

# Android: PDM18kotlin3v3

<http://developer.android.com/reference/android/util/JsonReader.html>

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# A REST-JSON example: PDM18kotlin3v3

[git clone https://<login>@gitlab2.educ.di.unito.it/ProgMob/PDM18kotlin3v3.git]

This project is an update of PDM18kotlin3v2,

the files added and modified in this example are:

- Model.kt
  - ▶ methods getCourses and getCourseDetail: performs a REST query to get the JSON array with the informations
  - ▶ getCourses is a new private method used to initialize the list of courses at the startup of the app
- CourseNetHelper.kt
  - ▶ Defines the support method for data download
- MainActivity.kt, AndroidManifest.xml, config.cml
  - ▶ Ask for the network privilege for the App
  - ▶ Added other two configuration data

Example of use of an JSON array:

```
1  init{
2      val strCorsi = CoursesNetHelper.getJSON(MainActivity.applicationContext().resources.getString(R.string.restCourseList), 10000)
3      val jsonCorsi = JSONArray(strCorsi)
4
5      val count = jsonCorsi.length()
6
7      for (i in 0 until count) {
8          val obj = jsonCorsi.optJSONObject(i)
9          if (obj != null) {
10             val course = Course(obj.optString("nome", ""),obj.optString("codice", ""),"", "")
11             courses.add(course)
12         }
13     }
14 }
```

Now:

- In this class is defined only one static method
- The method is synchronous

# MainActivity.java, AndroidManifest.xml

## AndroidManifest.xml

```
1  ...
2  <uses-permission android:name="android.permission.INTERNET" />
3  ...
```

## CoursesNetHelper.kt

```
1  fun getJSON(urlString: String, timeoutMilliseconds: Int): String {
2      ...
3
4      val policy = StrictMode.ThreadPolicy.Builder().permitNetwork().build()
5      StrictMode.setThreadPolicy(policy)
6
7      ...
8  }
```

## Other: some exercises

Upgrade to do on PDM18kotlin3v3:

- Add more details for each course informations
- Add some menu to the App, for example:
  - ▶ About
  - ▶ Invalidate cache data
- While changing the orientation of the phone, mantain the reference of the fragment
- CoursesNetHelper.getJSON: Make this method as asynchronous task
- Implement an offline cache using DB
- Highlight the information taken from the cache
- Add the management of the academic year, example:
  - ▶ `.../SI/API/v1/insegnamenti/lista?AA=2014`
  - ▶ `.../SI/API/v1/insegnamenti/descrizione/MFN1348?AA=2014`
- Add the teacher information



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## Some useful readings

- <http://android.devapp.it/>
  - ▶ <http://android.devapp.it/t018-fare-una-chiamata-a-un-servizio-json-dalla-nostra-applicazione-android>
  - ▶ <http://android.devapp.it/t019-scaricare-immagini-da-visualizzare-in-una-listview-parsing-json-parte-2>
  - ▶ <http://android.devapp.it/t020-download-asincrono-di-immagini-in-una-listview-con-cwac-thumbnail>