



# Application Development for Mobile and Ubiquitous Computing

## Seminar Task First Presentation

GroupNo. 9

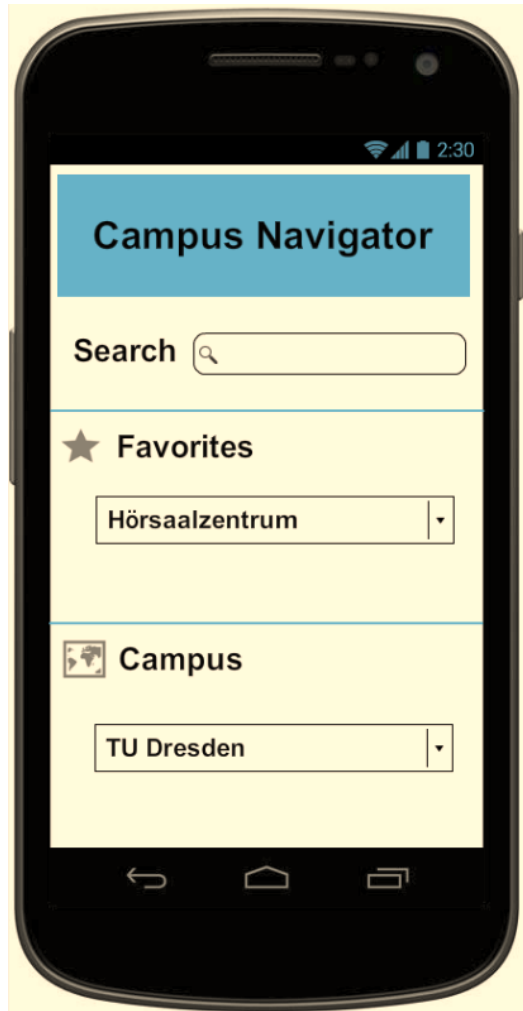
Team: Beatrycze Kmiec & Joachim Fritsch

1. Application Scenario
2. Technologies
3. Challenges
4. Work Plan

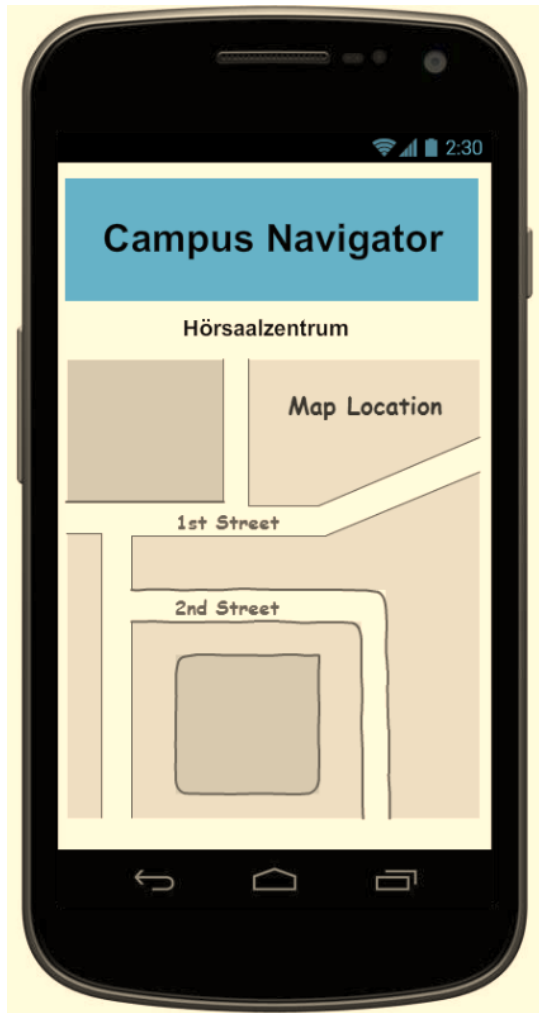


# Campus Navigator

- Help visitors/freshmen/rookies to find their way on large campuses
- Users shall be able to search for buildings by name, address or shortcut and see it on a map
- Show navigation route between current position and destination
- Show distance and estimated time between two locations, based on type of transportation



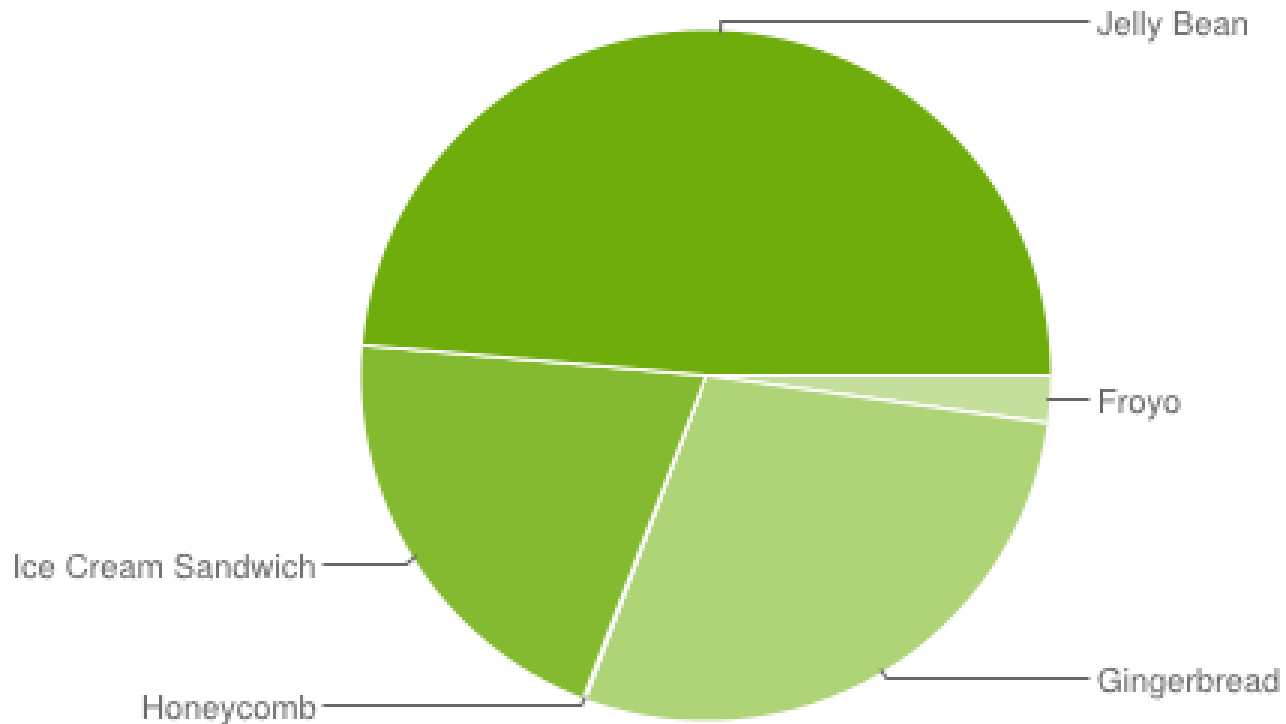
- Text-based search for building  
e.g. „HSZ“, „Hörsaalzentrum“
- Favorites or Recently Searched to  
have fast access to frequent or last  
search results
- Select campus  
e.g. „TU Dresden“, „AUDI Ingolstadt“,  
„Google Mountain View“



- Show building on map
- Provide additional information:
  - distance to destination
  - estimated time to destination based on transportation type (i.e. On foot, by bike or by car)

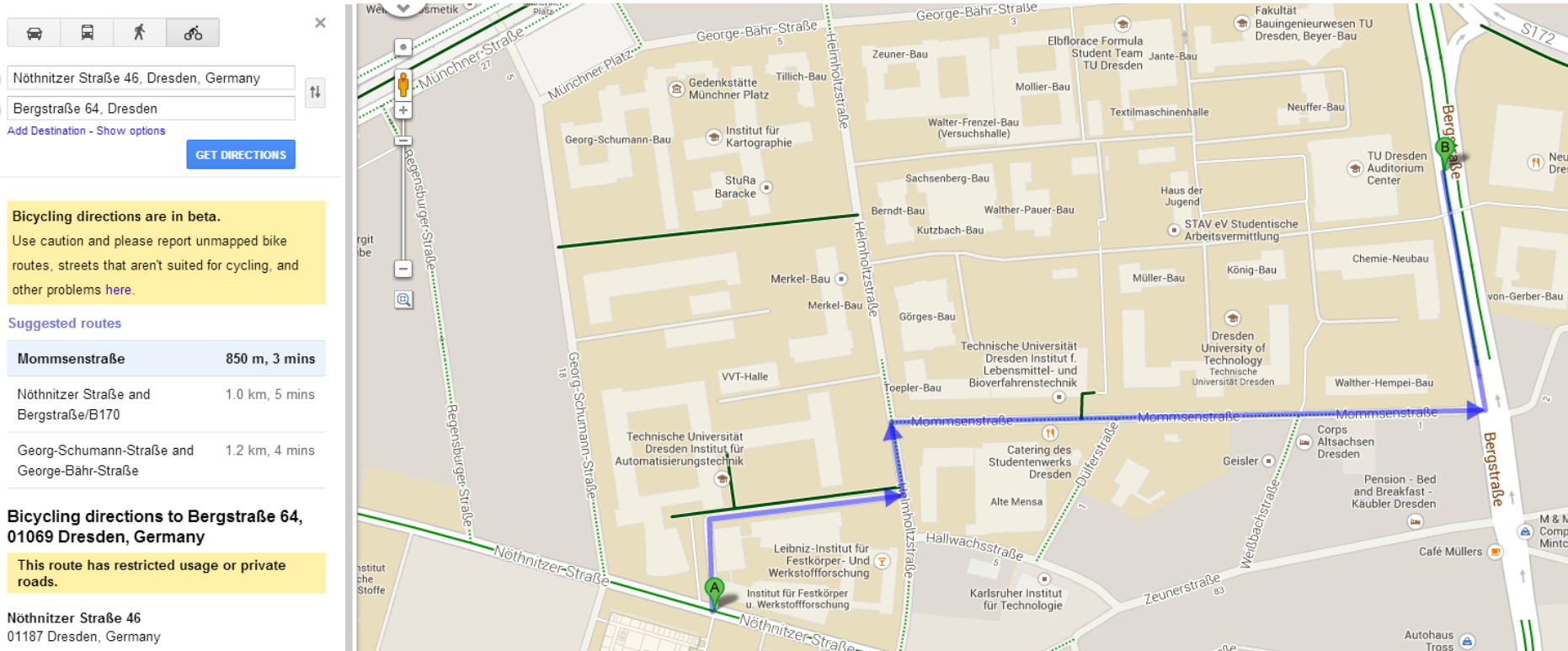
- Operating system: Android
- Map Provider: Google Maps
- Location awareness using GPS
- Campus data: XML + XML Schema

Android min. API Version:



-> Android 10, aka Gingerbread and newer cover 98%

## Google Maps:



**Start:** Nöthnitzer Straße 46, Dresden, Germany  
**End:** Bergstraße 64, Dresden

[Add Destination - Show options](#)

**GET DIRECTIONS**

**Bicycling directions are in beta.**  
 Use caution and please report unmapped bike routes, streets that aren't suited for cycling, and other problems [here](#).

**Suggested routes**

Route	Distance	Time
<b>Mommsenstraße</b>	850 m	3 mins
Nöthnitzer Straße and Bergstraße/B170	1.0 km	5 mins
Georg-Schumann-Straße and George-Bähr-Straße	1.2 km	4 mins

**Bicycling directions to Bergstraße 64, 01069 Dresden, Germany**

**This route has restricted usage or private roads.**

**Nöthnitzer Straße 46**  
 01187 Dresden, Germany

Offers vehicle, bicycle and pedestrian routing



## XML:

- Describing buildings on campus
- One file for every campus
- App can be used for many different campuses
- Download XML file from web source

## XML Schema:

- Template for new campus
- XML file can be verified and validated

## Small screen

- Present only important information

## Intuitive UI

- Make app easy and intuitive to use

## Context / Location Awareness

- Showing navigation from current location, calculate distances based on current location

1. Setup development environment  
Android SDK (Eclipse, ADT, Android emulator)
2. Implementation
  1. User Interface („Activities“)
  2. Google Maps API
  3. Geolocation API
3. XML Schema definition
4. TU Dresden Campus as example XML