# ASSIGNMENT 1

**SUBMITTED BY,**
**GROUP 1**
**JOYAL RAJU (C0749019)**
**MERLIN MARIAM THANKACHAN (C0748721)**
**SRUTHY KRISHNAN (C0749122)**

# EXISTING EMBEDDED SYSTEMS

- IoT based smart parking system.
- IoT enabled alcohol detection for road safety.
- IoT based patient monitoring system.

# IoT based smart parking system

- System uses IR sensors to detect the presence of vehicle in the lot

-  PIC microcontroller is the processing unit

-  LED is provided to identify the spot and for controlling entry of vehicle

-  ESP8266 Wifi module is used to transfer data to administrator

- Arduino based smart parking system uses IR sensor for vehicle detection and GSM module is used to send message to user

# Disadvantages

▶ Processing speed is low, or improvement is possible

▶ IR sensors are not reliable as it can be affected by sunlight and dark object

▶ Interfacing ESP8266 with PIC is complicated and not reliable

▶ GPS location is not provided for customer

▶ Multiple entry of vehicle is not possible at a time which makes waiting time more

▶ Provision for multilevel parking is not present

# IoT enabled alcohol detection for road safety.

- Blood alcohol content (BAC) level of driver is detected using MQ3 gas sensor

- Initial driver state is being uploaded to webpage

- GPS module provide the coordinates of driver's location

- When BAC passes preset threshold value vehicle will be stopped with a buzzer.

- Drivers coordinates will be delivered to the officials through webpage to evacuate the driver to prevent traffic.

# Disadvantages

- Power consumption is more as it drives the starter motor.

-  Not cost effective

-  Design is bulk as it has starter motor and its driving IC

- Hard to distinguish heavy perfume and alcohol content

- Design can be minimized

# IoT based patient monitoring system

- ▶ System uses pulse rate sensor to sense pulse rate and LM35 sensor to sense temperature with Arduino as processing unit.

- ▶ ThinkSpeak is a cloud system used to analyze the data

- ▶ System diagnosis type 1 diabetes using glucose sensor with Arduino as processing unit

- ▶ System analyzes the blood pressure from the heart rate sensor and this information is transmitted to a web server

# Disadvantages

- Combined system is more reliable
- Individual systems are cost ineffective
- In a combined system Arduino cannot be incorporated with all sensors at a time.
- Customer satisfaction is less

# REFERENCES

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