AUTOMATIC VERTICAL CAR PARKING SYSTEM

Guide name:- Prof. S.N.Gavade

Priydarshani Pujari[1], Vaishnavi Giribuva[2], Sonali Nrute[3], Varad Hegade[4]

[1] *Electrical Engineering, DKTE's Yashwantrao Chavan Polytechnic Ichalkaranji, Maharashtra, India.*

[2] *Electrical Engineering, DKTE's Yashwantrao Chavan Polytechnic Ichalkaranji, Maharashtra, India.*

[3] *Electrical Engineering, DKTE's Yashwantrao Chavan Polytechnic Ichalkaranji, Maharashtra, India.*

[4] *Electrical Engineering, DKTE's Yashwantrao Chavan Polytechnic Ichalkaranji, Maharashtra, India.*

ABSTRACT

The Automatic Vertical Car Parking System (AVCPS) is an innovative solution designed to address the challenges of urban parking. This system utilizes vertical space efficiently by stacking cars in multiple levels, thereby maximizing the use of available space. AVCPS employs automated mechanisms for parking and retrieval, eliminating the need for manual intervention. This abstract explores the key features and benefits of AVCPS, including its space-saving design, convenience, and potential for reducing traffic congestion in urban areas.

KEYWORD*:- Aurdiuno Controller, Sensor.*

1. INTRODUCTION

It also presents the design of multi-level parking lots which occupy less need on the ground and contains a large number of cars. In the modern world, where parking space has become a very big problem, it has become very important to avoid the wastage of space in modern big Automatic multi-level car parking system helps to minimize the car parking area companies and apartments.

Sometimes parked cars in the streets create an extra traffic jam and Traffic jam is already a curse in Dhaka city. One lane of a road gets always blocked Because of parking. In Filing Stations cars always creates a line to be refilled and blocks a lane of the road. Parking is a key component of the transportation program. The city has addressed parking problems associated with educational institutes, entertainment users, religious institutes, commercial activities, special events, etc. All this can be solved by the vertical car parking system, which is a mechanical device that multiplies parking capacity inside a parking lot. The driver leaves the car inside an entrance area and technology parks the vehicle at a designated area.

2. METHODOLOGY:

- ➤ The system detects the arrival of a vehicle at the entry point using sensors or a ticketing system.
- ➤ Based on available space and predetermined algorithms, the system selects an appropriate parking platform for the vehicle.
- ➤ The system guides the vehicle to the designated parking spot using automated platforms or guidance systems.
- ➤ Once positioned correctly, the system automatically parks the vehicle using robotic arms or conveyor belts.
- ➤ When the vehicle owner wants to retrieve their car, they either use a ticketing system or a mobile app to request retrieval.
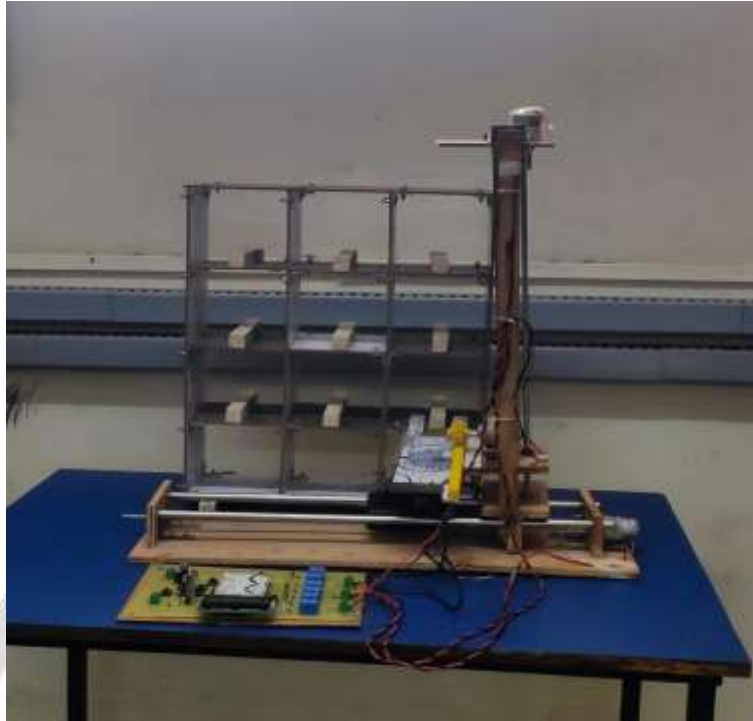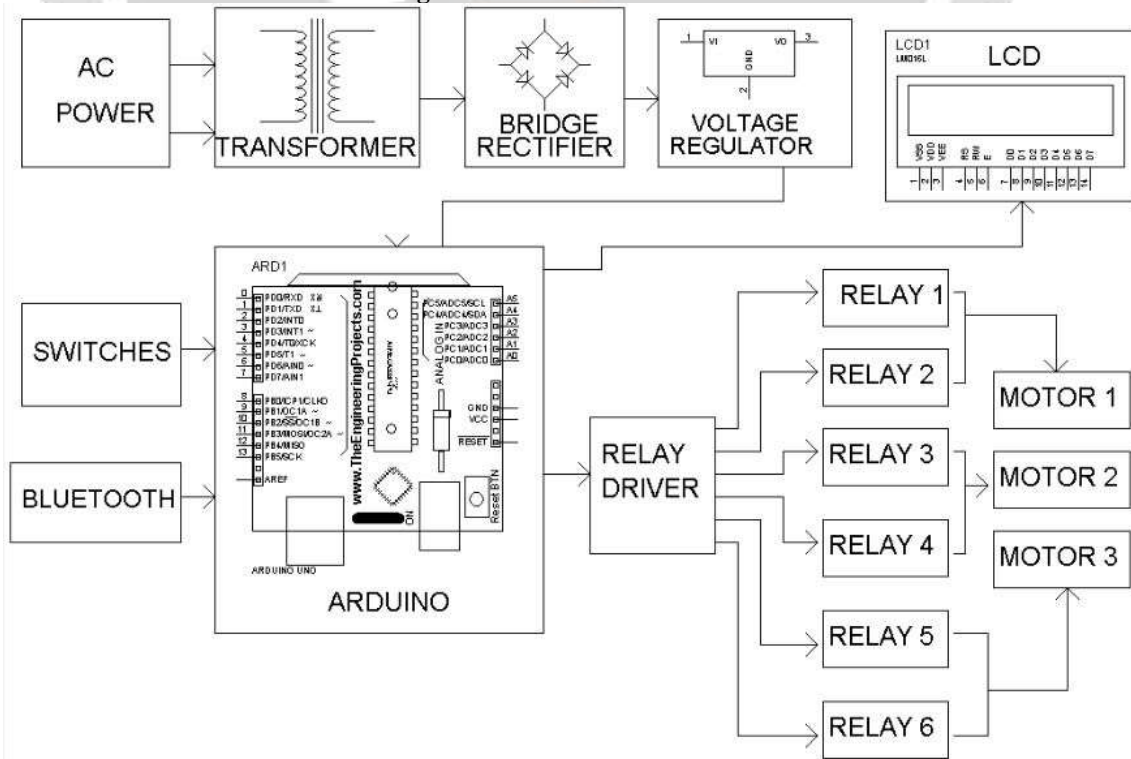
Fig –1: Actual View of Model

3. FUCTIONAL BLOCK DIAGRAM:

Fig -2: Functional Block

Diagram

3.1 HARDWARE RESULTS.

- ➢ Efficient space utilization: Vertical parking systems can accommodate more cars in a smaller footprint compared to traditional parking lots.
- ➢ Time-saving: Automated processes reduce the time required for parking and retrieving vehicles.
- ➢ Increased convenience: Users can easily park and retrieve their cars without maneuvering in tight spaces.
- ➢ Enhanced security: Controlled access and surveillance features provide added security for parked vehicles.
- ➢ Environmental benefits: Vertical parking systems can reduce the need for sprawling parking lots, potentially preserving green spaces and reducing urban congestion.

3.2 ADVANTAGES:

- ➢ Parking twice the number of cars in the same space as a conventional garage.
- ➢ Lower operation costs and overhead.
- ➢ Traditional parking garages are dark scary places, in the proposed system the driver and passengers are not allowed into the parking area resulting in.
- ➢ No car accidents.
- ➢ Convenience: Ground level easy access.

4. CONCLUSIONS:

The Automated Vertical Car Parking System had successfully been designed and developed. The mechanical model has been designed the software, as well as the control circuit, has been implemented successfully. It demonstrates the working of the planned automated car parking system. The control strategy for the traffic flow to the smart car parking system was designed using Arduino. A demonstration has been done for 6 cars. Servo motor is used to provide movements to transport the vehicle in the parking system.

5. ACKNOWLEDGEMENT:

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