# Abstract

Most known manipulation and analysis techniques originate from image processing and pattern recognition. The problem is how to recognize a shape at computer system. The final project studies how to identify and create new letter type through string matching process. The goal is developing an application that people can make new letter shape within modifying the old letter shapes and without design process. The string matching algorithm that is used is Boyer-Moore algorithm and the font format that can be processed is TrueType Font.

To solve the problems, the project uses Longest Common Substring (LCS) and Boyer-Moore string matching method. The LCS method is used to find maximal element from comparison of two strings. This element is a substring that appears in two comparison contours. The string matching process is used to find shape similarities. These methods work only in non-bidirectional shape but not in bidirectional shape.

**Key word:** shape analysis, shape modification, string matching, Boyer-Moore, shape similarities, TrueType font, longest common substring.