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Web and App Programming

Stoppi - A Bus Tracker for Students in Tampere

Design report

What is Stoppi?

Stoppi is an interactive, real-time bus tracking application, directed towards new English speaking TAMK students and visitors. Stoppi was built using the Google Maps JavaScript API, and it uses this Lissu API proxy to fetch real-time data from buses around Tampere. The list of trackable bus lines was taken from http://lissu.tampere.fi/

My extensions?

Apart from the requirements (map based service, able to select bus lines and display their locations, user geolocation), I added a few useful features to Stoppi. The most obvious one is including the bus lines as additional labels on the markers. I also implemented custom markers, which allow you to see which direction the bus is moving in. If the bus has stopped, the marker will become a circle, indicating that the bus is now stationary. This way, it's easy to see where each bus is going, with just a quick glance.

How bus positions are displayed on Stoppi. When a bus marker is clicked, a new infobox pops up.

I also added infoboxes for the buses and the user marker. If the user clicks on a bus, an infobox will appear, giving them additional information about the selected bus. If the user clicks on their geolocation marker, the Maps API will convert their latitude and longitude into an actual address, which will help with navigation.

Another core feature of Stoppi is the school route buttons you'll find in the bus lines menu. By clicking on one of the school logos, you can instantly select all the bus lines going to the most relevant bus stop(s) near that school. Currently there are four campuses featured: Mediapolis, the TAMK main campus, Tampere University and Tampere Technical University. Adding more schools or lines if needed is also very fast.
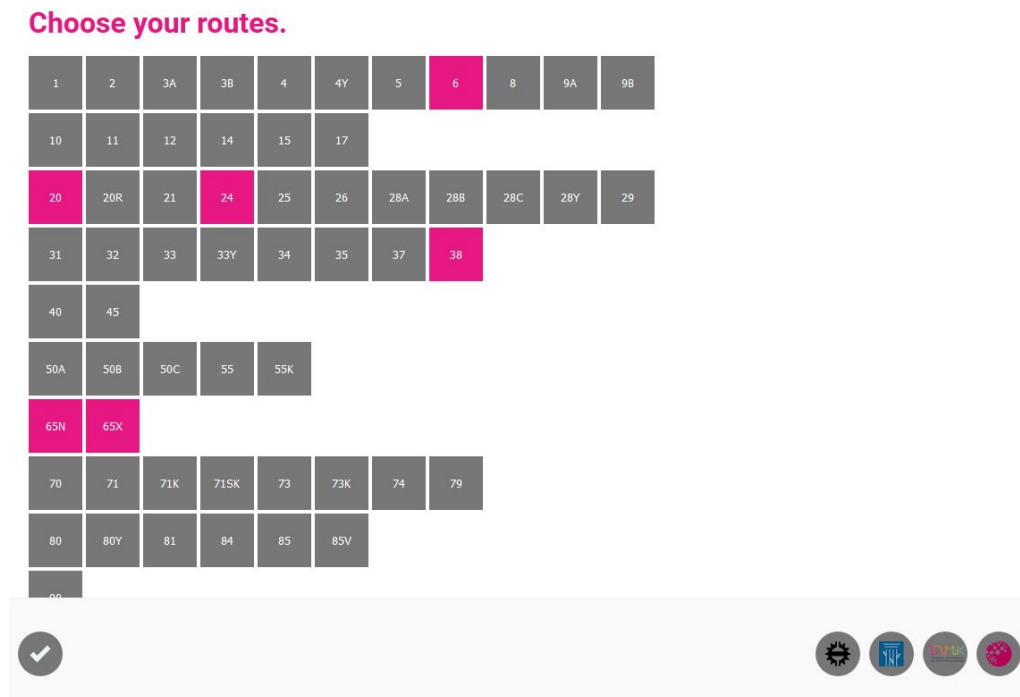

School route buttons in Stoppi.

Design choices

Since the target group of this project was new TAMK students and visitors, I didn't want to make the UI overwhelming. Because of this, I decided to go for a full screen, single page application. When the user enters the site, they're met with a large view of the city on a map, as well as a few bus lines. This instantly clarifies how the app displays information, and how you should interact with it. On the side of the page there's the TAMK logo for branding, as well as two buttons for geolocating the user, and opening up a menu to choose different bus lines.

I also wanted to make choosing the bus lines straightforward for the user. That's why I chose to display all the trackable bus lines seperately, and also offer the option to pick the lines by the campus you want to go to. By using the school route buttons, the user, who is most likely a tad confused about the public transport system in

Tampere, doesn't have to figure out which lines go where on their own, and can just find the lines they want with the click of a button.
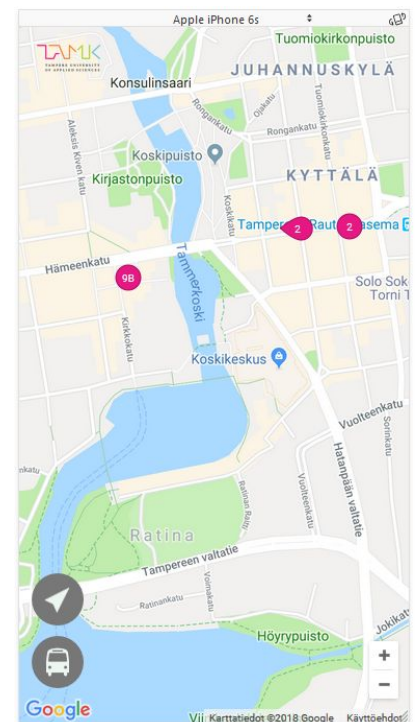

Choosing bus routes in Stoppi

For the color scheme of the app, I decided to go for a magenta/grey style. The magenta shade is the same one that's used in the TAMK logo, and the grey provides a good contrast for it. It also makes it easy to quickly identify active elements.

I also wanted to make sure that the app works well on mobile devices, since I figured that's what most people accessing it would be using. The majority of the users would most likely be trying to find the bus lines on the go, and not on their home computer.

I also added some animations to the UI to make the user experience a bit more refined. I gave the app out for a couple of people to test, and they felt it was useful, clear, and easy to use.

What went well, what could've gone better?

I think in general, I did good on the task. My biggest fault was time management – because of my personal life, I didn't get to spend a huge amount of time on the app.

I feel like one of my strong points was making the app mobile compatible, although there is more work I could also do with that. I think I will keep working on the mobile optimization during the summer, as I hope to make this app better and better.

I also wish I had time to implement more extensions, like using a device's local storage to store the user's favourite bus lines, and showing the school locations with unique markers. I will also be working on these during the summer.

I've gathered pretty vast information about the Maps API while working on this app. It'll also be useful for me in the future!

At its current state, the app is completely usable, and hopefully useful for people!

Finishing words

I really enjoyed working on this task. I'll keep working on it during this summer, if you'd like to keep up, check my [GitHub page](#) from time to time. There's also a live demo of Stoppi [here](#). If you have questions, do get in touch.

Thank you for this course, and have a great summer!

-   *Eetu Eskelinen*

870 words.