ABSTRACT

Forms of sign such as road signs, information boards, warning boards, billboards and other forms that was written using language that is not commonly used such as Arabic, can confuse tourists who are visiting the country. An alternative solution proposed in this thesis is to design an application on Android smartphones that can do text recognition process directly through the camera possessed by the Android smartphone. The text that will be the purpose of the introduction is the Arabic text.

For the needs of the application design methodologies use UML (Unified Modeling Language). UML is a methodology that is currently the most widely used, especially in developing applications using object-oriented programming language. In this thesis, four diagrams used to design applications that are made, including use case diagram, activity diagrams, sequence diagrams and class diagrams.

Android applications are built to work with how to do the image processing text captured by the camera and the image processing results are transmitted to the OCR service to be recognized, recognition of the text will be sent to the translation services. Image processing techniques are used such as cropping, grayscaling and thresholding using Otsu method. The problems that arise are likely text images generated during image acquisition to be less than optimal due to factors such text image location can be anywhere and at various conditions.

In this final project, the issue of the condition of the text images to be analyzed by a test of the text images in various conditions. Based on the tests performed, the application has been built to recognize Arabic text quite well. The image of text can not be identified properly is due to the factors that led to the shooting position of the text in the image that are not well defined.

Keyword: *Image Processing, Android, UML.*