

Ahsanullah University of Science and Technology

Department of Computer Science & Engineering

DATABASE LAB

CSE - 3104

Project Report

Parking Spot Finder

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1 Introduction

Finding a parking spot is frustrating and stressful. Our goal is to provide a simple parking solution for the users. By this software a user can easily find empty parking spot provided by other users.

2 Objective

The main objective of this project is to learn MS SQL Server Database System thoroughly.

3 Entity-Relationship Diagram

3.1 Entity and its attributes

3.1.1 Entity-01: User

Holds the information of users

Attributes:

* UserId : Primary key of the table, data type: integer
* Name: holds the name of the user, data type: varchar
* PhoneNo: holds the phone number of the user which is unique, data type: varchar
* Password: holds the password of the user , data type: varchar
* Type: holds the type (parking spot provider or looking for parking spot) of user, data type: integer
* Status : holds the status of the user (if the user is logged in or not)

3.1.2 Entity-02: VehicleOwner

Holds the information of users who own vehicle

Attributes:

* VehicleOwnerId: Primary key of the table, data type: integer

3.1.3 Entity-03: ParkingSpotOwner

Attributes:

* SpotOwnerId: Primary key of the table, data type: integer

3.1.4 Entity-04: ParkingSpot

Attributes:

* SpotId: Primary key of the table, data type: integer
* Address: holds the address of the parking spot, data type: varchar
* Rent: holds the rent per hour of the parking spot

3.1.5 Entity-05: Vehicle

Attributes:

* VehicleId : Primary key of the table, data type: integer
* VehicleLicense: holds the vehicle license number which is unique , data type: varchar
* VehicleModel: holds the model of vehicle

3.1.6 Entity-06: ParkingRequests

Possible Attributes:

* RequestId:Primary key of the table, data type: integer
* SenderId: UserId of the vehicle owner who requested parking
* ReceiverId: UserId of the parking spot owner who accepted the location
* Location: Preferred location , datatype: varchar
* StartTime : the time when a parking spot owner accepts the request, datatype :datetime
* EndTime : the time when a parking session ends, datatype :datetime
* Amount : Amount of money has to be paid to the parking spot owner and vice versa , datatype : integer
* Rating: rating given to the parking spot owner by vehicle owner , datatype : integer

3.1.7 Entity-07: Ads

Holds the information of permanent parking for rent added by parking spot owner

* AdId: Primary key of the table, data type: integer
* AddedDate : the time when a row is added to the table , datatype : datetime
* Contact: contact information of the spot provider, datatype : varchar
* Address: address of the parking spot
* Guard: holds the information if the spot has a security guard or not. data type: integer
* Rent: monthly rent of the spot ,data type: integer

3.2 Relationships

3.2.1 Relationship-01: is a

Relating VehicleOwner with User

3.2.2 Relationship-03: has

Relating VehicleOwner with Vehicle

3.2.3 Relationship-04: has

Relating ParkingSpotOwner with ParkingSpot

3.2.4 Relationship-05: receives

Relating ParkingSpotOwner with ParkingRequest

3.2.5 Relationship-06: adds

Relating VehicleOwner with ParkingRequest

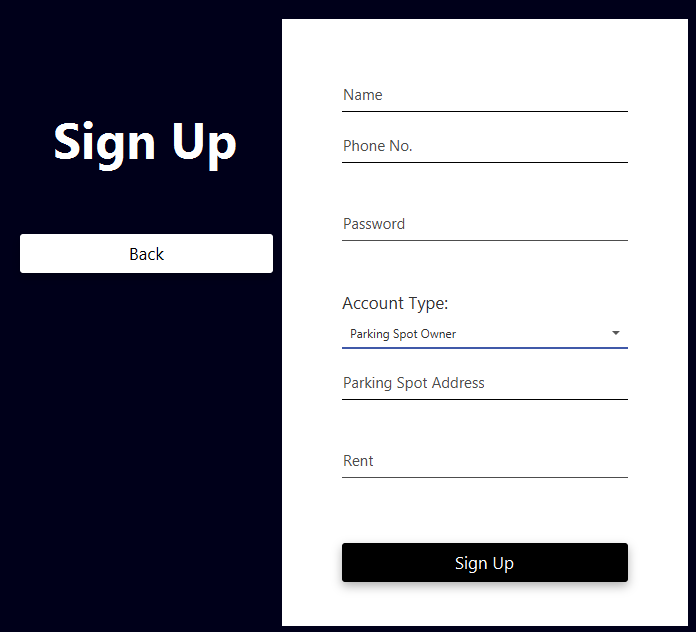
3.2.6 Relationship-07: posts

Relating ParkingSpotOwner with Ads

4 Software & Features

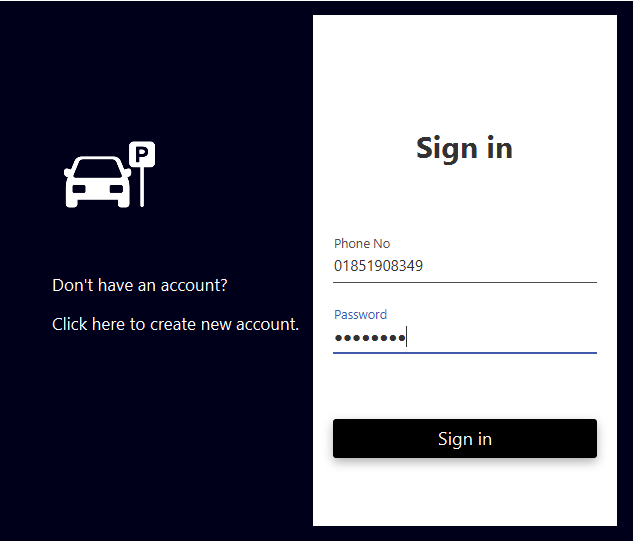
Sign up:

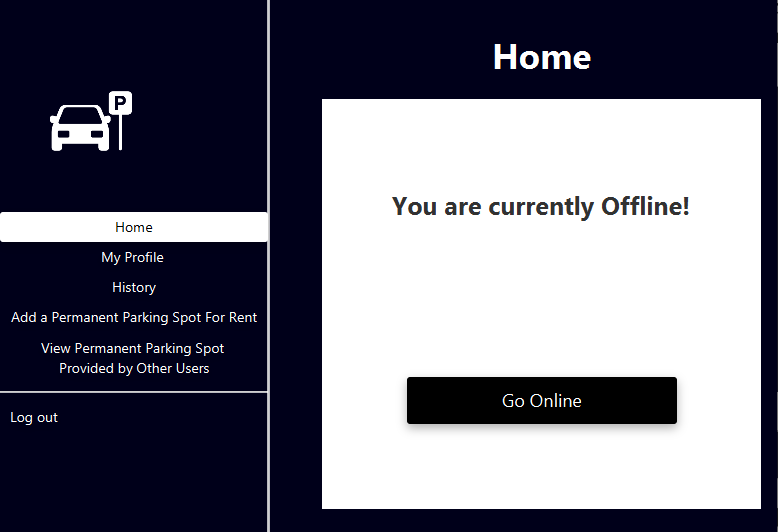
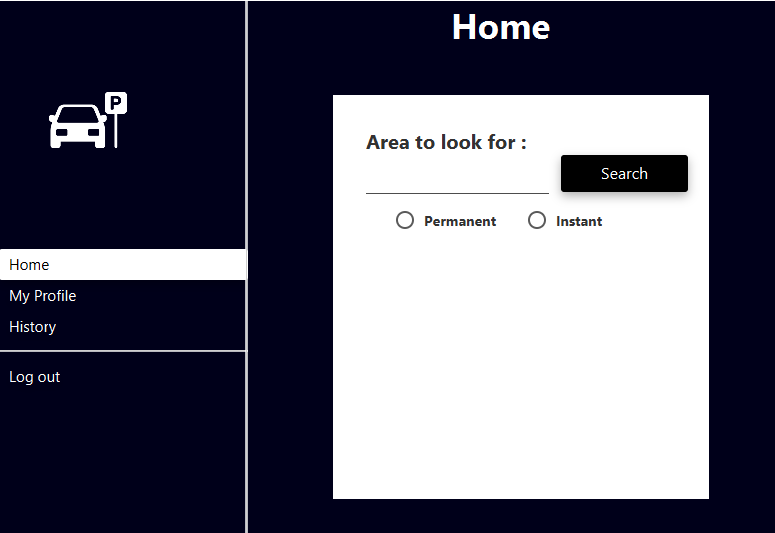
A user can register as a parking spot provider or vehicle owner. It is not possible for a user to have account of both type having the same phone number.



Sign in & Main Menu:

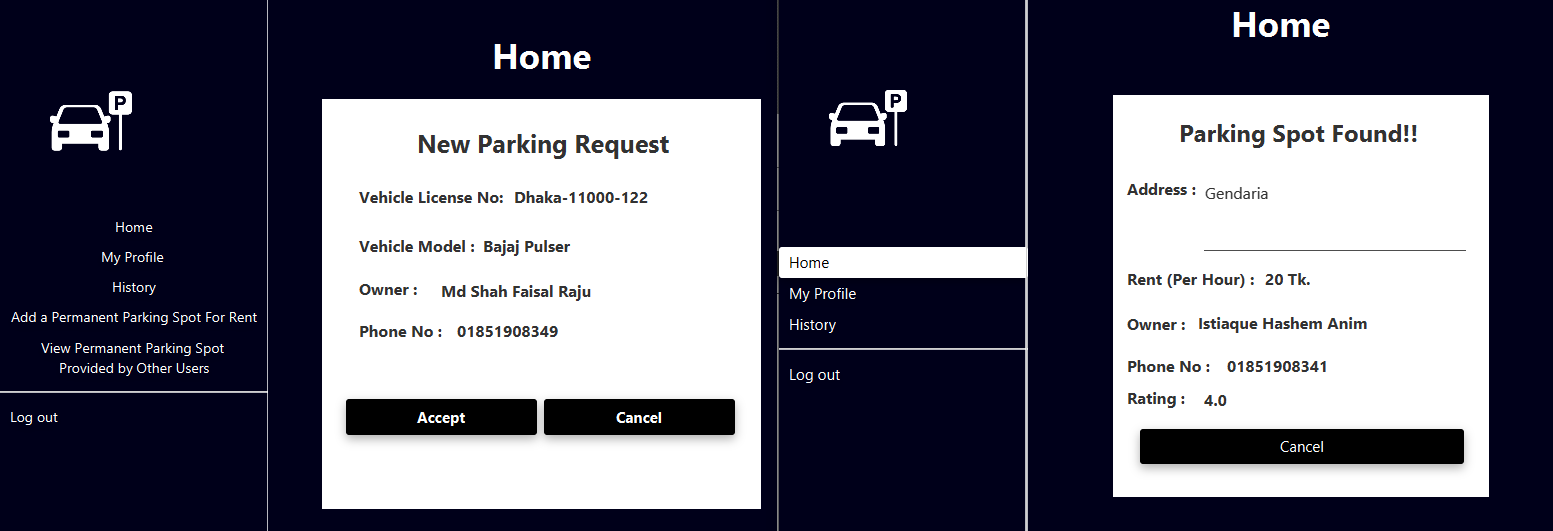
After creating account user can sign up. Depending upon the account type the next screen will be loaded. Parking spot owner and Vehicle owner has different main menu.



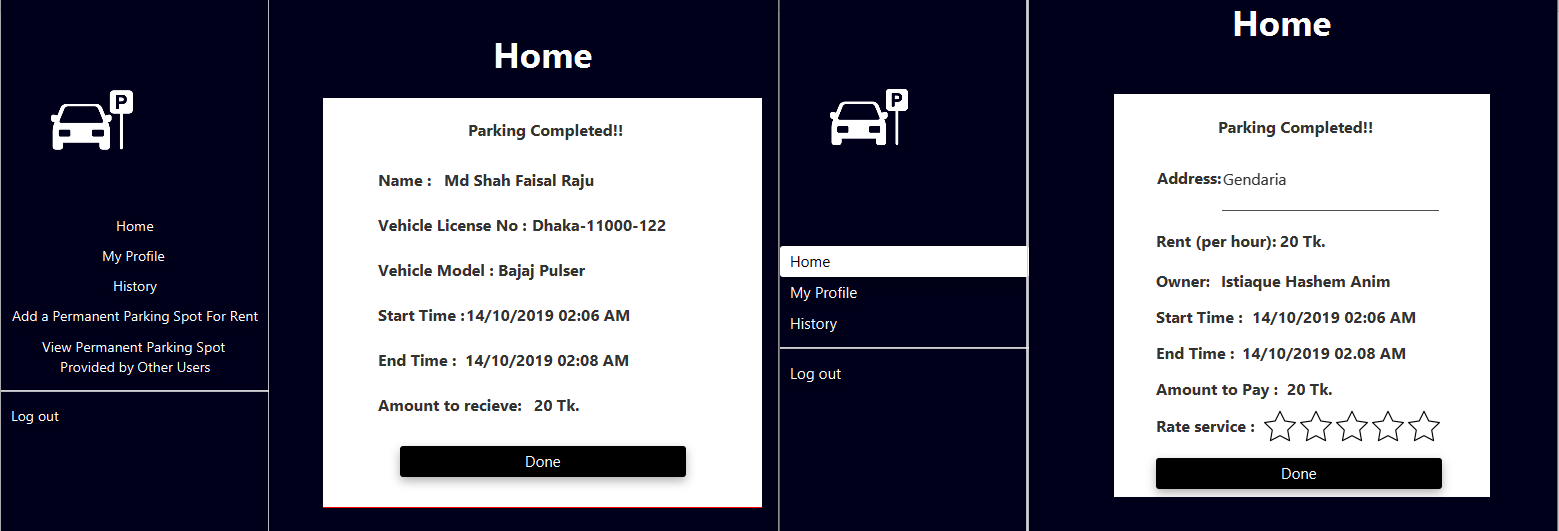


Parking spot owner can search for parking request by clicking the go online button. On the other vehicle owner can look for parking spot by searching parking spot in desired location. When a parking spot owner searches for a parking spot it gets added to the ParkingRequests table.

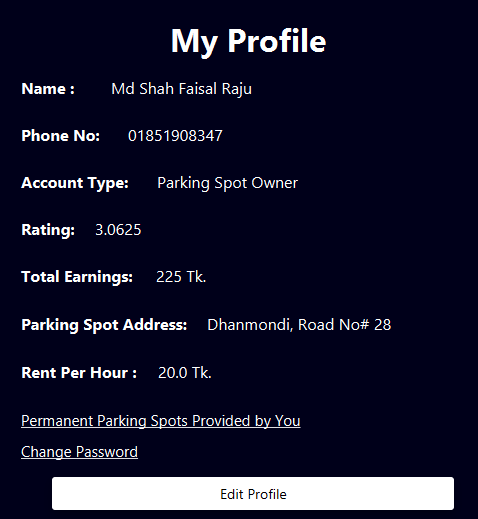
If the given location matches with the location of parking spot (which owner is willing to take parking request), GUI shows the information of the parking spot to the vehicle owner and shows the information of vehicle owner to parking spot owner.



The parking spot owner can accept or cancel the request. The vehicle owner can only cancel the request. After completing parking the amount of money that has to be paid by vehicle owner will be shown to both parking spot owner and vehicle owner. Vehicle owner can rate the parking spot owner.

View Profile & Edit:

Users can view their profile and edit if they want.



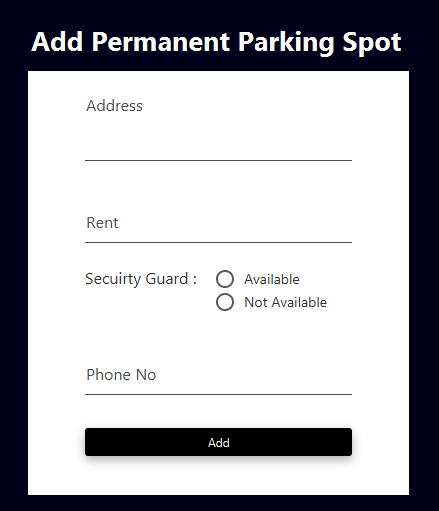
History:

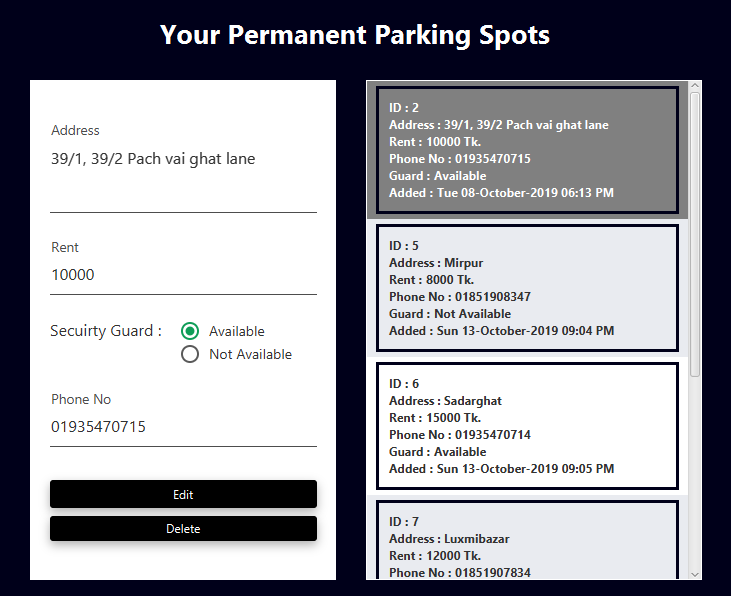
User can see their history.

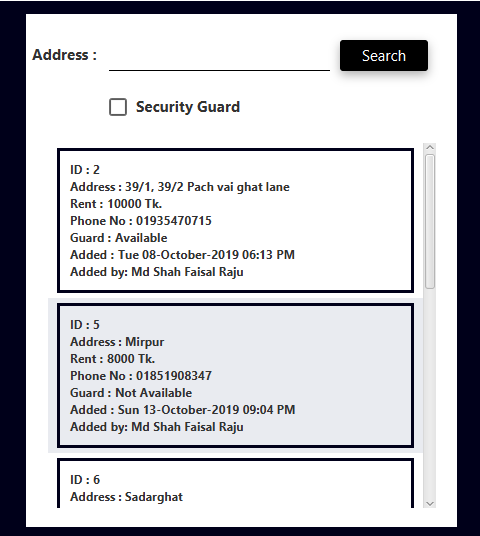


Add Permanent Parking Spot:

Parking spot owner can provide permanent parking spot if they want. By this feature user can add permanent parking spot. A parking spot owner can also see the permanent parking spot provided by other parking spot. A vehicle owner can also see the permanent parking spot provided by parking spot owners. Permanent spot can be searched by location and availability of security guard.







5 Conclusion

The main objective of this project is to learn more about Database and SQL. While working on this project we tried to learn about database and MS SQL server as much as possible, also using database in desktop application. Thought we faced some difficulties while working, by the help of course teacher we tried our best overcome the difficulties.

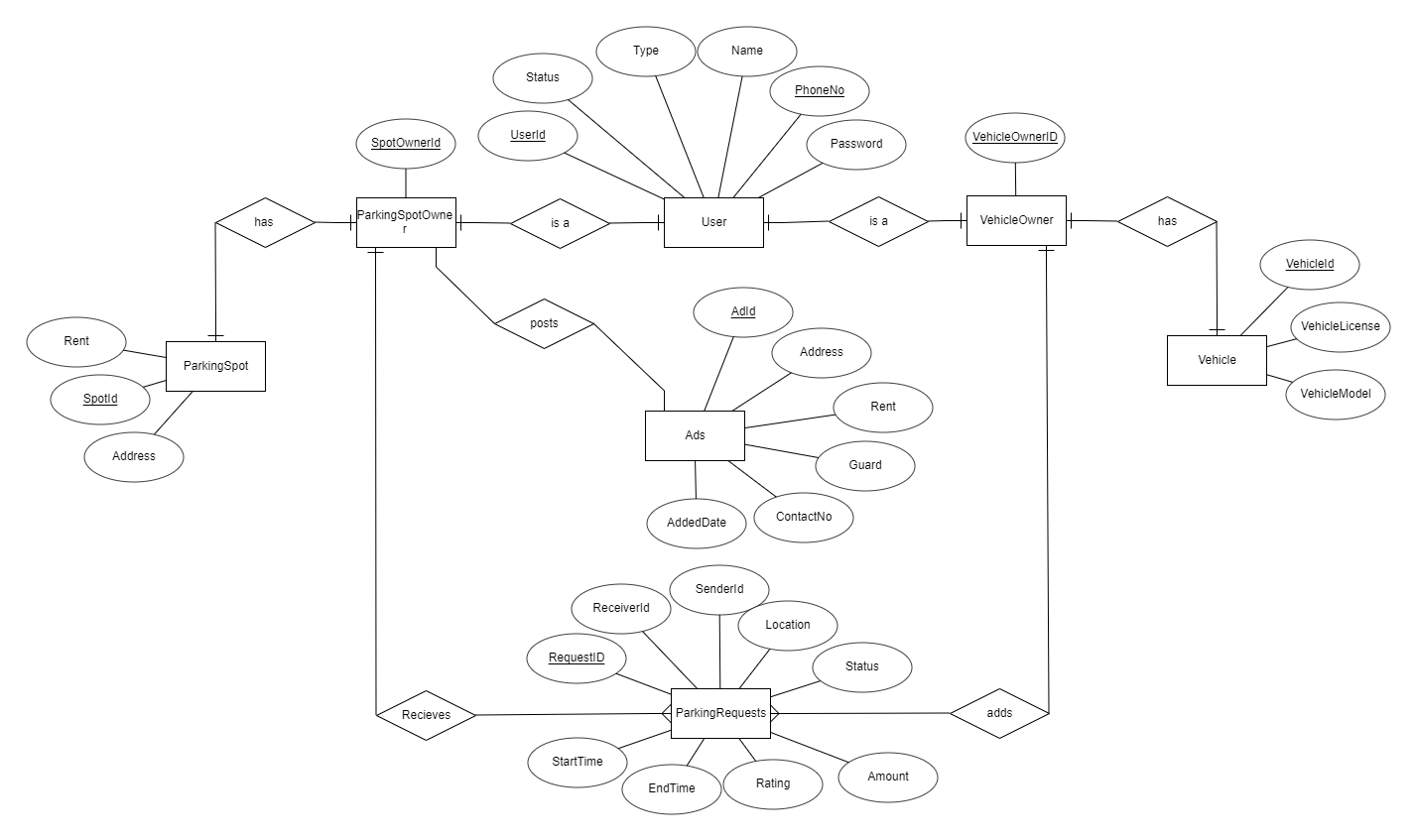


Figure 1: E-R Diagram of Parking Spot Finder