Location-Aware Mobile Application Design

Exercises 1/8, 15.3.2013

1. Find out coordinates of Kuopio and Joensuu. Calculate the distance using (a) Euclidean distance, (b) Haversine distance. You can assume that both towns have the same altitude of 80 m above sea level. Earth radius is 6371 km (mean radius). How big is the error if Euclidean distance is used instead of the Haversine distance?

2. Find at least two location-aware mobile applications. Explain (a) What, (b) Why and (c) How they differ from each other from location-aware point of view. Compare the applications in these aspects: simplicity, usability, informative.

3. Create an HTML page that includes GoogleMaps. Link it from your home page (or embed directly). Use the following example to learn how to use a Google Map:

   http://gmaps-samples-v3.googlecode.com/svn/trunk/single-infowindow/single-infowindow.html

4. Add an element on the map that shows your home location and also provide elements to display the followings at the location: (a) your photo and (b) address as text.

5. Find below a GPS track of 11 points (open circles) whereas the line which connects the black dots demonstrates the actual route travelled. How would you measure the accuracy of the GPS track if the only data is latitude, longitude and time stamp of each GPS track, and the start and end points (and time) of the real start and end points?