView;
import android.widget.TextView;
```

```java
import android.widget.Toast;

import com.squareup.okhttp.Call;
import com.squareup.okhttp.Callback;
import com.squareup.okhttp.OkHttpClient;
import com.squareup.okhttp.Request;
import com.squareup.okhttp.Response;

import org.json.JSONArray;
import org.json.JSONException;
import org.json.JSONObject;

import java.io.IOException;
import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {
    ListView listDesVisiteurs;
    private static final String TAG_matricule = "VIS_MATRICULE";
    private static final String TAG_nom = "VIS_NOM";
    private static final String TAG_prenom = "VIS_PRENOM";
    private static final String TAG_adresse = "VIS_ADRESSE";
    private static final String TAG_ville = "VIS_VILLE";
    private static final String TAG_cp = "VIS_CP";

    ArrayList<Visiteur> oslist = new ArrayList<Visiteur>();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button buttonCharger = (Button) findViewById(R.id.buttonCharger);


        buttonCharger.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                new JSONAsynchrone().execute();
            }
        });
    }
    @SuppressLint("StaticFieldLeak")
    private class JSONAsynchrone extends AsyncTask<String, String, String> {
        private ProgressDialog pDialog;

        @Override
        protected void onPreExecute() {
            super.onPreExecute();

            pDialog = new ProgressDialog(MainActivity.this);
            pDialog.setMessage("Je charge les données ...");
            pDialog.setIndeterminate(false);
            pDialog.setCancelable(true);
            pDialog.show();
        }
```

```java
        @Override
        protected String doInBackground(String... strings) {
            OkHttpClient client = new OkHttpClient();
            Request request = new Request.Builder().url("http://192.168.1.58/json-
android/TousVisiteursSwissJson.php").build();
            Response response = null;
            try {
                response = client.newCall(request).execute();
                return response.body().string();

            } catch (IOException e) {
                e.printStackTrace();
            }
            return null;
        }

        @Override
        protected void onPostExecute(String json) {
            pDialog.dismiss();
            JSONObject c = null;
            try {
                JSONArray android = new JSONArray(json);
                for (int i = 0; i < android.length(); i++) {
                    c = android.getJSONObject(i);
                    String id = c.getString(TAG_matricule);
                    String nom = c.getString(TAG_nom);
                    String prenom = c.getString(TAG_prenom);
                    String adresse = c.getString(TAG_adresse);
                    String ville = c.getString(TAG_ville);
                    String cp = c.getString(TAG_cp);

                    Visiteur vis = new Visiteur(id, nom, prenom, adresse, ville,
cp);
                    oslist.add(vis);

                }
                listDesVisiteurs = (ListView) findViewById(R.id.listView1);
                CustomAdapter monAdapter = new CustomAdapter( getBaseContext(),
oslist);

                listDesVisiteurs.setAdapter(monAdapter);
                listDesVisiteurs.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
                    @Override
                    public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                        Toast.makeText(MainActivity.this, "Vous avez cliqué le
visiteur " + oslist.get(+position).nomVis, Toast.LENGTH_SHORT).show();
                    }
                });

            } catch (JSONException e) {
```

```java
                e.printStackTrace();
                Log.i("e", e.toString());
            }
        }
    }
}
```

Aperçu de `Visiteur.java`

```java
package com.example.json_rest;

public class Visiteur {
    String matriculeVis;
    String nomVis;
    String prenomVis;
    String adresseVis;
    String villeVis;
    String cpVis;
    public Visiteur(String matricule, String nom, String prenom, String adresse,
String ville,String cp)
    {
        matriculeVis = matricule;
        nomVis =nom;
        prenomVis=nom;
        adresseVis = adresse;
        villeVis =ville;
        cpVis = cp;
    }

    public String getMatriculeVis(){
        return matriculeVis;
    }

    public String getNomVis() {
        return nomVis;
    }

    public String getPrenomVis() {
        return prenomVis;
    }

    public String getAdresseVis() {
        return adresseVis;
    }

    public String getVilleVis() {
        return villeVis;
    }

    public String getCpVis() {
        return cpVis;
    }
```

```java
    @Override
    public String toString() {
        return matriculeVis + " " + nomVis + " " + prenomVis;
    }
}
```

Aperçu de `CustomAdapter.java`

Un nettoyage du cache fût nécessaire après la création de `detail_visiteur.xml`

```java
package com.example.json_rest;

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

import java.util.ArrayList;

public class CustomAdapter extends BaseAdapter {

    private ArrayList<Visiteur> listData;
    private LayoutInflater layoutInflater;
    private Context context;

    public CustomAdapter(Context aContext, ArrayList<Visiteur> listData) {
        this.context = aContext;
        this.listData = listData;
        layoutInflater = LayoutInflater.from(aContext);
    }
    @Override
    public int getCount() {
        return listData.size();
    }
    @Override
    public Object getItem(int position) {
        return listData.get(position);
    }
    @Override
    public long getItemId(int position) {
        return position;
    }
    public View getView(int position, View convertView, ViewGroup parent) {
        ViewHolder holder;
        if (convertView == null) {
            convertView = layoutInflater.inflate(R.layout.details_visiteur, null);
            holder = new ViewHolder();
```

```java
            holder.matriculeView = (TextView)
convertView.findViewById(R.id.textViewMatricule);
            holder.NameView = (TextView)
convertView.findViewById(R.id.textViewNomVisiteur);
            holder.PrenomView= (TextView)
convertView.findViewById(R.id.textViewPrenomVisiteur);
            holder.AdresseView = (TextView)
convertView.findViewById(R.id.textViewAdresse);
            holder.VilleView = (TextView)
convertView.findViewById(R.id.textViewVille);
            holder.CpView = (TextView) convertView.findViewById(R.id.textViewCp);
            convertView.setTag(holder);
        } else {
            holder = (ViewHolder) convertView.getTag();
        }
        Visiteur vis;
        vis = this.listData.get(position);
        holder.matriculeView.setText(vis.getMatriculeVis());
        holder.NameView.setText(vis.getNomVis());
        holder.PrenomView.setText(vis.getPrenomVis());
        holder.AdresseView.setText(vis.getAdresseVis());
        holder.VilleView.setText(vis.getVilleVis());
        holder.CpView.setText(vis.getCpVis());
        return convertView;
    }
    static class ViewHolder {
        TextView matriculeView;
        TextView NameView;
        TextView PrenomView;
        TextView AdresseView;
        TextView VilleView;
        TextView CpView;
    }
}
```

Ressources en XML

Aperçu de `main_activity.xml`

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/buttonCharger"
        android:layout_width="221dp"
```

```
            android:layout_height="53dp"
            android:text="@string/charger_les_donn_es"
            app:layout_constraintTop_toTopOf="parent"
            tools:ignore="MissingConstraints"
            tools:layout_editor_absoluteX="95dp" />

        <ListView
            android:id="@+id/listView1"
            android:layout_width="359dp"
            android:layout_height="411dp"
            android:layout_marginTop="96dp"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="@+id/buttonCharger" />

        <Spinner
            android:id="@+id/support_simple_spinner_dropdown_item"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            tools:ignore="MissingConstraints" />

</androidx.constraintlayout.widget.ConstraintLayout>
```
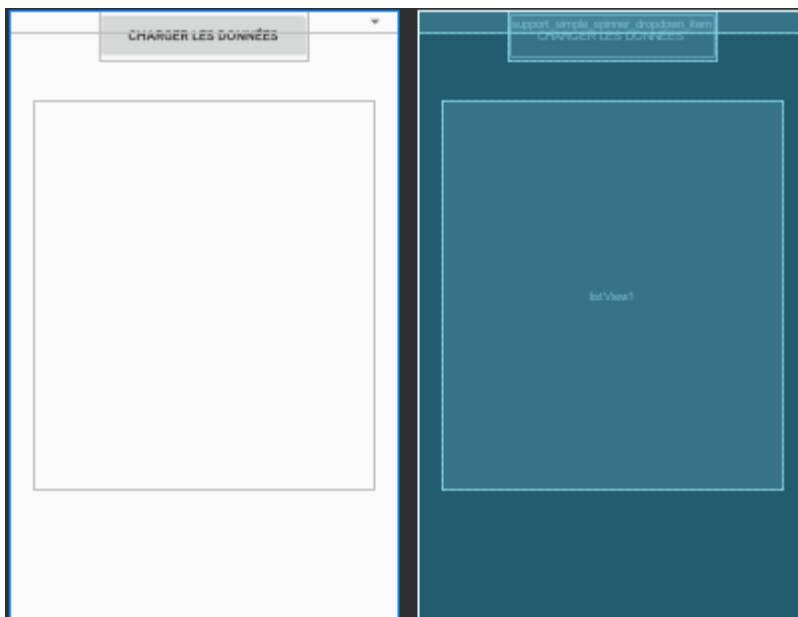

Aperçu de `details_visiteur.xml`

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent" android:layout_height="match_parent">

    <TextView
        android:id="@+id/textViewMatricule"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
```

```
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="23dp"
        android:layout_marginLeft="23dp"
        android:layout_marginTop="38dp"
        android:text="matriculeVisiteur"
        android:textColor="@color/colorAccent" />

    <TextView
        android:id="@+id/textViewNomVisiteur"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_marginStart="41dp"
        android:layout_marginLeft="41dp"
        android:layout_marginTop="38dp"
        android:layout_toEndOf="@+id/textViewMatricule"
        android:layout_toRightOf="@+id/textViewMatricule"
        android:text="nomVisiteur"
        android:textAllCaps="true" />

    <TextView
        android:id="@+id/textViewPrenomVisiteur"
        android:layout_width="wrap_content"
        android:layout_height="27dp"
        android:layout_alignBottom="@+id/textViewMatricule"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginStart="93dp"
        android:layout_marginLeft="93dp"
        android:layout_marginTop="37dp"
        android:layout_marginEnd="3dp"
        android:layout_marginRight="3dp"
        android:layout_marginBottom="-7dp"
        android:layout_toEndOf="@+id/textViewNomVisiteur"
        android:layout_toRightOf="@+id/textViewNomVisiteur"
        android:text="prenomvis" />

    <TextView
        android:id="@+id/textViewAdresse"
        android:layout_width="wrap_content"
        android:layout_height="24dp"
        android:layout_below="@+id/textViewMatricule"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginStart="23dp"
        android:layout_marginLeft="23dp"
        android:layout_marginTop="13dp"
        android:layout_marginEnd="60dp"
        android:layout_marginRight="260dp"
        android:text="adressevis" />
```

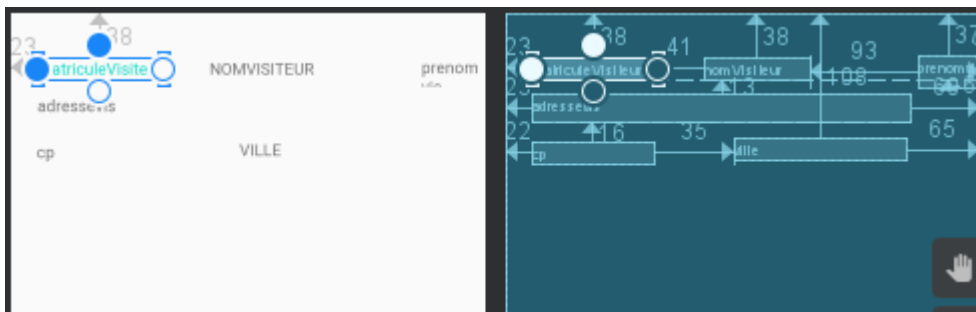```xml
    <TextView
        android:id="@+id/textViewCp"
        android:layout_width="114dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textViewAdresse"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_marginStart="22dp"
        android:layout_marginLeft="22dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="35dp"
        android:layout_marginRight="35dp"
        android:layout_toStartOf="@+id/textViewVille"
        android:layout_toLeftOf="@+id/textViewVille"
        android:text="cp" />

    <TextView
        android:id="@+id/textViewVille"
        android:layout_width="148dp"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginStart="35dp"

        android:layout_marginLeft="35dp"
        android:layout_marginTop="108dp"
        android:layout_marginEnd="65dp"
        android:layout_marginRight="65dp"

        android:text="ville"
        android:textAllCaps="true" />
</RelativeLayout>
```
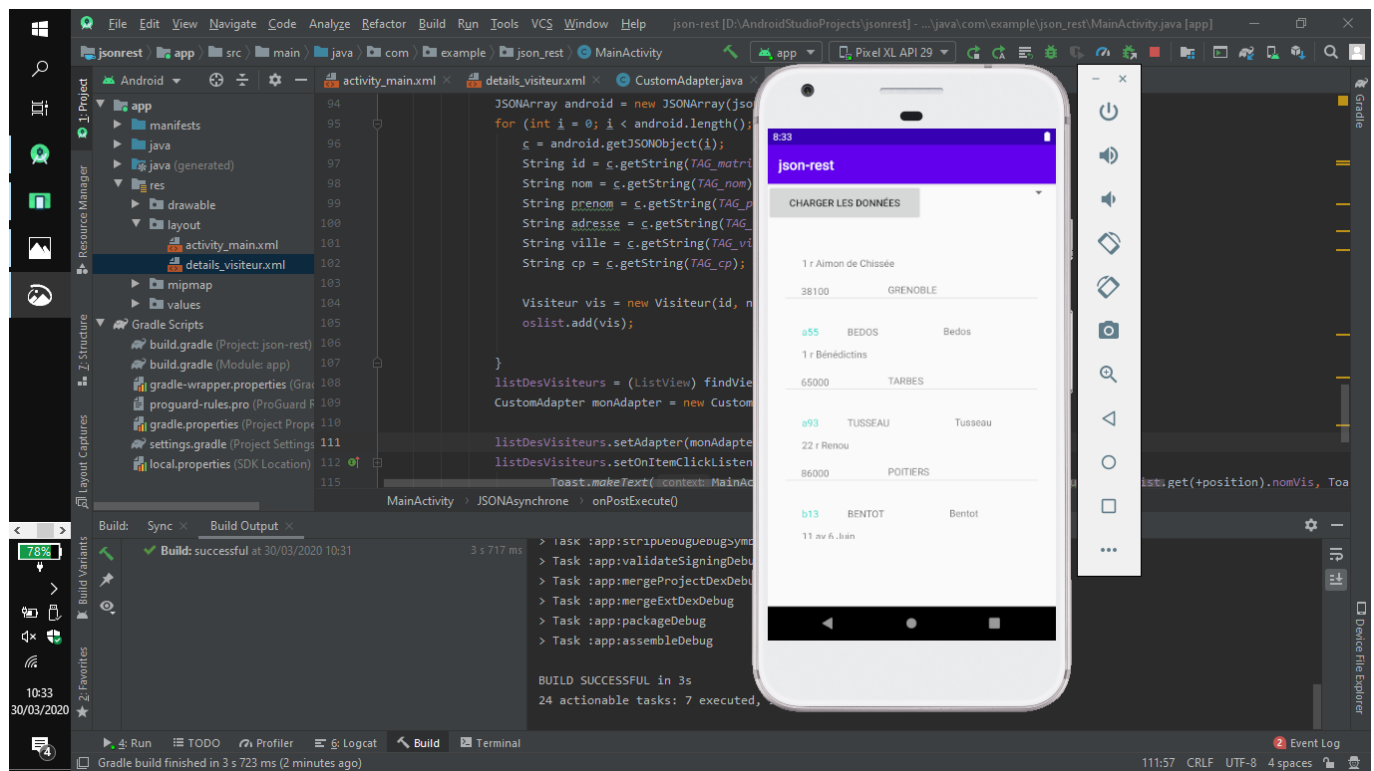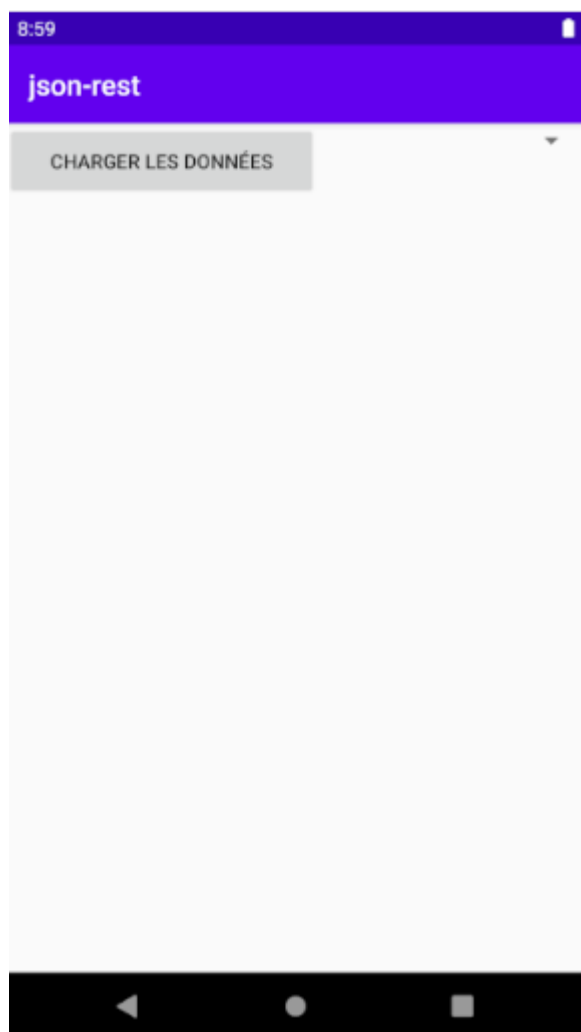


Preuve du développement sous android studio

# Les tests finaux

Connexion avec le service REST en PHP

11778-11812/? D/HostConnection: HostConnection::get() New Host Connection established 0xd458a6c0, tid 11812
11778-11812/? D/HostConnection: HostComposition ext ANDROID_EMU_CHECKSUM_HELPER_v1 ANDROID_EMU_dma_v1 ANDROID_EMU_direct_mem ANDROID_EMU_host_composit
11778-11812/? D/eglCodecCommon: allocate: Ask for block of size 0x1000
11778-11812/? D/eglCodecCommon: allocate: ioctl allocate returned offset 0x3ff1e0000 size 0x2000
11778-11812/? D/EGL_emulation: eglMakeCurrent: 0xdfb6ede0: ver 2 0 (tinfo 0xeadc00c0)

## Chargement des données



11778-11822/com.example.json_rest D/NetworkSecurityConfig: No Network Security Config specified, using platform default
11778-11812/com.example.json_rest D/EGL_emulation: eglMakeCurrent: 0xdfb6ede0: ver 2 0 (tinfo 0xeadc00c0)
11778-11812/com.example.json_rest I/chatty: uid=10133(com.example.json_rest) RenderThread identical 4 lines
11778-11812/com.example.json_rest D/EGL_emulation: eglMakeCurrent: 0xdfb6ede0: ver 2 0 (tinfo 0xeadc00c0)

## Détails du visiteur

/com.example.json_rest D/EGL_emulation: eglMakeCurrent: 0xdfb6fec0: ver 2 0 (tinfo 0xeadc02f0)
/com.example.json_rest D/EGL_emulation: eglMakeCurrent: 0xdfb6fec0: ver 2 0 (tinfo 0xeadc02f0)
/com.example.json_rest D/EGL_emulation: eglMakeCurrent: 0xdfb6fec0: ver 2 0 (tinfo 0xeadc02f0)
/com.example.json_rest D/EGL_emulation: eglMakeCurrent: 0xdfb6fec0: ver 2 0 (tinfo 0xeadc02f0)