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Automatic Car Parking System-Prototype: A Review

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Abstract

In metropolitan cities, vehicle parking has become a major thing in all busy areas and a good traffic system necessarily a useful parking system. Different example of vehicle parking are applied universal namely Multi-level Automated Car Parking, Automated Car Parking System, Volkswagen Car Parking etc. To avoid these problems, newly many newly technologies have been developed that help in solution the parking problems to a great extent. Multi-level car parking system (MLCPS) is one such technology which is accomplish in India It is application for optimum use of parking space by utilizing vertical space rather than horizontal space. Some of the advantage of MLCPS are optimum use of space, low building cost, low operation and maintenance price to name a few. We propose a newly "smart parking" system for an urban surrounding. The system allot and appropriate an optimal parking space for a driver supported on the user's requirements The parking space can be utilized to the highest if a multilevel parking system is designed. There exists a multilevel parking system for cars such as puzzle parking, tower parking, multi-circulation type, rotary type parking system. This Roto-Parker system can be installed with safeness installations such as, whenever there is human motion in the system, the rotation of the platforms should be instantly shut. The platforms can also be provided with safety sensors guiding the motion of vehicles in the platforms. It can be perfectly automated by

integrating it with a panel board, such that whenever a especial number is called on the panel board, the particular platform should look at the ground level.

Keywords: *Multi-level car parking system (MLCP), Automatic car parking system, Rotary car parking system*

INTRODUCTION

The first topic we are facing when we demonstrate the project is, "When your project is build a multilevel parking system?" So we would likely to introduce our project answering that subject display different example of parking as of now which are far used and the reasons why we had to Make this option from them in the field of technology everyday a newly technology is launched it has its own characteristics due to which we have to adopt it today is the world of newly technology which we have to take in practice.[4]

As the city modernization increase the many of vehicles increases correspondingly instead of taking people transportation people travel in personal vehicles to distinct locations in cities for convince and comfort. due to the lack of a well planned policy for parking facilities the demand of parking space is commonly than the supply additionally downtown areas are gradually saturated with commercial office buildings but not as many parking spaces drivers commonly want to spend a important amount of time circling the blocks around their destination searching and waiting for free parking spaces. To overcome above problem there is want of an advanced car parking system. [1] The automated parking guidance system has existed for a long time, but is only now finding quantity demand for the capable and powerful parking solution.

The demand for parking is uniformly increasing while the space for huge parking lots is decreasing. As a proceed, automated parking management systems have filled the void by parking more cars in less space and improving profitability, safeness, environment considerations and all related expenses. With this in mind, knowledge the background of the parking garage can be an exciting subject.

The automated parking system was in reality first developed in 1925 by Max Miller in New York City.

The designate original aim was simple to lift a vehicle off the ground, such as in the event of a stalled or broken down car on a road. It was never usage. It was not until 1941, as cars crowded cities that the first attempt to vertically park cars was attempted. O.A. Light produce a device that permit three cars to park vertically, three on each side for a entire capacity of six.

A year later, E.W. Austin invented the automated garage. His invention became the leader in automated parking during the 40s, 50s and 60s. These systems were called Bowsers, Pigeon Holes and Roto Parks. Throughout these years, developments and design exchange were made to continuously improve the automated car park. In 1964, Eric Jaulmes invented what is most like to the automated parking conduct systems of now. His system had a valet drive the car into an elevator.

The elevator would then take the car to a decide place and the valet would park the car in that space. Then on the return down, if it had been demand, the valet would stop at another spot to get a car to be returned. At the same period, the three former systems were revitalized to removal the valet altogether permit the lift to tip the car into spot and the contrary on retrieval.[4]

PARKING ISSUES IN INDIA:

India has more than 40 million vehicles. But the traffic on roads and parking space has been an region of concern in majority of Indian cities.[6] In most of the cases, 40 per cent of the street space is usage for parking rather than for traffic movement on a ordinary working Time. With affordable cars entry in the market, almost every intermediate-class family owns a car which adds to the vehicular population in our country.

If this trend is attended, no amount of space will be enough to adjust stationary vehicles, which will lead to narrower lanes for motion of people transportation.

The instant position in some areas of Indian cities is such that the demand for parking is doubly the supply. Shortage of parking hinders the free flow of traffic and can also lead to accidents. It also source air pollution, traffic jam and driver frustration. Some of reasons for parking problems are:

- Low parking cost
- Weak implementation of parking regulations
- Number of vehicles is growing Time by Time

The footpaths are not suitably constructed so walking surrounding is not strong. Hence prosperous vehicle owners do not choose parking their vehicles three or four meters away Vehicle owners are not willing to payment the parking amount and often end up parking on the streets so construction space for parking can seem likely a waste. So to avoid all these problems, researchers newly have turned to appropriate technologies for effective parking management.

These technologies have support in resolve the parking problems to a great extent. Different technologies are applied at distinct position accordingly to the parking surrounding and the type of parking demand in that area. The technologies usage are as follows:[9].

PARKING SOLUTIONS ALREADY PREVALENT IN INDIA:

It is usage for optimum utilisation of parking space by utilizing vertical space rather than horizontal space. The increasing (prenominal) population and the enhance in vehicles have made the plots costly and hence the conventional parking has become non-feasible. Car ramps or car lifts also consume a lot of space therefore mechanized car parking systems verify to be feasible.[8] Multi-level car parking system (MLCPS) has a many of benefit over the conventional parking. [7]

LITERATURE REVIEW

Integrated Car Parking:

Integrated Car Parking Solution Customize application proper for different example of landscapes and buildings Structures available below the ground. Ease governs by soft touch on the operation panel screen.

When a vehicle stops in front of the entering, automatically door exposed and trolley transfers the vehicle to parking cell. Misleading of this solution is it should be undergrounded. By this investment grow and lot much space use is to be made. [1]

Figure -1 Integrated Car Parking [4]

Rotary Automated Car Parking System:

The driver will pull the car onto a electronic computer- controlled pallet, turn it off, and get out. The pallet is then lowered into the abyss of parking spaces, much likely a freight elevator for cars, except it can also move sideways, not just up and down.

There's an arrange of laser sensors that consider the system know if the car doesn't suitable on the pallet (although it's great enough to suitable a mid-sized SUV). The system retrieves the car when the driver returns, although this might take some period and creative manoeuvring. Cars are parked two deep in some spots, so a particularly tailored software system has to Figure out the logistics of shuffling the different vehicles around as required to retrieve a particular car.

And for those, like me, who find it difficult to transfer their vehicle around after pulling out of a space, there's an underground turntable that transfer the vehicle around before it is lifted to the surface, so the car is facing out into the drive, ready to go. Backing out of garages or parking spaces is one of the most usual reason of accidents. [2]

Figure-2 Rotary Automated Car Parking System [2]

Automatic Multilevel Car Parking:

A multi-level car parking is essentially a construction with amount of floors or layers for the cars to be parked. The distinct levels are accessed through interior or exterior ramps. An automated car parking has mechanized lifts which moving the car to the distinct levels. Therefore, these car parks necessity less building volume and less ground space and thus reserve on the cost of the building.

It also does aside the need for occupy to many personal to monitor the position. In an automated car parking, the cars are left at the entering and are further transported within the construction by robot trolley. Similarly, they are retrieved by the trolley and position at the exit for the owner to driven away.[3]

Vertical Car Parking – A Prototype:

Unique Characteristics the space for parking 3 motorcar can hold more than 9 motorcar. It adopts rotating for mechanism so as to minimize the vibration and noise. Flexible management, No caretaker is required, key pressing function, High safeness, whole investigate device Stable and safe It is simple to manage with the driver parking and leaving the vehicle in the system at the ground level.

Once the driver leaves the incorporated safeness zone the vehicle is automatically parked by the system rotating to lift the parked car aside from the bottom middle

place. This leaves an empty parking space free at the ground level for the next car to be parked on. The parked motorcar is easy retrieved by pushing the knob for the applicable position number the car is parked on. This purpose the required motorcar to rotate down to ground level ready for the driver to enter the safeness zone and reversed the car out of the system. Except vertical car parking system all other systems usage a huge ground area, vertical car parking system is improved to utilize greatest vertical area in the convenient minimum ground area.

It is completely successful when installed in engaged areas which are well established and are suffering with shortage of region for parking. Although the building of this system seems to be comfortable, it will be with from knowing without the knowledge of materials, chains, sprockets, bearings, and machining operations, kinematic and dynamic mechanisms Imagine the period that automatic smart parking systems would preserve you. Every period you enter your office construction you have to find a parking space and spend time walking in and out of the lot as well. Imagine how much period it is costing you. Even if you just waste 5 minutes a day to park that transfer to you.

Concept designate and proto build of Roto parker for two wheel:

This system can have more than two levels of parking. Its designate has a configuration that enables usage of all parking entering and exits on ground level. The parking pallet moves left, right, above, and downward and has always a minimum of one empty slot for motion. Car parker can have manifold levels above, pit style below, or a union of both. Cost: Rs. 2.5 lakhs/ECS Advantages: Operation is simple, no necessity for parking attendant. Fast retrieval time, commonly within two minutes Extremely secure and safe with safeness sensors and optional automatic gates. [5]

CONCLUSION

We can decide from the examiner that Automatic car Parking is at a very tender stage in India and people severely know throughout the technology. They cannot differentiate between smart parking and automated parking which is already very successful in India. However people are willing to approve it as it will solution many problems similar space availability, waste of time, fuel and will also provide protection to

the vehicle. Hence Automatic car Parking has got a vast potential as many Smart City purpose are approaching up in India and a vast investment has already been lined up.

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