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# A Design of Facebook User Analysis System for Human Trafficking Page Monitoring in Thailand

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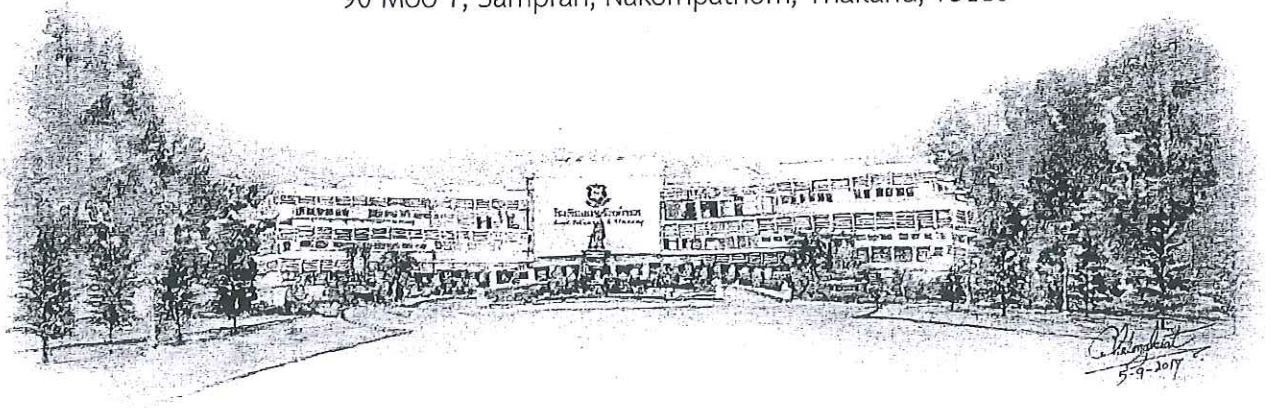
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## Abstract

This research aims to study and design a monitoring system for the Facebook user analysis from human trafficking pages in Thailand. The graph API was applied for data retrieval which is acquired from Facebook. This research also proposes the data analysis system using the keyword matching and the scoring system and applies statistics for managing the data relationships.

**Keywords:** Facebook user analysis, Facebook page monitoring, Human trafficking

## Introduction

Nowadays, the human trafficking is a major problem in Thailand which includes the prostitution of children, young people and women. According to Thai Children's Crime Against Children (TICAC) statistics (TICAC, 2018), there have been 112 cases of sexual harassment in Thailand that police officers successfully arrested the offenders since the beginning of this year. Currently, human trafficking has occurred in more various forms, especially with regard to human trafficking in social media; Facebook, Twitter and Instagram. Based on the statistics of Social Media Monitoring Security Operation Center (SMMSOC), Royal Thai Police (SMMSOC, 2018), found that more than 300 pages of social media in Thailand were related to human trafficking, which have not yet been investigated.

This research aims to study and design a surveillance and monitoring system for human trafficking in social media with a focus on Facebook as a case study. This is to setup a system to monitor users on Facebook pages that are likely to be used for human trafficking activities. The main concepts of this research were to analyze the data from the expression behavior of members in pages such as posting, sharing and liking (Anusorn and Siradanai, 2018). The data were managed by using keyword matching and score rating and the statistical methods were also applied to find the relationship among the members on the Facebook pages which are related to human trafficking.

### Theoretical Framework

In Facebook, the graph API is the primary way to get data into and out of the Facebook platform (Facebook graph API, 2018). It's a low-level HTTP-based API that apps can use to programmatically query data, post new stories, manage ads, upload photos, and perform a wide variety of other tasks. All of the SDKs and products interact with the graph API in some way, and other APIs are extensions of the graph API, so understanding how the graph API works is crucial for Facebook user analysis for human trafficking monitoring. The example of the graph API shown in figure 1.

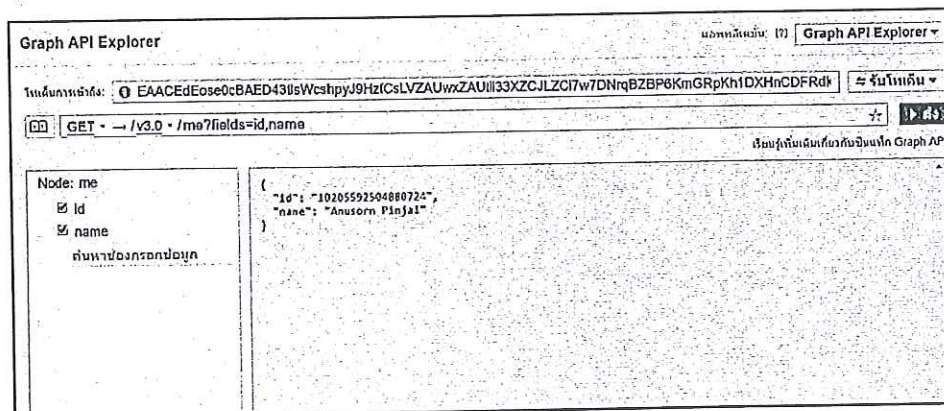


Figure 1: Facebook graph API



From the figure 1 the graph API is named after the idea of a "social graph" — a representation of the information on Facebook with JavaScript Object Notation (JSON) format. It's composed of:

nodes — basically individual objects, such as a user, a photo, a page, or a comment,

edges — connections between a collection of objects and a single object, such as photos on a page or comments on a photo,

fields — data about an object, such as a user's birthday, or a page's name.

Typically, we use nodes to get data related to a specific object, use edges to get collections of objects on a single object, and use fields to get data about a single object or each object in a collection.

The use of graph API probably noticed the access token parameter and placeholder value in the URL request. Most graph API requests require an access token. We eventually must learn how access tokens work by reading the access token documentation from the Facebook website.

### Methodology

In order to use graph API, firstly, users must have a Facebook account then go to the graph API explorer homepage to browse through the web browser by specifying the Facebook page name. The searching system for related information will require an access token to work with Facebook connection. The steps of accessing the data by using Facebook graph API shown in figure 2.

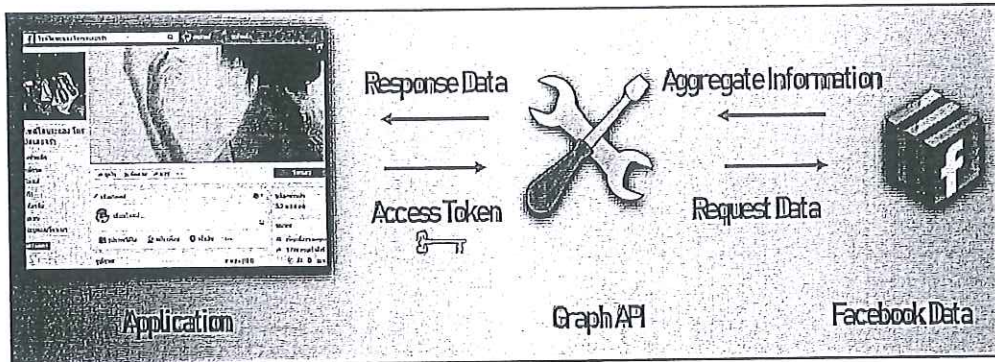


Figure 2: Accessing the data by using Facebook graph API

After the graph API is initialized, the computer program is used to extract the data and process the graph API with JSON format. All of related data was stored into the central database.

The keyword matching was applied to this research by storing the related human trafficking words from users and administrators. We used the list of keywords to match the words which is getting form Facebook data with graph API. The process of keyword storing and searching system shown in figure 3.

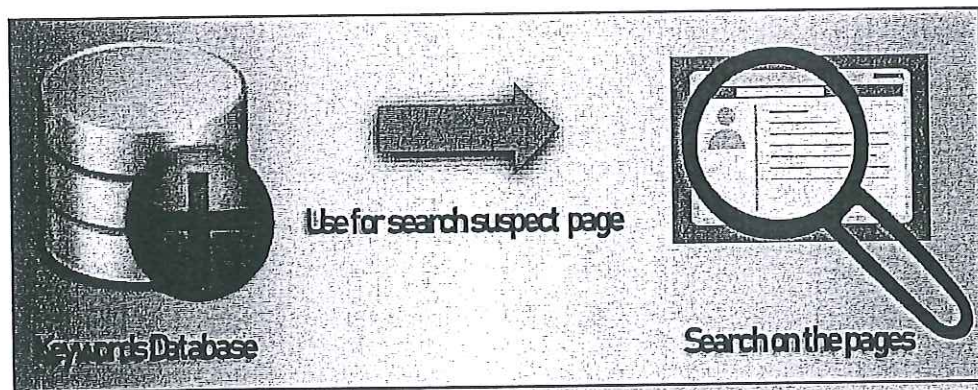


Figure 3: The keyword storing and searching system



## Results and Discussion

This system retrieves the related keywords from the central database to check and to match to Facebook pages and users. After to match the keywords to the words that appear on Facebook pages, then the score is calculated for each user by counting the relevant keywords derived from the user's posts, the user's shares and the user's likes. The example of score board system shown in figure 4.

Page ID	User_name	User_ID	Keyword	Score
786758	ตอ จะใครละ	54621658	นิตเจอ	250
786758	Suar Fang	457979979	ขายตัว	100
786758	วิรุฬห์ คำชู	856767675	Under 15	370
786758	Kentaky Love	79798989	คาน้ำ	255
786758	Chalermak Suwan	79795663	โซเชียลไลน์	190
786758	จ๊อด เรนเจอร์	31344545	บ๊วบ	400
786758	คนตามทาง ที่ไม่เห็นทาง	94154648	โอไม	50
786758	โซเชียลไลน์ เชียงใหม่	34684653	15-	95
786758	พิเศษรัฐ คินรวงศ์	73513543	18+	75
786758	Man Pitick	61568468	SL	165

Figure 4: The example of score board system

The processing of the human trafficking monitoring system is continuous real-time system. The overall results shown in figure 5.

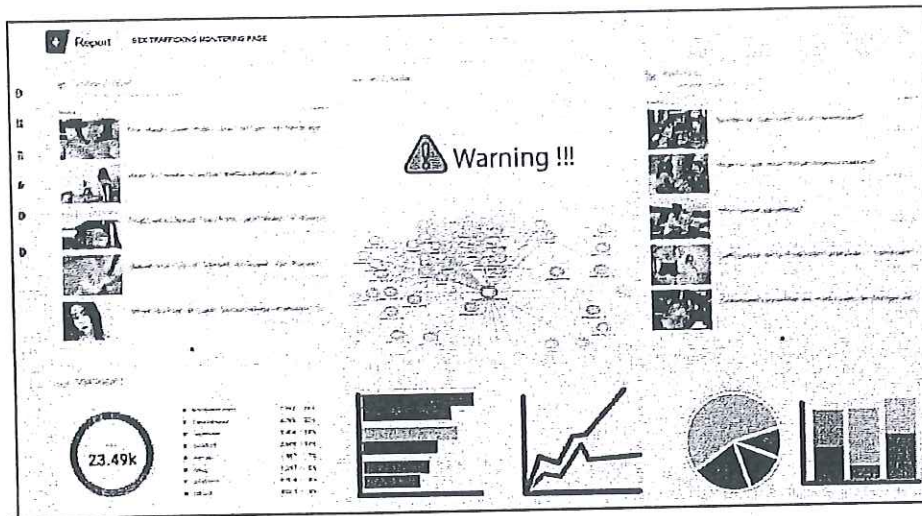


Figure 5: The overall results of human trafficking monitoring system

### Conclusion and Future Research

This research proposes a design of the human trafficking monitoring system on Facebook by using graph API. The keywords matching and the scoring system were applied to the step of data retrievals and relationships. This research is a prototype project for extending the human trafficking monitoring system of Thailand in the future.

### Bibliography

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