

ABSTRACT

In this globalization era, understanding other language is one of the important needs for everyone. Many people visit other countries to do a lot of activities such as work, study even for a vacation, one of them is Japan. Japan has a different form of alphabet with the Latin alphabet generally. To learn the Japanese language requires to understand the alphabets. On the other hand, along with the development of technology, one of them is Android as an operating system that is mostly used by the smartphone users. Android is an open source operating system, it allows user to add application based on their needs. Therefore, an application for translating Japanese word that consists of basic alphabet of hiragana.

In this final project was designed a word translator application from Japanese language to Indonesian language on smartphone based on Android. The basic principle in this application is to use Optical Character Recognition (OCR) to recognize Japanese word captured by smartphone camera. This research uses Directional Feature Extraction (DFE) method to extract each of the Japanese alphabet's characteristic as an input. Then those characteristics will be compared with dataset that consists of 104 type of hiragana alphabet. Finally, the application will display the translation from input to the user.

The testing that conducted gave the best parameter result for application was at 4128x3096 pixel and 5312x2988 pixel image resolution where input consists of two and three word syllables. The best level of accuracy was achieved at 85.71% and 91.42%. The testing also showed that the clock speed of the device affect linearly against the system response time. Beta testing results of four points, namely the appearance of the application, the response time of the system, the accuracy of the translation, and the merits of the application shows the application can be classified as either.

Keyword: *Optical Character Recognition, Directional Feature Extraction, Support Vector Machine, Android*