

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

With the development of the technology world, there are more new discoveries in technology. One of the developing sciences in technology is image processing. Image processing is programming science which designed to process digital images that can be used to identify images in more detail. This processed image is stored in digital form.

There is project which is from Eflin Winata, Helvi Risna, and Renni Angreni made in year 2016, titled “Identifikasi Jenis Bangun Datar dengan Algoritma Line Hough Transform dan Circular Hough Transform”. This program is also used to identify geometries by using the Line Hough Transform algorithm and Circular Hough Transform. And this program is successful and has an accuracy rate of 88.75%. The other journal which look alike this program is from Andri Pranata Kusuma, Koredianto Usman, and Suryo Adhi Wibowo made in year 2013, titled “Analisis Algoritma Transformasi Hough Dalam Mendeteksi Lingkaran dan Elips Berbasis Pengolahan Citra Digital”. This program uses the Hough Transform algorithm. But this program has not been successful in identifying geometries with curved lines (circles and ellipses).

This program identifies geometries by converting color images to monochrome images first. After the color changing in this image is complete, the next step is to detect the coordinates of the object. In this program, there are 4 points that will be detected. The program detects several geometries, there are square, rectangular, triangular, and also trapezoidal.

This program might be the basis for developing image recognition applications. Examples of applications that can use this program as a reference are

children's learning applications to recognize geometries, detect word on images, and other forms such as faces and also other objects.

## 1.2 Scope

1. Can this program identify geometries only by detecting edge points?
2. Can this program identify a geometries after rotated?

## 1.3 Objective

The purpose of this project is to identify geometries in 2-dimensional images which of course are digital images. The results are the information about geometries were found or not, the type of geometries which identified, and the results of the calculation of its area.

