Mobile application for find alumni using social media application programming interface

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Abstract. The purpose of this research is to build a system that can determine the educational information of a Facebook user account even though the school information is hidden. Facebook as a social media that provides features for users to display user data in detail including the school or college a person is coming from. But the problem occurs when user privacy is enabled so that it cannot be found by other users and also search results that are still too broad in looking for someone. To determine the alumni then made an assessment of the peoples based on existing data derived from social media users. The attribute used to determine the calculation of the alumni information is school name, friend status, user hometown, user current location, user event page, and user like page. The calculation result show that if more number of event page and like the same page between user, then about more than 80% chance of both user have ever or is studying in same school. Furthermore, the results of this study indicate that the attributes of current location and hometown play an important role to determine between users coming from the same school.

1. Introduction
Mobile application for find alumni using Social Media Application Programming Interface is a system that can help to search alumni data easily with data source from social media system. Social media have become ubiquitous and are playing an increasingly critical role in society [1]. The wide use of social media platforms has generated massive user generated contents (UGCs). Social media grows into a gigantic database with abundant data, through proper analysis, the data can be utilized to gain a useful pattern and knowledge.

In this study, social media that will be used is Facebook. Facebook, the most popular Online social network is a virtual environment where users share information and are in contact with friends [2]. But not all the information on the Facebook user profile is displayed explicitly. Facebook allows users to control and customize the personal information they make available to other users [3]. For example, a Facebook user – let’s call her Alice – can configure her account so that her friends can see her photos and interests, but the general public can only see her name and profile picture on her public profile page. In particular, Alice has the option of hiding her attributes such as friend list, age, gender, relationship status, school information, and political affiliation in her public-profile page.

Based on the problems that have been described, the purpose of this research is to build a system that can determine the educational information of a Facebook user account even though the school information is hidden. By comparing each attribute of information between users, so that there will be
approximate similarity of information, one of which is education information. To get user profile data, will using Facebook Graph Application Programming Interface (API).

2. **Experimental method**

Facebook has features that can combine applications with its social networking functionality. To be able to produce applications that can use Facebook, then Facebook provides a platform that can be used by developers. The platform is a software environment component. One of the components provided by Facebook is the Graph API.

3. **Results and discussion**

Graph API is the main component used to request or insert data into social graph on Facebook. Social graph is a representation that shows information owned from an entity along with relationships with other entities. The Graph Facebook API can be seen in the **figure 1**.

Social graph is a representation of the data graph structure. Graph consists of nodes (points) and links (ropes), where links play a role to show relationships between nodes. The data on social graph that exist on Facebook can be accessed in two ways, that is through:

- **Graph API** It is the primary method used to add, delete, or retrieve data from social graphs using HTTP based requests to Facebook servers.
- **FQL (Facebook Query Language)** It is a method that can be used to access social graph objects through SQL-based interface. Objects can be accessed by using a query like in SQL. In the Graph API, objects represent nodes and links indicate relationships between objects. Objects contained in the Graph API is a collection of entities contained in Facebook, such as individuals, photos, videos, and others. Each of these objects can have a link that states a relationship, such as the relationship between individuals, or tagged photos given to some individuals.

**Figure 1.** Graph Facebook API.

To determine the alumni then made an assessment of the peoples based on existing data derived from social media users. The following is the method used to determine whether the user searched for an alumnus of the user looking for.

The attribute used to determine the calculation of the alumni determination is:

- Name school
- Friends status
- User location
- User Hometown
- User Event
- User Page Likes
Determination of the values of each of the determinant attributes:

- **Name_school**
  
  If name_school is the same then the value for name_school = 100. If it is not the same value name_school = 0.

- **Friend**
  
  If the status is friends then the value of value for status_friend = 100. If not equal value status_friend = 0.

- **Location**
  
  If the name of the current location is the same then the value for location = 100. If not the same value location = 0.

- **Hometown**
  
  If the original location name is the same then the value for hometown = 100. If not equal value hometown = 0.

- **Event**
  
  If the event name is the same then the value for events = 100. If not equal value events = 0.

- **Likes**
  
  If the name like page is the same then the value for likes = 100. If not equal value likes = 0.

The determination of the determining attribute values:

- **Name_school = 1**
- **Status_friends = 0.25**
- **Location = 0.1**
- **Hometown = 0.1**
- **Events = 0.1**
- **Likes = 0.1**

The selection of Hometown and Location attributes has been felt precisely to determine the similarity of school users, this is in accordance with the results of research conducted by R. Farahbakhsh that it finds strong correlations between Current City and Home Town attributes as well as (i.e. College and High School) and professional (i.e. Employers) attributes [2].

In a study of the Facebook users’ profile attributes, authors in [4] present a method to estimate the birth year of 1M Facebook users in New York City, based on the information available on their profiles, such as their friends. Authors in [5] examined the possibility of using the attributes of users, in combination with their social network graph, to predict the attributes of another user in the network. Other similar work [6] presents a study of Facebook profile attributes by analyzing a dataset of 30,773 Facebook profiles. They were able to determine which profile attributes are most likely to predict friendship links. They explore how profile attributes relate to the #Friends of a user's profile. An investigation of Facebook users’ privacy evolution in a dataset of a large sample of New York City (NYC) Facebook users, was presented in [7]. That study shows how the close/disclose status of profiles attributes changed over time.

### 4. Conclusion

Based on the results of the study, the system can determine a Facebook account that has privacy information can be estimated educational information based on the comparison of profile data with other accounts. The method used to calculate the approximate recommendation of educational information.

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