

Automated car parking Indicator System in Myanmar

**Topic selection:
Smart Environment Protection**

Dr. Myat Thanda Khin

Embedded System Lab., University of
Computer Studies, Yangon

E-mail: myattk05@gmail.com

Background of the proposed system

- Human mobility is a necessity in today's world.
- It has a significant impact on both quality of life and the economy of modern societies.
- Transport systems are a key element in developed or developing countries.
- Due to the proliferation in the number of vehicles on the road, traffic problems are bound to exist. This is due to the fact that the current transportation infrastructure and car park facility developed are unable to cope with the influx of vehicles on the road.

System Requirements

Arduino UNO

Resisters

IR Sensors

LCD display

LED

BC547 Transistor

Capacitors

Power supply connector

Crystal Oscillator

USEFUL

- Reduce traffic congestion and accident.
- Less use in gases so it can solve environmental problems.
- Reduce the costs related to the deployment of technology.
- More convenient for driver to see that parking is free.
- More efficient wasted time to wait parking.

Proposed System

- The increasing numbers of automobiles, illegal roadside parking and other factors have affected traffic congestion and accidents, while exhaust gases have created environmental problems.
- In the parking system solutions field, automated car parking indicator system provides comprehensive support for the operation of parking lots, which have today become an essential part of the urban transportation system.

Cont'd

- Problems such as traffic congestion and insufficient parking space inevitably crops up.
- In Asia, the situation are made worse by the fact that the roads are significantly narrower compared to the West.
- Various measures have been taken in the attempt to overcome the traffic problems.

Cont'd

- The problem can be addressed via many methods, the proposed system focuses on the car park indicator system introduced, which is the smart parking system.
- The various sensor systems used in developing the systems in addition to the recent research and commercial system on the market are examined as vehicle detection plays a crucial role in the smart parking system.

Cont'd

- The system performs only monitor the entry or exit of vehicles from the parking area from the systems that are able to detect whether each parking space is occupied or free.
- Systems belonging to the first type are easier to deploy and less expensive, appropriate for monitoring the occupancy levels of large outdoor parking areas.
- The proposed system is designed to monitor the entry and exit of vehicles into and out of outdoor parking zones located on public roads, not to monitor every single car space available, thus reducing the costs related to the deployment of technology.

Cont'd

- The system has been tested in closed car parks.
- On public roads, the system would not account for every single slot, but it is designed to provide estimations on real-time occupation levels.
- Basic concept behind this system is to measure and display the number of cars entering in parking and if there is full of parking, LCD display no parking area and red led turn on.
- This works in a two way. That means counter will be incremented if car enters the parking and will be decremented if a car leaves from the parking.
- In addition, it will automatically control LED lights .
- When the parking is full, red LED is on and when parking is free area, green LED is on.

Cont'd

- Sensor 1 has three sensors, front sensor, height sensor and rare sensor.
- If front sensor senses a car, at the same time it gives a delay of 1sec so that the car can cross the height sensor and the rare sensor.
- Sensor 1 informs the controller that a car has entered so that controller can increment the count.
- If there is at least 1 free parking is inside the parking, a GREEN LED will glow and LCD displays number of available parking space.
- Sensor 2 has also three sensors, front sensor, height sensor and rare sensor.
- When a car exits, the front sensor senses and similarly it also provides a delay of 1 sec to cross the height sensor and the rare sensor.

Cont'd

- Sensor 2 informs the controller to decrease the count.
- The count is displayed on LCD by the controller.
- When the parking is full, RED LED will glow and LCD display Unavailable parking space.
- In this form, the driver can see away from the LED light and know that parking is free or full.
- It can reduce the traffic congestion and unexpected accident.
- The system of informing of free parking lots provides support for drivers by directing them in real-time to the vacant spaces.

Overview of system

