A Mobile App and an API for Essential and Useful Thai Herbs Search

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Abstract—Herbs are plants used for flavoring, food, and medicine. It is important to know about herbs before using it. Thus we propose to help people get access to herb data easier by developing an application called "Thai Herb Search" in the form of a web application, an Application Programming Interface (API), and Android application which can search herb data by herb names or properties via the given keyword. Our provided herb data API makes it easy for other developers to create new applications.

Keywords—Herb, Searching, API, Android application, Mobile, Web application, Health

I. INTRODUCTION

Nowadays Internet is no longer just about website and e-mail. People search for and learn useful information from the Internet.

Herbs are any plants used for flavoring, food, and medicine. It is important to know about herb before using it. There are many website on Internet providing the information about herb. But most herb information can be access only when we are connected to Internet. Furthermore, it is difficult to use their data for developing a new application.

Thus we propose to help people get access to herb data at anytime from anywhere by developing an Android application. We have developed Android application to search for herb information and also provided the API to make it easy for other developers to create new applications that used herb data.

II. RELATED WORK

There are many web applications and mobile applications developed to provide the herb information. Table 1 shows the comparison between three similar propose applications and our proposed application, Thai Herb Search.

TABLE 1: RELATED APPLICATIONS

Features	Thai Herb Search	Herbal Maejo University [1]	banban_ herb [2]	สมุนไพร ไทย [3]
Platform	Web/Mobile	Web	Mobile	Mobile
API	Yes	No	No	No
Offline search	Yes	No	No	Yes
Favorite Herb	Yes	No	No	No

As shown in Table I, although both "banban_herb" and "สมุนไพรไทย" provided herbs data like Thai Herb Search. However, for "banban_herb", users can perform only search by symptoms with Internet access. On the other hand, our proposed Thai Herb Search and "สมุนไพรไทย" can search herbs by name or symptom/properties without Internet connection requirement. In addition, Thai Herb Search application users can save the herbs to a favorite list. Such feature makes it easy for users to find his/her interested herbs easier next time. Moreover, Thai Herb Search Android application users can share the content of an application in the form of web URL.

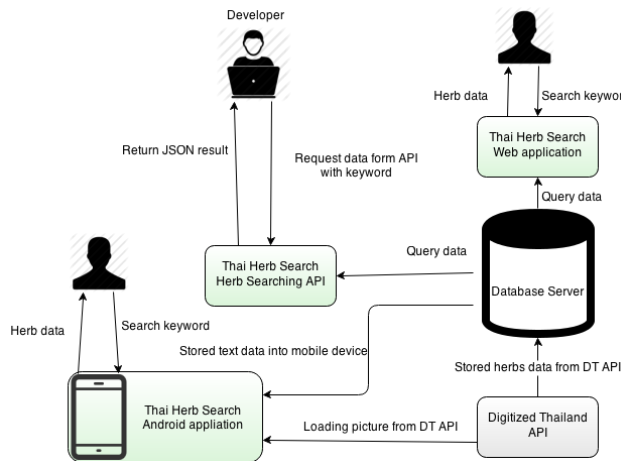## III. DESIGN AND DEVELOPMENT

Fig. 1. Thai herb search design overview.

Fig. 1 shows Thai Herb Search Design Overview. In this figure, an user can either directly Thai Herb Search Android application or Thai Herb Search Web application. Both applications query data from the database server which retrieves the data from Digitized Thailand API [4]. Other developers can also develop their own applications by using Thai Herb Search API that we provide.

Digitized Thailand (DT API) [4] collected many kinds of data in a digital form such as herbs data, Thailand tourist attraction data, and Thai silk data. First we called DT Herb API [5] that collected herbs data from KUIHerb [6] to get and store their data in our database. We store the herb data in the database to avoid repeatedly call API every time there is the search request.

We have developed our own Thai Herb Search API that has these following functions additional from DT API.

1) Search by name API: When a user enters an input keyword to system, it will match that keyword with herb name in database, and then show the search result.

2) Search by symptom API: When a user enters an input keyword to system, it will find herb properties data in the database that contains keyword, and then then show the search result. If the system cannot match herb properties, it will use Thai word segmentation and POS tagging API [7] to split text into meaningful units, and then perform the search process for each word unit. The system will show the number of results found for each word.

Thai Herb Search API is implemented using PHP programming language and the program accesses the data from MySQL database system. For the output response format of the API, we choose to have the returned format as JSON instead of XML because JSON is more concise than XML. In addition, JSON is a part of JavaScript thus it is easy for web developers to retrieve JSON data using their JavaScript code.

Thai Herb Search API is available at https://fb.kku.ac.th/warit-xml/ThaiHerb/api.php Fig. 2 shows the list of herbs in JSON which can be accessed via the developed API.

Fig. 2. API response (data format is in JSON).

We also use our own Thai Herb Search API to return data for Thai Herb Search web application which is available at https://fb.kku.ac.th/warit-xml/ThaiHerb/
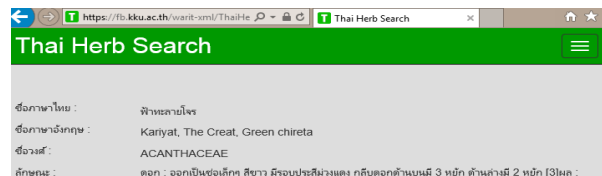

Fig. 3. Thai Herb Search web application.

In developing Thai Herb Search web application, we used HTML to specify the web content, CSS to control the presentation style, and Bootstrap [8] as a front-end framework to support responsive web design. The responsive web design is an approach to provide an optimal viewing experience—easy reading and navigation with a minimum of resizing, panning, and scrolling—across a wide range of devices (from mobile phones to desktop computer monitors)

Thai Herb Search Android application has been developed using JAVA programming language with Android SDK. We developed this application for people to use "Thai Herb Search" at anytime and from anywhere. This Android application will load herb data from Thai Herb Search API.

IV. EXPERIMENTAL ANALYSIS

In this section, we illustrate the features of an Android app which can be downloaded freely at https://play.google.com/store/apps/details?id=rangsiku npum.pamin.thaiherbsearch
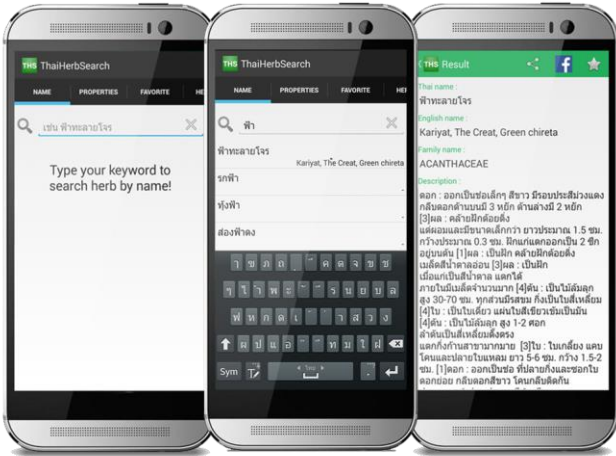

Fig. 4. Searching herbs by name.

In Fig. 4, it has been shown that users can enter only some part of the keyword and then the app will suggest the remaining part of the keyword.
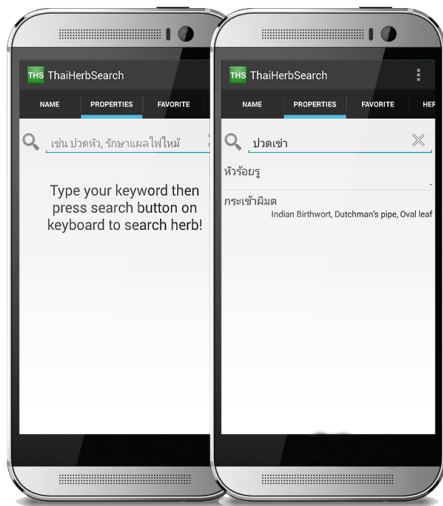

Fig. 5. Searching herb by symptom.

Fig. 4 and Fig. 5 show how Thai Herb Search android application works. It can search herb information by herb name as shown in Fig. 4 and search by the symptom that the herb can be used for as shown in Fig. 5.
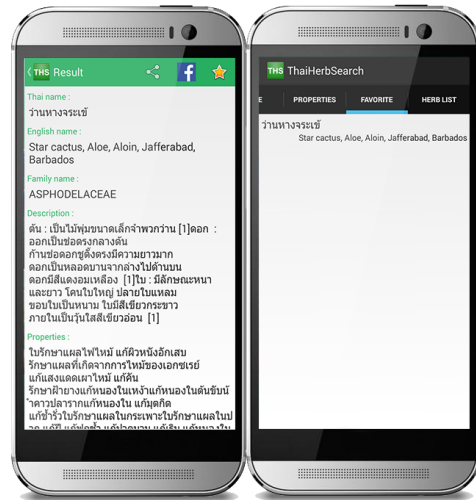

Fig. 6. Saving the herbs to favorite list

Fig. 6 illustrates that users can save the herbs to their favorite list. This feature makes it easy to users to read their interested without performing search every time.

In addition, the Android application also supports data sharing. The users can share the herb information via the URL of the web application as shown in Fig. 7.
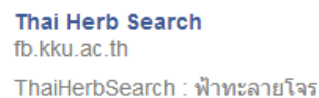

Fig. 7. Sharing the application content via Facebook

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V. CONCLUSIONS

We have developed Thai Herb Search in the forms of web application, web API, and Android application to help people access herb data easily and conveniently. It uses simple text matching method to search herb data.

In the future, we plan to improve our search algorithm to be more efficiently by using properties/symptom tags that will provide more precise

searching result. We will also add more details about herbs and add the herb pictures into application.

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