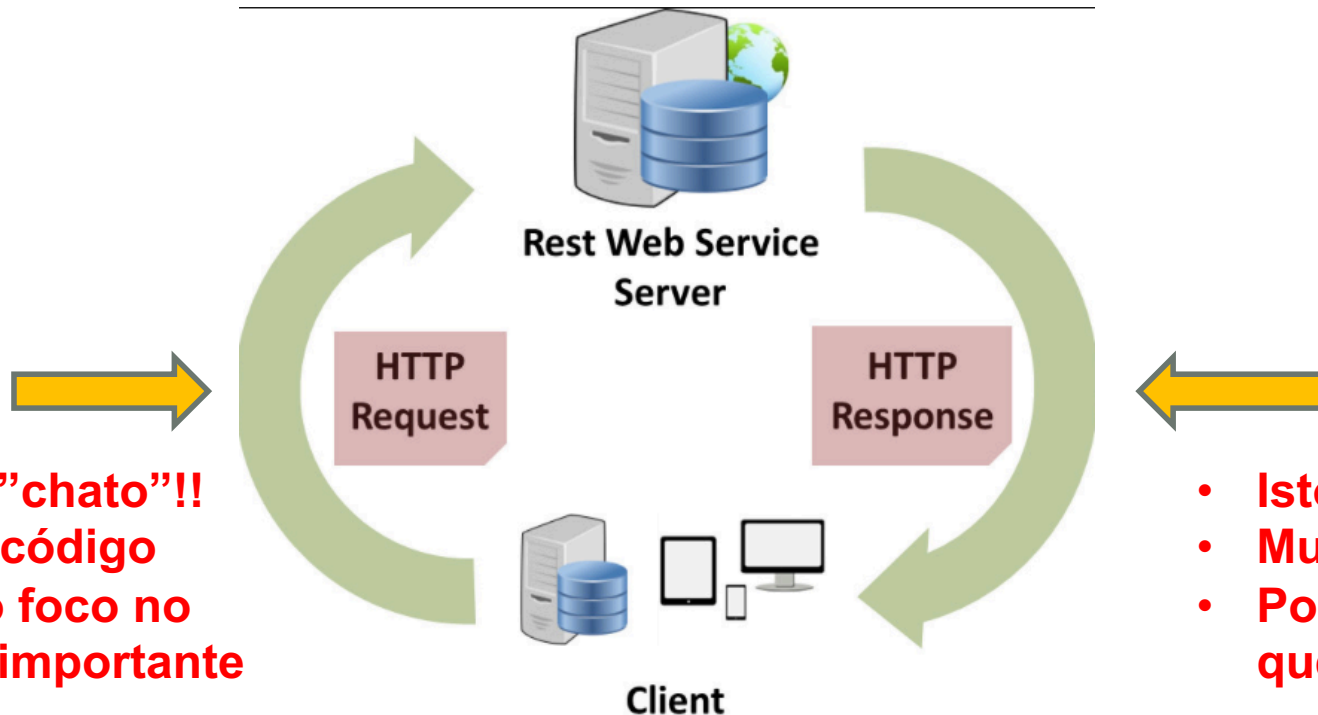# PROGRAMAÇÃO ANDROID

Configuração do Retrofit

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Vejamos novamente

- Relembrando que este é nosso modelo

- **Isto é "chato"!!**
- **Muito código**
- **Pouco foco no que é importante**

- **Isto é "chato"!!**
- **Muito código**
- **Pouco foco no que é importante**

E agora?

- Precisamos alguém que faça este trabalho (chato e cansativo) e deixe que a gente se concentre no nosso objetivo
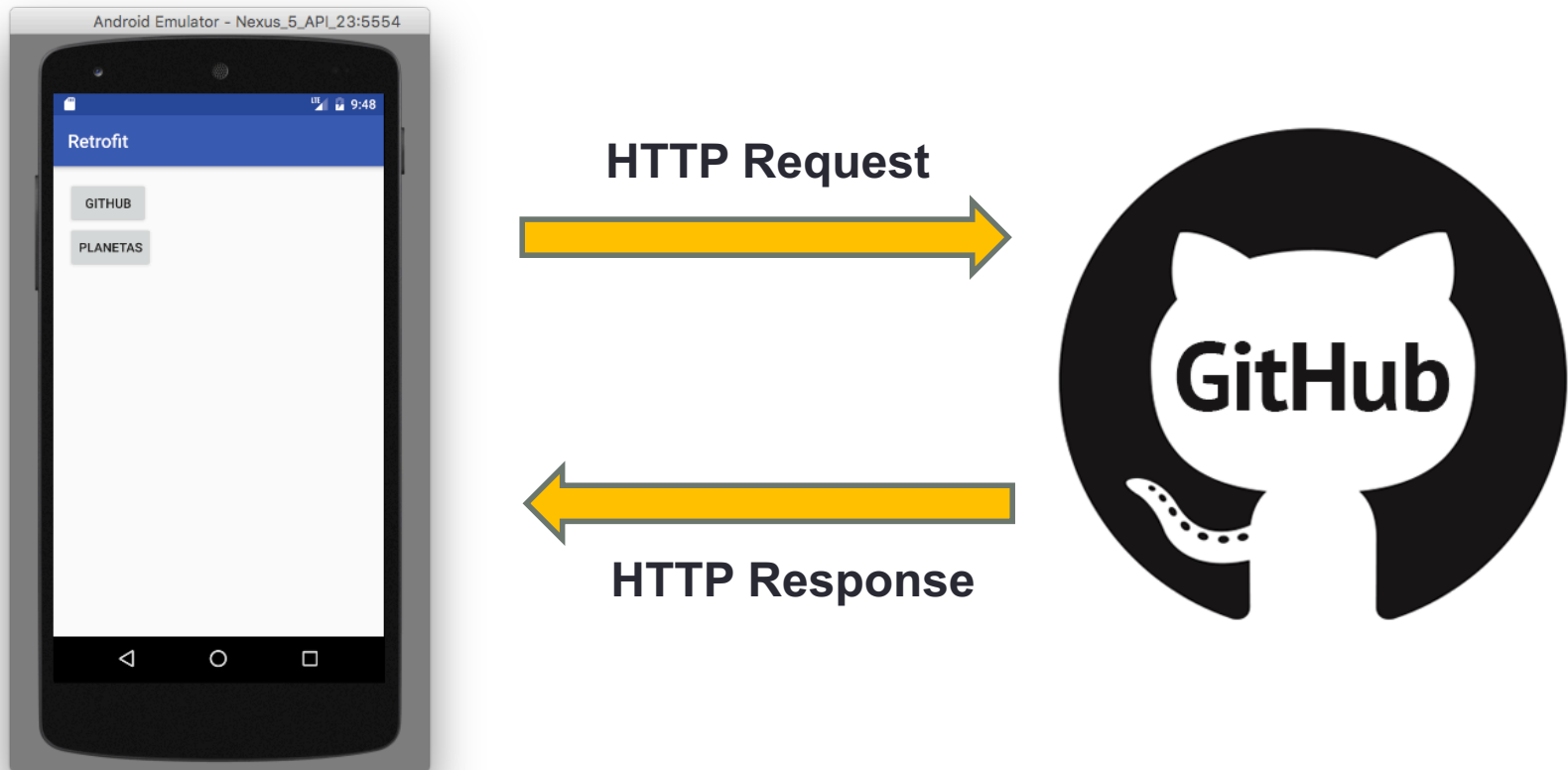
Retrofit

- Retrofit é uma solução para acesso backend
- Criada pela Square Inc
- Permite focar no domínio da aplicação
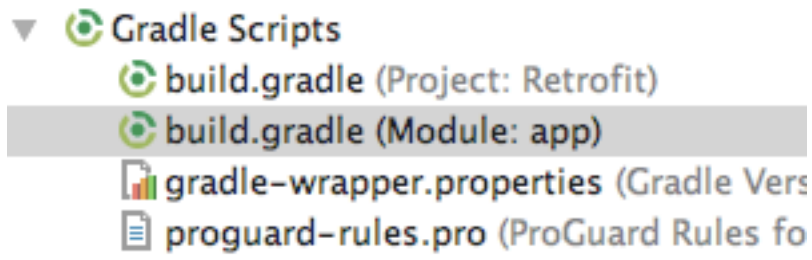- Criada sob Licença Apache 2.0

Retrofit

- Vamos criar um exemplo simples de uso do Retrofit para acessar dados do GitHub

Retrofit

- Por ser uma biblioteca externa, temos que usar o Gradle para incluir as dependências
- Adicione as linhas no build do Module: app


```
compile 'com.google.code.gson:gson:2.6.2'
compile 'com.squareup.retrofit2:retrofit:2.0.2'
compile 'com.squareup.retrofit2:converter-gson:2.0.2'
```

Buscando dados na web

- A primeira coisa que temos que fazer é dar permissão para que a aplicação possa usar a internet
- Fazemos isso editando o arquivo manifest.xml e adicionando a seguinte linha

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

Retrofit

- Inicialmente vamos dar uma olhada no REST
  - A URL https://api.github.com/users/ammenendez
  - Onde ammenendez é o nome do usuário

```
{
    "login": "ammenendez",
    "id": 11837021,
    "avatar_url": "https://avatars.githubusercontent.com/u/11837021?v=3",
    "gravatar_id": "",
    "url": "https://api.github.com/users/ammenendez",
    "html_url": "https://github.com/ammenendez",
    "followers_url": "https://api.github.com/users/ammenendez/followers",
    "following_url": "https://api.github.com/users/ammenendez/following{/other_user}",
    "gists_url": "https://api.github.com/users/ammenendez/gists{/gist_id}",
    "starred_url": "https://api.github.com/users/ammenendez/starred{/owner}{/repo}",
    "subscriptions_url": "https://api.github.com/users/ammenendez/subscriptions",
    "organizations_url": "https://api.github.com/users/ammenendez/orgs",
    "repos_url": "https://api.github.com/users/ammenendez/repos",
    "events_url": "https://api.github.com/users/ammenendez/events{/privacy}",
    "received_events_url": "https://api.github.com/users/ammenendez/received_events",
    "type": "User",
    "site_admin": false,
    "name": "Andrés Menéndez",
    "company": null,
    "blog": null,
    "location": null,
    "email": null,
    "hireable": null,
    "bio": null,
    "public_repos": 8,
    "public_gists": 0,
    "followers": 2,
    "following": 0,
    "created_at": "2015-04-07T14:20:29Z",
    "updated_at": "2016-09-15T17:04:41Z"
}
```

Retrofit

- https://api.github.com/users/ammenendez/followers

```
[
  {
    "login": "alanpassos",
    "id": 11463663,
    "avatar_url": "https://avatars.githubusercontent.com/u/11463663?v=3",
    "gravatar_id": "",
    "url": "https://api.github.com/users/alanpassos",
    "html_url": "https://github.com/alanpassos",
    "followers_url": "https://api.github.com/users/alanpassos/followers",
    "following_url": "https://api.github.com/users/alanpassos/following{/other_user}",
    "gists_url": "https://api.github.com/users/alanpassos/gists{/gist_id}",
    "starred_url": "https://api.github.com/users/alanpassos/starred{/owner}{/repo}",
    "subscriptions_url": "https://api.github.com/users/alanpassos/subscriptions",
    "organizations_url": "https://api.github.com/users/alanpassos/orgs",
    "repos_url": "https://api.github.com/users/alanpassos/repos",
    "events_url": "https://api.github.com/users/alanpassos/events{/privacy}",
    "received_events_url": "https://api.github.com/users/alanpassos/received_events",
    "type": "User",
    "site_admin": false
  },
  {
    "login": "euderdigitus",
    "id": 11530181,
    "avatar_url": "https://avatars.githubusercontent.com/u/11530181?v=3",
    "gravatar_id": "",
    "url": "https://api.github.com/users/euderdigitus",
    "html_url": "https://github.com/euderdigitus",
    "followers_url": "https://api.github.com/users/euderdigitus/followers",
    "following_url": "https://api.github.com/users/euderdigitus/following{/other_user}",
    "gists_url": "https://api.github.com/users/euderdigitus/gists{/gist_id}",
    "starred_url": "https://api.github.com/users/euderdigitus/starred{/owner}{/repo}",
    "subscriptions_url": "https://api.github.com/users/euderdigitus/subscriptions",
    "organizations_url": "https://api.github.com/users/euderdigitus/orgs",
    "repos_url": "https://api.github.com/users/euderdigitus/repos",
    "events_url": "https://api.github.com/users/euderdigitus/events{/privacy}",
    "received_events_url": "https://api.github.com/users/euderdigitus/received_events",
    "type": "User",
    "site_admin": false
  }
]
```

Retrofit

- Uma das vantagens de utilização do Retrofit é o mapeamento da resposta JSON em uma classe Java (sem fazer parser!!!!)

```
{
  "login": "ammenendez",
  "id": 11837021,
  "avatar_url": "https://avatars.githubusercontent.com/u/11837021?v=3",
  "gravatar_id": "",
  "url": "https://api.github.com/users/ammenendez",
  "html_url": "https://github.com/ammenendez",
  "followers_url": "https://api.github.com/users/ammenendez/followers",
  "following_url": "https://api.github.com/users/ammenendez/following{/other_user}",
  "gists_url": "https://api.github.com/users/ammenendez/gists{/gist_id}",
  "starred_url": "https://api.github.com/users/ammenendez/starred{/owner}{/repo}",
  "subscriptions_url": "https://api.github.com/users/ammenendez/subscriptions",
  "organizations_url": "https://api.github.com/users/ammenendez/orgs",
  "repos_url": "https://api.github.com/users/ammenendez/repos",
  "events_url": "https://api.github.com/users/ammenendez/events{/privacy}",
  "received_events_url": "https://api.github.com/users/ammenendez/received_events",
  "type": "User",
  "site_admin": false,
  "name": "Andrés Menéndez",
  "company": null,
  "blog": null,
  "location": null,
  "email": null,
  "hireable": null,
  "bio": null,
  "public_repos": 8,
  "public_gists": 0,
  "followers": 2,
  "following": 0,
  "created_at": "2015-04-07T14:20:29Z",
  "updated_at": "2016-09-15T17:04:41Z"
}
```

```java
public class Usuario {
    int id;
    String login;
    String name;

    @Override
    public String toString() { return(login); }
}
```

Retrofit

- Ao criar a classe Java tenha cuidado com o nome dos atributos. Eles devem ter o mesmo nome do JSON

```java
public class Usuario {
    int id;
    String login;
    String name;
}
```

Retrofit

- Temos que criar uma interface para fazer o mapeamento da chamada HTTP

```java
public interface GithubUserAPI {

    @GET("/users/{usuario}")
    Call<Usuario> getUsuario(@Path("usuario") String usuario);

    public static final Retrofit retrofit = new Retrofit.Builder()
            .baseUrl("https://api.github.com/")
            .addConverterFactory(GsonConverterFactory.create())
            .build();
}
```