

GSM tracking using GPS and Location based service

Luben Ivanchev

Valerio Perrotta

Aalborg University

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Abstract

The project describes the ability to create a Location based service that allows the user to be notified of certain pre-determined landmarks that are within a small area around the user. It also allows the tracking of the user via maps that are embedded in a webpage.

Technical details

The software is limited to Python for S60. The mobile phone is a Nokia N95 (which supports GPS).

The Python code is executed on the mobile phone. It activates the GPS on the mobile phone and searches for satellites. Once a position is calculated it is sent via the mobile network to a web server.

A PHP script on the server receives the latitude and longitude coordinates from the mobile phone and creates a XML file with the coordinates. Javascript is used to read the XML and passes them to a function that displays the coordinates in a Google map which is embedded into the webpage.

The mobile phone sends coordinates every 3 seconds. Notifications are stored in a text file on the server which is checked every 3 seconds by the phone to see if there are any new notifications that need to be displayed to the mobile phone user.

Notifications can be sent from the website to the mobile phone from a text box. Notifications are also automatically sent to the user from the server if the user is near a certain waypoint.

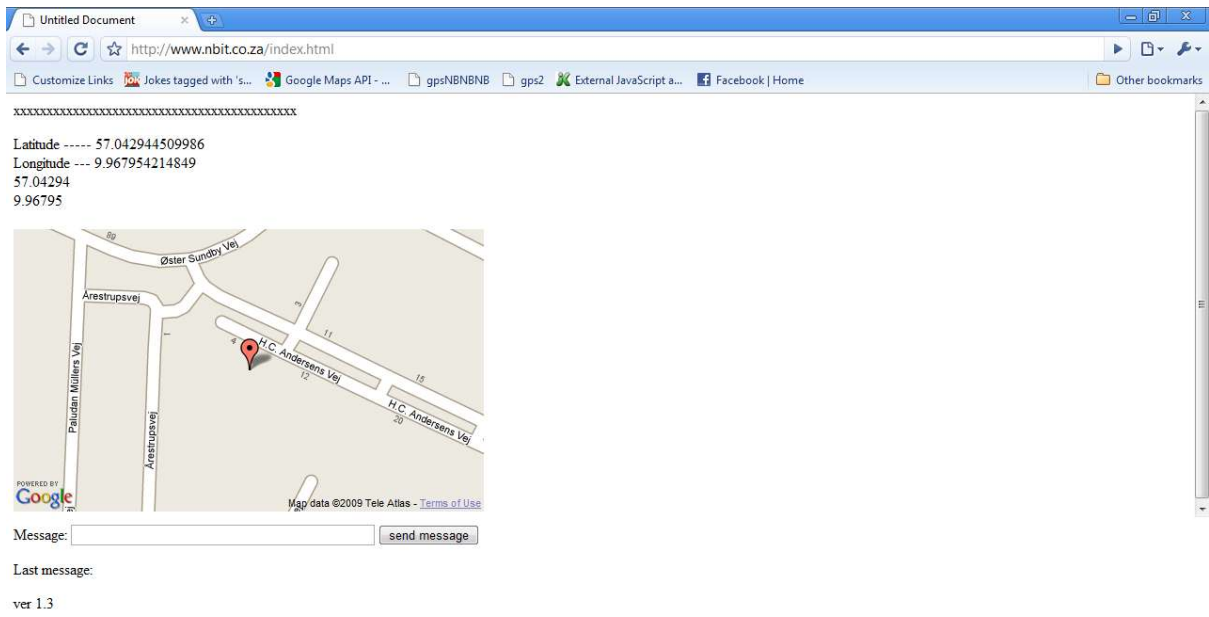


Figure 1 – Website GUI Available at: www.nbit.co.za/index.html. The user's location is indicated by the red marker and is always in the center of the map.

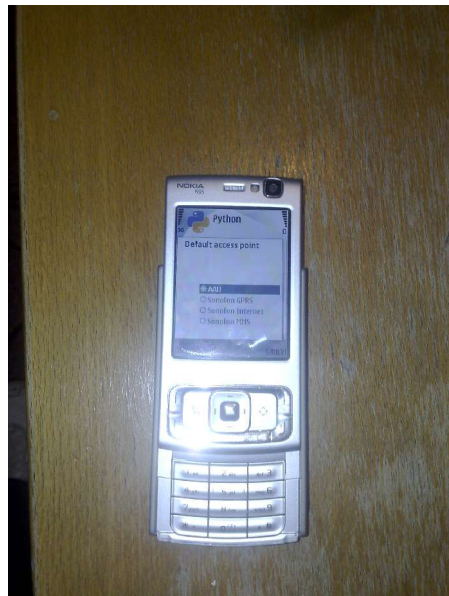


Figure 2 – The user is prompted to select a data network to connect to.

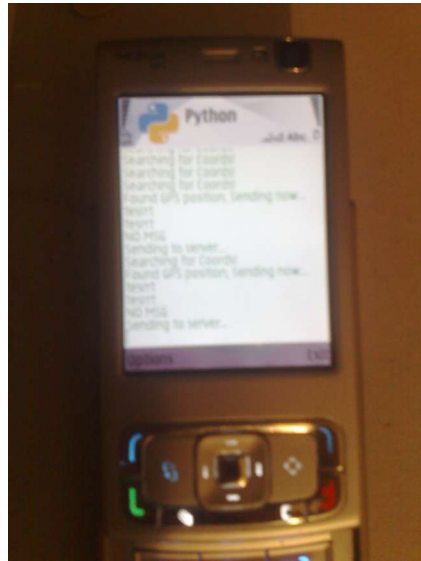


Figure 3 – The phone displays status messages so the user can know that everything is working.



Figure 4 – The phone receives a notification from the server informing the user of new events.