HTTPs Request

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Connectivity

In addition to providing standard network connectivity, Android provides APIs to let your app connect and interact with other devices with protocols such as Bluetooth, NFC, Wifi P2P, USB, and SIP.

Overview

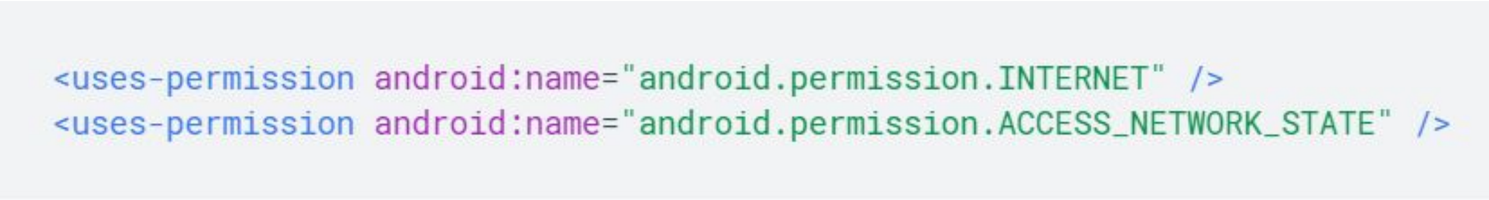
HTTPs Request: is the network request that use to retrieve data or media from a server

There are two ways for network connection:

- From scratch (HTTpURLConnection)
- From libraries(Vollye, Retrofit, Okhttps)

Connect to Network

- In this slide we are using Retrofit to make the Https Request.
- First, in order to perform network operations in your application, your AndroidManifest must include the following permissions:



```
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
```

- if not the device cannot connect to the internet.

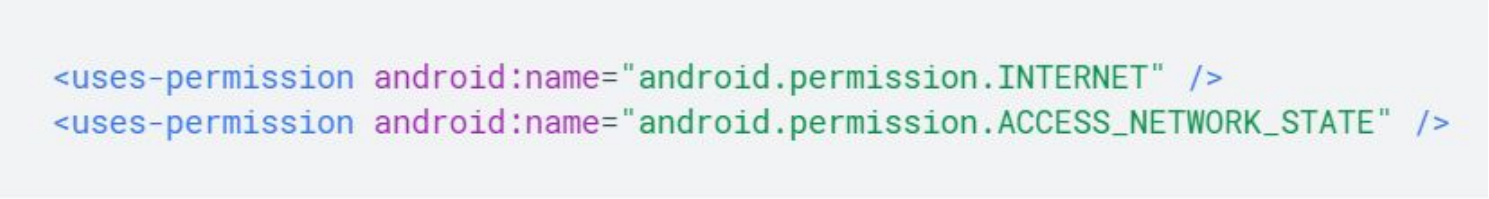
Retrofit

Retrofit is a REST Client library (Helper Library) used in **Android** and Java to create an HTTP request and also to process the HTTP response from a REST API. It was created by Square, you can also use **retrofit** to receive data structures other than JSON, for **example** SimpleXML and Jackson.

In build.gradle(Module: app) we must add these two in dependencies:

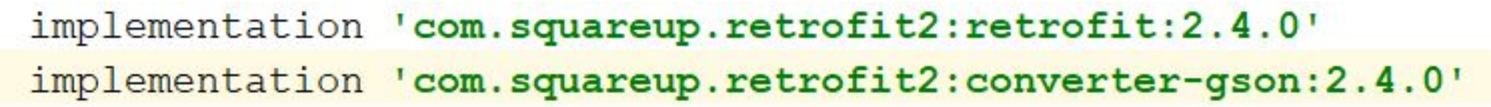
Using Retrofit

- Step1, add internet permission to Android Manifest



```
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
```

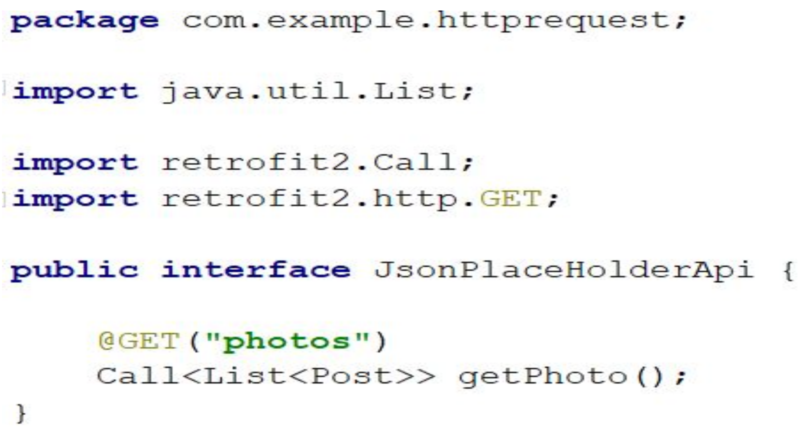
- Step2, add dependencies to Gradle



```
implementation 'com.squareup.retrofit2:retrofit:2.4.0'
implementation 'com.squareup.retrofit2:converter-gson:2.4.0'
```

Using Retrofit (Con't)

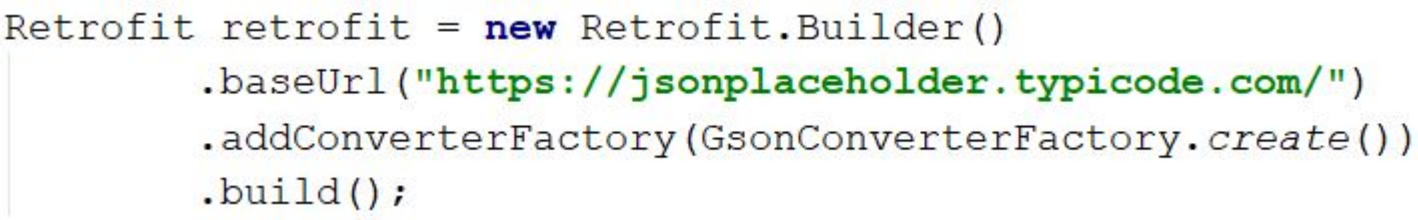
- Step3, create an interface with 1 method that we annotate with @GET and the relative URL to the API endpoint of the REST API we want to query.



```
package com.example.httprequest;

import java.util.List;

import retrofit2.Call;
import retrofit2.http.GET;

public interface JsonPlaceHolderApi {

    @GET("photos")
    Call<List<Post>> getPhoto();
}
```

Using Retrofit (Con’t)

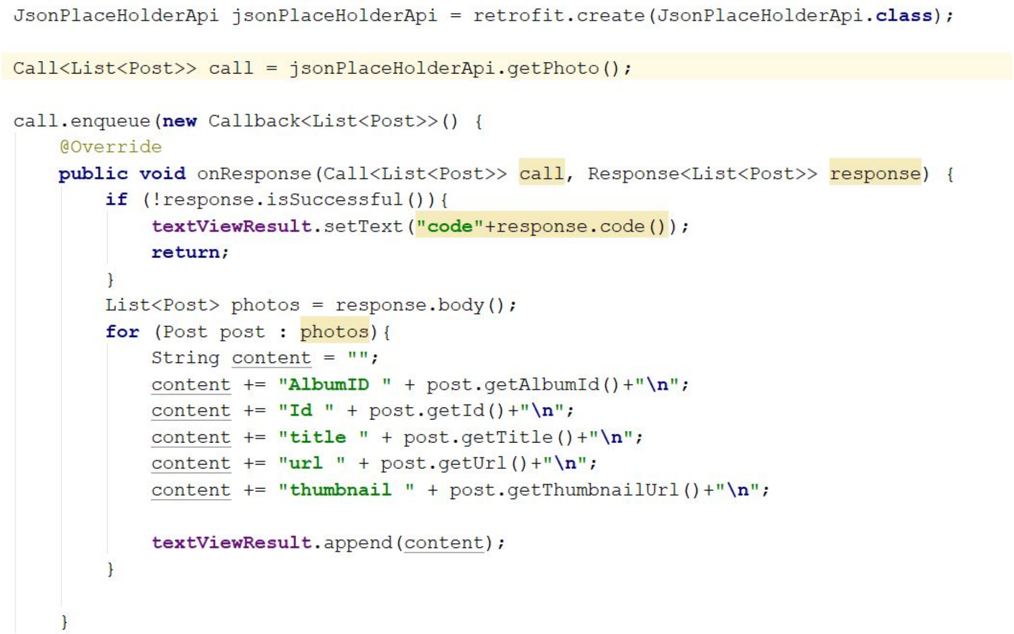
- Step4,create a Retrofit instance using Retrofit.Builder



```
Retrofit retrofit = new Retrofit.Builder()
        .baseUrl("https://jsonplaceholder.typicode.com/")
        .addConverterFactory(GsonConverterFactory.create())
        .build();
```

Using Retrofit (Con’t)

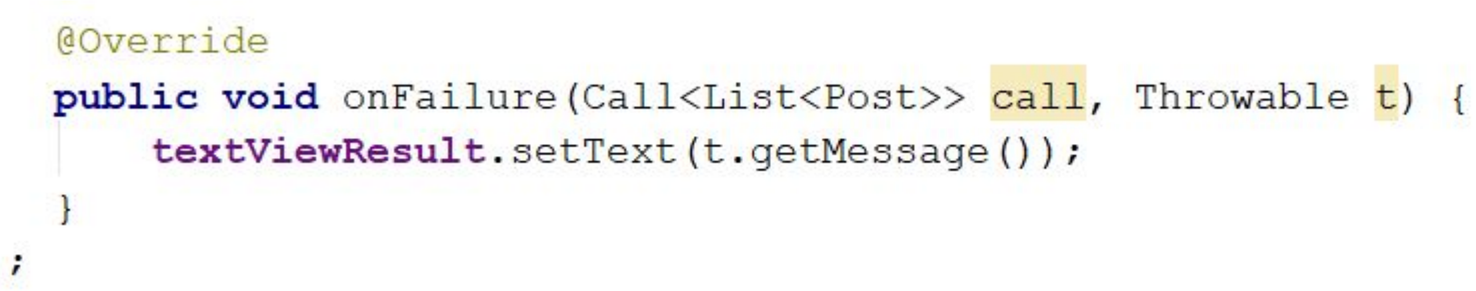
- Step5,The Call object that our GET method returns encapsulates a single request + response.



```java
JsonPlaceHolderApi jsonPlaceHolderApi = retrofit.create(JsonPlaceHolderApi.class);

Call<List<Post>> call = jsonPlaceHolderApi.getPhoto();

call.enqueue(new Callback<List<Post>>() {
    @Override
    public void onResponse(Call<List<Post>> call, Response<List<Post>> response) {
        if (!response.isSuccessful()){
            textViewResult.setText("code"+response.code());
            return;
        }
        List<Post> photos = response.body();
        for (Post post : photos){
            String content = "";
            content += "AlbumID " + post.getAlbumId()+"\n";
            content += "Id " + post.getId()+"\n";
            content += "title " + post.getTitle()+"\n";
            content += "url " + post.getUrl()+"\n";
            content += "thumbnail " + post.getThumbnailUrl()+"\n";

            textViewResult.append(content);
        }

    }
```

Using Retrofit (Con’t)

- Step6,Write failure message if something went wrong



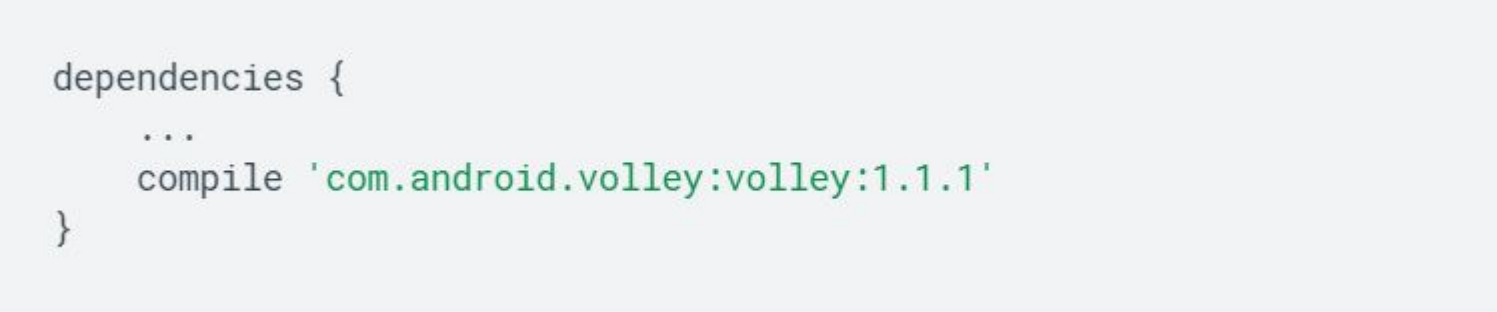
```
  @Override
  public void onFailure(Call<List<Post>> call, Throwable t) {
      textViewResult.setText(t.getMessage());
  }
;
```

Valley

Volley is an HTTP library that makes networking for Android apps easier and most importantly, faster. Volley is available on GitHub.

Retrofit and **Volley** are the libraries to handle http requests in android application. Both do the same work efficiently. But one is **better** than the other in some aspects. For e.g. **Volley** is known to be used where you are receiving lots of images over the http call.

In build.gradle(Module: app) we must add this code in dependencies:



```
dependencies {
    ...
    compile 'com.android.volley:volley:1.1.1'
}
```

Thank You