

Automatic smart parking system using IOT

MeghaPahade¹, Dharadevi Katre², Nagma Sheikh³, Prof.Aman Arora⁴

¹(Department Of Electronics And Telecommunication SRPCE Nagpur, Email:Meghapahade888@gmail.Com)

²(Department Of Electronics And Telecommunication SRPCE Nagpur, Email:Dharakatre111@gmail.Com)

³(Department Of Electronics And Telecommunication SRPCE Nagpur, Email:Nagmasheikh773@gmail.Com)

⁴(Department Of Electronics And Telecommunication SRPCE Nagpur, Email:Aman.Arora1407@gmail.Com)

Abstract:

It's difficult for the people to update with the growing technology. And it mainly focus on reducing the time in finding the parking lots and also it avoids the unnecessary travelling through filled parking lots in a parking area. In this study we design a Smart Parking System which enables the user to find the nearest parking area availability of parking slots in that respective parking area.

Keywords — ultrasonic sensor, GPS module, PIC, Microcontroller, IOT

1. INTRODUCTION

The current switch in home which produces flashes and furthermore brings about flame mischance's in couple of circumstances. Considering the uses of Wi-Fi a propelled robotization framework was the task helps at outlining a propelled keen stopping framework utilizing this innovation. The gadgets can be exchanged ON/OFF utilizing a versatile through server (Wi-Fi). Mechanization is the most every now and again spelled term in the field of hardware. The yearn for robotization acquired numerous insurgencies the current advances. These can be used as a substitution made to screen the status of ceasing spaces. Wi-Fi (Short for Wireless Fidelity) is a remote innovation that utilizations radio recurrence to transmit information through the air. Wi-Fi has beginning rates of 1mbps to 2mbps. Wi-Fi

Transmits information in the recurrence band of 2.4 GHz. It actualizes the idea of repeat division multiplexing innovation. Scope of Wi-Fi innovation is 40-300 feet. The controlling gadget for the checking in the wander is a Microcontroller. Microcontroller gathers the information. Microcontroller accumulates the data. Microcontroller examines the data and sends the data over Wi-Fi to the IOT site page. The Microcontroller is adjusted used introduced „C? Tongue Implements the possibility of repeat division multiplexing development. Microcontroller scrutinizes the data and sends the data over Wi-Fi to the IOT site page. The Microcontroller is customized utilized implanted „C? Dielectric Implements the idea of

Innovation. Scope of Wi-Fi innovation is 40-300 feet. The controlling gadget for the observing in the undertaking is a Microcontroller. Microcontroller gathers the information. Peruses the information and sends the information over the wifi.

2. BASIC COMPONENT LIST OF PARKING SYSTEM:

- stepper motor
- unshaped photo sensor
- seven segment display
- PIC microcontroller
- Transmitter
- Receiver
- Ultrasonic sensor
- Micro controller (16F73)
- 2Crystal oscillator
- Regulated power supply
- LED Indicator
- Wi-Fi module

3. CIRCUIT DIAGRAM:

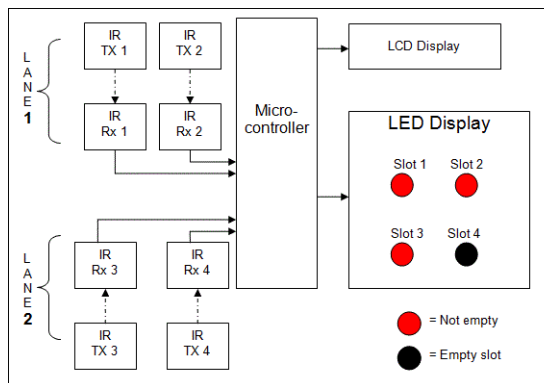


Fig 1. Circuit diagram

4. PIN DIAGRAM OF MICROCONTROLLER:

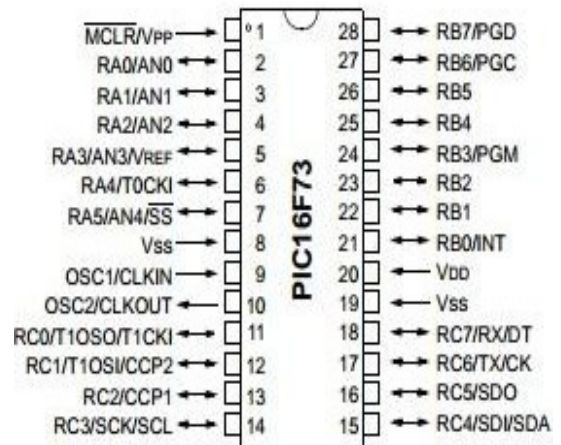


Fig 2. pin diagram of microcontroller

This capable 200 nanosecond direction execution yet simple to-program only 35 single word guidelines CMOS FLASH-based 8-bit microcontroller packs Microchip's effective PIC® design into 28-stick bundle and is upwards perfect with the PIC16C5X, PIC12CXXX and PIC16C7X gadgets. The PIC16F73 highlights 5 channels of 8-bit Analog-to-Digital (A/D) converter with 2 extra clocks, 2 catch/analyze/PWM capacities and the synchronous serial port can be designed as either 3-wire Serial Peripheral Interface (SPI™) or the 2-wire Inter-Integrated Circuit (I²C™) transport and a Universal Asynchronous Receiver Transmitter (USART). These highlights make it perfect for further developed level A/D applications in car,

mechanical, apparatuses and buyer applications.



Fig 3. Basic guidelines of parking system

Mechanized stopping includes the utilization of PC controlled system, which enables benefactors to drive up to the inlet, bolt the autos and let the machines consequently put the vehicle in the distributed space. This sort of auto stop offers most extreme use of room as it is machine controlled not at all like traditional auto stop where space is required for route of vehicle inside the auto stop.

Among its advantages is that the execution works awesome in areas, where there are restricted space for development because of its structure. Other than that, the Automated Parking System additionally offers proficiency in auto stockpiling as it permits auto stacking and the benefactor does not have to go into the auto stop which by implication gives additional security measures which covers both the vehicles and supporters

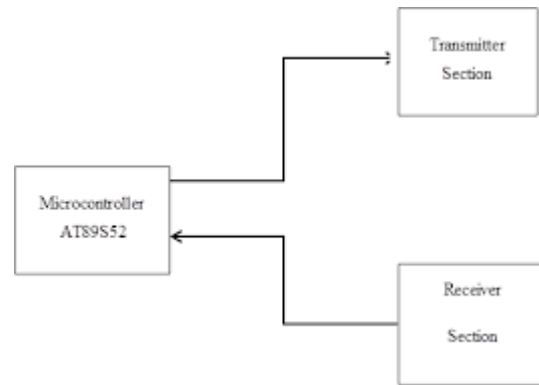


Fig4. Transmission and reception vie controller

5. ULTRASONIC SENSOR



Fig 5. Ultrasonic sensor

Microchips and microcontrollers are broadly utilized as a part of installed frameworks items. Microcontroller is a programmable gadget. The microcontroller utilized as a part of this task is PIC16F73. The PIC16F73 CMOS FLASH-based 8-bit microcontroller. It highlights 200 ns guideline execution, self-programming, an ICD, 2 Comparators, 5 channels of 8-bit Analog-to-Digital (A/D) converter, 2 catch/look at/PWM capacities, a synchronous serial port that can be arranged as either 3-wire SPI or 2-wire I2C transport, a USART, and a Parallel Slave Port.

6. WIFI MODULE

Espressif Systems Smart Connectivity Platform (ESCP) of superior remote SOCs, for versatile stage fashioners, gives fantastic capacity to implant Wi-Fi abilities inside different frameworks, at the least cost with the best usefulness.

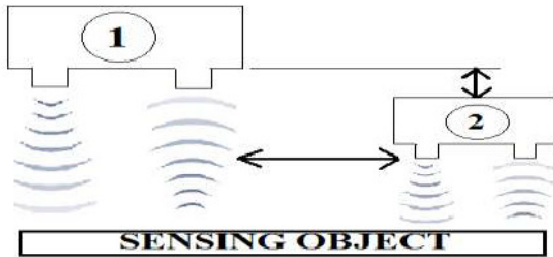


Fig 6. Sensing object direction

Ultrasonic sensing element transmits the unhearable waves to the moving farm/field objects (human being, animals, vehicles, etc.) from its sensing element head and once more receives the mirrored unhearable waves from that element.

7. FUTURE SCOPE:

Optimized parking – Users find the best spot available, saving time assets and exertion. The parking garage tops off effectively and space can be used legitimately by business and corporate substances entities.

1. Reduced traffic – Activity stream increments as fewer autos are required to drive around searching for an open parking spot.
2. Reduced pollution – Looking for stopping consumes around one million barrels of oil a day. An ideal stopping arrangement will altogether diminish driving time, in this manner bringing down the measure of day by day vehicle outflows and at last decreasing the worldwide natural impression.

3. Enhanced User Experience – A shrewd stopping arrangement will coordinate the whole client encounter into a brought together activity. Driver's A shrewd stopping arrangement will coordinate the whole client encounter into a bound together activity.

8. CONCLUSION:

Our keen stopping framework venture is intended to be coordinated on-Change stick Chip can be reinvented up to 100.000 times. In-Circuit Serial Programming Option, Chip can be modified even inserted in the objective gadget, 256 bytes EEPROM memory, Data can be composed in excess of 1.000.000 times

With another product application to help drivers to locate the void spot in parking area all the more effortlessly with less time. Likewise our task actualizes the vast majority of the functionalities required in a parking area. For instance, execute a programmed route for instalment.

9. REFERENCES:

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