Implementation Application Internal Chat Messenger Using Android System

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***Abstract*— At present the development of rapid communications equipment makes easier to communicate globally. Chat messenger application is used for android users to communicate through internet and have a chat such as line, whatsUp, blackberry messenger (BBM), yahoo messenger and so forth. In communicating via instant messages, some people may also experience problems when communicating with foreigners, of which at least the required skills in the English language. The purpose of this research is to build the application chat messenger fellow android user through internal operation office. The result shows that the application can translate automatically in different language. It also shows the application can achieve the good performance in CPU, RAM, GPU and bandwith usage.**

Keywords— Android; internal chat messenger; Google API; Prototype

I. INTRODUCTION

Increasingly widespread type of smart phone models recently made the developers produce a variety of applications to facilitate in a life or community. The developer is also able to reap a profit by the applications public. One of the many useful public applications is sending a short message that we call instant chat messenger. In previous research, the applications are also built for disabled people which are peer to peer based applications [1-3], In this context, they are people who are unable to communication orally (mute) and are unable to hear (deaf). Usually, these people communicate using various methods, such as sign language and writing [4]

In communicating via instant messages, some people may have problems communicating with foreigners which needs at least the required skills in the English language. To overcome this obstacle, the authors tried to built with a translator feature. With this application, users can interact with other users by using a different language. For example, the message being sent using the Indonesian language will be automatically translated into English.

It is also be used for group or distibution team [5]. This chat application is also created for communication interanlly. Therefore, it uses the internal server. By using the internal server, it keeps on saving space and helps the users to skimp the memory device used. This application is based on android which has been common in the community and spread with rapidly around the world. It is also more easily understood and attractive.

II. RELATED WORK

A. *Instant Messaging*

Instant messaging is a kind of network service that allows two or more people to make text chat to each others. It is developed rapidly in recent years and integrated many functions such as offline message delivery, voice chat, video chat, file-transfer and so forth. Currently, instant messaging is one of the most popular network services in the Internet [6]. Chat Messenger is a conversation technology used for communication between two or more people simultaneously using a LAN network or area network or Bluetooth [7] that allows users to be able to send messages to other users in real time instantly through internet. Chat is the conversation using text, sound or video. The application are used such as such as Yahoo Messenger, Google Talk, Skype and so on.[8].

B. *Google API*

API is interpreted as a code or program which is the interface between an application or a web link that is created with the functions undertaken. Google API means the program code (simplified) which can be added to web application or to access / run / utilize the functionality or features provided by Google. For example, a feature google translate can be added to the application [9].

Google API can be studied directly through Google Code. There are many APIs provided by Google, some of which are: **Language API**: to take advantage of features that Google translation; **Earth API**: take advantage of the features available in Google Earth; **Javascript API; Maps API**: take advantage of existing features on Google Maps; **Search API**: utilize the search features in Google Search. **Visualization API**: create graphs and charts with the Google API. **YouTube API**: take advantage of features available on YouTube for example to video search.

One easy way to use Google API is Google AJAX APIs Playground. AJAX APIs playground is a site provided to direct a number of Google API-based AJAX (Asynchronous Javascript and XML). With AJAX based program, the code javascript can be embedded directly for the application (web).

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By using Google AJAX API, the time can be synchronized [10], and save some space for excessive coding.

C. *Prototype Model*

Figure 1 shows the model prototyping which is a technique for collecting information regarding specific needs quick operate user information. The prototype will be evaluated by the user and used to review the software development needs.

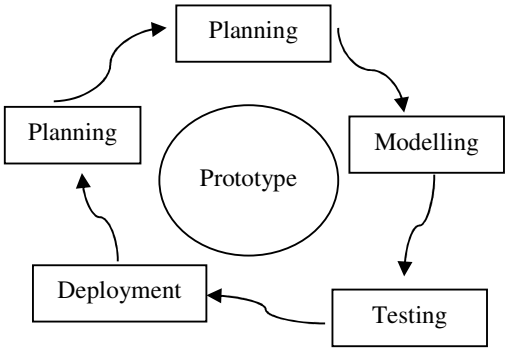


Fig. 1. Prototype development model.

III. PROPOSED METHOD

Chat messenger internal system development was adopted by begining with the analysis of system requirements for defining problems, needs user, as well as system design desired as shown in figure 2. The process will identify user needs, analyze the system and conduct feasibility studies as well as studies on the needs of users, including interface model, procedural techniques and technologies that will be utilized. The prototype was evaluated several times before the end user stating that the prototype is accepted [11]. The first step is doing some research to the employee by interview, observation and then collecting their some personal data. These interviews are conducted to find out the user problem in various devices. This step is conducted in each branch offices which has various languages. Then, the observation is conducted to observe the operational companies. This step expects finding the need of internal chat messenger system desired by the user.

The programming is based on design of prototype front screen display program (menu, texting, input, output) with android platform studio and MySQL database. Design system is built by using prototype software package description of procedures system. In Figure 3 shows when user A sends a message in a language, the message message is sent into a server that has been installed with API Google translate and starting to translation appropriate language based on setting language on server.

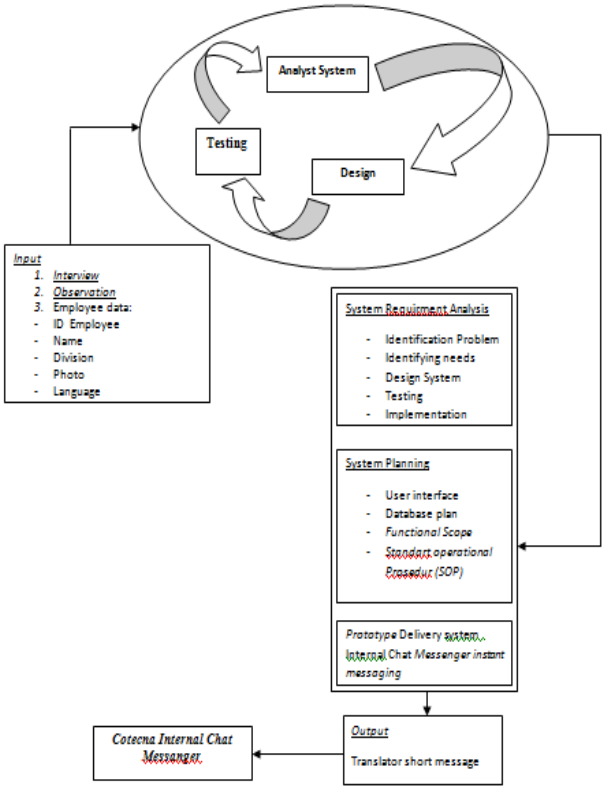


Fig. 2. Concept *Chat Prototyping*

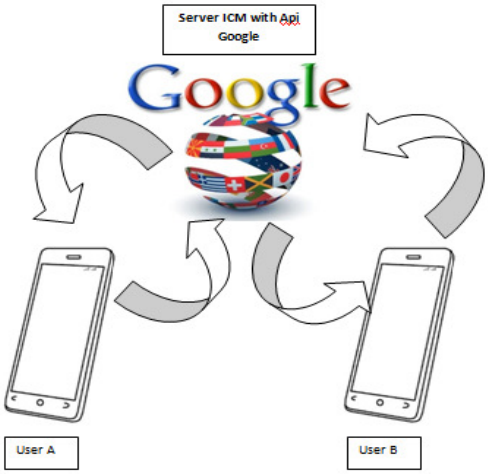


Fig. 3. Design system will be built

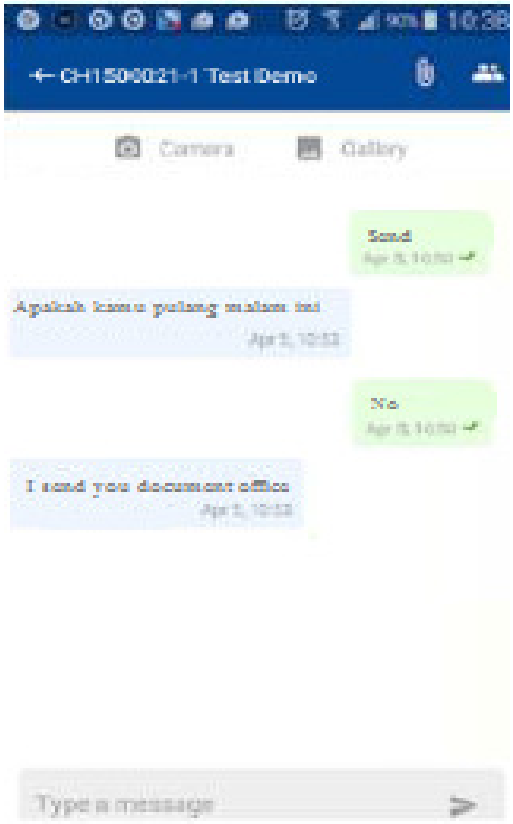
The server then translates to the languange based on user B before forwarding the message to user B. Likewise, the procedure also occurs when user B sends a message to user A.Therefore the data from each user should be valid especially

the language they used because it would be the basis of translation.

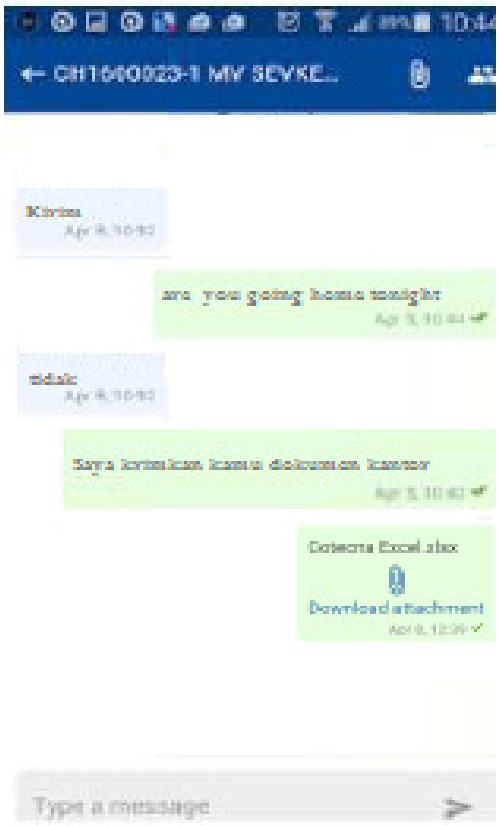
IV. Performance Analysis

To show the performance, some testings are conducted [12]. Fugure 4 shows the ability the application chat messanger translating languange between two users who uses Indonesia language A (Figure 4 (a)), and user B who uses English language (Figure 4 (b)). It shows that when user A send " *Apakah kamu pulang malam ini*", in device of user B shows the translation to English " *Are you going home tonight*.

This application also show the low source memory as shown in Figure 5. This figure shows that the machine processor only need 11 % which shows that the processor work lightly.



(a)



(b)

Fig. 4. (a) user A in Indonesia language (b) user B in englsih language

The graph of CPU increased drastically means that a lot of data that are in the system. The use of RAM and GPU are shown on Figure 6. This result shows that it can achieve good *buffering, sync* and *misc time* performance. This application is also implemented on chat group with 20 members. It also show the condtion RAM still visible.

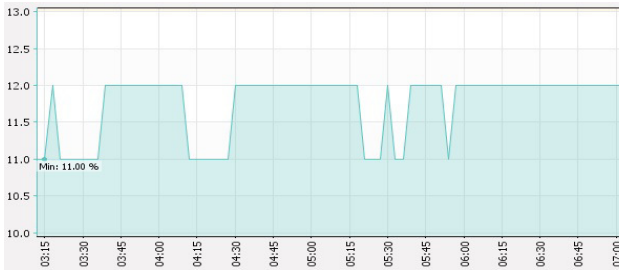


Fig. 5. CPU usage

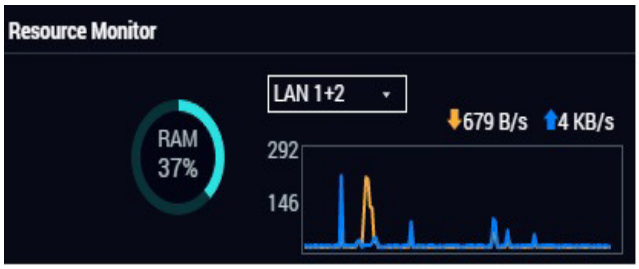


Fig. 6. RAM and GPU monitoring

Figure 7 shows the application is run on internet speeds up to 1 Mbps. The image 5 MB is transffered using this system. It shows that the transfer data is run quickly which takes about 30 seconds.

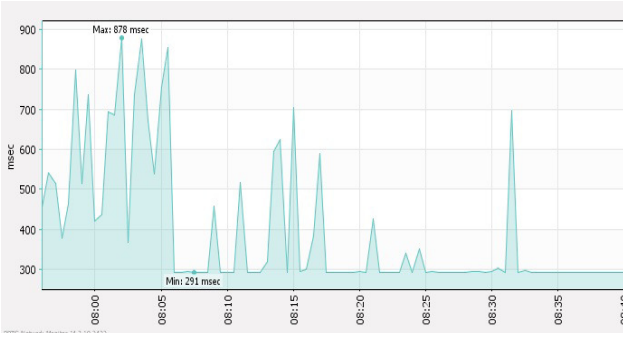


Fig. 7. Bandwith usage in transfer image 5 MB

V. CONCLUSIONS

This paper proposes creation an application messenger based on android system using a method prototype and google API to translate a language automatically. This application is built to save space storage capacity and lighten a processor for running applications that mentioned are implemented in the internal server. This application also shos the good performance in CPU, RAM, GPU and bandwith usage.

In the future, the feature application can be added to get the more performance such as video call, map (provided map API), and so forth.

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