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Automatic Rotary Car Parking System

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Abstract: ***In this project, the essential multi-level automotive parking system with 3 floors is taken into account to indicate the employment of management systems in parking systems. The system can play a significant role in organizing the entry to and exit from the parking tons. It additionally presents the look of multi-level parking tons that occupies less want on the bottom and contains the big variety of cars. In the modern times, wherever parking-space has become a really huge downside, it's become important to avoid the wastage of area in fashionable huge Automatic multi-level automobile parking system helps to reduce the automotive lot corporations and residences As railway system town is laid low with the dearth of accessible parking spots and high-ticket land costs particularly in vital area, we were inspired to create an multi-level car parking system that Cal counter such a daily basis problem to make easier.***
Keywords: Automotive Parking System, Multi-level Parking, Parking-Space, Railway System town, Accessible Parking Spots.

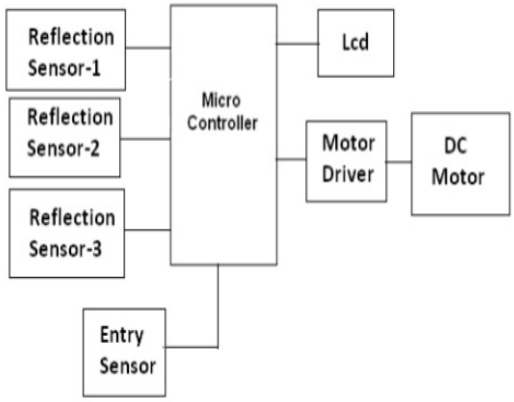
I. INTRODUCTION

In this project, we tend to show the essential structure automobile parking system with 3floors. although we tend to show the conception with 3 floors, it's still attainable to indicate this idea on multiple floors. also, in this project, we will show three floors with conveyer assembly. the conveyor carries the car to each floor. we square measure victimization here multimode provide victimization solar power that store their energy in battery and dc motors power that management conveyor consistent with slide switches.

II. OBJECTIVE OF THE PROJECT

in this project, we tend to show the essential structure automotive parking system with 3floors. although we tend to show the idea with 3 floors, it's still attainable to point out this idea on multiple floors. we will learn to the automation of multi-level automotive parking system within the modern times. multilevel parking systems for generally have provided relief since they are available with variety of benefits. Optimal utilization of space, lower maintenance and operational cost, lower construction cost, secure and environment-friendly nature (the underground implementation renders the outdoor space free for landscaping), comfortable for the drivers, value saving for builders by saving height or depth. in this project, we tend to employing a natural supply of energy or power to form a inexpensive multi-level automotive parking system within the future. by using solar energy, we will be trying to eliminate the problem of electricity in that project. through this we can reduce the pollution that produces in environment during simple parking and also reduce the problems in metro city, shopping malls, and residential apartment.

Block Diagram And Working



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An automated parking garage are often erected on any empty heap, even in between buildings. They come in many sizes; therefore, a town will opt for which kind of garage fits its desires best. The building itself is created of a metal skeleton which Automated parking systems build use of computers, sensors, cameras and mechanical elements to require the automobile, move it throughout the garage and park it in an empty slot. The process is incredibly straightforward and it needs very little effort from the driving force. There are 2 sorts of machine-controlled parking systems, counting on the style during which they transport the automobile from entry to the parking spot: horizontal platforms or vertical lifts. In both cases, the process is very similar, with the only thing that differs being the movement of the car until it reaches the desired spacey both types of systems, the automobile is driven into the multi-storied garage as was common. Once positioned on the ramp, the driving force shuts down the engine, secures the parking brake and steps out of the car. While the motive force will all this, sensors analyse the vehicle to determine its size and overall shape. Once the driving force has exited the building, the mechanical arms of the living building are set in motion. Depending on the out their empty spots within the garage, the system determines wherever to require the automobile. Using various electro-mechanical components, the car is moved into the respective spot, either vertically or horizontally. For the quickest such systems, the complete method will take as very little as 2 and 0.5 minutes from entry to parking the automobile in its spot. Most such systems are fitted with turntables, which suggests that once exploit, there's no want for the motive force to drive in reverse. Now, if you're wondering how the system recognizes which car is yours, you should know it does no guess work. Automated parking systems offer you a card or key containing a code that identifies the position of the vehicle. Once you scan your card or key, the system finds the automobile and sets in motion it's mechanical arms to bring the automobile back to you.

III.INSTRUMENT

A. Structure of Wooden Block

In this multi-level car parking system, we make a wooden block, whose length is 2 feet, breath is 2 feet and height are 3 feet. The wooden block has three multi floors. Each floor contains 2 partitions of automotive parking of accessible house or space.

B. Structure of Lift

In this project, we make a frame of metal rectangular pipe made up of mild steel. The rectangular pipe area this 2 feet and3feet height long are adjusted to the wooden block of car parking system. A flat conveyor adjusted to that frame rackorpinionandrope arrangement to provide the vertical or horizontal motions. The frame structure is shown below.

C. Structure of Flat belt Conveyor

The belt conveyor is an endless belt moving over two end pulleys at fixed positions and used is used to transport the car from one belt conveyor to second belt conveyor. In this flat conveyor DC motors used as a driving member to manoeuvre the driven member of the flat belt conveyor. A flat rubber material is used as a conveyor belt to providing the motion of conveyor smoothly.

D. DC Motors

DC power systems don't seem to be quite common within the up to date engineering apply. However, DC motors are employed in industrial applications for years in addition to a DC drive, DC motors give terribly precise management DC motors are often used with conveyors, elevators, extruders, marine applications, material handling, paper, plastics, rubber, steel, and textile applications, automobile, craft and negotiable physics, in speed management applications.

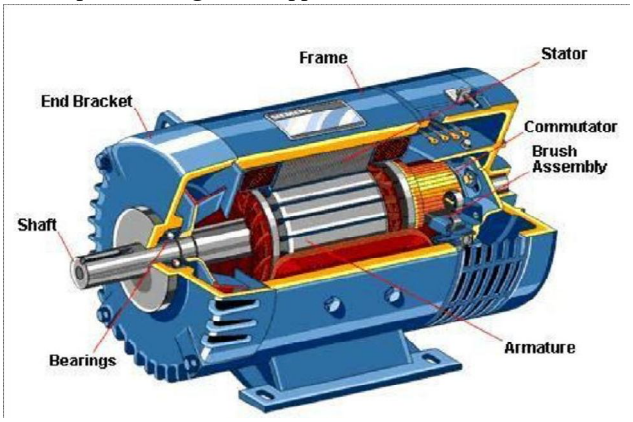

Fig :- DC Motor

IV. ADVANTAGES

A. there's a bigger sense of security thanks to the very fact that patrons don't really walk to and from their own area.
B. it's extremely possible for very little sites that area unit unable to accommodate a standard ramped parking structure.
C. There is high parking efficiency (i.e. sf /space and cf /space).
D. there's no want for driving whereas trying to find associate on the market area.
E. Emissions are greatly brought down and reduced.
F. The patrons expect their automobile in an exceedingly extremely controlled setting.
G. There are less chances for vehicle vandalism.
H. there's a border line worker demand if it's employed by famous parkers.

V. DISADVANTAGES

A. Use of redundant systems can end in a bigger value.
B. It may be a bit confusing for unfamiliar users.
C. it's not suggested for prime peak hour volume facilities.
D. There may be a bit confusing for unfamiliar users.

VI. APPLICATIONS

A. At industrial areas
B. At malls
C. At residential area
D. At college
E. At cinema house
F. At visiting place
G. At historical place.

VII. FUTURE SCOPE

The basic plan behind a star car parking zone is just to include star panels into a car port, that is essentially associate open-sided shed with a roof. Solar automobile ports may be sufficiently small to suit one car at a residence, or scaled up for industrial and institutional functions. The main benefit, of course, is to generate renewable energy that can be used to lower utility costs on site, for example at a mall or office complex. Depending on the size, the installation may conjointly yield excess energy within the sort of of electricity available. A star car port also can facilitate cut back the “heat island” impact of parking heaps and contribute to a cooler community, and by providing protection from the weather it will help enhance vehicle lifespan. Solar typically meets up to 35 per cent of a space’s total power requirements and can typically save up to 15 per cent in energy costs. These „sustainable car parks‟ also have short pay back periods (five to eight years) and offer multiple benefits by providing both shade and electricity.

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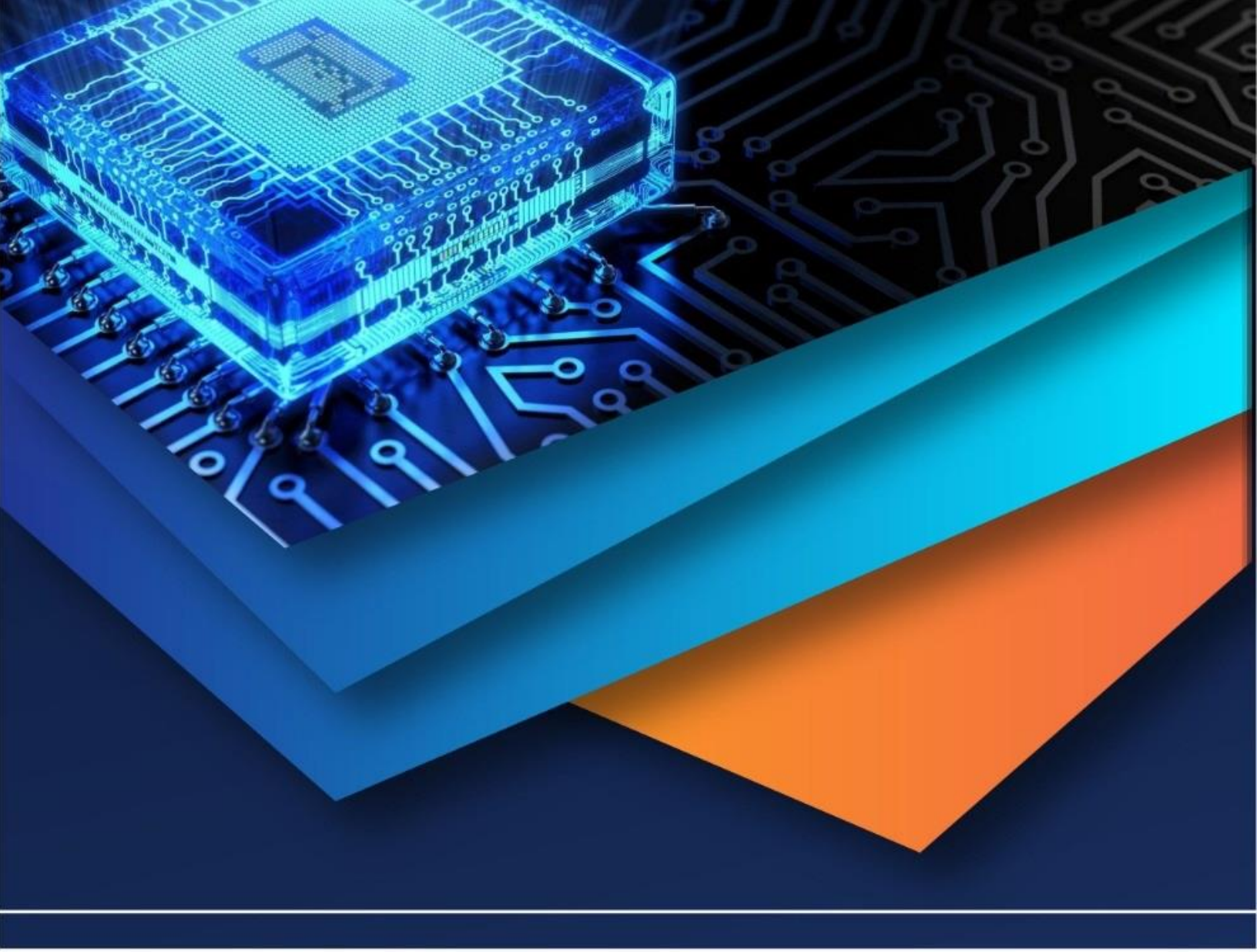

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