

## ABSTRACT

Growth in vehicles directly give some views about condition transportation sub sector. Along increase of population, request for having vehicles are increase too. With increase for having vehicles, land of parking lot is limited.

In this final project discusses about parking reservations on smart parking, by creating prototype parking reservation systems using the NodeMCU microcontroller as controlling and the android application as controlling and monitoring. The microcontroller will be placed in each parking slot with an ultrasonic sensor as a vehicle detector which is one of the components connected to the microcontroller, buzzer for notification sound, LED for signify parking slot, and keypad for code who make from user. Users can make parking reservations by using an android application that have account before, also connected to the internet network in order to save time and no longer need to look for a parking slot.

There are have result for functional testing hardware, android, also ultrasonic sensor which are the result for testing are all good. There is testing for QoS (Quality of Service) too and the result for average total delay from every parking slot is 0.1 seconds and average total throughput from every parking slot is 18572.752 bit/s.

*Keyword: vehicles; Parking reservation; microcontroller; NodeMCU; Android; Delay; Throughput.*