Lab.
Pemrograman Mobile

android

Pertemuan 8

android

Learning Objectives

o   Retrofit
  o   GET

android

# Pert. 8
Retrofit.2

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Setup Retrofit 2

First, add the **Retrofit 2** and **Gson Converter** dependencies in build.gradle (module) file by writing this line of code under depedencies block. Then re-sync the gradle.

```
implementation("com.squareup.retrofit2:retrofit:2.6.2")
implementation("com.squareup.retrofit2:converter-gson:2.6.2")
```

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Network Security Config

Create a layout file for network security config on res > xml > **network_security_config.xml**
And then paste these lines:

```
xml
    backup_rules.xml
    data_extraction_rules.xml
    network_security_config.xml
```
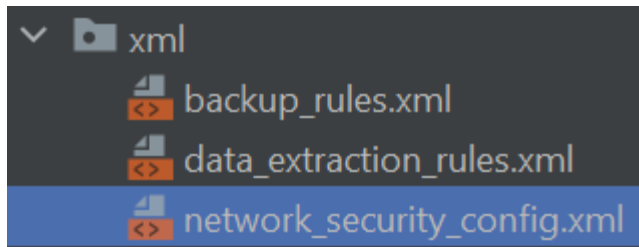
```xml
<?xml version="1.0" encoding="utf-8"?>
<network-security-config>
    <base-config cleartextTrafficPermitted="true">
        <trust-anchors>
            <certificates src="system" />
        </trust-anchors>
    </base-config>
</network-security-config>
```

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Network Security Config

Create a layout file for network security config on res > xml > **network_security_config.xml**
And then paste these lines:

```xml
<application
    android:networkSecurityConfig="@xml/network_security_config"
...>
</application>
```

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Create a REST package

Create a REST package to hold the API configuration and create one interface (kt) file and one object (kt) file

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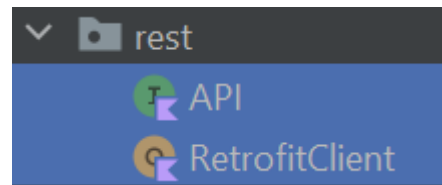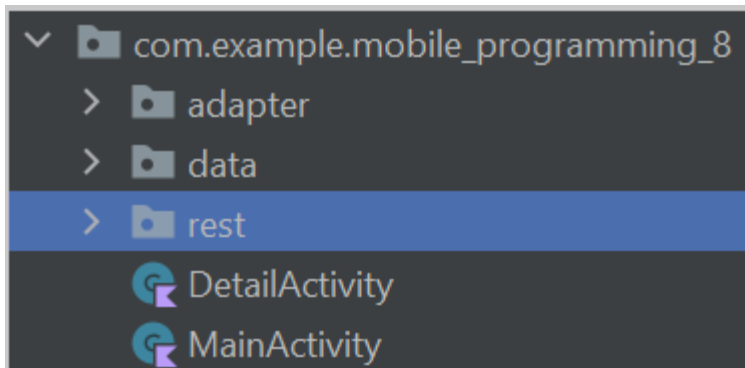
RetrofitClient.kt

Create a RetrofitClient object with the API BASE URL and Gson Converter.

```kotlin
object RetrofitClient {

    private const val BASE_URL = "http://192.168.1.7/api-country/"

    val instance: API by lazy {
        val retrofit = Retrofit.Builder()
            .baseUrl(BASE_URL)
            .addConverterFactory(GsonConverterFactory.create())
            .build()
        retrofit.create(API::class.java)
    }
}
```

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API.kt

Create an API interface and function for accessing the API.

```kotlin
interface API {
    @GET("read.php")
    fun getCountries():Call<ArrayList<CountryItem>>

    @GET("detail.php")
    fun getCountryDetail(
        @Query("countryId") countryId: String?
    ):Call<CountryDetail>
}
```
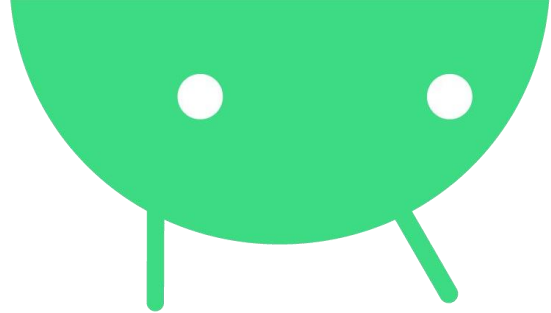
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Access API from Main Class

We can call RetrofitClient to access the API from the Main Class

```kotlin
RetrofitClient.instance.getCountries()
    .enqueue(object: Callback<Data_Type> {
        override fun onResponse(call: Call<Data_Type>, response: Response<Data_Type>) {
            if (response.code() == 200) {
                // what to do if data successfully retrieved
                val list = response.body()
                Log.d("GET ITEMS", list.toString())

                if (list!!.isEmpty()) {
                    // what to do if the data retrieved is empty
                } else {
                    // what to do if there is the data
                }
            } else {
                // what to do if failed to fetch the data (response is not 200)
            }
        }
        override fun onFailure(call: Call<Data_Type>, t: Throwable) {
            // what to do if the system failed to retrieve the data
        }
    })
```

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Any Question?

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