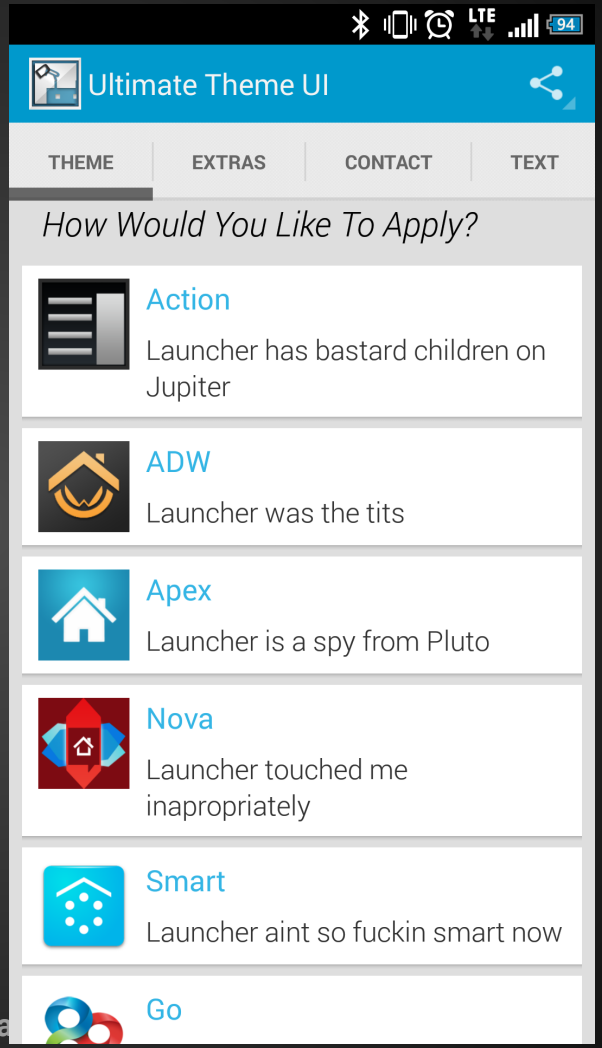
Android Fundamentals

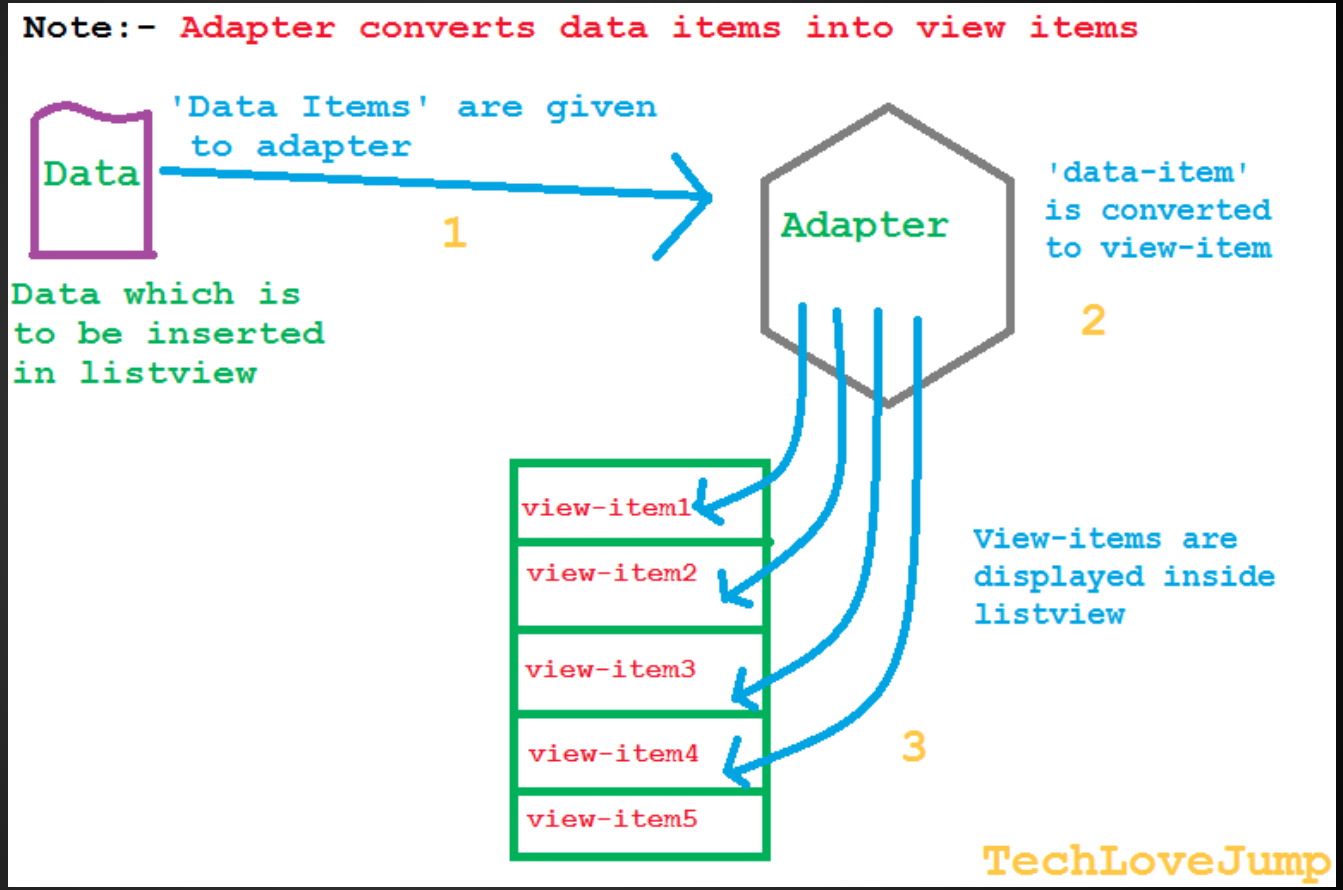
Лекция 2

ListView, Adapter, ViewHolder

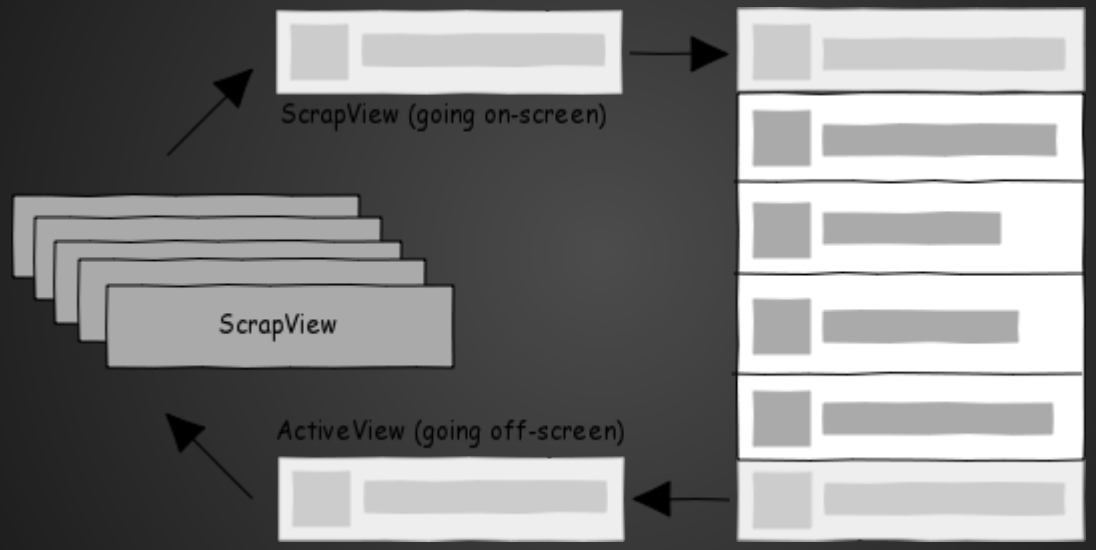
ListView


Ultimate Theme UI
THEME
EXTRAS
CONTACT
TEXT
How Would You Like To Apply?
Action
Launcher has bastard children on Jupiter
ADW
Launcher was the tits
Apex
Launcher is a spy from Pluto
Nova
Launcher touched me inapropriately
Smart
Launcher aint so fuckin smart now
Go

Adapter


Note:- Adapter converts data items into view items
Data
'Data Items' are given to adapter
1
Data which is to be inserted in listview
Adapter
'data-item' is converted to view-item
2
view-item1
view-item2
view-item3
view-item4
view-item5
View-items are displayed inside listview
3
TechLoveJump

ViewHolder


ScrapView (going on-screen)
ScrapView
ActiveView (going off-screen)

ViewHolder

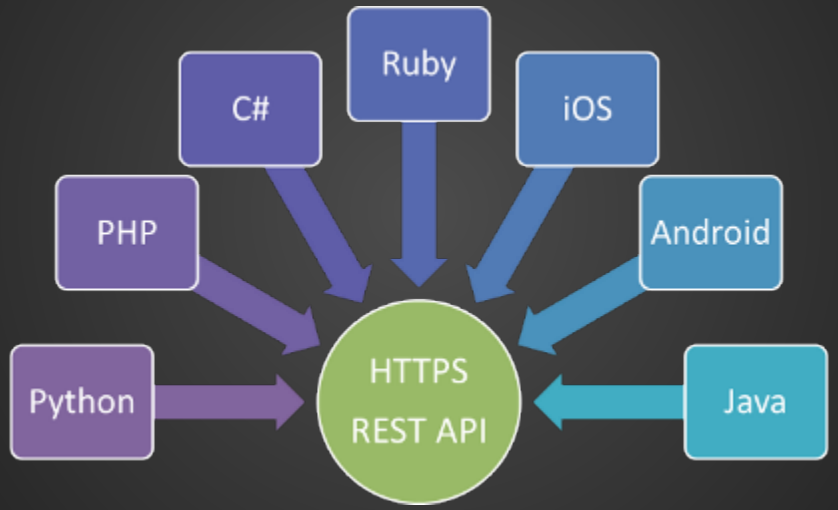
```
static class ViewHolder {
    TextView name;
    ImageView icon;

    void populateItem(Person person){
        name.setText(person.getName());
        DisplayImageOptions options = new DisplayImageOptions.Builder()
                .resetViewBeforeLoading(true)
                .build();
        ImageLoader.getInstance().displayImage(person.getImageUrl(), icon, options);
    }
}
```

Adapter

```
@Override
public View getView(int position, View convertView, ViewGroup parent) {
    ViewHolder holder;
    if (convertView == null) {
        convertView = inflater.inflate(R.layout.person_list_item, parent, false);
        holder = new ViewHolder();
        holder.name = (TextView) convertView.findViewById(R.id.person_list_item_name);
        holder.icon = (ImageView) convertView.findViewById(R.id.person_list_item_image);
        convertView.setTag(holder);
    } else {
        holder = (ViewHolder) convertView.getTag();
    }
    Person person = getItem(position);
    holder.populateItem(person);
    return convertView;
}
```

Rest



JSON

```
{ "users":[
            {
                "firstName":"Ray",
                "lastName":"Villalobos",
                "joined": {
                    "month":"January",
                    "day":12,
                    "year":2012
                }
            },
            {
                "firstName":"John",
                "lastName":"Jones",
                "joined": {
                    "month":"April",
                    "day":28,
                    "year":2010
                }
            }
    ]}
```

org.apache.http.client.HttpClient

```
HttpClient httpclient = new DefaultHttpClient();

// Prepare a request object
HttpGet httpget = new HttpGet("http://api.openweathermap.org/data/2.5/forecast");

// Execute the request
HttpResponse response;
response = httpclient.execute(httpget);
HttpEntity entity = response.getEntity();
```

java.net.HttpUrlConnection

```
URL url = new URL("http://api.openweathermap.org/data/2.5/forecast");

HttpURLConnection urlConnection = (HttpURLConnection) url.openConnection();

InputStream in = urlConnection.getInputStream();

InputStreamReader isw = new InputStreamReader(in);
```

Uri.Builder

```
Uri.Builder builder = new Uri.Builder();
builder.scheme("http")
        .authority("api.openweathermap.org")
        .appendPath("data")
        .appendPath("2.5")
        .appendPath("forecast")
        .appendQueryParameter("q", "Moscow,ru");
String myUrl = builder.build().toString();
```

org.json.JSONObject

```
JSONObject jsonResponse = new JSONObject(responseString);

JSONArray forecastList = jsonResponse.optJSONArray("list");
for (int i = 0; i < forecastList.length(); i++) {
    JSONObject forecast = forecastList.getJSONObject(i);
    long date = forecast.optLong("dt");
    String dateString = forecast.optString("dt_tx");
    JSONObject artist_name = forecast.optJSONObject("main");
    int temp = forecast.optInt("temp");
}
```

OkHttp + Retrofit + GSON

Retrofit turns your REST API into a Java interface.

```
public interface GitHubService {
  @GET("/users/{user}/repos")
  List<Repo> listRepos(@Path("user") String user);
}
```

The `RestAdapter` class generates an implementation of the `GitHubService` interface.

```
RestAdapter restAdapter = new RestAdapter.Builder()
    .setEndpoint("https://api.github.com")
    .build();

GitHubService service = restAdapter.create(GitHubService.class);
```

Each call on the generated `GitHubService` makes an HTTP request to the remote webserver.

```
List<Repo> repos = service.listRepos("octocat");
```

No permission

LogCat

Log.d(“custom tag”, “message”);

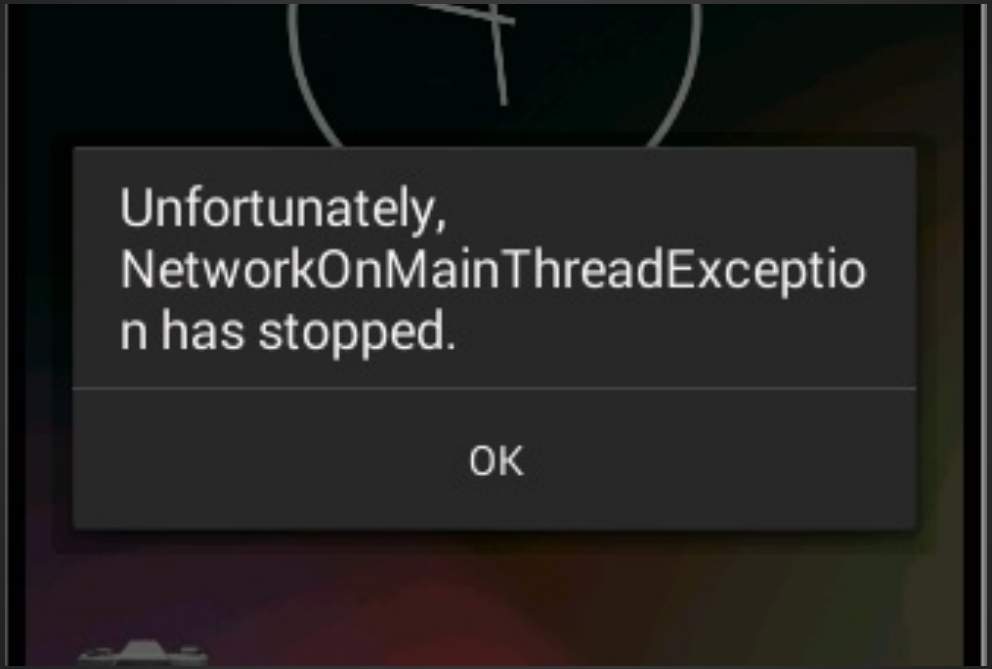
```
logcat
04-08 20:57:01.597   13247-4745/? I/Fitness :  IO Exception NetworkError
04-08 20:57:01.618  13185-21826/? I/GLSUser :  [GLSUser]  extracting token using
04-08 20:57:01.618  13185-21826/? W/GLSActivity :  gms.StatusHelper Status from
  status: NETWORK_ERROR
04-08 20:57:01.618  13185-21826/? I/GLSUser :  GLS error: NetworkError Account
 {name=nekdenis@gmail.com, type=com.google} oauth2:https://www.googleapis.com/
04-08 20:57:01.667   13247-4745/? W/Fitness :  FitProxyBroker cannot determine :
 .com is supported, using cached result
    com.google.android.gms.fitness.sync.h: no network
            at com.google.android.gms.fitness.apiary.g.a(SourceFile:379)
            at com.google.android.gms.fitness.apiary.g.b(SourceFile:354)
            at com.google.android.gms.fitness.service.a.h.a(SourceFile:180)
            at com.google.android.gms.fitness.service.a.h.a(SourceFile:150)
            at com.google.android.gms.fitness.service.a.h.a(SourceFile:39)
            at com.google.android.gms.fitness.service.a.i.run(SourceFile:65)
            at android.os.Handler.handleCallback(Handler.java:739)
            at android.os.Handler.dispatchMessage(Handler.java:95)
            at android.os.Looper.loop(Looper.java:135)
```

Permissions

INSTALL_SHORTCUT	Allows an application to install a shortcut in Launcher
INTERNAL_SYSTEM_WINDOW	Allows an application to open windows that are for use by parts of the system user interface.
INTERNET	Allows applications to open network sockets.
KILL_BACKGROUND_PROCESSES	Allows an application to call `killBackgroundProcesses(String)`.
LOCATION_HARDWARE	Allows an application to use location features in hardware, such as the geofencing api.
MANAGE_ACCOUNTS	Allows an application to manage the list of accounts in the AccountManager
MANAGE_APP_TOKENS	Allows an application to manage (create, destroy, Z-order)

http://developer.android.com/reference/android/Manifest.permission.html

NetworkOnMainThreadException



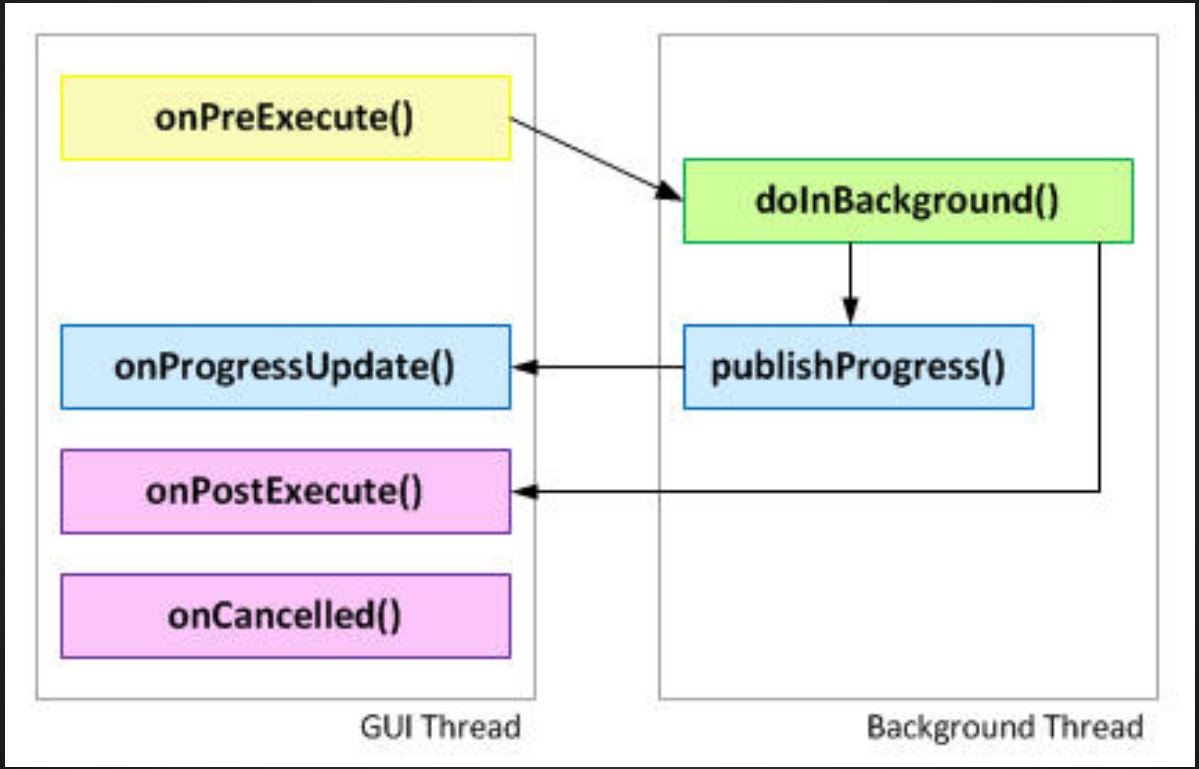
UI and Background

Thread

AsyncTask

Service

ASyncTask


onPreExecute()
doInBackground()
onProgressUpdate()
publishProgress()
onPostExecute()
onCancelled()
GUI Thread
Background Thread

Home work

Получить погоду по запросу:

http://api.openweathermap.org/data/2.5/forecast?q=Moscow,ru

Отобразить результаты в ListView

Time for Q&A

Lesson 2