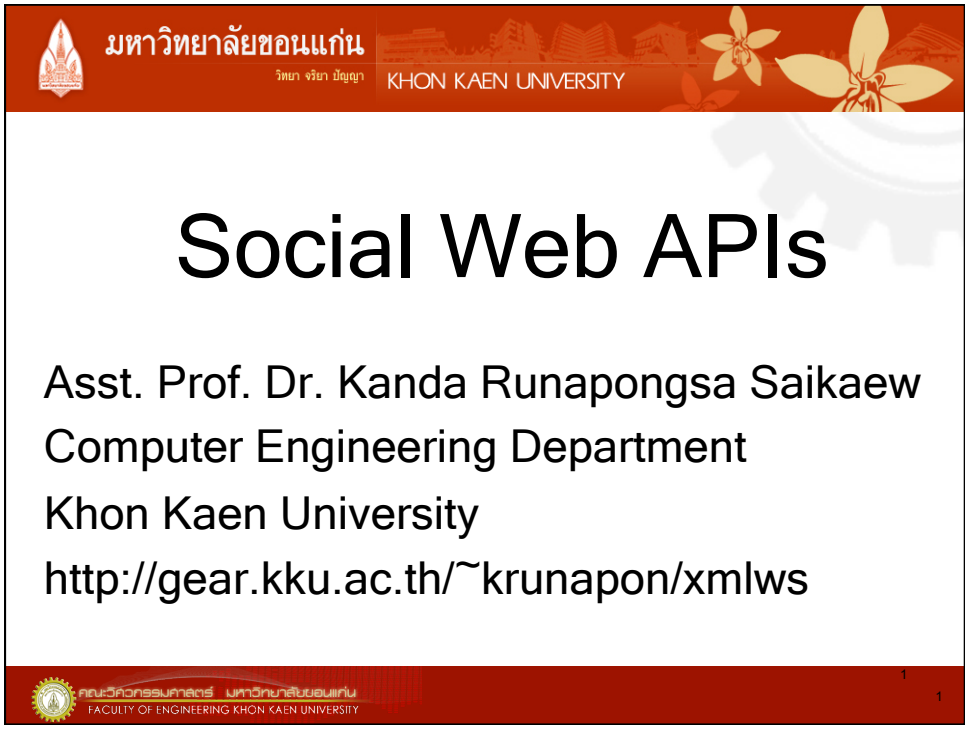
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KHON KAEN UNIVERSITY
Social Web APIs
Asst. Prof. Dr. Kanda Runapongsa Saikaew
Computer Engineering Department
Khon Kaen University
http://gear.kku.ac.th/~krunapon/xmlws
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Agenda
Social Media Usage
Twitter
Facebook
Foursquare
YouTube
Google Maps
Conclusion
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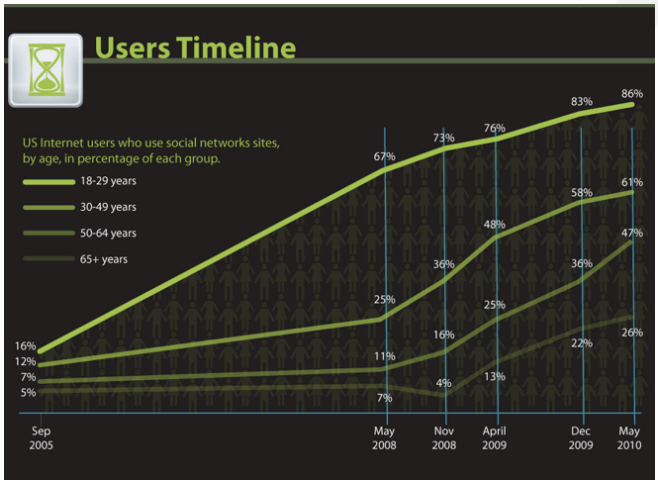
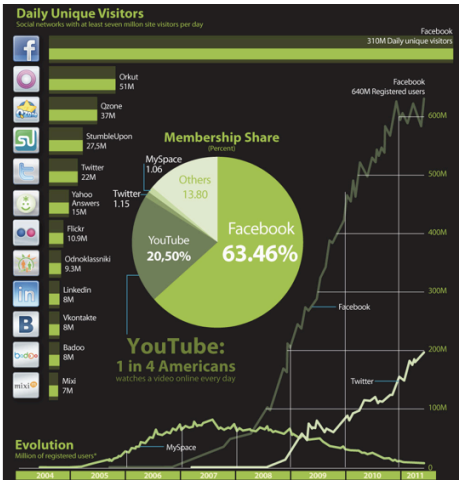
Social Media Explained

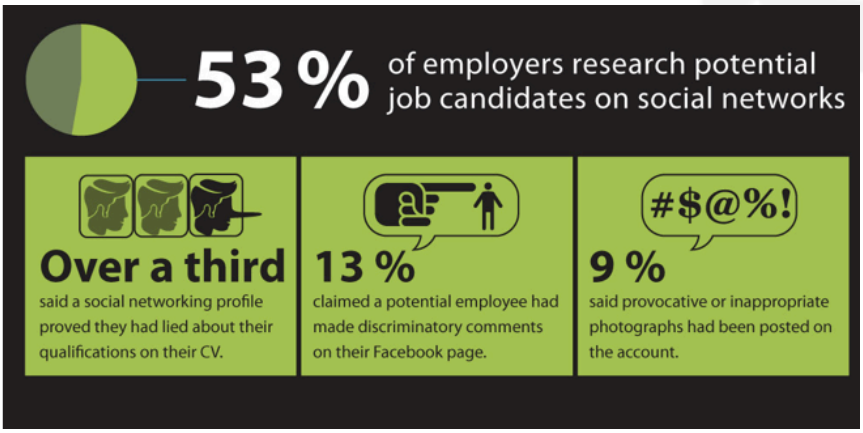
Users Timeline



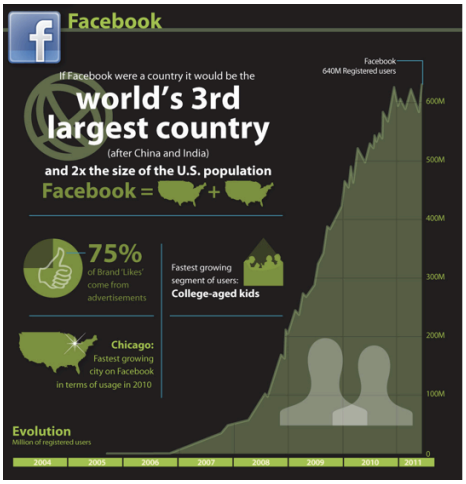
Daily Unique Visitors



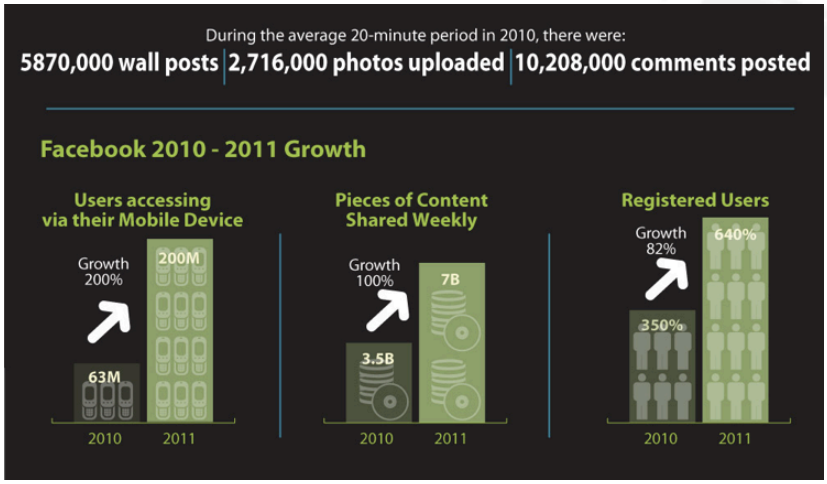
Job Candidates on Social Networks



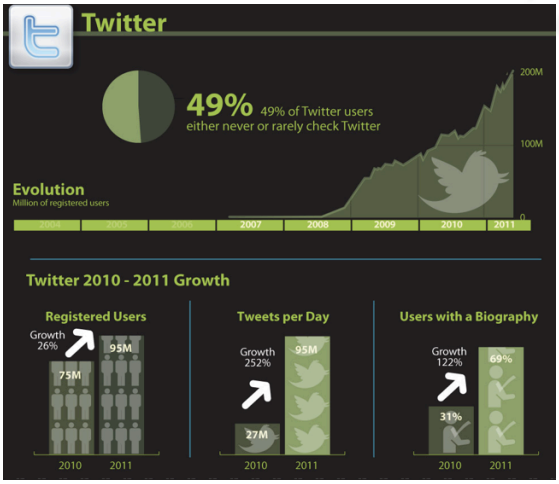
World's 3rd Largest Country



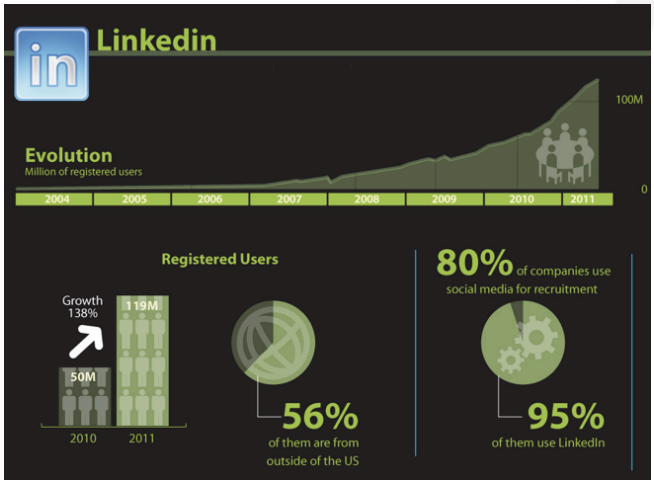
Facebook 2010-2011 Growth



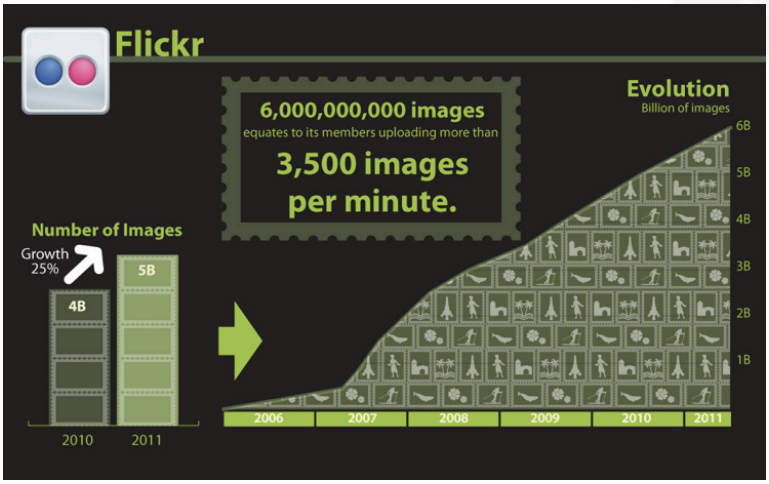
Twitter 2010-2011 Growth



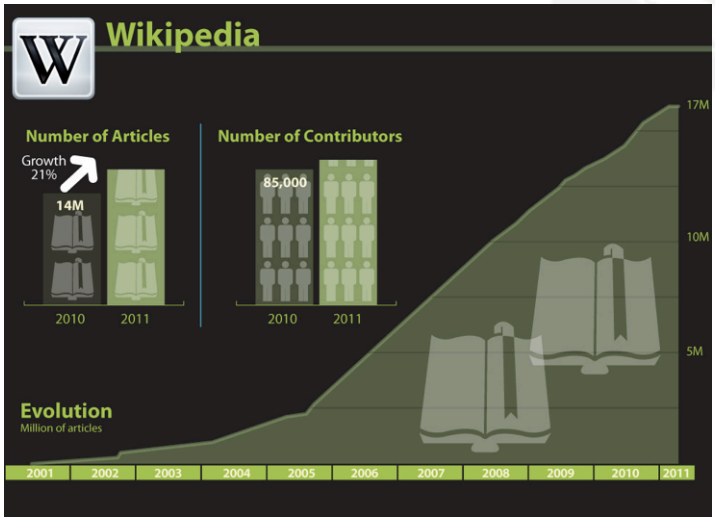
Linkedin



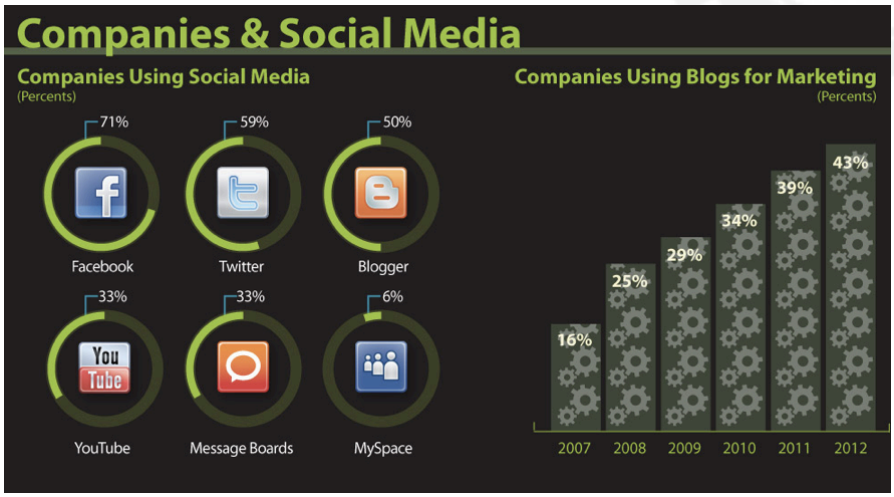
Flickr



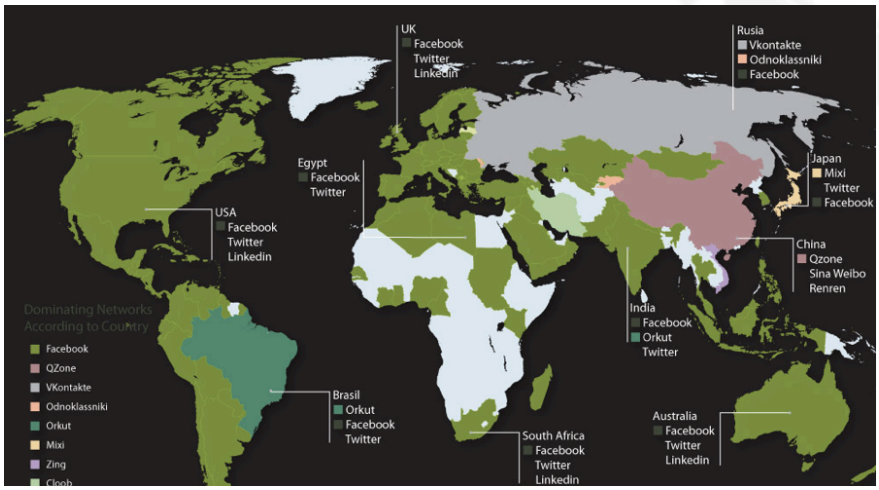
Wikipedia



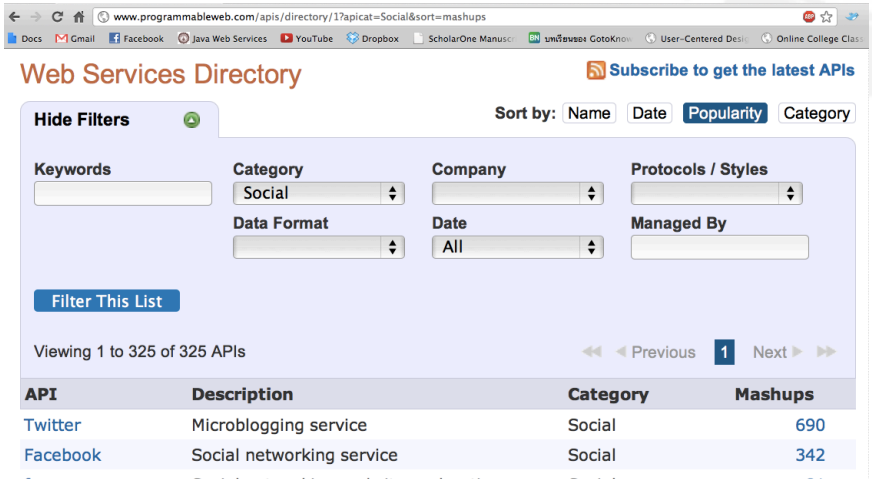
Companies & Social Media



The World of Social Media



Top Social Web APIs



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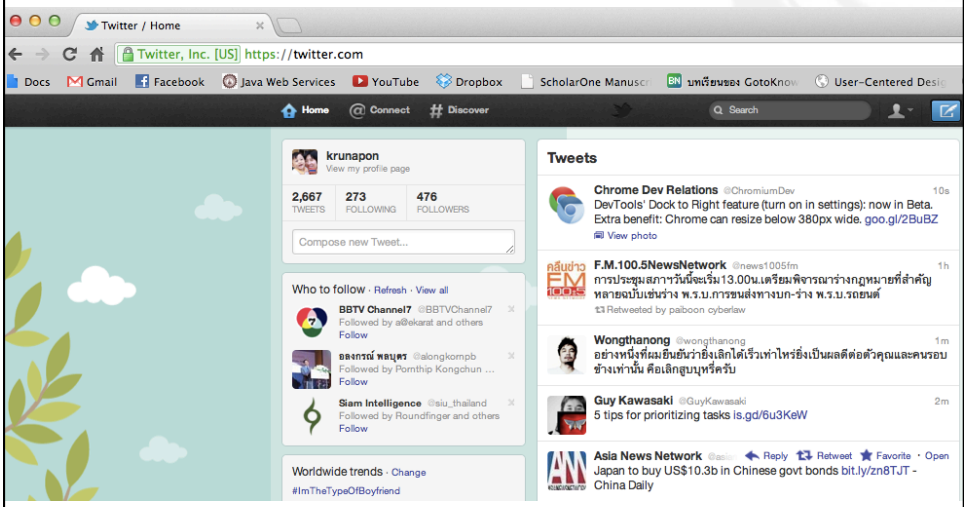
http://twitter.com



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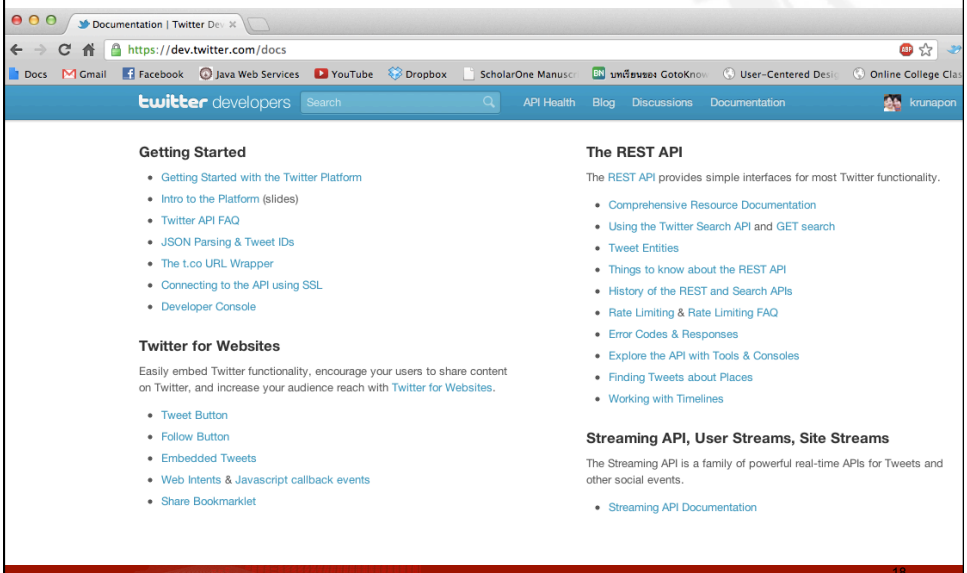
Twitter

- Twitter is broadcasting information to your followers and getting information from your followings
  - Used for : What are you doing ?
  - Used for : Question & Answer
- Basics about Twitter APIs
  - The Twitter API currently consists of two discrete REST APIs and a Streaming API
  - The Streaming API provides low-latency high-volume access to tweets

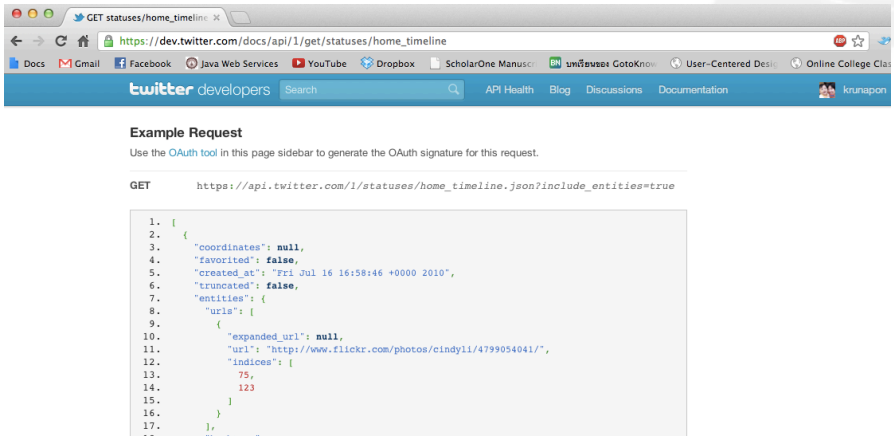
http://dev.twitter.com



Twitter APIs

- Methods to retrieve data from the Twitter API require a GET request
- Methods that submit, change, or destroy data require a POST
- A DELETE request is also accepted for methods that destroy data
- The API presently supports the following data formats: XML, JSON, and the RSS and Atom syndication formats

Sample Twitter API



http://facebook.com

Facebook

- Facebook is a social utility that connects people with friends and others who work, study and live around them.
  - Inbox Message
  - Instant Messaging
  - Event
  - Group
  - Picture
  - Video
  - Application Plug in

http://developers.facebook.com

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Facebook Developer Platform

- Facebook connect
  - Connect to Facebook on the Web, the mobile Web, and the iPhone
- Facebook APIs for managing the data about
  - Photo
  - Group
  - Application
  - Market Place
  - Friend
  - Notification

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Facebook Graph API

- The new Graph API attempts to drastically simplify the way developers read and write data to Facebook
- It presents a simple, consistent view of the Facebook social graph, representing
  - Objects in the graph (e.g., people, photos, events, and fan pages)
  - The connections between them (e.g., friend relationships, shared content, and photo tags).

http://graph.facebook.com/<username>

All responses are JSON objects

Facebook APIs and Tools

- FQL: Facebook Query Language
- Ads API: The Facebook Ads API lets you create and manage your own ads on Facebook grammatically
- Chat API: You can integrate Facebook Chat into your Web-based, desktop, or mobile

Facebook APIs and Tools

- Legacy REST API: The REST API enables you to interact with Facebook web site programmatically via HTTP requests
- Legacy FBML: FBML enables you to build Facebook apps that deeply integrate into a user's Facebook experience
  - To use JavaScript within FBML, use FBJS
- Legacy Javascript API: The old Javascript API provides a rich client-side functionality

Legacy REST API

- The legacy REST API is the previous version of the Graph API
  - Most of the methods required for canvas applications to integrate with Facebook have not yet been upgraded to the new API.
- It enables you to interact with Facebook web site programmatically via simple HTTP requests

JavaScript SDK

- The JavaScript SDK enables you to access all of the features of the Graph API via JavaScript
- It provides a rich set of client-side functionality for authentication and sharing
- The JavaScript SDK is also necessary to use the XFBML versions of the Social Plugins
- The most efficient way to load the SDK in your site is to load it asynchronously so it does not block loading other elements of your page

JavaScript SDK Sample

```
<div id="fb-root"></div>
<script>
  window.fbAsyncInit = function() {
    FB.init({
      appId      : 'YOUR_APP_ID', // App ID
      channelUrl : '//WWW.YOUR_DOMAIN.COM/channel.html', // Channel File
      status     : true, // check login status
      cookie     : true, // enable cookies to allow the server to access the session
      xfbml      : true  // parse XFBML
    });

    // Additional initialization code here
  };

  // Load the SDK Asynchronously
  (function(d){
     var js, id = 'facebook-jssdk', ref = d.getElementsByTagName('script')[0];
     if (d.getElementById(id)) {return;}
     js = d.createElement('script'); js.id = id; js.async = true;
     js.src = "//connect.facebook.net/en_US/all.js";
     ref.parentNode.insertBefore(js, ref);
   }(document));
</script>
```


FQL

- Facebook Query Language (FQL) enables you to use a SQL-style interface to query the data exposed by the Graph API
- It provides for some advanced features not available in the Graph API, including batching multiple queries into a single call
- You can execute FQL queries by fetching https://api.facebook.com/method/fql.query?query=QUERY
- You can specify a response format as either XML or JSON with the format query parameter

FQL vs. SQL

- Queries are of the form SELECT [fields] FROM [table] WHERE [conditions]
- Unlike SQL, the FQL FROM clause can contain only a single table
- You can use the IN keyword in SELECT or WHERE clauses to do subqueries, but the subqueries cannot reference variables in the outer query's scope
- Your query must also be indexable, meaning that it queries properties that are marked as indexable

FQL Sample

For any query that takes a `uid`, you can pass `me()` to return the logged-in user. For example:

```
SELECT name FROM user WHERE uid = me()
```

Other functions that are available are `now()`, `strlen()`, `substr()` and `strpos()`.

Here's an example of a subquery that fetches all user information for the active user and friends:

```
SELECT uid, name, pic_square FROM user WHERE uid = me()
OR uid IN (SELECT uid2 FROM friend WHERE uid1 = me())
```

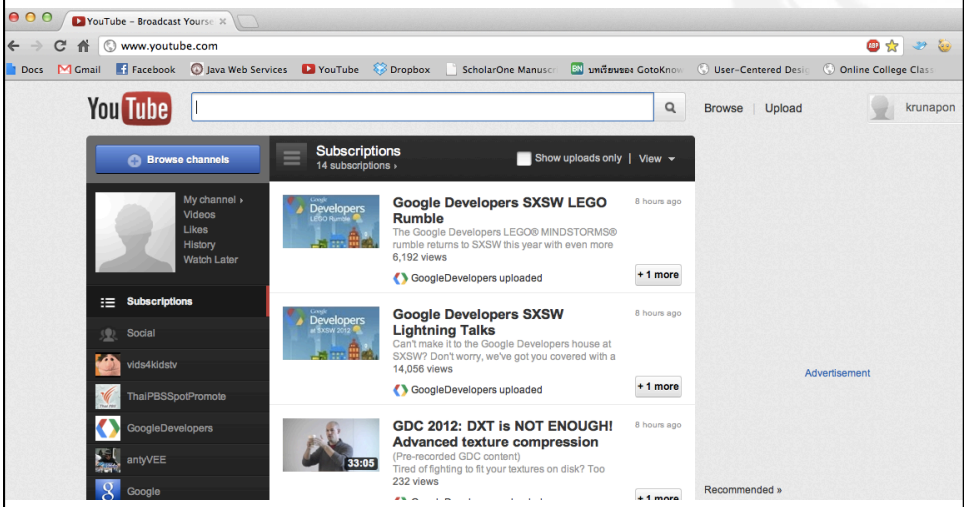
FBML

- FBML enables you to build Facebook applications that deeply integrate into a user's Facebook experience.
- We do not recommend FBML for new developers
  - If you aren't already using FBML, you should instead implement your application within an iframe, using the JavaScript SDK and social plugins for client-side integration with Facebook services
- If you absolutely must create an application that appears as a tab on a Facebook Page, you will need to use FBML

FBML Example

```
<fb:board xid="titans_board"
          canpost="true"
          candelete="false"
          canmark="false"
          cancreatetopic="true"
          numtopics="5"
          returnurl="http: //apps.facebook.com/myapp/titans/">
   <fb:title>Discuss the Titans</fb:title>
</fb:board>
```

YouTube



YouTube API

- The YouTube Data API allows applications to perform functions normally executed on the YouTube website.
- The API enables your application to search for YouTube videos and to retrieve standard video feeds, comments and video responses
- In addition, the API lets your application upload videos to YouTube or update existing videos
- Your application can also retrieve playlists, subscriptions, user profiles and more

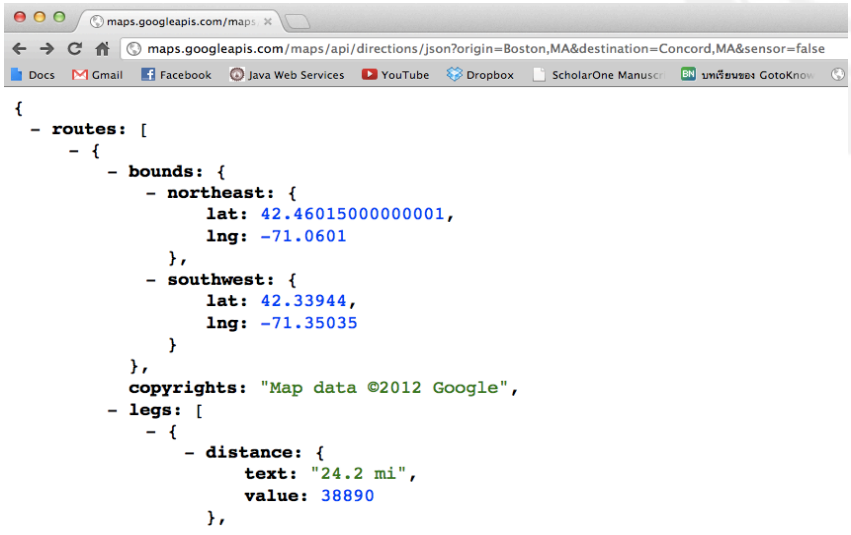
Google Maps API Web Service

- Directions API
- Distance Matrix API
- Elevation API
- Geocoding API

Google Directions API

- The Google Directions API is a service that calculates directions between locations using an HTTP request
- Directions may specify origins, destinations and waypoints either as text strings (e.g. "Chicago, IL" or "Darwin, NT, Australia") or as latitude/ longitude coordinates
- The Directions API can return multi-part directions using a series of waypoints.

Sample Google Maps Directions API



Distance Matrix API

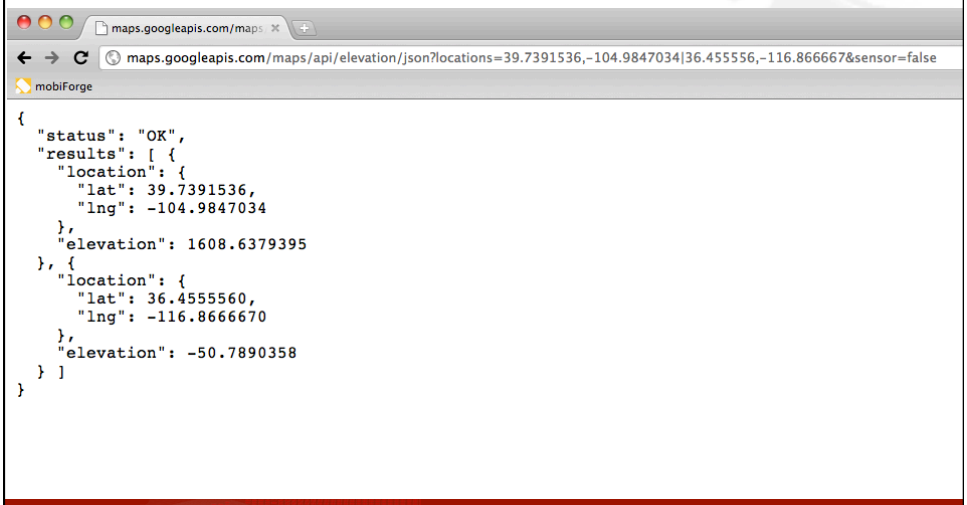
- The Google Distance Matrix API is a service that provides travel distance and time for a matrix of origins and destinations
- The information returned is based on the recommended route between start and end points, as calculated by the Google Maps API, and consists of rows containing duration and distance values for each pair

Sample Direction Matrix API

Google Elevation API

- The Elevation API provides elevation data for all locations on the surface of the earth, including depth locations on the ocean floor (which return negative values)
- In those cases where Google does not possess exact elevation measurements at the precise location you request, the service will interpolate and return an averaged value using the four nearest locations
- With the Elevation API, you can develop hiking and biking applications, mobile positioning applications, or low resolution surveying applications.

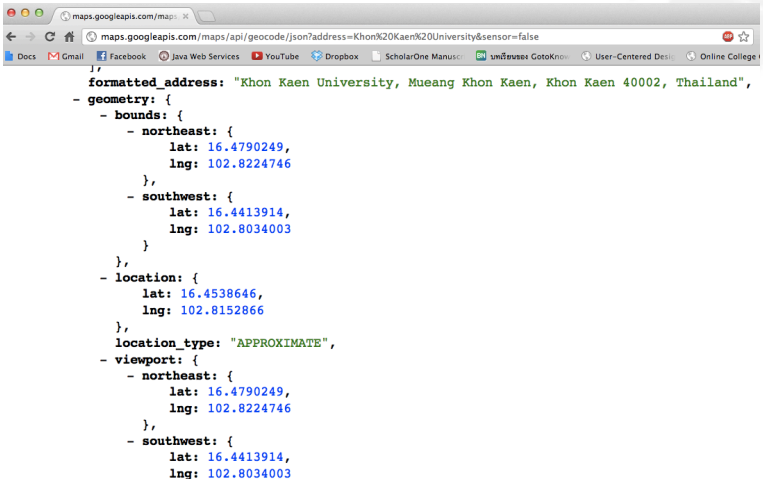
Google Maps Sample Elevation API



Google Maps Geocoding API

- Geocoding is the process of converting addresses (like "1600 Amphitheatre Parkway, Mountain View, CA") into geographic coordinates (like latitude 37.423021 and longitude -122.083739)
- The Google Geocoding API provides a direct way to access a geocoder via an HTTP request
- Additionally, the service allows you to perform the converse operation (turning coordinates into addresses); this process is known as "reverse geocoding."

Google Maps Sample Geocoding API



Conclusion

- Many social API Web Services are developed and invoked in many new applications
- Many millions of people around the world use social media
- We should learn how to call social API Web services
  - To access information about people
  - To distribute information to them

References

- http://www.jeffbullas.com/2011/09/02/20-stunning-social-media-statistics/