**PARKING LOT MANAGEMENT SYSTEM**

**Group 5394\_RR\_1**

Parking lot system is a software system that enables customers to park their vehicle in parking area with some unique features. Central Management System is the main controlling system which has different sub systems like ticket issuing system, map viewing and locating your vehicle and check out system. This system is designed for a parking complex having multiple levels and each level having multiple rows. The system keeps track of the available spots at a given point of time. When the customer wants to enter the parking lot and if there are slots available, the system asks him to enter the Vehicle Number and Vehicle type. Based on the vehicle type entered by the customer, the available spots are highlighted and displayed to him, along with the cost of parking from which he can select the desired slot. When there are no available slots, the system doesn’t allow the customer from entering the complex. Vehicle types that are allowed for parking are motor cycles, cars, and buses. If the customer has chosen motor cycle, all the available spots in the entire lot is displayed for him to choose one. If the vehicle type is Car, all available single compact spot or a single large spot is displayed. If the vehicle type is Bus, only the available large spots are displayed to the customer. Few accessible parking lots are also available for each vehicle type at the first level which will be highlighted uniquely and displayed to the user. Only customers with handicapped parking permit can use those lots. If violated, $200 fine is added to the receipt and the vehicle is towed at customer’s expense. Once the customer chooses a spot, the customer can use maps in the system that shows the route to reach to the exact location. If the customer doesn’t park his vehicle at the chosen slot, a $100 fine will be added to his receipt and the vehicle will be towed at the customer’s expense. When the customer comes back to take the vehicle out of the complex and doesn’t remember his/her parking location, individual stations are installed at many places in the entire complex and when he/she types in his/her vehicle number at the station, it displays the lot number. And, just like at the Entry gate, our map guides the customer with his route to his parking lot. There is an exit gate at the complex at which the customer can pay his parking amount, get a receipt and exit. At the gate, when the customer types his vehicle number, based on the entry date and time, and the amount for each day, a total amount is generated and displayed to the user with a unique receipt number, entry date and time, exit date and time, cost for each day and the total cost. Our system accepts only card. When the customer types in a valid 16-digit card number and CVV, his payment is validated and he is allowed to exit the complex. (In general it will have swipe concept).

The parking lot system will also maintain Frequent Parker program. A user can create an account by registering in Central Management System. Customer can register using email ID, vehicle number, vehicle type, credit card information and address. Then a card will be issued to the customer having unique id number and user can use this card for parking and making payment. Also, customer will equally earn points for every parking stay depending on the duration of stay and get some benefits. Also, admin can view or update the parking rates and can analyze the parking data to find out details like the rush hours and less busy hours, etc.