Assignment #2 - Social Media and Mashups

Group # 1

1 Introduction

This report presents the details for the implementation of a website and the integration of some APIs of known platforms that are used for social networks and maps. These are: Facebook API, Twitter and Google. In addition, to the website, this report also introduces an example usage of the Facebook canvas feature combined with Facebook API and Google map.
The type of website chosen for the usage of API is a blog. The programming language contains back-end PHP and front-end JavaScript,CSS and HTML5. We use a simple template for our blog [1] [2].
The main idea of the blog is that the users can log in with the privacy preferences by using their Facebook account. Then, they could post the link of some of the articles of the blog and also there are pictures that can be used for posting on their wall. In addition, the blog uses Facebook features such as "Comment plugin" and "Like" button where users can write comments and click on Facebook button regarding an article. In addition, the blog can be followed on Twitter with Twitter plugin. Moreover, in the blog, we show the usage of Google graph API to draw an example chart based on AJAX and data file in JSON format [3].
Apart from the blog, we implement the Facebook Canvas feature for the Facebook application. The user can check his friends' location as well as their details on the Google map inside a Facebook framework. The user friends information is collected with Facebook FQL API.

2 Development Architecture And Procedure

2.1 Architecture

Figure 1 illustrates the architecture defined for our blog. On the left side, there are *end-users*, who access to our site `http://group01.naf.cs.hut.fi` by using a browser and through the Internet. On the right side, there is a server where our application is located and also there are others servers that belong to the platforms (e.g., Facebook, Google and Twitter) that interact with our application in order to show their features in our blog.
In overall, the integration of Facebook, Google and Twitter required the usage of JavaScript code that runs on the client side but also it was required the use of Facebook PHP SDK on the server side in order to enable the authentication of the Facebook application from our blog.

[1] `http://www.dezzain.com/tutorials/creating-a-simple-responsive-html5-template/`
[2] `http://tutorialzine.com/2010/02/html5-css3-website-template/`
[3] `https://developers.google.com/chart/interactive/docs/php_example`

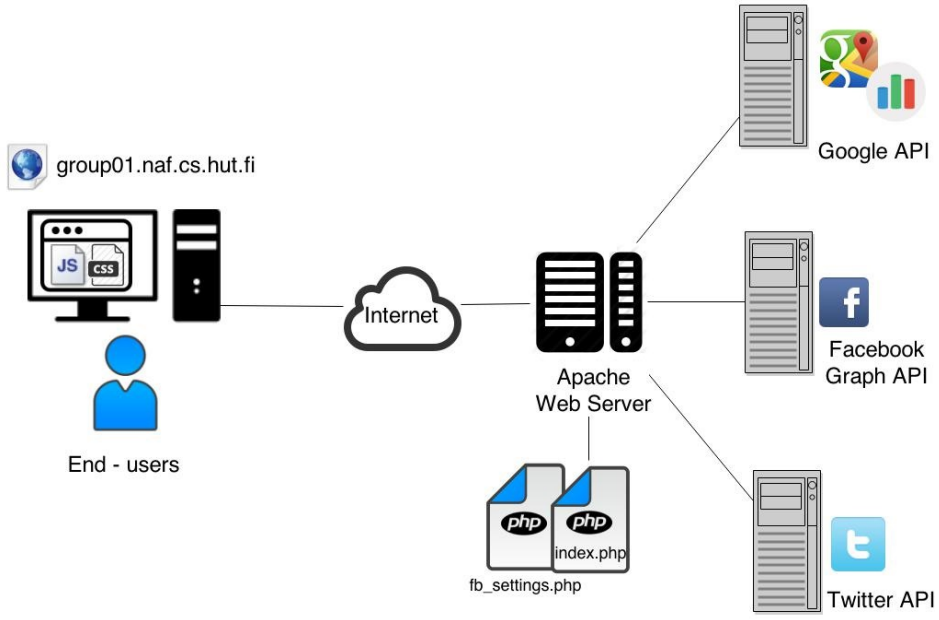

Figure 1: Architecture for the website

2.2 Layout Structure and Location Display

Basically, the layout for our blog uses two columns and contains four regions as it shows in the Figure 2. In the "header" section, there is a menu where user can click on button "Log in" and it will be redirected to Facebook Login page. Once the user is logged, his name,picture and 5 of his friends will appear on the sidebar. It is important to mention that the list of friends is shown only on the "Home" page.
The "main" section contains the list of available articles to read and the content of an article once is selected. Each article contains a section to follow the blog and write a tweet on Twitter. At the bottom of the article there is a section for comments and the buttons for "Like" and "Share" on Facebook. Figure 3 illustrates the view of an article.
On the other hand, the "Contact Us" menu shows a contact form and a map with a marker in order to display the location of "Otaniemi Campus".
Finally, as shown in Figure 4 on the Facebook application webpage, it shows the location details of the user's friends, such a s city, state, country, latitude and longitude.

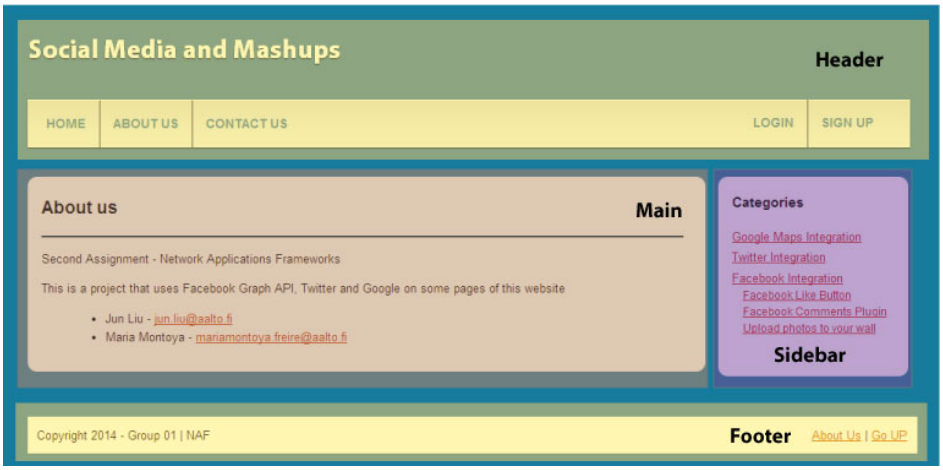

Figure 2: Layout structure for the website

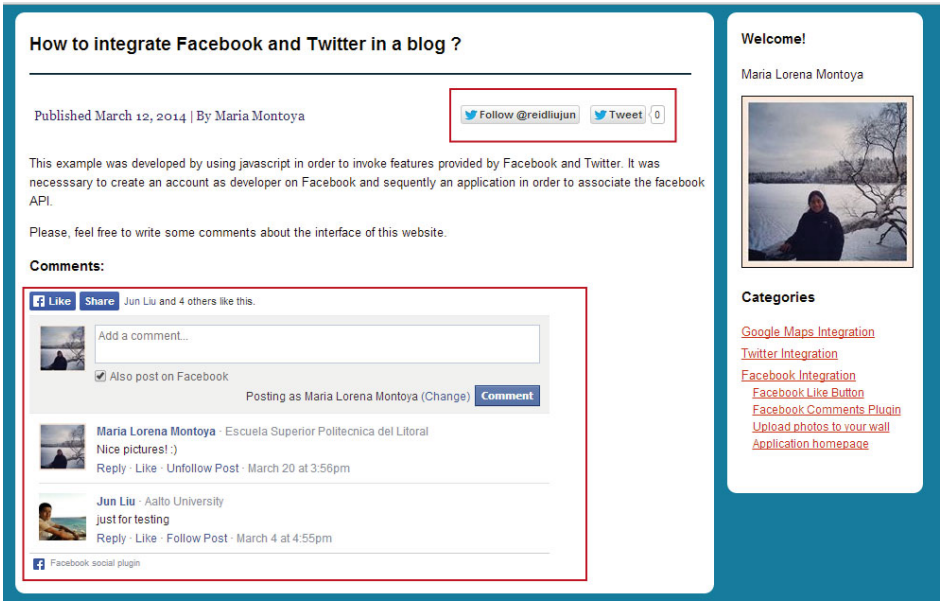

Figure 3: View of an article with the features of Facebook and Twitter integrated

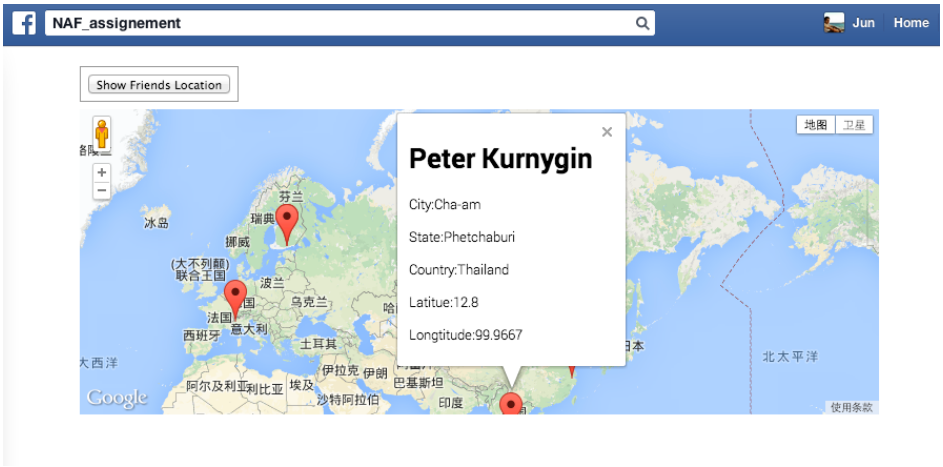

Figure 4: View of Facebook application webpage

2.3 Integration of APIs

- Facebook API: the usage of Facebook API is listed as follows:
  - Facebook SDK for JavaScript [4] : by using Facebook SDK for JavaScript, we can enable *Like Button*, *Share Button* and *Comment*. In order to use the JavaScript SDK, the application ID should be included in the source url.
  - Facebook SDK for PHP [5] : the Facebook SDK for PHP enables server-side functionality for accessing Facebook's API. The usage of PHP SDK in our development contains Facebook login implementation, Graph API and FQL. In PHP, user can authorize the privacy preferences that the application. Based on the permissions, the access token of the application is generated for the user, and then user can use Graph API and FQL. Graph API [6] is a primary way to get data from a Facebook account, while FQL [7] is a SQL-style interface to query the data which provides advanced features not available in Graph API. The data is sent back in JSON format which is easy to use.
  - Facebook canvas usage: Facebook supports the display of developer's website inside of Facebook with canvas feature. In order to use the Facebook canvas, the website has to enable SSL, and then secure url as well as the width and height should be configured in the Facebook development dashboard.
- Twitter API: we add several Twitter buttons in our website such as *Follow* and *Tweet*. The usage is very simple, just modify the button on the official website of Twitter development, and then copy and paste the generated JavaScript code to our website.
- Google API: the API we use for Google map is *Google Maps JavaScript API v3 X* [8]. By using the API key with authorized website url, we can get the history report of the website usage information from the Google console. The API is JavaScript based and it initializes the maps with the center location, zoom level and map type. Marks can be added to the map by the declaration of a new *Marker* object. The location of a certain address can be coded to the GPS location by using *Geocoding Service*.

[4] https://developers.facebook.com/docs/javascript/quickstart
[5] https://developers.facebook.com/docs/reference/php
[6] https://developers.facebook.com/docs/graph-api
[7] https://developers.facebook.com/docs/technical-guides/fql/
[8] https://developers.google.com/maps/documentation/javascript/tutorial

3 Learning Experience

The implementation of the static and dynamic page by using some known API's such as Facebook and Google was quite useful for us in order to apply the knowledge acquired in class. The level of difficulty was normal because we have programming skills and we are familiar with JavaScript, HTML and PHP. The most easy part for this assignment was the basic integration that only required the implementation of an static page and JavaScript functions. On the other hand, the most difficult part of the assignment was the deep integration because it involved the use of PHP with Facebook Graph API and FQL which was not familiar for us, hence we had to spend time on researching and learning how to use the API.
Each of us have worked around 20 hours on writing the code, testing the web site and writing this report.