Lab 1: Google Maps API

Overview

Mobile web pages have much in common with regular web pages in the desktop world. However, there are some differences apart from them being smaller. The purpose of this lab is to get familiar with the way how web content can be adapted and customized to mobile terminals.

After completing this lab you will be able to write web pages that target basic mobile web map applications, and since there are many things in common with hybrid solutions and wrapped web applications, it will prove useful in the project and in your professional career (at least if your career involves making mobile stuff).

Exercise

Having access to a map has many uses for the mobile user, for finding out where you are, to navigate when walking or riding a vehicle as well as finding directions to points of interest. Some years ago the GIS market and especially maps were quite expensive to use, edit and customize for various purposes, while since Google, Navteq and TeleAtlas brought about public APIs to maps, the cost of the using them is either free or very reasonable.

Useful links

- Google Map API (version 3): https://developers.google.com/maps/documentation/javascript/tutorial (Länkar till en externa sida.)Länkar till en externa sida.

- Making the mobile web behave like a proper app
- https://nicasiodesign.com/wordpress/4-easy-tricks-for-making-your-mobile-website-behave-like-a-native-app/ (Länkar till en externa sida.)Länkar till en externa sida.
- https://developers.google.com/web/fundamentals/native-hardware/fullscreen/ (Länkar till en externa sida.)Länkar till en externa sida.
- (there are many more here, go look for that native app experience)
- Adding to home screen on mobile
- https://developer.chrome.com/multidevice/android/installtohomescreen (Länkar till en externa sida.)Länkar till en externa sida.
- GeoLocation tutorials
- http://mobile.tutsplus.com/tutorials/mobile-web-apps/html5-geolocation/
- (Länkar till en externa sida.)Länkar till en externa sida.http://www.w3schools.com/html/html5_geolocation.asp (Länkar till en externa sida.)Länkar till en externa sida.
- Generating a Google Maps API key. In this lab excersise, you don't need to generate a Google maps key as we're not generating thousands of map tiles, just omit the "key=YOUR_API_KEY&" part in the example at developer.google.com
- https://developers.google.com/maps/documentation/javascript/get-api-key#registering-authorized-urls (Länkar till en externa sida.)Länkar till en externa sida.

More links (generic):

JavaScript: W3Schools Tutorial and Debugging

http://www.w3schools.com/js/default.asp (Länkar till en externa sida.)Länkar till en externa sida.

https://developers.google.com/web/tools/chrome-devtools/ (Länkar till en externa sida.)Länkar till en externa sida.

jQuery: W3Schools Tutorial and API Documentation

http://www.w3schools.com/jquery/default.asp (Länkar till en externa sida.)Länkar till en externa sida.

http://api.jquery.com/ (Länkar till en externa sida.)Länkar till en externa sida.

HTML: W3Schools HTML tutorial and W3Schools CSS tutorial

http://www.w3schools.com/html/default.asp (Länkar till en externa sida.)Länkar till en externa sida.

http://www.w3schools.com/css/default.asp (Länkar till en externa sida.)Länkar till en externa sida.

HTML: Drag and Drop in HTML 5

http://www.html5rocks.com/en/tutorials/dnd/basics/ (Länkar till en externa sida.)Länkar till en externa sida.

Webapp exercise 1 (3p)

Task

Make a web view which retrieves a Google Map widget on-screen. Center it on KTH campus (59.3498092,18.0684758) with a reasonable zoom level. Try the different map types; roadmap, satellite, hybrid.

You don't need the API key for testing, so you can just skip the "key=YOUR_API_KEY&" parameter in the example code at developer.google.com

Examine the 45° tilt version of the map and how to get it working (there is no tilt view at all zoom levels, nor covering the entire planet, you won't find it near KTH for instance, go down to City centre instead!).

There are some intrinsic controllers for zooming and panning, but often you'd want to have your own. DON'T USE THE BUILT IN ONES IN THE MAPAPI. Replace them with your own so you can navigate using buttons on the screen.

Investigate animations (like drop and bounce), as well as draggability by setting one marker as draggable and one as not.

Webapp exercise 2 (2p)

Task

Make the map web page more app-like, minimising browser clutter, with a custom icon, and why not add a suitable start-up screen. Investigate things such as means of hiding the address bar setting colors to periphery elements, make the app display a site-specified icon on the desktop, hide status bar, go full screen, give a notification if a site offers to "install" it as web-app, support for a splash-screen while loading the content or control the viewport, to provide for a full screen experience

NOTE: you don’t need to solve everyone of these

Take notes on whether they work on different phone/pad platforms that you have available in the lab group. Perhaps there is one solve for iOS and one for Andriod. This task is about reasoning around how small things like adding icons, and handling contents adds to the “app feel” of a mobile web service.

Webapp exercise 3 (3p)

Task

Set a marker at a favorite location of each of the group members, with some kind of info on what the user could expect to see. Make some <input type=”button” /> buttons; typically a “here” button and and a couple of “there” buttons outside of the map area. In more detail; try get hold of your position (if you phone allows positioning into to be shared with the browser, it probably won’t work on your PC browser), and center the map there.

Add points of interest, center on your current geolocation, and specific geolocation, e.g. your favorite secret fishing places, of your choice by pressing a button. Investigate how to make a custom marker and see if it works on different browsers.

For buttons you can also use the <button> tag, see this discussion for further details:

http://stackoverflow.com/questions/469059/button-vs-input-type-button-which-to-use (Länkar till en externa sida.)Länkar till en externa sida.