Application Development for Mobile and Ubiquitous Computing

Final Presentation
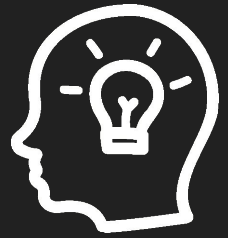
Scout

Group 8
- José Duarte
- Miguel Carrega

Share the best of your trips!

Register

Username

User

Password

••••

Repeat Password

••••

or Sign In

REGISTER

Dashboard Management

TU Dresden

Tue, Jan 29, '19

Post trip online

Show trip on the map

Delete trip

Trip Gallery

Picture Viewer

3968x2976

Faculty Entrance

Germany   Tue, Jan 29, '19
Sachsen, Dresden
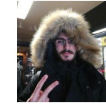Nöthnitzer Straße Fakultät Informatik
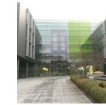Lat: 51.026° Lon: 13.723°
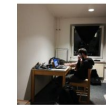
Trip Map

Global Feed

Dresden
Tue, Jan 29, '19

TU Dresden
Tue, Jan 29, '19

Gutz
Mon, Jan 28, '19

Context Information

Connection State

- If the app has no connection or a poor connection to the internet it's functionality should be restricted

Battery Status

- In order to save battery the app should make careful use of the device resources

Location Services

- Show user trips on the map
- Capture user's location when the picture is taken
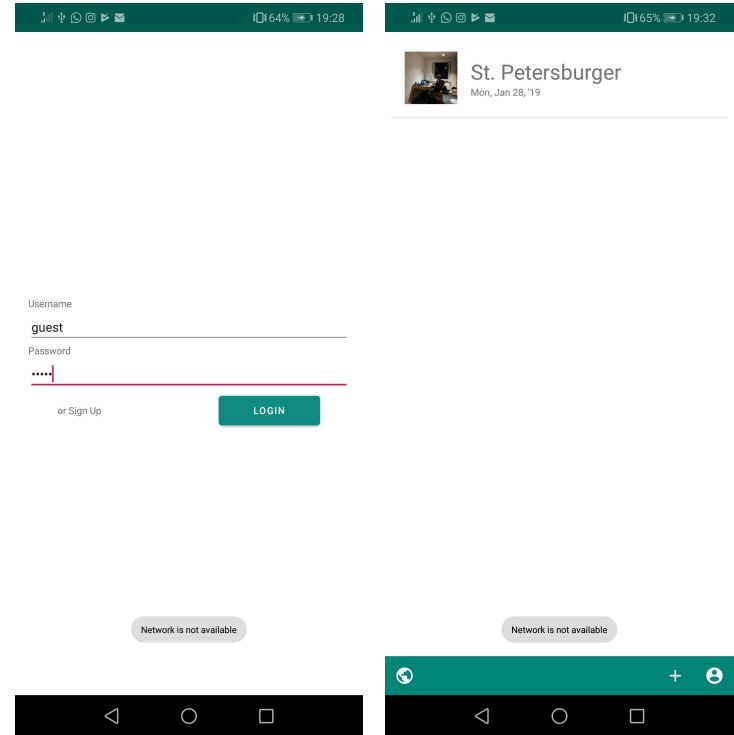
Adapt to Network State

Under low connectivity

- Do not download images

- Uploads are scheduled

Offline

- Features such as creating trips and taking pictures are still available

- Any feature that requires an active connection is inaccessible

```
// Also checks for online connection
if (context.isNetworkFast()) {
   Picasso.get().load(...)
   // ...
}
```

```
Constraints.Builder()
    .setRequiredNetworkType(
        NetworkType.CONNECTED
    ).build()
```

Power Consumption

Low battery (< 20%)

- Schedule uploads

- No GPS

Normal battery (> 20%)

- High GPS precision

```
Constraints.Builder()
    .setRequiresBatteryNotLow(true)
    .build()
```

```
if (getBatteryLevel() > LOW_BATTERY) {
    getCurrentLocation(mMap)
}
```

Location Services

Showing trips on the map

- *Seeing simultaneous trips is overwhelming*

- *Show only one trip at a time*

- *Locate photos on the map*

Android Architectural Overview

Local Data Persistence

ANDROID + SQLite

writes to

Scout

requests w/

Network

OkHttp

Jackson

Picasso

loads images

visualizing trips

Location

Maps

capture location

GPS
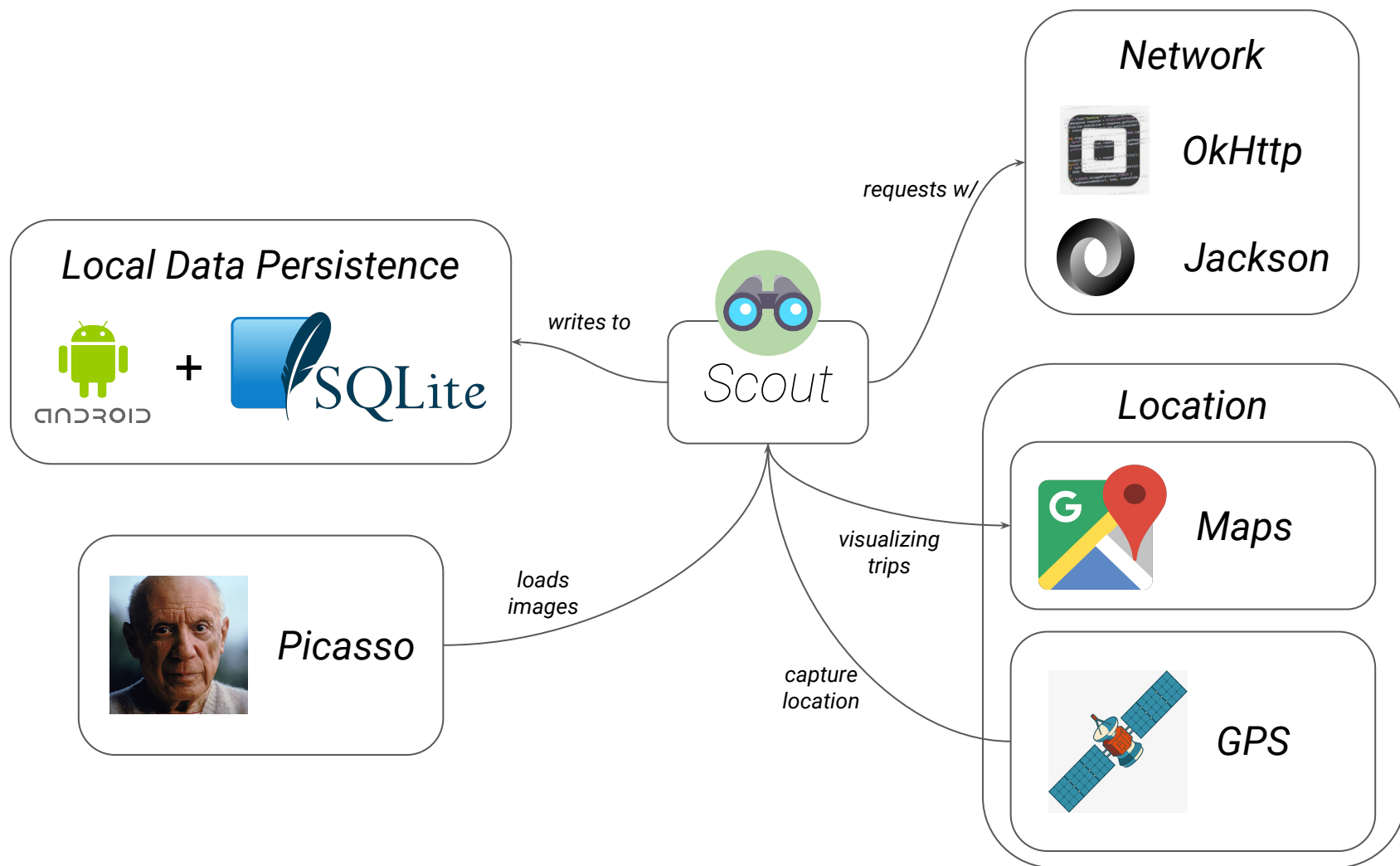
Full-Stack Overview
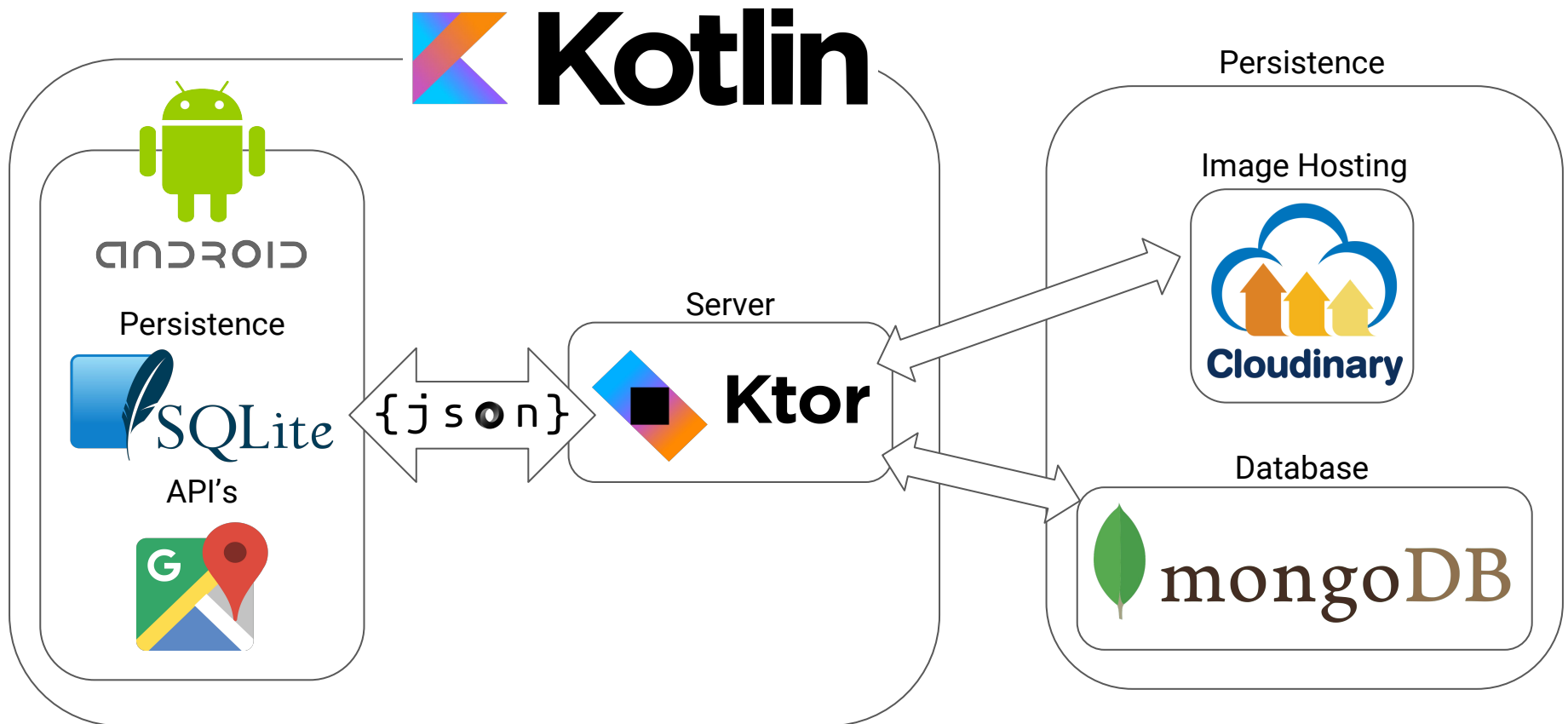
Conclusion

Problems

- Getting up to speed with Android & Kotlin

Lessons Learned

- Fully read the documentation before diving in

- All technologies used were new to us

Next Steps

- Polish the interface

- Modularize UI components with Fragments

- Complete the functionality of the app