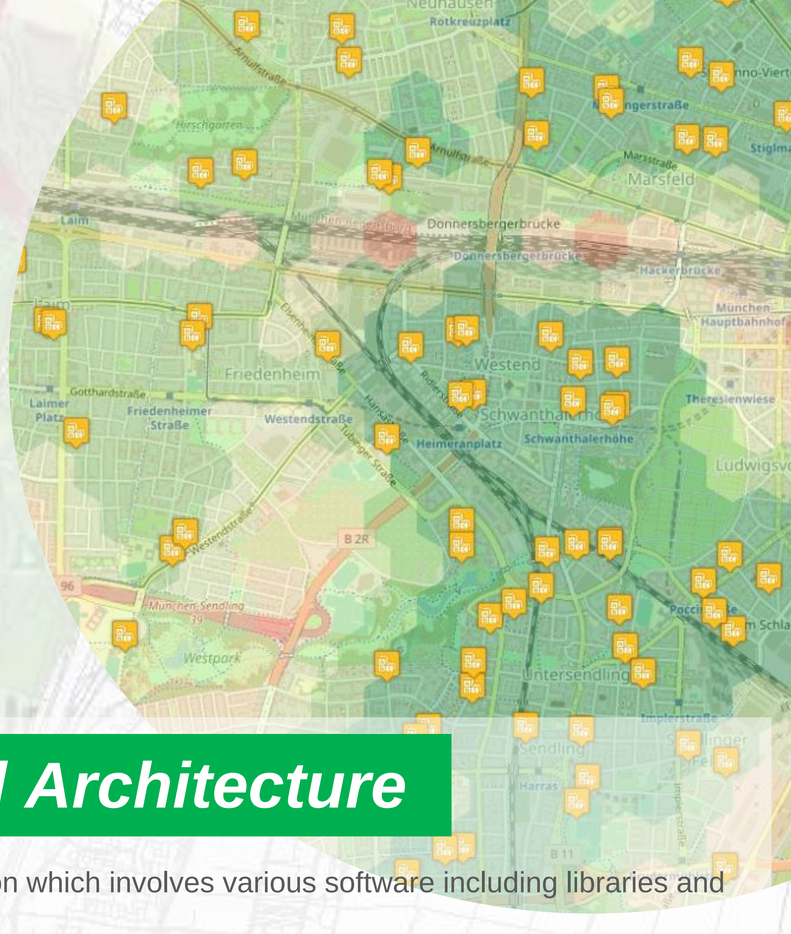
GOAT
Geo Open Accessibility Tool

PLAN SUSTAINABLE CITIES WITH GOAT AND OSM DATA



About GOAT

What is GOAT ?

- GOAT stands for *Geo Open Accessibility Tool* and is designed to interactively analyze walking and cycling accessibility to foster active mobility
- It is under development at the Technical University of Munich (TUM) and currently funded by the German Ministry of Transport and Digital Infrastructure (BMVI)
- The tool is designed to be transferred to cities worldwide

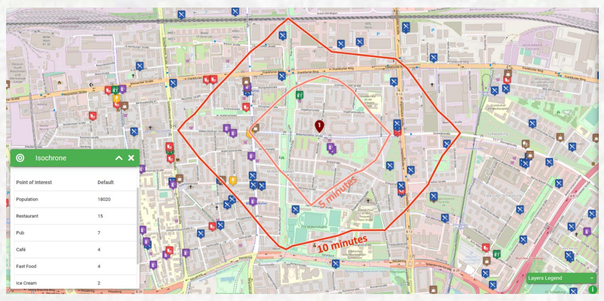
Why to use GOAT?

- GOAT provides planners with decision support when planning for walking and cycling
- By modelling the effects of transport (e.g. building a new pedestrian bridge) and land-use measures (e.g. building a new school), GOAT serves as a suitable instrument for easy and transparent urban and transport planning

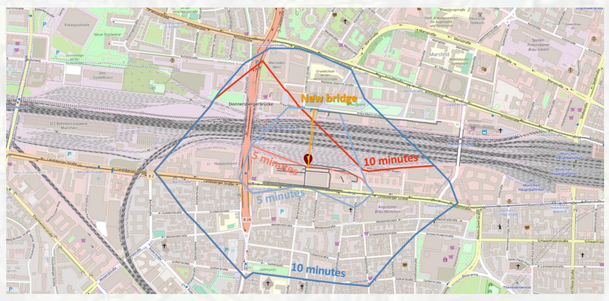
What are the main features ?

- Calculation and visualization of walking and cycling isochrones, which represent the area that can be reached in a dedicated time from a starting point
- Visualization of walkability by calculating gravity-based accessibility measures, which are visualized as heat-maps
- Development of your own scenarios and examination of corresponding changes in accessibility

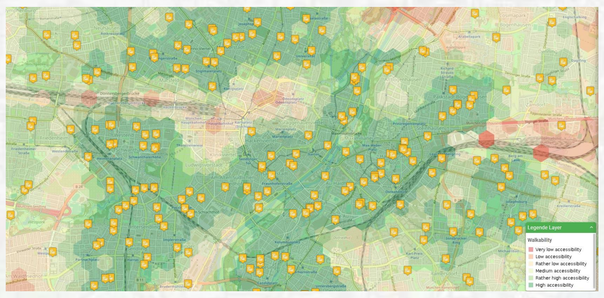
Accessibility Analyzes



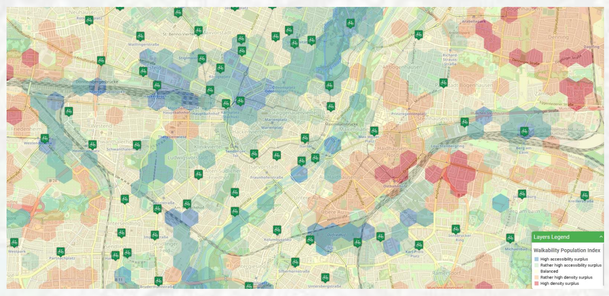
Calculating isochrones



Modelling the effects of a new pedestrian bridge



Analyzing accessibility to important amenities such as Kindergartens



Combining supply and population density to find suitable locations, e.g. for new bike-sharing stations

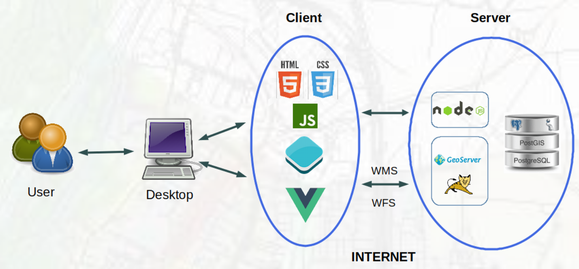
Using GOAT in Planning Practice

Exemplatory Planning questions that can tackled with GOAT:

- How good is the walking accessibility to kindergartens in different parts of the city?
- How many residents are served by certain public transport stops? Where can the perfect location for a new public transport be in order to serve as many residents as possible?
- What is the effect of a new pedestrian or bicycle bridge on the accessibility of a neighborhood?
- How does the accessibility of a place change if there is temporary closure of a walkway?
- How many people can reach a certain destination within 10 minutes walking distance? How does this change if only barrier-free paths can be used?

Technical Architecture

- GOAT is a WebGIS-application which involves various software including libraries and programming language
- Interaction is made possible by the classical server-client architecture of the web



- GOAT's database efficiently stores and organizes information, which can be accessed, managed and updated appropriately
- GOAT is an open source project (License GPL-3.0) where you are welcome to contribute code, collect data or improve the documentation on our website via GitHub

Our Contribution to OSM

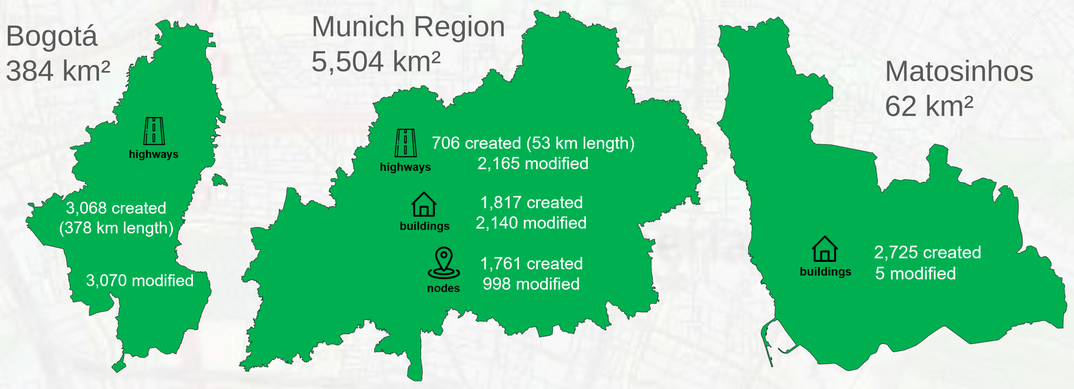
- Our aim is to have a model as close to real life infrastructure as possible, so a big part of our job is to improve the OSM data
- Transferring GOAT to new study areas therefore also involves high mapping activities, for example, adding missing path-connections or verify information of Points-of-Interests
- With our project we also enthuse new mappers for OpenStreetMap

How do we improve OSM data?

- Organization of Mapping Parties
- Organized / paid mapping for consulting and research projects (On-site and off-site mapping, collection of Mapillary imagery - so far, we have captured 28,354 Mapillary images and used them to refine OSM data)
- Support of individual data collection by supervising Bachelor Thesis, Study Projects and Master Thesis, depending on the mapping needs related to the research question in the selected study areas
- Providing a platform for mapping challenges (under development, will be launched soon)

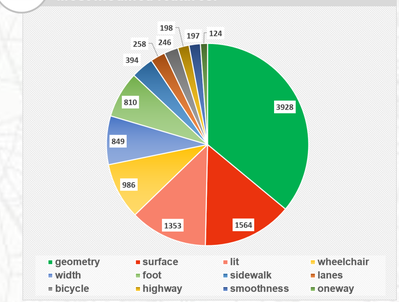
What have we contributed so far?

Σ 10,077 features created
Σ 8,378 features modified

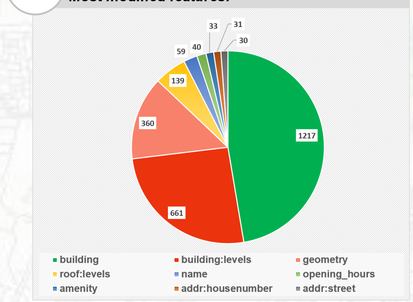


Which tags have we edited for existing features?

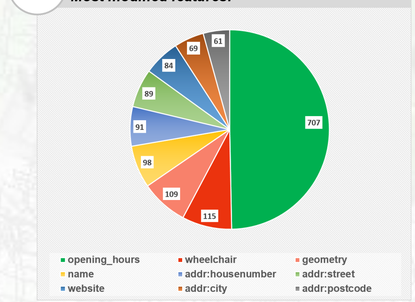
HIGHWAYS
Most modified features:



BUILDINGS
Most modified features:



NODES
Most modified features:



mFUND
Das Startkapital für die Mobilität 4.0

Gefördert durch:
Bundesministerium für Verkehr und digitale Infrastruktur
aufgrund eines Beschlusses des Deutschen Bundestages

Learn more: https://www.open-accessibility.org
Contribute: https://github.com/goat-community/goat

Chair of Urban Structure and Transport Planning
TUM Department of Civil, Geo and Environmental Engineering
Technical University of Munich