A Synopsis
on
"Wireless Voice operated lift control system with Safety"

Amrutvahini College of Engineering, Sangamner
Electronics and Telecommunication Engineering

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Synopsis

1. Introduction

Elevator is a turned into the important part in our everyday life. We utilize it from moving products and group of people vertically in large buildings that time elevator is more useful. In present situation elevator is important thing for the shopping center, shopping market, schools, hospitals. So we are make it more programmed through our task. Voice to text convertor software technique by which the elevator can be controlled. Voice operated lift control system acts like a human-machine communication system. This project documentation findings and result of a research of elevator control by using wireless technology like Bluetooth module and PIC microcontroller. In this project, lift control system is going to be produce by using microcontroller. Thus, the main purpose of this paper is to design voice operated lift control system with the help of wireless technology that is Bluetooth module to design program for this system. To the combination of hardware and software in order to simulate the function of voice operated lift control system. In this project we try to find out solution over any emergency condition like people lock inside the lift due to cut off power supply or any other technical issue. Then sometimes panic situation occurs. To overcome this problem, we send emergency alert with floor number to control room or security cabin using zigbee communication.

2. Need of the Project

Looking towards the current situation of COVID-19, manually operated lift has high rate of spreading the virus as contact of each other while manually operating it. Also for the handicapped person manually operating the lift will not be possible. So to overcome this major drawback, Voice controlled elevator can be a very good option.
At present, the lift is operated by buttons which is difficult to operate for blind people and people with disability. When the blind and disabled people are alone, they find it difficult to operate the lift so, this is a problem for these categories of people while using the lift.One more drawback of the current lift is when any emergency problem arises in the lift when people inside the lift then sometimes provide help cannot possible in time. So many times, the panic situation can occur.

3. Related work

Huggins-Daines explained the accessibility of real-time continual speech recognition on cell phones and embedded gadgets and the technical challenges of computational requirements of continuous speech recognition. In this paper they have presented work on porting and development of CMU SPHINX-II, a largely used non proprietary large vocabulary continual speech recognition (LVCSR) system, for portable devices.[1]

P. Cernys, V. Kubilius reports the study of voice and sensor-controlled lift model in this paper. The structure is build with the help of standard powered controller; it includes speech recognition system, configurable ports and analytical lift program, which links all of them. The moderation of the popular DTW (Dynamic Time Warping) process was used.[2]

Zhang Yajun presented a control model for lift positioning. The structure is build with the help of AT89S52 microcontroller. The structural model gives an instinctive and in-depth explanation for fabrication and ideal concept of elevator and provides a base for future research of the new elevator control technologies.[3]

This paper Athanaselis, T., talk about the development of voice recognition when additional noise is present, when we use a method of signal amplification. This article looks after the comparison of the SVD-based noise eradication method with the Non-Linear Spectrum method so that to improve weakened speech before it is given to the speech recognition system.[4]

4. Aim and Objectives

Aim: The main aim of this project is to design and construct a voice operated lift/elevator control system. This system acts as human-machine communication system. Speech recognition is the process of recognizing the spoken words to take the necessary actions accordingly.

Objectives:

1. Operation of lift through voice commands.
2. It is operated on the voice of any person.
3. To highlight key provisions on the use of voice-operated lift for handicap person.If in case of any emergency happening then wireless alert send to control room.
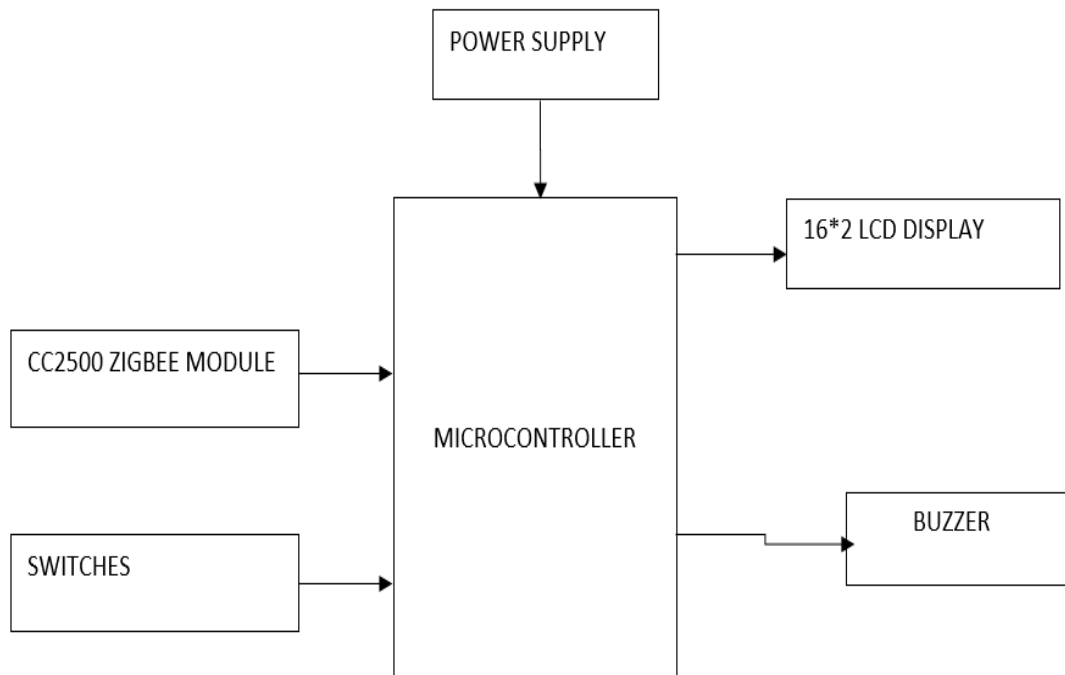
5.Block Diagram of the Proposed System
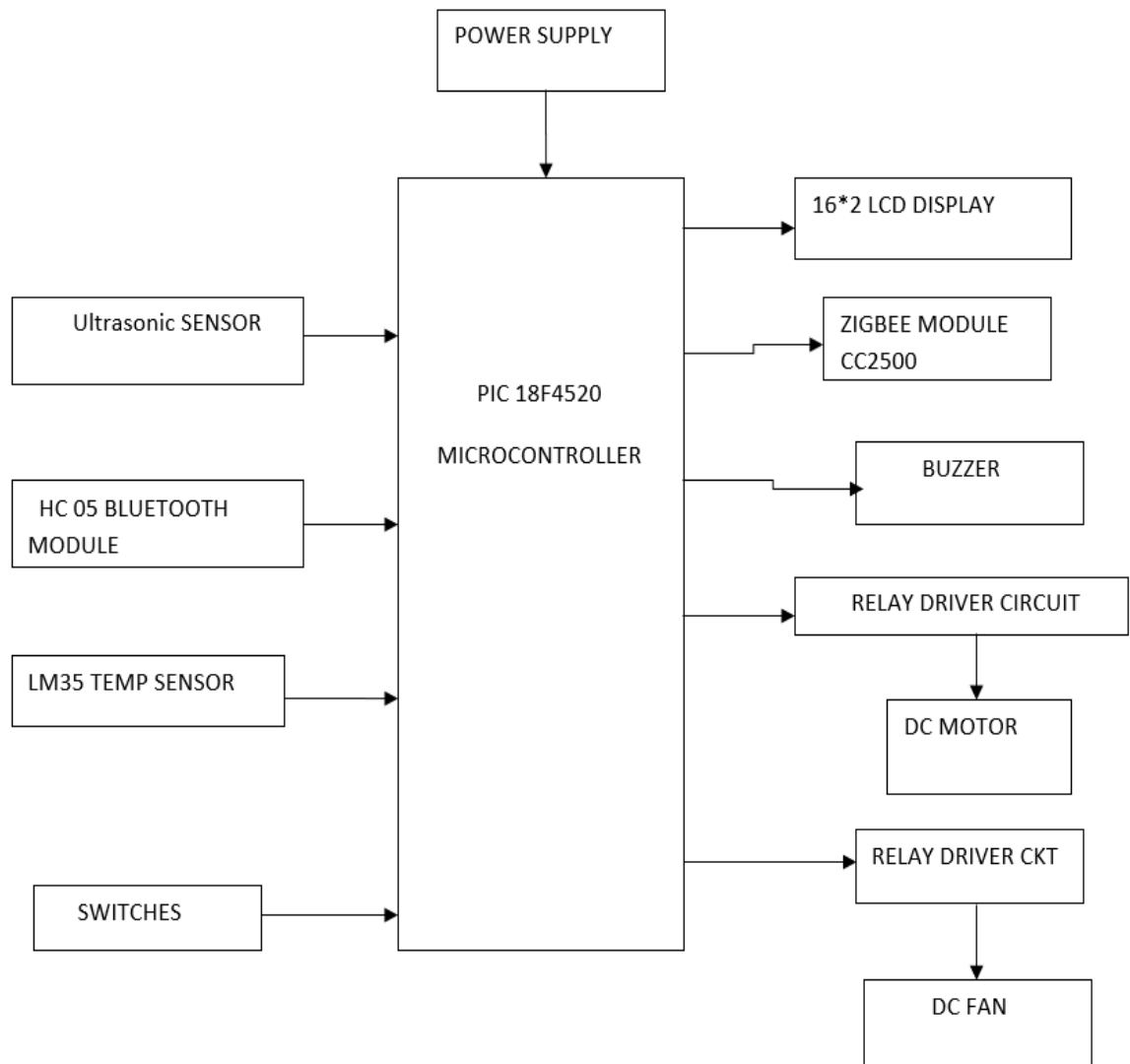
Block diagram: Lift Unit

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                              ┌─────────────────┐
                              │  POWER SUPPLY   │
                              └────────┬────────┘
                                       │
                                       ▼
                          ┌───────────────────────┐        ┌──────────────────┐
                          │                       │───────▶│ 16*2 LCD DISPLAY │
┌──────────────────────┐  │                       │        └──────────────────┘
│ CC2500 ZIGBEE MODULE │─▶│                       │
└──────────────────────┘  │    MICROCONTROLLER    │
                          │                       │        ┌──────────────────┐
┌──────────────────────┐  │                       │───────▶│     BUZZER       │
│      SWITCHES        │─▶│                       │        └──────────────────┘
└──────────────────────┘  └───────────────────────┘
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Block Diagram: Control Unit

The voice operated system is the main part of this project. Voice to text convertor software is communication mechanism between the user and microcontroller. The project makes the use of DC motor for the moving of lift. Microcontroller is programmed, with the help of embedded C programming. The microcontroller is capable of communicating with all input and output modules of elevator.

The Bluetooth module is used for the wireless connection between the user and controller. This HC-06 Bluetooth module is the most and easiest way to go wireless technology. This module allows you to wirelessly extend your serial interface.

Hence any program running on your laptop feels its controlling local serial port which is over a wireless Bluetooth link. The four pins are +5v, GND, TXD, RXD. Supply voltage should be 3.3v-6v. Absolute maximum is 7v.

6.List of Hardware and/or Software Tools

Hardware:

• PIC microcontroller
• Bluetooth module
• Zigbee module
• DC motor
• Relay driver circuit
• DC fan
• Temp sensor
• Ultrasonic sensor
• 5V/ 12V power supply
• LCD display

Software:

• MPLAB IDE
• PCB wizard
• CCS compiler

7.References

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Amrutvahini College of Engineering, Sangamner
Department of Electronics and Telecommunication
Project Synopsis
Academic Year: 2023-24

Project Type: Industry Sponsored/ Inhouse

Any Other Details:

Remark of Project Guide:

Remark of Project Coordinator:

Remark of Head of Department:

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