Retrofit

How to bring to your project

```
compile 'com.squareup.retrofit2:retrofit:2.3.0'
compile 'com.squareup.retrofit2:converter-gson:2.3.0'
```

What you need

- Model class which is used to map the JSON data to
- Interfaces which defines the possible HTTP operations
- Retrofit.Builder class - Instance which uses the interface and the Builder API which allows defining the URL end point for the HTTP operation.

Model

Simple class with setters and getters

```
public class TimeZoneApiResponse
{


    @SerializedName("status")
    @Expose
    private String status;
    @SerializedName("message")
    @Expose
    private String message;

@SerializedName("countryCode")
    @Expose
    private String countryCode;
```

```
public String getStatus() {
    return status;
}

public void setStatus(String status) {
    this.status = status;
}

public String getMessage() {
    return message;
}

public void setMessage(String message) {
    this.message = message;
}

public String getCountryCode() {
    return countryCode;
}

public void setCountryCode(String countryCode)
{
    this.countryCode = countryCode;
}
```

Interface

```
public interface TimeZoneAPI {

    @GET("get-time-zone")
    Call<TimeZoneApiResponse> getTimeZone(@Query("key") String apiKey,
                                          @Query("format") String format,
                                          @Query("by") String searchBy,
                                          @Query("lat") String latitude,
                                          @Query("lng") String longitude);
}
```

There are five built-in annotations: GET, POST, PUT, DELETE, and HEAD
Another annotations for data providing: Query, Path, Body

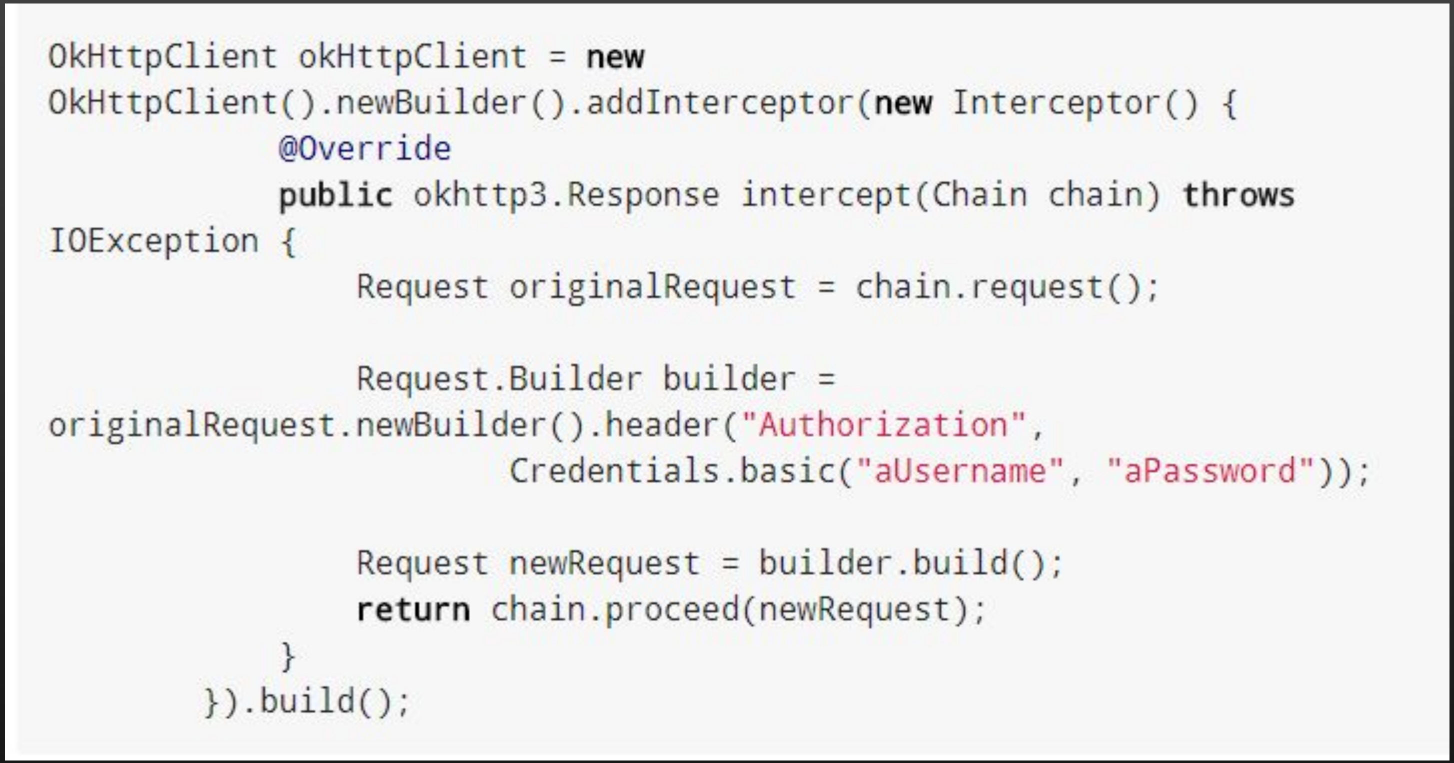
Retrofit.Builder

```
public TimeZoneAPI getTimeZoneAPI() {
    return new Retrofit.Builder()
            .baseUrl("http://api.timezonedb.com/v2/")
            .client(initClient())
            .addConverterFactory(GsonConverterFactory.create())
            .build().create(TimeZoneAPI.class);

}


@NonNull
private OkHttpClient initClient() {
    HttpLoggingInterceptor interceptor = new HttpLoggingInterceptor();
    interceptor.setLevel(HttpLoggingInterceptor.Level.BODY);
    return new OkHttpClient.Builder()
            .connectTimeout(CLIENT_TIMEOUT_MILLIS, TimeUnit.MILLISECONDS)
            .addNetworkInterceptor(new StethoInterceptor())
            .addInterceptor(interceptor)
            .build();
}
```

Authorization



```
OkHttpClient okHttpClient = new
OkHttpClient().newBuilder().addInterceptor(new Interceptor() {
            @Override
            public okhttp3.Response intercept(Chain chain) throws
IOException {
                Request originalRequest = chain.request();

                Request.Builder builder =
originalRequest.newBuilder().header("Authorization",
                        Credentials.basic("aUsername", "aPassword"));

                Request newRequest = builder.build();
                return chain.proceed(newRequest);
            }
        }).build();
```

What you get when create a request

```java
/**
 * An invocation of a Retrofit method that sends a request to a webserver and returns a response.
 * Each call yields its own HTTP request and response pair. Use {@link #clone} to make multiple
 * calls with the same parameters to the same webserver; this may be used to implement polling or
 * to retry a failed call.
 *
 * <p>Calls may be executed synchronously with {@link #execute}, or asynchronously with {@link
 * #enqueue}. In either case the call can be canceled at any time with {@link #cancel}. A call that
 * is busy writing its request or reading its response may receive a {@link IOException}; this is
 * working as designed.
 *
 * @param <T> Successful response body type.
 */
public interface Call<T> extends Cloneable {
  /**
   * Synchronously send the request and return its response.
   *
   * @throws IOException if a problem occurred talking to the server.
   * @throws RuntimeException (and subclasses) if an unexpected error occurs creating the request
   * or decoding the response.
   */
  Response<T> execute() throws IOException;

  /**
   * Asynchronously send the request and notify {@code callback} of its response or if an error
   * occurred talking to the server, creating the request, or processing the response.
   */
  void enqueue(Callback<T> callback);
```

How to deal with a Call

```java
public interface Callback<T> {
  /**
   * Invoked for a received HTTP response.
   * <p>
   * Note: An HTTP response may still indicate an application-level failure such as a 404 or 500.
   * Call {@link Response#isSuccessful()} to determine if the response indicates success.
   */
  void onResponse(Call<T> call, Response<T> response);

  /**
   * Invoked when a network exception occurred talking to the server or when an unexpected
   * exception occurred creating the request or processing the response.
   */
  void onFailure(Call<T> call, Throwable t);
}
```

Sources & useful links

http://square.github.io/retrofit/

http://www.vogella.com/tutorials/Retrofit/article.html

http://www.jsonschema2pojo.org/