

Application Development for Mobile and Ubiquitous Computing

reMYnd_PLACES
Final Presentation

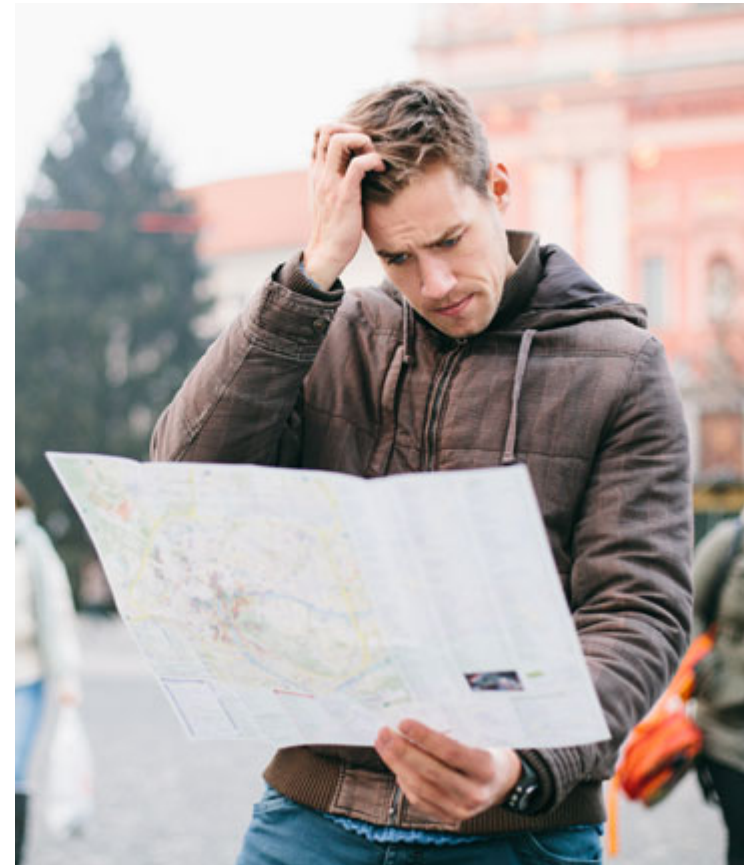
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Imagine you go to Rome to visit someone...

- You always wanted to visit that special place (shoe shop, museum, street etc..) but you would never go to Rome just for this reason...
- Use the opportunity and don't miss it!

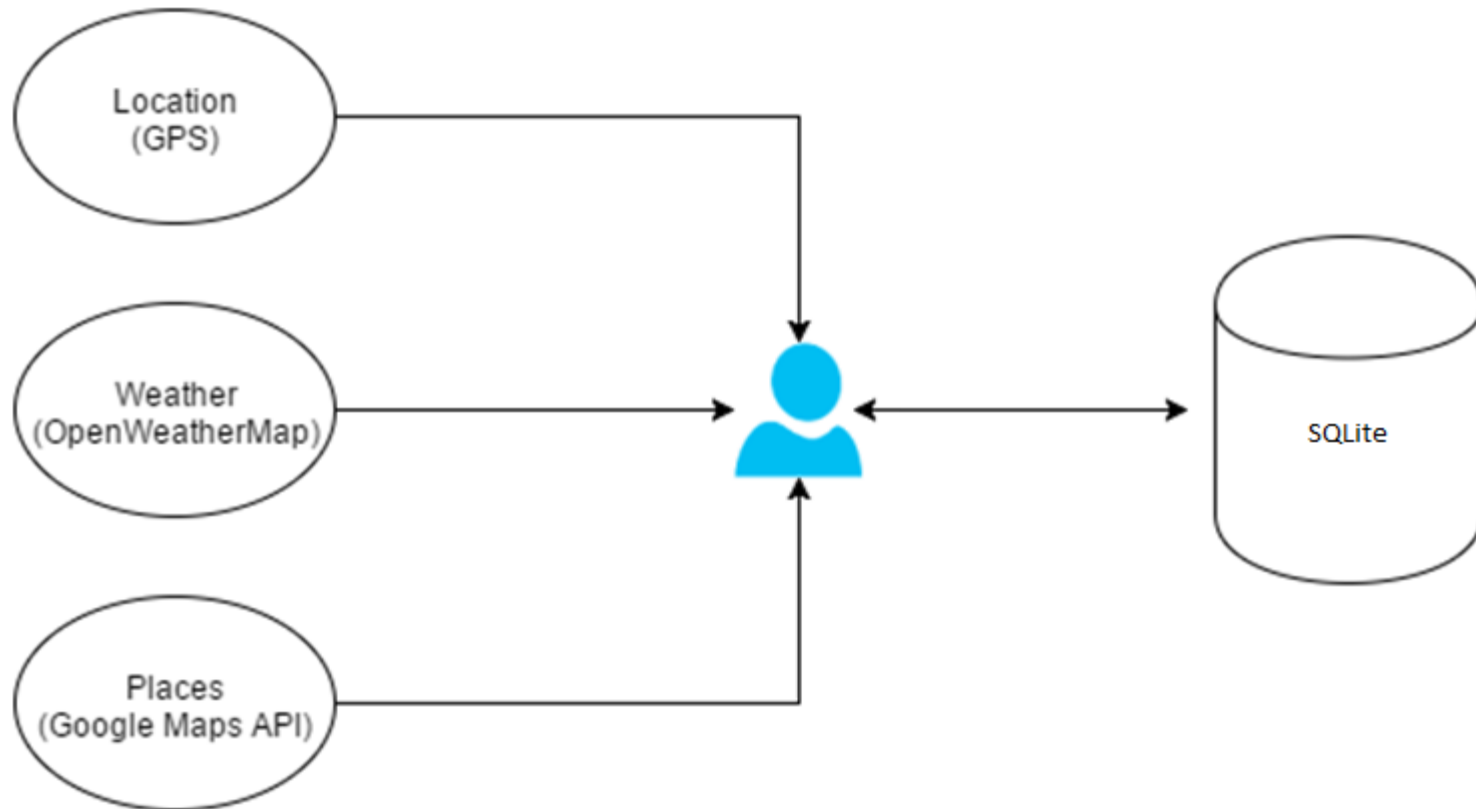


- User is able to save POIs he wants to visit one day, all around the world. (Like "PINTa bar" or "Großer Garten"...))
- The POIs will be grouped to the folders according to the location of the place
- The application evaluates categories of the saved POIs, actual user location, time of the day, as well as opening hours of some saved POIs, if relevant, and weather, if relevant.
- If the user location is in a set radius from one of the saved POIs, he gets a notification if some requirements fulfilled.

Example

- The user will get notified about an park he saved nearby, if the weather is warm/hot
- If it is rainy he won't get a notification, as well as if the saved place is closed at the time the user is passing by





- Android OS (Android Studio)
- Google Maps API
- Google Places API
- Google Places Webservice
- Open Weather Map
- GPS for location tracking
- SQLite Database

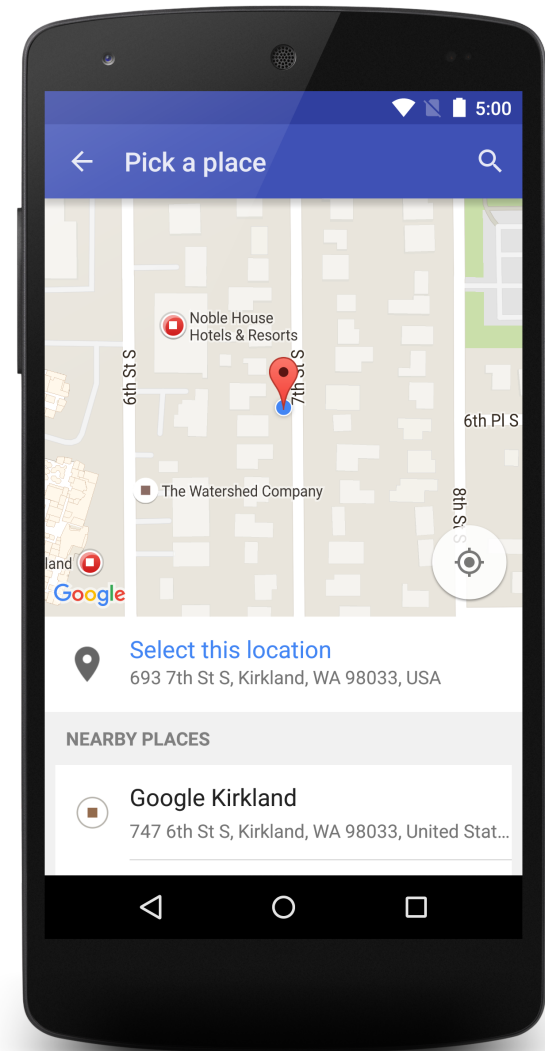
Content Adaptation

Object of Adaptation

- Current situation based on
 - User location
 - Location of the POI
 - Category of the POI (museum, bar...)
 - Opening hours of the POI
 - Weather (if relevant)

Google Places API : PlacePicker Widget

- Place ID
- Latitude
- Longitude
- Address



Google Places API : PlacePicker

- Start PlacePicker widget :

```
int PLACE_PICKER_REQUEST = 1;
PlacePicker.IntentBuilder builder = new PlacePicker.IntentBuilder();

Context context = getApplicationContext();
startActivityForResult(builder.build(context), PLACE_PICKER_REQUEST);
```

- Get and save information about your place

```
protected void onActivityResult(int requestCode, int resultCode, Intent data) {
    if (requestCode == PLACE_PICKER_REQUEST) {
        if (resultCode == RESULT_OK) {
            Place place = PlacePicker.getPlace(data, this);
        }
    }
}
```

Opening times and place type

Sensor / API

- Google Places Webservice API (Information about the place, opening hours)

Adaptation

- opening hours of the place (is open? as boolean variable)
- category of the POI

Google Places Webservice

- Get PlaceID from PlacePicker
- Get API Key : <https://console.developers.google.com/>
- Request : BASE_URL + PlaceID + APIKEY

```
private static String BASE_URL =  
"https://maps.googleapis.com/maps/api/place/details/json?placeid=";
```

- AsyncTask
- JSON as Response
(type of the place, opening hours)
- Parse JSON for easy access to data

Google Places Webservice

Place types :

accounting	embassy	moving_company
airport	establishment	museum
amusement_park	finance	night_club
aquarium	fire_station	painter
art_gallery	florist	park
atm	food	parking
bakery	funeral_home	pet_store
bank	furniture_store	pharmacy
bar	gas_station	physiotherapist
beauty_salon	general_contractor	place_of_worship
bicycle_store	grocery_or_supermarke t	plumber
book_store	gym	police
bowling_alley	hair_care	post_office
bus_station	hardware_store	real_estate_agency
cafe		restaurant

Weather

Sensor / API

- OpenWeather API
- Cold outside ? Too hot outside?
- rainy weather or sunshine ?

Adaptation

- get a warm coffee if it is cold
- get a tasty icecream if it is too hot

Weather

- AsyncTask
- rainy weather or sunshine ?

Adaptation

- get a warm coffee if it is cold
- get a tasty icecream if it is too hot

Weather

- As AsyncTask
- Request: BASE_URL + CITY

```
private static String BASE_URL =  
"api.openweathermap.org/data/2.5/weather?q=";
```

- JSON as response (temperature, rain, snow)
- Parse JSON for easy access

Notification Filters

- Check if there are your places nearby
($< 2000\text{m}$ only)
- Check if your places are open
(Google Place Webservice)
- Check weather information
(OpenWeather), current time und filter places types

Notification Filters

- Bar / Nightclub :
 - Only in the evening
 - Is it open ?
 - Weather is irrelevant
- Park
 - In the morning / during the day
 - No rain
 - Warm / hot weather

Demo

Questions?