ABSTRACT

Seesaw is a game that made from a long straight board which the equilibirium point at its center, if one of its side rise then another side will be down. This game usually exist in the playground. The playing method of seesaw is each kid sit in each end, then each kid take turns rise their foot from the ground so that seesaw can be played. The increaement of both side will be different.

This thesis that I designed aim to control velocity of seesaw's movement in stable state at both side that have different load automatically. In other side, this seesaw also designed so that can be played by one child that only exist in one side.

This seesaw use a prototype as initial simulation with maximum load at ±300 gram and the length of board is 20 cm in each side. This tool use DC motor as activator, controlled by microcontroller ATMEGA32 that use rotary encoder censor as feedback system, and use Liqiud Crystal Display (LCD) to monitor and display the velocity of seesaw. Angular velocity in DC motor will bring up-down movement on seesaw. The Algorithm that used is PID Method. This method is done to reach desired setpoint.

The system is simply designed and use PID method. Using this PID method is expected can generate good seesaw system performance such as low overshoot and setting time on slow process, but the weakness of PID is the parameter to control depend on the obect.