

ABSTRACT

Train is one of mass transportation used by the people of Indonesia, because it has its own line to avoid the congestion. This transportation equipped with the crossbar on each road where the line crossed. The doorstep train system currently control by operator manually to open and close the crossbar which is mean sometimes not safe for people because of human error. It means we need to carry the safety on the doorstep train system so we can pretend the accident.

To solve this problem we need an alternative control system for the doorstep train thus we can reduce the risk of human error and improve the security. The automation in doorstep train can also improve safety for road users and the train itself.

This final project will show a design to an automated control system that can predict the arrival time of trains that cross the road in order to be given a warning and give the countdown time when the train will come through. The basic technology in this automatic control is the Arduino microcontroller combined with ultrasonic sensor. The sensor will sense when the train is coming and sent a signal to Arduino. The Arduino will compile the signal from ultrasonic sensor and sent a signal to crossbar actuator to closed it and also to the timer.

With this system, we can control and give a warning sign to the people to aware and reduce the accident rate.

Keywords: *Arduino, Train, Doorstop ,Crossbar*