Universität Bamberg

Accessiwheel:
A route-planning app for mobility-impaired users

Authors: Carral Vincent, Faraz Behrouzieh, Felicitas Borkes, Hanh Huyen My Nguyen, Saad Rawasia, Sulayman Md, Syed Zohair Ahmed Bin Ayaz
Supervisors: Christoph Baum, Michael Freitag, Simon Steuer

Motivation

- Barriers for people with disabilities exist everywhere, of which the rest of the society is often not even aware
- Currently there is little to no integration of accessibility information in common route planners which leads to high manual efforts in creating accessible tours for affected users and to exclusion of those users from enjoying tourism
- Ethical responsibility of science to research how social inclusion and equality can be achieved

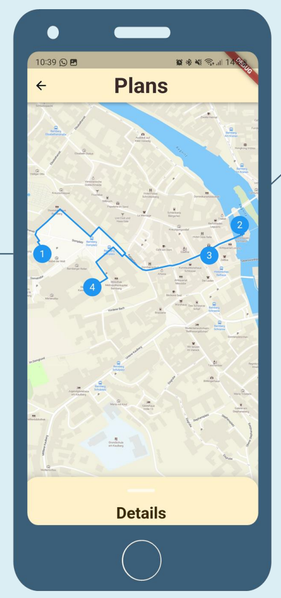
Need for a digital health project that leverages geospatial technology, including mapping services and accessibility data, to develop a mobile solution for better mobility and inclusivity

Product Values

- Potential to serve both as a standalone app and as an easy plug-in to other apps
- Making it easier for people, especially those with disabilities or mobility impairments, to navigate and explore cities on their wheels
- Empowering people with disabilities to enjoy the same experience as others
- Reducing discrimination, improving social inclusion and accessibility awareness in society
- Encouraging tourism and supporting local businesses by promoting accessible locations

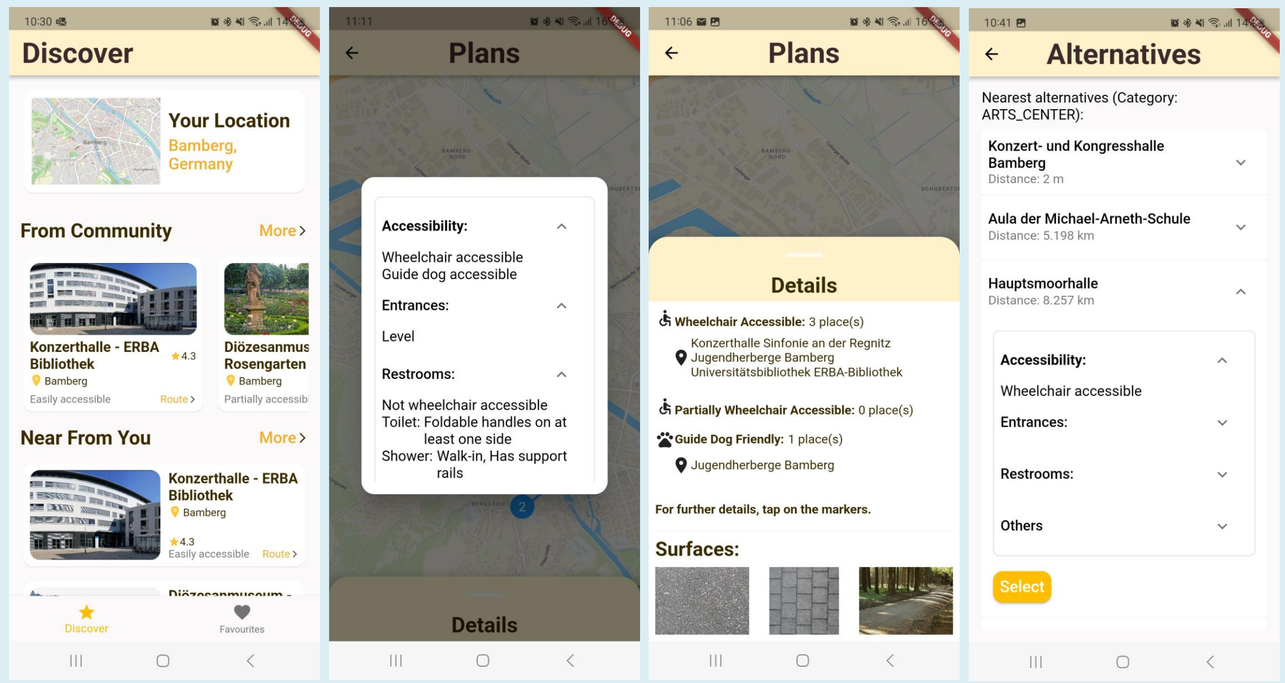
Major Functions

Discover city tours and get accessibility information of the included places



Follow wheelchair-friendly routes with navigation instructions

Find accessible alternatives and personalize routes



Workflow

Extracting place coordinates

wheelmap.org

Enriching the place information with details about accessibility from wheelmap.org

openroute service

- Generating wheelchair-friendly polylines
- Enriching the route information with surface conditions and steepness
- Generating instructions

Integrated view of all gathered data in the Plans page

Future Work

- Usability tests with mobility impaired users are needed to ensure goals are met
- Further development of the app such as:
  - Add a backend to allow advanced functions like saving, sharing and rating of routes
  - Provide section-wise accessibility information of a route
  - Expand the scope of accessible places available for discovery and offer more options to customize routes
  - Multi-language support
- Requirement analysis with stakeholders to discover additional features that are of importance for mobility impaired users

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