**DIGITAL PARKING SYSTEM**

*Submitted by*



ABSTRACT

This project aims to design a three tier parking system.

The project will keep track of the duration for which cars are parked. The lowest tier will have those cars parked for short interval (few mins).The middle tier will contain cars which will remain for 1-3 hrs. Cars which will remain in the lot for more than 3hrs will be in upper tier.

It is based on the technology which takes a picture of the approaching car when it is at the main gate. The system will assign a password to the user (visiting for the first time).After the user has entered the password the project will check for space in the parking area. If space is available the electronic main gate will open

And user will park the car inside.

If there is no space in the area the main gate will not open. In this case the system will check for the car parked for the longest interval & notify its user that it should remove the car & park it in the upper tier of the parking lot.

If the user inputs the wrong password the main gate will not open and signal will be sent to the user that the password is wrong.

AIM of the PROJECT

The aim is to develop a technologically advanced parking system which will implement various innovations. The system will allow maximizing of parking capabilities .The system will inform drivers if they are available at the parking spot and prevent unauthorised vehicles from entering the parking lot. The unauthorised vehicles will be tracked by a camera which will record the corresponding vehicles license plates. The images will be transmitted to a recording device

Software Requirements

The following software tools will be used:-

* Turbo c++ & JCreator 2.5
* Mozilla Firefox browser
* Web server
* MY SQL for database management

MODULE DESCRIPTION

The project will have the following modules:

1. **User profile module**:- This will have information of all users using the parking lot.
2. **Device Management Module:-**This will take care of the various technological devices like web camera, electronic gates, cctv cameras , wireless devices and so forth.
3. **Time management module:-**This module will keep a track of time for which cars are parked in the three tiers of the parking area.
4. **Geographical module:-**This will be used to find area in the city which is best suited to build a parking lot as large as the one proposed.
5. **Security Module**:- This will ensure that unauthorised vehicles are not parked. The system will inform drivers if they are available at the parking spot and prevent unauthorised vehicles from entering the parking lot. The unauthorised vehicles will be tracked by a camera which will record the corresponding vehicles license plates. The images will be transmitted to a recording device.
6. **Design Module**:-Modelling and design.
7. **Cost Management Module**:-This module will aim to prepare a cost efficient system and at sane time will not compromise with the use of technology. It will have the financial budget of the project.

**Design Requirements**

**Basic input and output:-**

* **Number of vehicles entering/exiting the parking lot**
* **Number of violators**.

Scenarios:-

1. **Entrance with a valid Id number**. The number will be provided to the user who visits for the first time by the machine .The number would have to be provided at the entrance for entry. If the user gives a wrong id num he will not allowed park the vehicle in the parking area. In case the user forgets his id no he has provide the wrong id to the machine at the gate five times and his id will be changed. Failing to remember the id for the second time will lead to prohibition of the user from entering the area in future.
2. **Entrance speed regulated by speed bumps**. This is done to ensure single vehicle entry.
3. **Entry/exit**. On entry and exit of a vehicle the automobile counter will be triggered which will link to the comp software to keep the system updated with no of parking spots available.
4. **Security arrangements and rule violation**. If two vehicles enter at a time with a speed of more than 10 km/hr a snapshot of the violators will be taken at the main gate.
5. **Separate gates for entry and exit.**  If a person tries to leave from the entry gate his snapshot will also be taken through a cctv camera at the main gate.

**Design Approach**

The project should have the following features for its successful functioning.

1. Technology.
2. Feasibility.
3. Efficiency.
4. Optimum Cost

The project will deliver a cost efficient system which would be feasible and at the same time will not comprise with the technology as far as possible.