

1, 2, 3, 4 Für Alle: The Accessibility Web Map for The Main Districts in Munich



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Cities can present many obstacles mobility-wise for the people living there, especially considering the ones physically impaired. However, it makes a big difference to how to face these being aware of them, and so, being able to plan and act beforehand.

This web map is a tool that focuses on disabled people, providing them with a more complete overview of the four main districts in the city of Munich, rather than the conventional maps that tend to ignore some basic needs of the community.

With this map, users can go through detailed information about the accessibility status of U-Bahn stations, housing options, and up-to-date barriers on the streets, as well as planning the most convenient routes for their everyday life.

AIM

The goal of our project is to make life easier for people with disabilities through our web map, targeting mainly people using wheelchair. We provided information on accessibility in the U-Bahn subway, information on accessible long-term rentals in WG-Gesucht, and roadway and sidewalk obstacle alerts. As a result, users can use the map to avoid areas with obstacles in advance and to plan roads by route length. In the obstacle alert section, we want to use the power of the crowd to achieve this, so we have set up a reporting system for volunteers to report on any kind of barrier (Fig. 1).

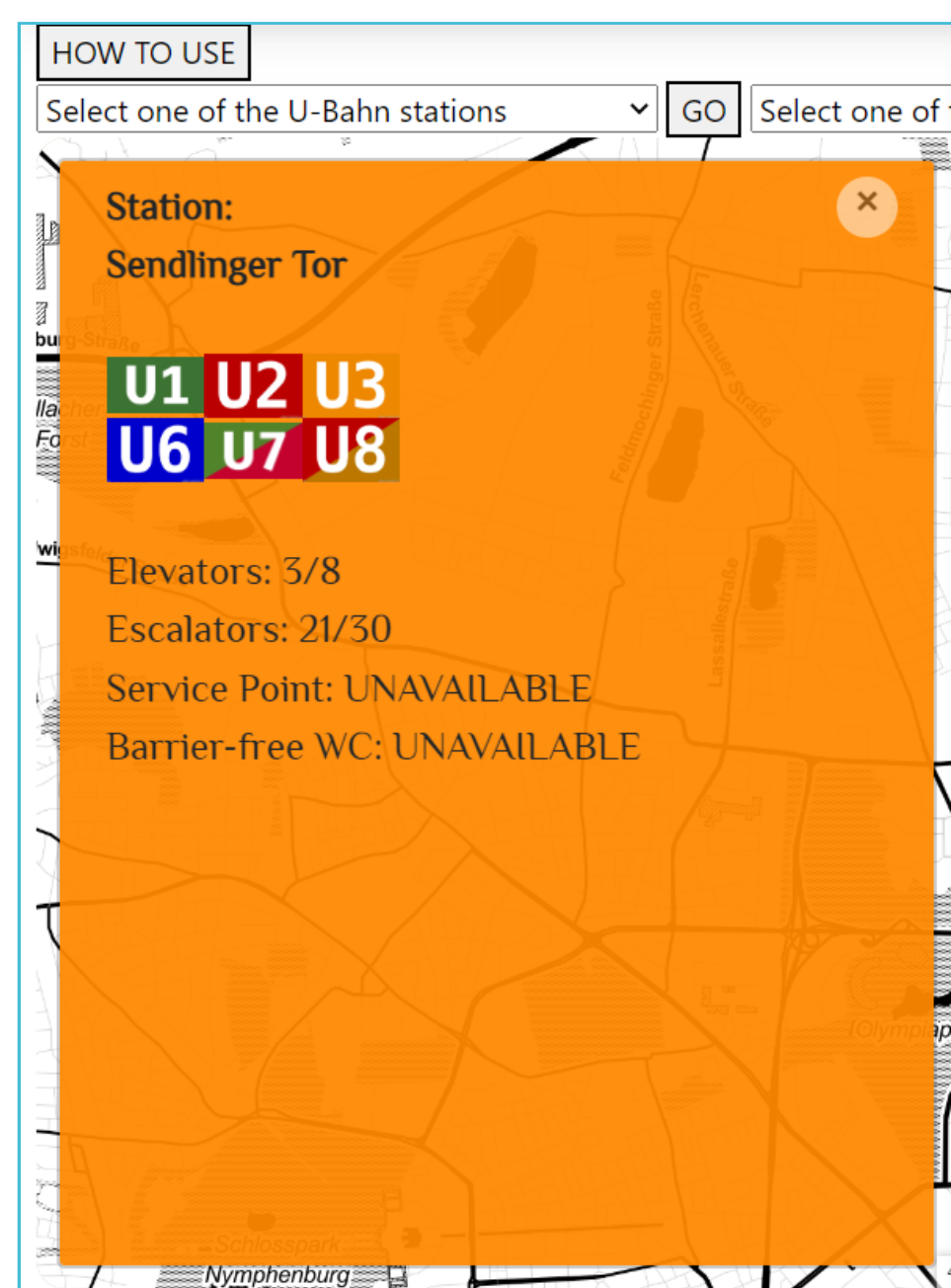


Fig.2: Example of the information showed about one of the U-Bahn stations.



Fig.1: General overview of the map showing all the available icons to click on. As an example, a pop-up for the barrier alerts that can be added by users is displayed.

METHODOLOGY

We used Leaflet [1] to build our web map, and used Google form and Google sheet as an aid to the obstacle reporting system. The subway information (Fig.2) and housing information were collected from Münchner Verkehrsgesellschaft (MVG) [2] and WG-Gesucht application [3] in Munich, respectively.

DATA COLLECTION

We obtained information from the MVG on the accessibility of the U-Bahn, including information on elevators and escalators and the availability of handicapped toilets. In addition, we obtained barrier-free housing information from the WG-Gesucht application. We recorded information on rent, type, roommates, and conditions of housing, using long-term rentals and barrier-free facilities as restrictions.

As for the barrier collection, we used Google form to collect data, and volunteers need to input the barrier's coordinates, scale of the construction, position of the barrier (road, sidewalk, etc.) and image of the barrier. We also use Google sheet to collect statistics and then send the data to the web map for display. After the volunteer submit the information of barrier, the Google sheet will receive the data and add it in the table as database.

RESULTS

The final result of this Mapping Project is an innovative, appealing and easy-to-use instrument that offers different layouts depending on the user's preferences, with switchable base maps, and filterable options for accessible accommodation.

This means that users can use it in a dark mode for a higher colour contrast if needed (Fig.3), or with a more classical and familiar Open Street Map base map. All the available options as well as the correct way to proceed with the preset functions are explained in detail and can be reached easily whenever they need it, in order to optimize the user experience and make the usability smoother.

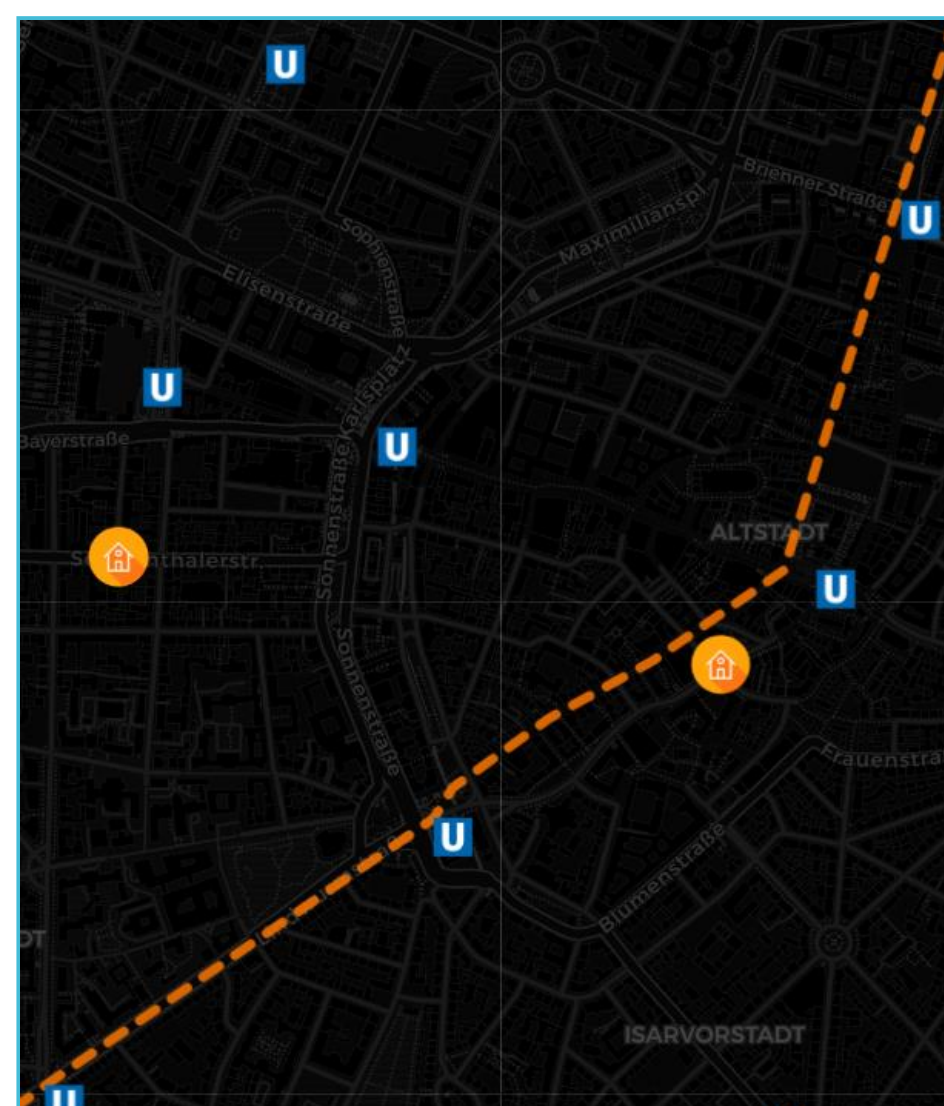


Fig.3: Example of one of the suggested routes using the dark base map.

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LINK

<https://ting20314.github.io/>



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