

AUTOMATIC VOICE OPERATED LIFT USING SOLAR ENERGY

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Abstract

This venture presents the plan and development of voice worked lift/liftcontrol framework. This framework goes about as human machine correspondence framework. Discourse acknowledgment is the way toward perceiving the verbally expressed words to make the vital moves appropriately. Client can likewise control the electrical gadgets like fan, entryway and so forth with the assistance of voice acknowledgment framework. The fundamental reason for planning this undertaking is to work the Elevator by utilizing voice orders. This gadget is exceptionally useful for loss of motion, diminutive tallness individuals and actually tested people. While the framework will work on sun based force with the goal that the expense of power is likewise saved. The sun oriented force will decrease the general support cost just as the running expense of the lift framework.

Keywords-*Voice operated lift, Microcontroller, Voice Module, RF Module*

I. INTRODUCTION

Nowadays peach signals are the main methods for correspondence in people. Pretty much every discussion to cooperate is finished by methods for voice signals. Sounds and different discourse signs are often changed over into electrical structure utilizing a mouthpiece [1]. Voice acknowledgment is an innovation which is employed to vary over the discourse signals into a PC text design. This voice acknowledgment innovation can be utilized to control and produce discourse affirmation utilizing some outside worker. The fundamental point of this task is to plan and build a voice worked lift/lift control framework [2]. This framework goes about as human-machine correspondence framework. Lift is become the fundamental piece of our everyday life. Lift is become a vehicle gadget that is normal to us now a days. We use it consistently to move products or people groups vertically in a high structure like retail plaza, working office, lodging and a lot more things. Lift is a valuable gadget that moves individuals in the briefest chance to wanted floor.[3] Lift is the indispensable piece of everybody's everyday routine experiencing in huge structures, and besides it is the vital thing in huge structures or any enormous development having number of floors to move starting with one story then onto the next [4]. Just as our optional point is to utilize sunlight based energy for the working of the whole model, with the goal that it gets prudent and because of which the general electric bill of an association or the client is decreased [5]. The sensor module comprises of steel network under which sensor is fixed. The detecting component has a detecting material and a radiator. At the point when the detecting component is taken care of with current, the detecting material gets warmed up and gases approaching it get ionized, further making a charge distinction. [6]

II. ARDUINO

Arduino is an open - source programmable circuit board that can be coordinating into a wide assortment of activities both basic and complex. The arduino can interface with a huge cluster of yields like LEDs, engines and presentations due to its adaptability and ease.

Pin category	Pin Name	Details
Power	Vin, 3.3V 5V ,GND	Vin: Input voltage to Arduino when using an external power source (6-12V). 5V: Regulated power supply used to power
Reset	Reset	Resets the microcontroller.
Analog Pins	A0 - A7	Used to measure analog voltage in the range of 0-5V
Input/Output Pins	Digital pins D0 – D13	Can be used as input or output pins. 0V (low) and 5V (high)
Serial	Rx, Tx	Used to receive and transmit TTL Serial data.
External Interrupts	2,3	To trigger an interrupt
PWM	3,5,6,9,11	Provides 8-bit PWM output
SPI	10 (SS), 11(MOSI) 12(MISO) 13 (SCK)	Used for SPI communication.
Inbuilt LED	13	To turn on the inbuilt LED
IIC	A4 (SDA), A5 (SCA)	O provide reference voltage for input voltage

Table 1: Arduino Specification

Microcontroller	ATmega328 – 8 bit AVR family microcontroller
Operating Voltage	5V
Recommended input Voltage for Vin pin	7 – 12V
Analog Input Pins	6(A0 –A5)
Digital I/O pins	14 (Out of which 6 provide PWM output)
DC Current on I/O Pins	40 mA
DC Current on 3.3V Pin	50mA
Flash Memory	32 KB (2KB is used for Boot loader)
SRAM	
EEPROM	
Frequency(clock speed)	
Communication	IIC, SPI,USART

Table 2: Arduino Nano Technical Specifications

III. SOLAR PANEL

Sun oriented energy is boundless wellspring of monstrous energy irradiance of $1367\text{W}/\text{m}^2$ which is otherwise called sunlight based consistent. At the point when this force thickness is found the middle value of over the outside of the world's circle, it is diminished by a factor of 4. A further decrease by a factor of 2 is because of misfortunes in going through the world's air [7]. This worth changes consistently and furthermore from one spot to another. Presently sun oriented energy isn't only a method of creating influence yet additionally producing cash. The world piece of the pie of sustainable sources are raising consistently. What's more, today with the improvement of innovation sunlight based energy is a developing business sector giving abundant work openings [9].

IV. APPLICATIONS

Sun based energy has numerous applications in our day to day existence. It is such a source that can fight all our energy needs. From lighting to warming .from transportation to cooling every one of the necessities can be satisfied by using sun oriented energy. Sun oriented boards and sun based water warmers introduced on the roofs are regular uses of sun powered energy. Sun oriented energy isn't just utilized for charging batteries and warming water [8].

V. VOICE MODULE

The voice upgrade Model is a limited and straightforward control talking affirmation board. This thing is a speaker dependant voice affirmation module. It maintains up to 800 voice orders inside and out Max 7 voice requests could be enrolled at the same time. Any strong could be set up as request. Customers need to set up the module first before let it seeing any voice request. This board has 2 controlling ways: port, general Input Pins. General Output Pins on the board could deliver a couple of kinds of waves while relating voice request was seen (2)

VI. PARAMETERS & BLOCK DIAGRAM

Voltage: 4.5 - 5.5V

Current: <40mA

Digital Interface: 5V

TTL level UA RT interface

Analog Interface: 3.5mm mono- channel microphone connector + microphone pin interface

Size 30mm x 47.5mm

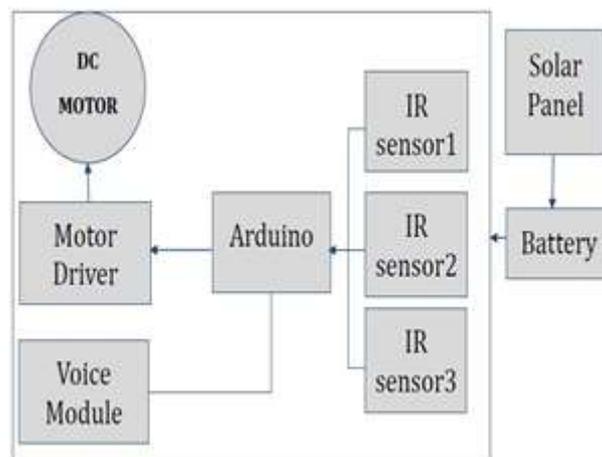


Fig: Block Diagram of Voice operated lift using solar energy

VII. WORKING & IMPLEMENTATION

The live model is made using Arduino Atmega328 Microcontroller, the floors are detected using IR sensor which sends signal to controller. The programming is done in controller which detects the floors and drive the dc geared motor to move the lift as per the floor selected. The voice module is used to give voice signal to controller. The voice module has to program on which floor to stop as per the voice signal input. The whole system will run on battery and battery will charge from solar panel.

VIII. CONCLUSION

A voice acknowledgment program and its association with a regulator can supply an adequate measure of orders vital for the lift control on which the lift will work. The old lifts were having downsides like there was key press issue and time needed to squeeze one key was additionally more. In this voice worked lift, we are taken anticipation in crisis condition like lift disappointment and here sign given to the security individual who will be inside security lodge. This voice-based arrangement of lift is saving time yet there was an issue of safety.

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