

ABSTRACT

Balinese ancient alphabet was originally from India and spread by Indian students during their studies in Indonesia. Up until now, this set of characters had gone through several modification phases in order to receive a strong acceptance to become Balinese traditional characters. Balinese ancient alphabet refers to *Pallawa* as well as Dewanagari characters. It similarly looks like Javanese alphabet but the major difference is only at its unique shape/curve. Balinese ancient alphabet had reached its glorious summit as a written formal letter and language among people in Bali during kingdom age. There were a lot of written documents as well as ancient scripts created using this set of characters and surprisingly, these scripts are still currently being used as a fundamental reference for traditional medicine and also to determine appropriate days for performing certain activities.

Nowadays, Balinese ancient alphabet is less interested by the youth since it is difficult to recognise its basic words' shapes. Balinese ancient alphabet's basic word has similar structure between one and another. Therefore, there will be a tricky problem encountered in identifying the basic word(s).

This Final Year Project develops an application in order to convert Balinese ancient alphabet in an image data that contains characters taken out from hardcopied-materials through *scanning* processes. The process of unique character extract implements *template matching* where it is used to explain the process of re-recognising the shape or character. In addition, unique character classification process relies on *K-Nearest Neighbor* method.

Testing is performed by picking up numerous samples from a *scanned data* and the best accuracy is shown at the unique character extract process. Overall, system accuracy is set at 75% with the time different for each character.

Keywords: Balinese ancient alphabet, *Template Matching*, *K-Nearest Neighbor*, *Scanning*.