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## VOICE CONTROLLED ELEVATOR

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### ABSTRACT

This project presents the design and construction of voice-operated lift/elevator spoken words to take as the commands. The main purpose of designing this system is to operate the Elevator by using voice commands by the user. This project better fits for blind, paralyzed and physically challenged individuals, as well as regular individuals to move from one floor to other without the use of switches.

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Key Words: Arduino, Elevator, Voice recognition.

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## 1. INTRODUCTION

Elevator has over the time become an important part of our day to day life. It is used as an everyday transport device-useful to move goods as well as persons. In the modern world, cities and crowded areas require multi-floor buildings. The main purpose of this project is to operate the elevator by voice command. Therefore, we have decided to come up with a new idea, which is fascinating as well as helpful. We have tried to develop an elevator system that accepts the destination input via a voice recognition module and taking the elevator to the destination accordingly. Speech recognition is the method by which the elevator can be controlled using voice. Whenever it is with voice control, the first term that comes to the user's mind is Speech Recognition. Speech recognition is a technology in which the system will understand the words but not the meaning of the words. Speech is the best and ideal method to controlling the elevator. Automatic Speech Recognition is a technique by which a computer takes a speech signal and Converts it into words.

The main objectives of the proposed system are:

Voice-based command operation of the elevator.

Voice-based operation of a device in the lift.

To avoid physical contact with the elevator.

## **2. LITERATURE SURVEY**

[1] Kaladharan N “A Study of Speech Recognition” emphasized types of speech recognition technology developed in recent years and working for the same. The researcher has described types of words, types of speaker models and other approaches for the voice recognition system which provides basic knowledge about speech recognition systems.

[2] Reddy, D.R. &Ermann, “Tutorial on System Organisation for Speech Understanding” described a large variety in the speech recognition concept and it is important to understand the differences between the systems. According to the researcher, the classification of the voice recognition system can be done according to the size of the vocabulary, type of speech, and speaker dependence.

[3] 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 continuous speech recognition (LVCSR) system, for portable devices.

[4]P. Cerny's, V. Kubilius reports the study of the voice and sensor-controlled lift model in this paper. The structure is built with the help of a standard powered controller; it includes a speech recognition system, configurable ports

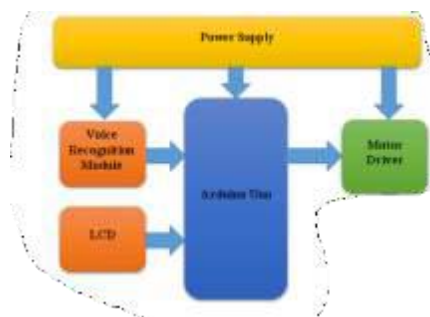
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## **3. PROPOSED SYSTEM**

The proposed system consists of mainly two components viz., speech recognition system and Arduino. The main part of the project is the speech recognition system. The exchange of instruction from the user to the control mechanism is delivered by the speech recognition system. Arduino is competent to communicate with all input and output devices simultaneously. To move the elevator in the upward or downward direction according to the given user command DC motors are used. The input voice module to the Arduino and the Arduino receives the voice command specified by the user as input. The controller decides if the command for the lift is to move in an upward direction or downward direction, and the control mechanism moves the elevator according to the user’s command. According to the input from the user, the Arduino decides which lift to be moved to the desired floor. In the proposed system, corroboration of the working of an elevator model is shown with the help of Arduino Board and with speech recognition module For visual information of the performed task LCD can be made available.

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## **4. BLOCK DIAGRAM**



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## **5. IMPLEMENTATION.**

In this project, Arduino is utilised for processing the instruction and added components such as a voice recognition module along with, motor driver and LCD display. After power on the Arduino initialized the LCD and turns off the motor. The voice command given by the user is received by the voice recognition module. The Voice recognition module accepts voice

command and it analyzes the analogue signal and compares it with stored data in external RAM, then processes the command and gives it to the Arduino. The Arduino then receives the instruction from the voice recognition device and decides whether to move the elevator in the upward or downward direction. Motor is used for the motion of the elevator. Judging from the command the Arduino decides which lift is closer to the user's location and move the elevator accordingly. The LCD display gives the floor positioning.

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## **6. RESULT**

By using the speech recognition module, we can eliminate the use of the keypad. Since the voice recognition module transforms the spoken words into commands to the Arduino and the lift moves and reaches the desired floor.

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## **7. CONCLUSION**

The voice-controlled elevator is of great use as it works effortlessly. This project tries to give commands using a voice recognition system, which can be used to modify the conventional elevator and make it more efficient and usable for physically challenged people. The prototype of the elevator is a useful instrument for research in the specialization of voice signal acknowledgement, computerization and control advances as well as useful in finding potential applications in this field. This project acts as a human-machine communication system.

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## **8. REFERENCES**

1. Huggins-Daines, D., Kumar, M., Chan, A., Black, A. W., Ravishankar, M., & Rudnick, A. I. (n.d.). Pocketsphinx: A Free, Real-Time Continuous Speech Recognition System for Hand-Held Devices. 2006 IEEE International Conference on Acoustics Speed and Signal Processing Proceedings.
2. P.Cernys, V.Kubilius, V.Macerauskas, K.Ratkevicius, Intelligent Control of the Elevator Model, IEEE International Workshop on Intelligent Data Acquisition and Advanced Computing System: Technology and Applications 8-10 September 2003, Lviv, Ukraine.
3. Reddy, D.R. & Ermann, "Tutorial System Organization for Speech Understanding. "Speech Recognition: Invited paper presented at the 1974 IEEE Symposium, Academic Press.
4. Kaladharan N, Assistant Professor, Dept. of Electrical Engineering, Annamalai University, IJIRCCE, "A Study of Speech Recognition" Vol. 3, Issue 9, Page 8030-8034.