# Abstract

The growing number of vehicles the car from time to time can be difficult for users to find an empty parking lot. In real conditions many empty parking lot, but hard to find. From the discussion above appeared an idea to build a system that can give information about the condition of the parking area. This is important to the ability of the system is able to update the data on state park land in realtime to the user system.

This thesis explores the implementation of systems related to automatic checking of the parking lot. By using the technology of WSN (Wireless Sensor Network) as a means of communication ZigBee systems. The use of ZigBee in accordance with the needs of nature that *requires* a small power consumption, speed of delivery is great and the price is cheap (compared to cable installation). Testing was performed using an analog sensor data reader in grayscale as a parking zone. Processed information is then sent to a computer that is then processed into information.

Based on the test results, it was found that the system worked as expected which may provide information regarding the status of the parking lot (filled or empty) to the user automatically parking sensor with a threshold of 685. Maximum delay of the network system obtained is 1.076923 ms. This delay is in accordance with real-time systems. Optimal distance for the system to work is 30 meters with a success rate of 95% data delivery. For distances over 40 meters communication between nodes is lost.



**Key Words**: Car parking Area Checking, *Wireless Sensor network*, Analog Grayscale Sensor, ZigBee.