Laboratory exercises 1 - SDA

Nearest barber shop

Short project description

The goal of the project is the implementation of a simple navigation system. The system should find the five nearest barber shops 5km from the current location. For each of them it will be shown the estimated time and distance to the shop. The user should be allowed to select one of the barber shops and the optimal route to it will be shown. The system is web-based, and users can manage it by using a standard web browser. Each page should have a simple and readable URL. The user should not wait more than 5 seconds for getting the information he needs. The system should serve 100,000 users and 1000 users at the same time to be able to search for routes.

Specification of the functional and non-functional requirements

Functional requirements

Priority level	Description
Priority 1	Essential and required functionality
Priority 2	Desirable functionality
Priority 3	Extra features

- The system shall enable language support in Macedonian and English. *Priority 1*
- The system shall enable creating a profile for a new user. *Priority 2*
- The system shall enable a log-in and log-out options for the user. *Priority 2*
- The system shall ask permission for sharing the location of the user. *Priority 1*
- The system shall show two of the closest barber shops on the shared location. *Priority 2*
- The system shall show the time and distance to the two closest barber shops. *Priority 2*
- The system shall allow the user to select one of the barber shops on the list. *Priority 2*
- The system shall show the map for the selected barber shop. *Priority 2*
- The system shall have an administrator option where a new barber shop can enter their data. *Priority 3*

Non-functional requirements

Performance:

- The system must be interactive, and the delays involved must be minimal. In every action-response of the system, there will be little to no immediate delays.
- In the case of searching for nearby barber shops, the system will take no more than 5 seconds to find every barbershop within a given area.
- In the case of calculating routes, the system will take no more than 10 seconds to find shortest path to the selected barbershop.

Scalability:

- At first, the system will only support coverage of the city of Skopje, once initial testing is conducted expansion to more cities will be considered.
- In the case of searching for nearby barbershops, the user will have the option to gradually increase the search radius up to a limit.

Availability:

- The system will be available 24/7.
- The system will initially require an internet connection but through the use of the system, the cache will slowly build up and will eventually allow for more and more effective use without internet connection.

Team:

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