

# IMPLEMENTATION OF VOICE OPERATED LIFT SOLAR BASED(BLIND)

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## Abstract

*This paper presents the arrangement and advancement of voice worked lift/lift control structure. This system goes probably as human-machine correspondence structure. Talk affirmation is the route toward seeing the communicated words to take the fundamental actions as requirements be. Customer can moreover control the electrical contraptions like fan, doorway, etc with the help of voice affirmation structure. To adapt up to this issue, input order can be given to the lift utilizing voice. This addresses the issue for both older individuals, genuinely incapacitate individual just as visually impaired individuals. Additionally sometimes where different individuals are utilizing the lift, this arrangement likewise makes it simpler for individual standing away from the information board to provide order. This device is helpful for loss of movement, minor stature people and really tried individuals. In spite of the fact that the structure will chip away at daylight based power with the objective that the cost of force is similarly saved. The daylight based power will diminish the overall upkeep cost similarly as the running cost of the lift system.*

**Keywords:** Voice operated lift, Microcontroller, Voice Module, RF Module.

## I.

### INTRODUCTION

These days peach signals are the principle strategies for correspondence in people. Practically every conversation to convey is done by strategies for voice signals. Sounds and diverse talk signs can be changed over into electrical construction using a collector [2]. Voice affirmation is an advancement which is used to change over the talk signals into a PC text plan. This voice affirmation development can be used to control and create talk certification using some external specialist. The essential place of this endeavor is to plan and assemble a voice worked lift/lift control structure [3]. This system goes probably as human-machine correspondence structure. Lift is become the guideline part of our regular day to day existence. Lift is become a vehicle contraption that is very fundamental to us now a days. We use it reliably to move product or social classes upward in a high construction like shopping centre, working office, hotel and significantly more things. Lift is an amazingly accommodating device that moves people in the briefest chance to needed floor. Lift is the vital piece of everyone's day by day schedule encountering in colossal designs, what's more it is the key thing in immense constructions or any enormous improvement having number of floors to move beginning with one story then onto the following [1]. Similarly as our discretionary point is to use sun based energy for the working of the entire model, so it gets common sense and due to which the overall electric bill of an affiliation or the customer is diminished.

## II. WORKING

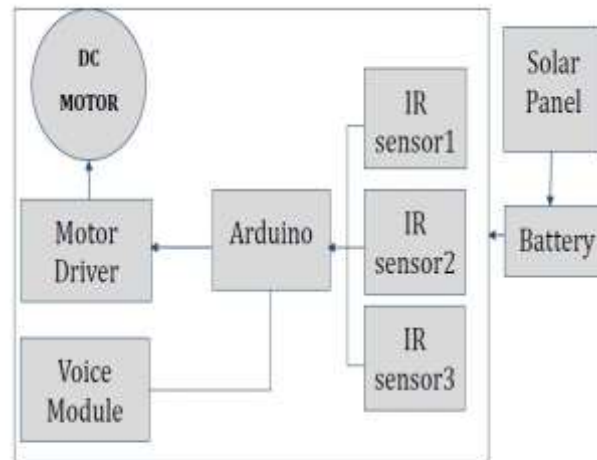


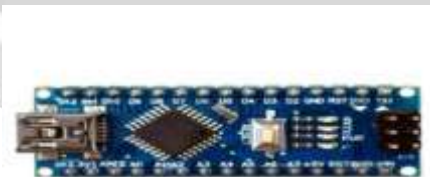
FIG 5.1 Block Diagram of Voice operated lift using solar energy

The live model is made using Arduino Atmega328 microcontroller, the floor are detected using IR sensor which sends single to controller. the programming is done in controller which detect the floor and drive the Dc geared motor to move the lift as per the floor selected the voice module is used to give voice single to controller. the voice module has the programme on which the floor to stop as per the voice single input. The hold system will run on battery a battery will charge from solar panel.

## III. COMPONENTS

### 1.Arduino nano

Arduino nano circuits board with Arduino IDE is capable of reading Analog or digital input signals from different sensors activity the motor, turning LED on/ off and do many other such activities. all functionalities are performed by sending a instruction to the ATmega328 main micro controller on the board Via Arduino IDE the Arduino board also includes power USB, power (Barrel jack) , voltage regulator crystal oscillator , voltage teams ( 3.3 volt 5 volt ground and VIN ), A0 to A5 Analog pins, ICSP pin , power LED indicator, TX and RX LED'S 14 digital input/ output pins and Arduino reset. The Atmega328 is a low power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture structure.



### 2. SOLAR ENERGY

Sun oriented energy is the main wellspring of energy for living things. It is a sustainable wellspring of energy, dissimilar to non-inexhaustible sources like petroleum products. sunlight based energy alludes to energy from the sun-oriented energy is a totally free wellspring of energy sun-based energy has additionally utilization of photosynthesis, sun powered energy is changed over into substance energy by green plants, which makes the biomass that makes up petroleum products. Sun powered energy which contains brilliant warmth and light from the sun can be outfit with some advanced innovation like photovoltaic cells, sun-oriented warming, counterfeit photosynthesis, sunlight-based design and sun based warm power. The principal advantage of sun powered energy is that it doesn't deliver any poisons and is one of the cleanest wellsprings of energy. It is a sustainable wellspring of energy, requires low upkeep and is not difficult to introduce. the lone impediment

that sun powered energy has is that it can't be utilized around evening time, and the measure of daylight that is gotten on earth relies upon area, season of day, season, and climate conditions sunlight-based innovation can be recognized into dynamic and detached. Photovoltaic boards and sun oriented warm authorities which bridle sun-based energy. Sunlight based energy can likewise be utilized for making saline water without utilizing power or synthetic substances.



### 3. SOLAR PANEL

Sunlight based energy starts with the sun. Sun oriented boards called "PV boards" are used to change light from the sun, which made of particles called "photons", into the power that can be used to control electrical burdens.

Sun oriented boards can be utilized for a wide assortment of utilization including distant force frameworks for lodges, broadcast communications hardware, far off detecting, and obviously for the creation of power by private and business sun based electric frameworks [6].



Fig.1

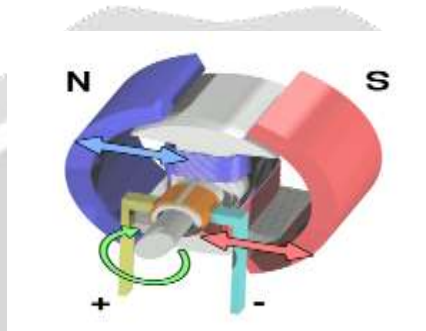
Sun based boards gather clean environmentally friendly power as daylight and convert that light into power which would then be able to be utilized to give capacity to electrical burdens. Sun oriented boards are contained a few individual sun based cells which are themselves made out of layers of silicon, phosphorous (which gives the negative charge), and boron (which gives the positive charge). Sunlight based boards ingest the photons and in doing so start an electric flow [7]. The subsequent energy created from photons striking the outside of the sun oriented board permits electrons to be taken out of their nuclear circles and delivered into the electric field produced by the sun powered cells which at that point manoeuvre these free electrons into a directional flow [8]. The cycle is called as Photovoltaic Effect. A normal home has a very sizable amount of rooftop zone for the vital number of sun oriented boards to create sufficient sun based power to supply the entirety of its force needs over abundance power produced goes onto the primary force lattice, paying off in power use around evening time.

## APPLICATIONS OF SOLAR ENERGY

A portion of the significant use of sun based energy are as per the following: Solar water warming, Solar warming of structures, Solar refining, Solar siphoning, Solar drying of rural and creature items, Solar heaters, Solar cooking, Solar electric force age, Solar nuclear energy creation, Solar green houses [7].

### 4. DC MOTOR

An electric motor is an electric machine that converts electrical energy into mechanical energy most electric motors operate through the interaction between the motors magnetic fields and electric current in a wire binding to generate force in the form of rotation of a shaft . electric motors produced linear or rotary forced ( torque) intended to propel some external mechanism, such as a fan or an elevator . an electric motor if generally design for continuous rotation, or for liner movement over a significant distance compared to its sized.



#### Permanent magnet electric motor

The PM motor does not have a field winding on the stator frame; instead relying on PM's to provide the magnetic field against which the rotor filed interacts to produced torque. Compensating windings in series with the armature may be used on large motors to improve commutations under load because this filed is fixed; it cannot be adjusted for speed controlled.

We are using 30 Rpm fan DC geared motor.

### 5.Voice module

The voice recognition module is a compact and easy controlled speaking recognition board this product is a speaker dependent voice recognition module. Its supports up to 80 voice commands in all maximum 7 voice commands could be registered at the same time. This board has to controlling waves serial ( full function) , general input pins ( part of function) .



#### Parameters

Voltage: 4.5-5.5 v

Current: <40m A

Digital interface: 5 v

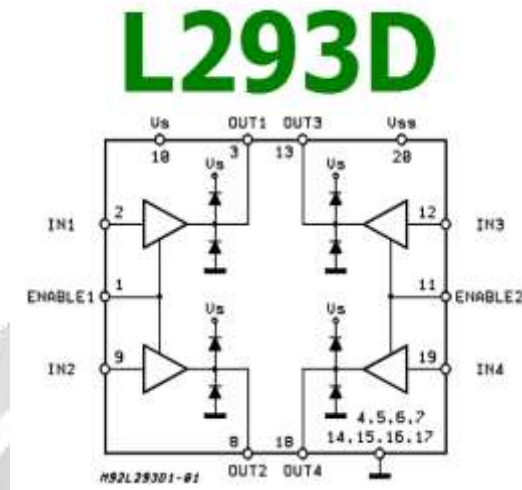
TTL Level UART interface

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

Size: 30mm x 47.5 mm

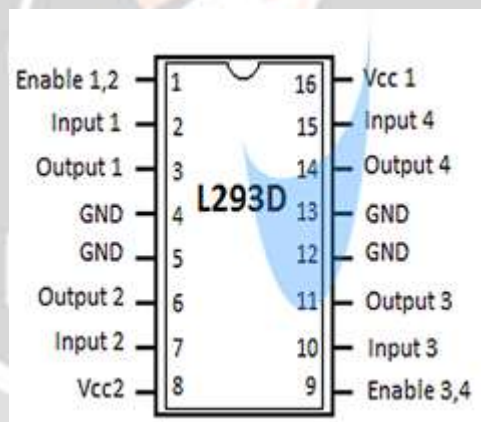
**6. Photovoltaic cells**

A solar cell converts light energy into electrical energy. This conversion is based on the phenomena of photovoltaic effect. Sunlight consists of photons with different energy levels depending upon the spectrum from which they belong [6]. When sunlight strikes the surface of the photovoltaic materials it ejects electrons which results in the generation of electricity. This phenomenon is known as photovoltaic effects.



In theory, solar cells can convert about 30 percent of the incident solar radiation energy into electricity. Commercial cells today, depending on technology. Typically have an efficiency of 5-12 percent for thin films and 13-21 percent for crystalline silicon-based cells.

**PIN DIAGRAM**



**Features**

- 5VDC operating voltage.
- I/O pins are 5V and 3.3V compliant.
- Range : up to 20cm.
- Adjustable sensing range.
- Built-in ambient light sensor.
- 20mA supply current.
- Mounting hole.

**VII. COMPARISON LOW AND HIGH-TECH LIFT**

**TRACTION ELEVATORS**

The significant contrast among footing and water driven lifts is standing out the frameworks transport the taxi. With footing lifts, the taxi is raised and brought down by foothold steel ropes or belts on a pulley framework. Contrasted with water driven frame works, foot hold lifts:

S. N		TRACTION ELEVATORS	HYDRAULIC ELEVATORS
1.	<b>Limitations</b>	<ul style="list-style-type: none"> <li>• More affordable to install.</li> <li>• Less expensive to maintain and repair.</li> <li>• Better for transporting heavy loads.</li> <li>• Intended for low-rise application.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses less energy.</li> <li>• Serve mid to high rise buildings.</li> <li>• Ride smoother.</li> </ul>
2.	<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Net travel above 60.</li> <li>• Smaller control room requirements.</li> <li>• Smaller motor size.</li> <li>• Possibly a quieter ride.</li> </ul>	<ul style="list-style-type: none"> <li>• Quickest to install.</li> <li>• Least expensive to install and maintain capable of moving increased weights ( i e. custom cabs)</li> <li>• Lower pit and overhead requirements with standard travel.</li> <li>• No crane/roof access required</li> <li>• Above-ground models available with or without machine rooms (pre - engineered only).</li> </ul>
3.	<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>• More expensive to install</li> <li>• Maintain crane is typically required (building roof cannot be installed over hoist way).</li> <li>• Limited on cab weights.</li> <li>• Limited on cab capacities.</li> <li>• Increased overhead/pit requirements 4-6 weeks added to project schedule.</li> </ul>	<ul style="list-style-type: none"> <li>• Limited to low and mid-rise buildings.</li> <li>• Machine room required for in-ground applications. (viewed as a PRO when service is needed). <ul style="list-style-type: none"> <li>• Larger power requirements 150 ft./min. max up-speed.</li> <li>• Self-supported MRL (most common traction elevator).</li> </ul> </li> </ul>

## **HYDRAULIC ELEVATORS**

In contrast to footing frameworks, pressure driven lifts don't utilize overhead raising hardware. All things being equal, these lifts lift a taxi by utilizing a liquid driven cylinder that is mounted within a chamber. The important liquid has customarily been oil-based yet can be supplanted with vegetable oil to diminish the natural effect.

## **IX. 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 likewise 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 however there was an issue of safety.

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