

APPLICATION DEVELOPMENT FOR MOBILE AND UBIQUITOUS COMPUTING

Second Presentation - **Adaptation Concept Presentation**

CheckIt

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Just to remember

To give a tourist a simple and interactive way to know the most interesting places of the town.

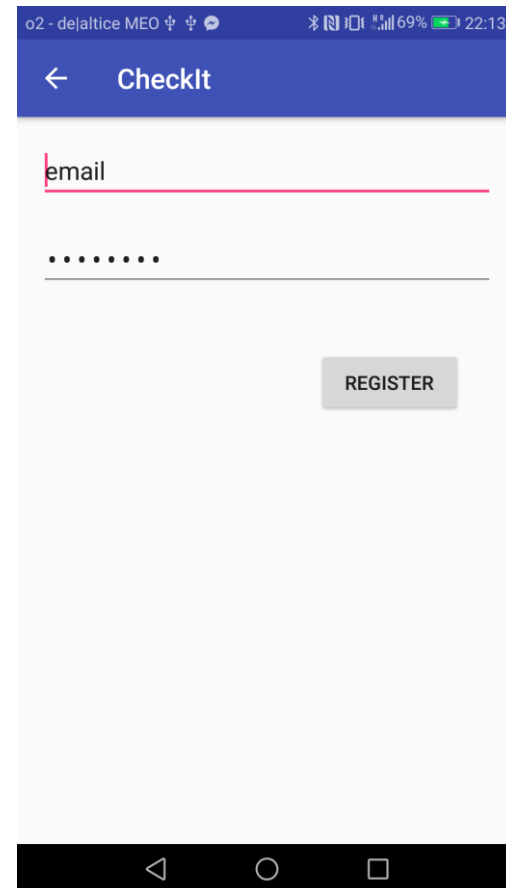
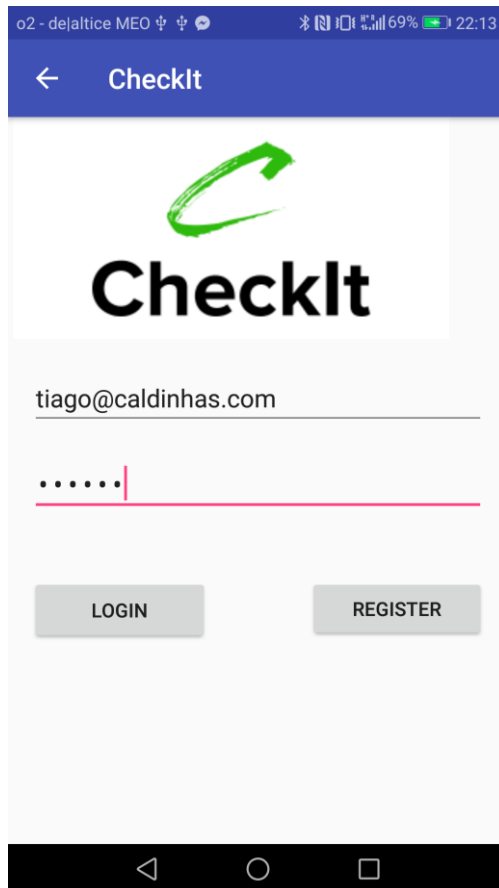
Basic Idea:

- Choose one interesting place of the list
- Go to that place
- Take a picture at the place and **CHECK IT**

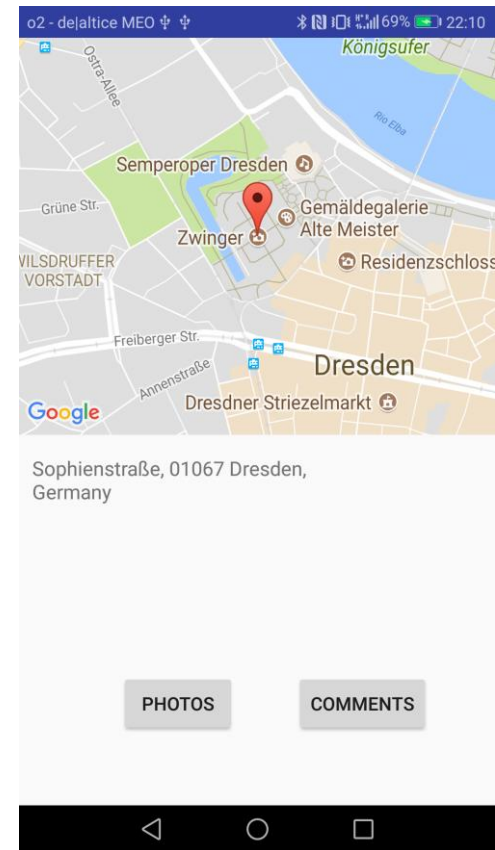
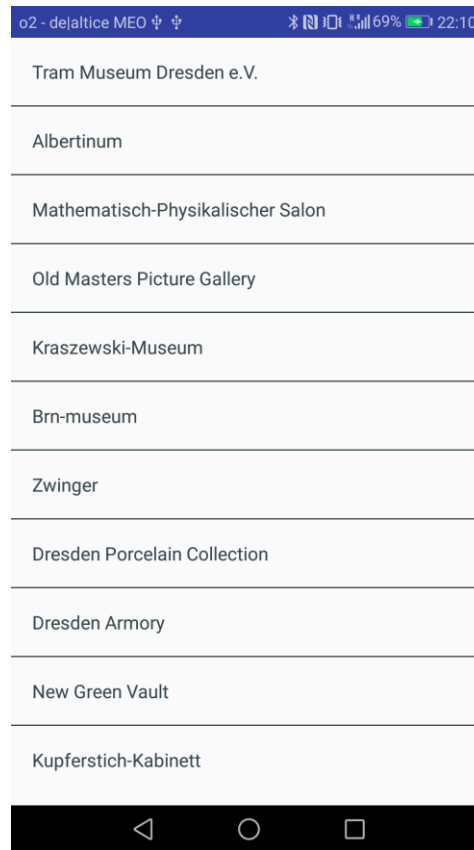
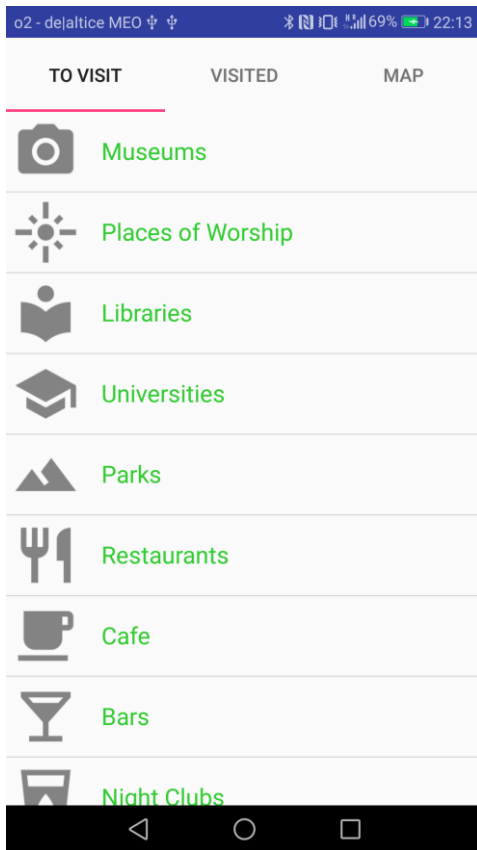


The best application for small travels!

Until Now

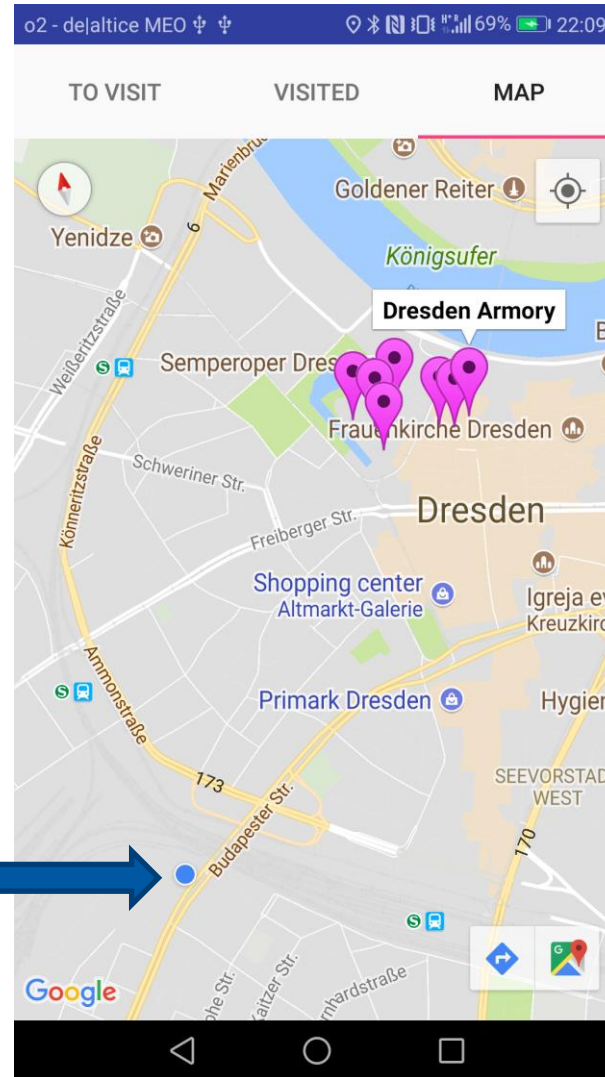


Until Now



Until Now

Current location of the
device



Context features

Physical context: **Current location**

- Capture the device's location, using `android.location.LocationManager`.

Adaptation:

- **Adapt the results of the search for interesting places:** Using the current location (latitude and longitude) we use the Text Search Request from Google Places API to get a set of locations.
- **The results should be inside of a given radius, centered at the device's location:** The radius starts with a default value (5000m) but the user can redefine this value at the settings.

Latitude found with the **LocationManager**

Example of a request:

`https://maps.googleapis.com/maps/api/place/textsearch/json?query=restaurant&location=51.0429730,
13.7223350&radius=5000&type=point_of_interest&key=OUR_KEY`



Longitude found with the **LocationManager**



Context features

Technical context: **Network Awareness & Offline Usage**

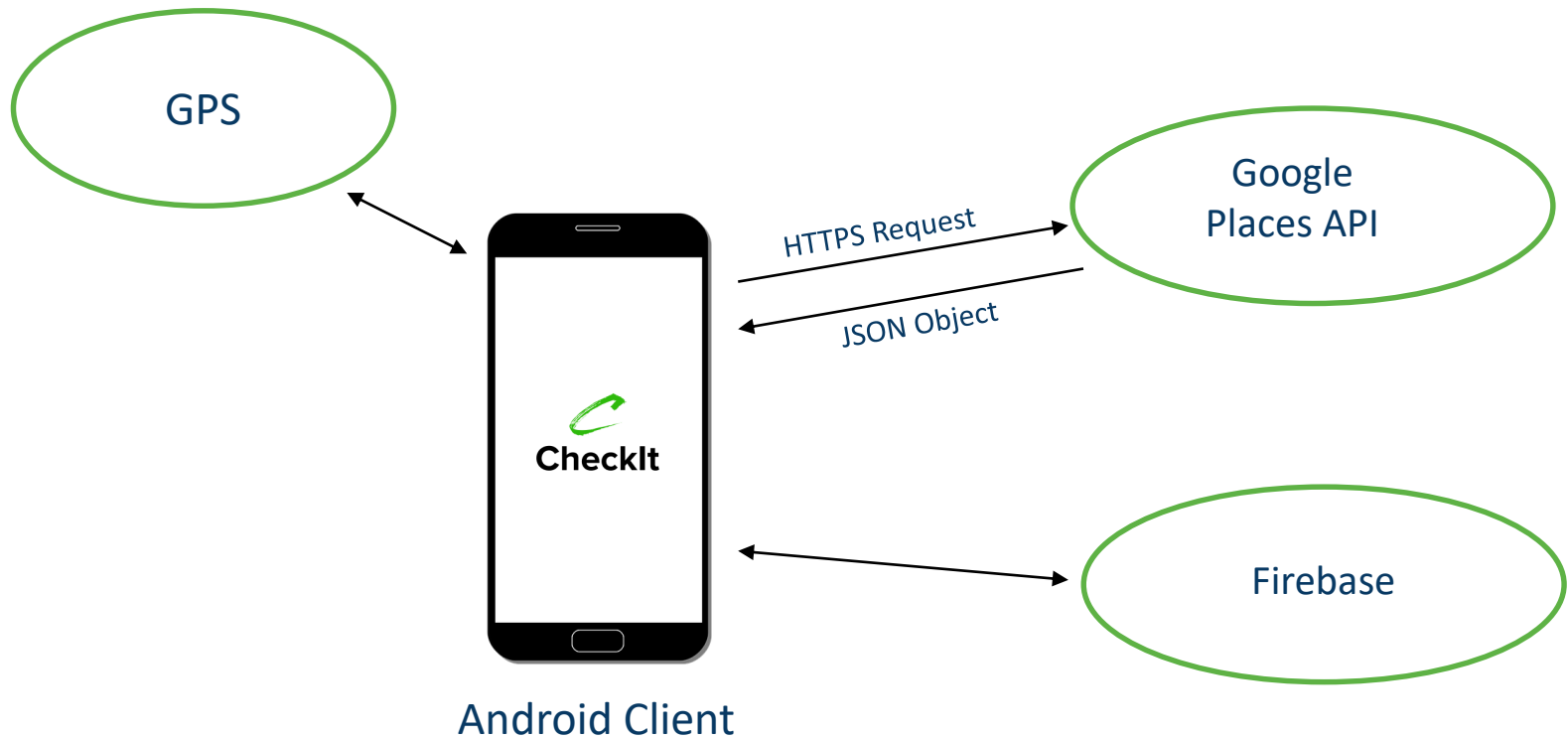
- Capture if the device has a network connection, using `android.net.ConnectivityManager` and `android.net.NetworkInfo`.

Adaptation:

- **Adapt the loading of the results by choosing if they should be loaded from the server or from a file in cache:** if the device has a network connection, uses Google Services to obtain updated information, otherwise uses the results of the last search (cached).
- **Every time we get updated information from the server, this one is stored in cache.**

```
private boolean isNetworkAvailable () {  
    ConnectivityManager connectivityManager =  
        (ConnectivityManager) getSystemService (Context.CONNECTIVITY_SERVICE) ;  
    NetworkInfo activeNetworkInfo = connectivityManager.getActiveNetworkInfo () ;  
    return (activeNetworkInfo != null && activeNetworkInfo.isConnected ()) ;  
}
```

Architecture



Technologies

Client:

- Android
- GPS for location tracking
- Mobile Camera
- Google Maps API
- Google Places API



Server:

- Firebase



Firebase