

## **ABSTRACT**

Driving Simulator is a device used to simulate driving virtually, designed to imitate real driving conditions. The making of the Driving Simulator is aimed to train new drivers to operate in main roads without having to be in a real road. Aside from driving training, Driving Simulator can also be used to reduce the rate of accidents caused by novice drivers.

Driving Simulator has three main parts: input system, visual system, and output system, all connected to one another. When all the three parts are put together they will form a greater system called the Driving Simulator for Driving Training.

In this Final Task, there will be made an input system that consists of the steering wheel, acceleration pedal, brake pedal, and gear shift that has a function of providing input for the visual system and affect movement of the output system. Accuracy and stability of the input system are mandatory for a good system performance. Implementation of the control system using PI parameters for stability of the accelerator and brakes, while using an encoder for the steering with a precision of 0.01 mm is highly appropriate for the input system in Driving Simulator of this research. Test results show a stable system in an estimate of 1.7 second, and yields an accuracy of 99.69% to 99.81%.

Keywords: Simulator, Driving, Input, System