

EasyPark

VEHICLE PARKING MANAGEMENT SYSTEM

Title of project: EasyPark

Description of project: Vehicle Parking Management System

Semester: IV

Branch: Computer Science & Business Systems

Department: Information science & Engineering

Course: Database Management Systems

Course code: CB420

Project title: Vehicle Parking Management System

Date: 19-06-2021

Members of the team:

Name	USN
Chavva Bala Meghanath Reddy	01JST19CB009
Chinmayananda M A	01JST19CB010
Danussh Manjunath	01JST19CB012
Harsh R Shah	01JST19CB017

Acknowledgement:

We would like to extend our heartfelt gratitude to our project mentor Dr. Pratibha R.J whose constant guidance, and encouragement is what made this project successful.

Table of Contents

<i>Introduction:</i>	3
<i>Objectives:</i>	3
<i>Design:</i>	3
1) Tables:	3
a) <i>VehicleDetails:</i>	4
b) <i>OwnerDetails:</i>	4
c) <i>VehicleOwnership:</i>	5
d) <i>DriverDetails:</i>	5
e) <i>Charge:</i>	5
f) <i>Slot:</i>	6
g) <i>Slot Allotment</i>	6
2) ER Diagram:	7
3) Flow diagrams:	8
<i>Sample Data:</i>	9
<i>Hardware Requirements: (PC Only)</i>	11
<i>Software Requirements:</i>	12
<i>Steps to run the Project:</i>	12
<i>Snapshots</i>	14
<i>Future Scope:</i>	17
<i>Conclusion:</i>	18

Introduction:

- Vehicle Parking Management system allots a parking slot and maintains the record of the registered owner and vehicle.
- This software is developed to remove the confusion in parking vehicles and to ease the flow of traffic near the parking areas.
- This software helps to allot slots and charge the users for using the slots.
- This particular software is developed specifically for Devraj Urs road located in Mysore, Karnataka, India.
- A timer will be shown when the user has occupied the booked parking slot

Objectives:

- To allot slots for parking a vehicle
- To store the details of the vehicle
- To store the owner's details
- To track the driver's details
- To track the record of parking details of the vehicles
- To charge the vehicle for using the parking slot
- To ease the problems to find parking slots

Design:

1) TABLES:

The tables in the Database are

- a. VehicleDetails
- b. OwnerDetails
- c. VehicleOwnership
- d. DriverDetails
- e. Charge
- f. Slot
- g. SlotAllotment

a) VehicleDetails:

SL NO	AttributeName	Type	Description
1	VehicleNumber	VARCHAR	Registration number of a vehicle
2	Type	VARCHAR	• Car • Bike
3	Company	VARCHAR	Name of company
4	Model	VARCHAR	Model Type
5	Colour	VARCHAR	Colour of the vehicle
6	FuelType	VARCHAR	• Petrol • Diesel
7	EngineNumber	VARCHAR	Unique engine number
8	Chassis number	VARCHAR	Unique chassis number

Primary key: Vehicle number

b) OwnerDetails:

SL NO	Attribute Name	Type	Description
1	IDNumber	VARCHAR	Unique ID Number
2	IDProof	VARCHAR	Unique ID Proof of the owner
3	Name	VARCHAR	Name of the owner
4	Mobile number	VARCHAR	Mobile number of the owner
5	Address	VARCHAR	Address of the owner

Primary key: IDNumber

c) VehicleOwnership:

SL NO	Attribute Name	Type	Description
1	VehicleNumber	VARCHAR	Vehicle number
2	IDNumber	VARCHAR	ID Number of the Owner

Primary Key: VehicleNumber

Foreign Key: 1) VehicleNumber

Referencing Table: VehicleOwnership

Referenced Table: vehicle details

2) IDNumber

Referencing Table: VehicleOwnership

Referenced Table: Owner'sDetails

d) DriverDetails:

SL NO	Attribute Name	Type	Description
1	DLNumber	VARCHAR	DI number of the driver
2	Name	VARCHAR	Name of the driver
3	Mobile number	VARCHAR	The contact number of the driver

Primary Key: DLNumber

e) Charge:

SL NO	Attribute Name	Type	Description
1	Type	VARCHAR	Type of vehicle that is to be parked (Car or Bike)
2	Charge	FLOAT	Chargeable Amount

Primary Key: Type

f) Slot:

SL NONO	Attribute Nam	Type	Description
1	Slot	INT	Slot number allotted
2	Type	VARCHAR	Type of vehicle that is to be parked (Car or Bike)
3	Occupancy	CHAR	Takes value Y or N to tell if it is occupied

Primary Key: Slot

Foreign Key: 1) Type

Referencing Table: Slot

Referenced Table: Charge

g) Slot Allotment

SL NO	Attribute Name	Type	Description
1	VehicleNumber	VARCHAR	Unique Vehicle Number
2	InTime	TIMESTAMP	The time stamp at the vehicle enters the slot
3	OutTime	TIMESTAMP	Timestamp at the vehicle leaves the slot
4	Charge	FLOAT	Chargeable amount to the vehicle
5	Slot	INT	Slot number provided
6	DLNumber	VARCHAR	Unique Driving License Number

Primary Key: (VehicleNumber, InTime)

Foreign Key: 1) VehicleNumber

Referencing Table: SlotAllotment

Referenced Table: vehicle details

2) Slot Number

Referencing Table: SlotAllotment

Referenced Table: Slot

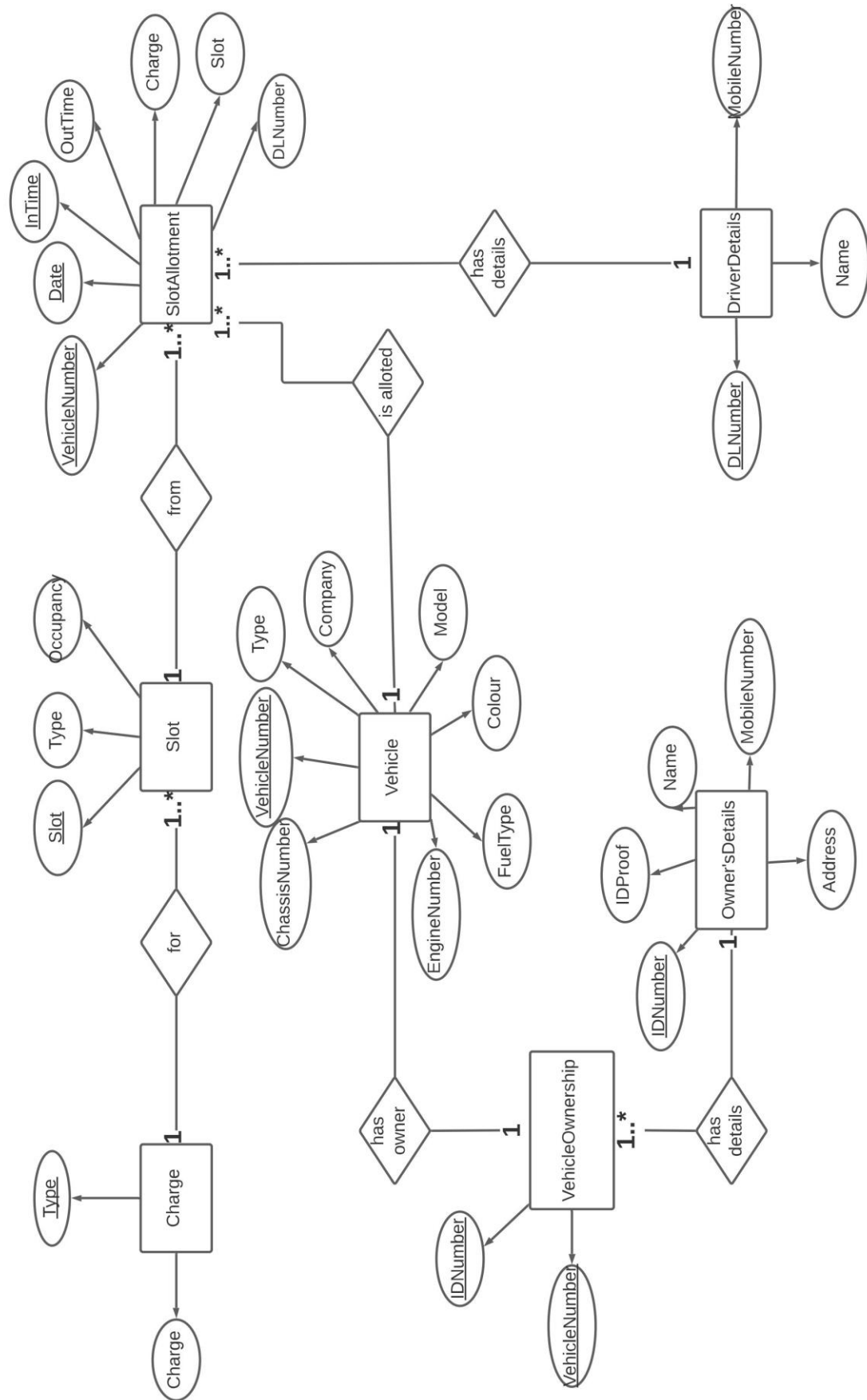
3) DLNumber

Referencing Table: SlotAllotment

Referenced Table: Driver'sDetails

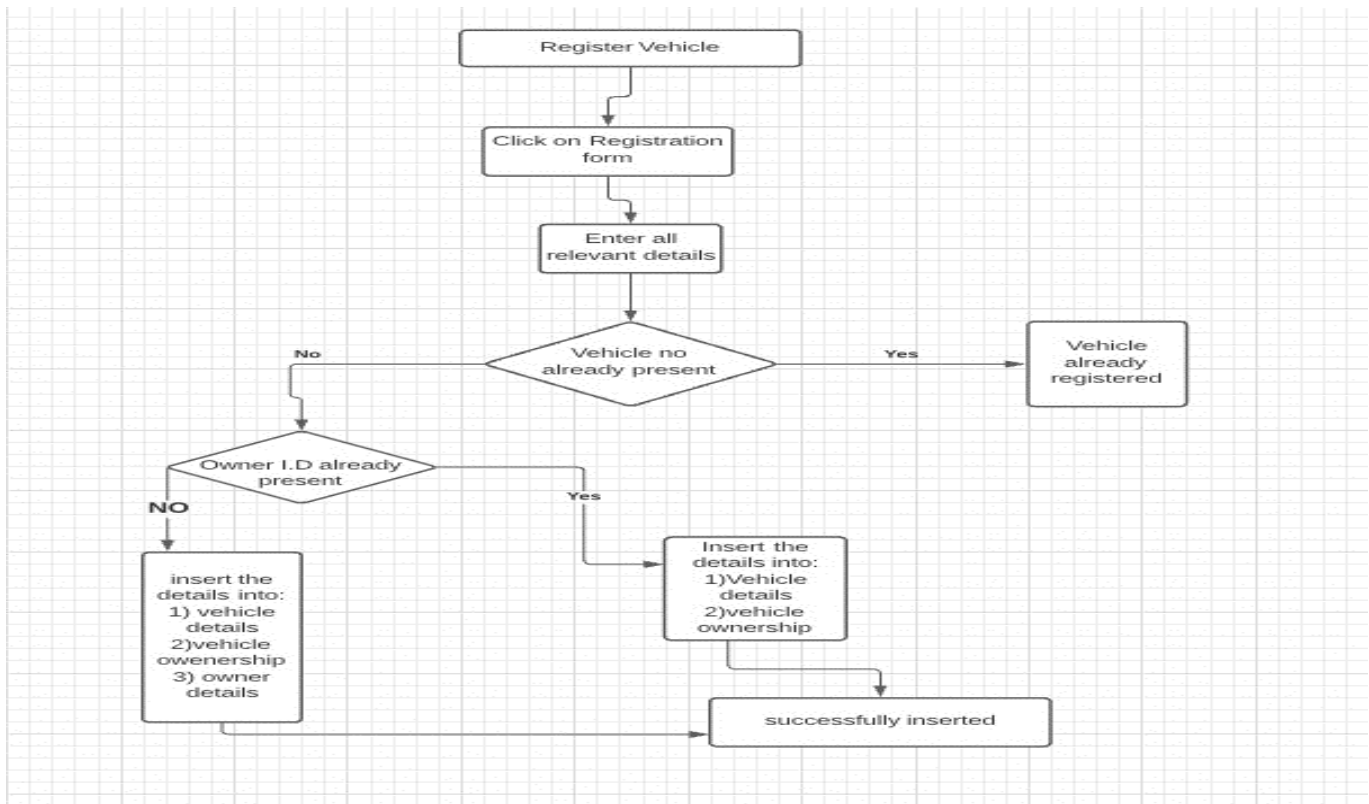
2) ER DIAGRAM:

VPMS ER Diagram

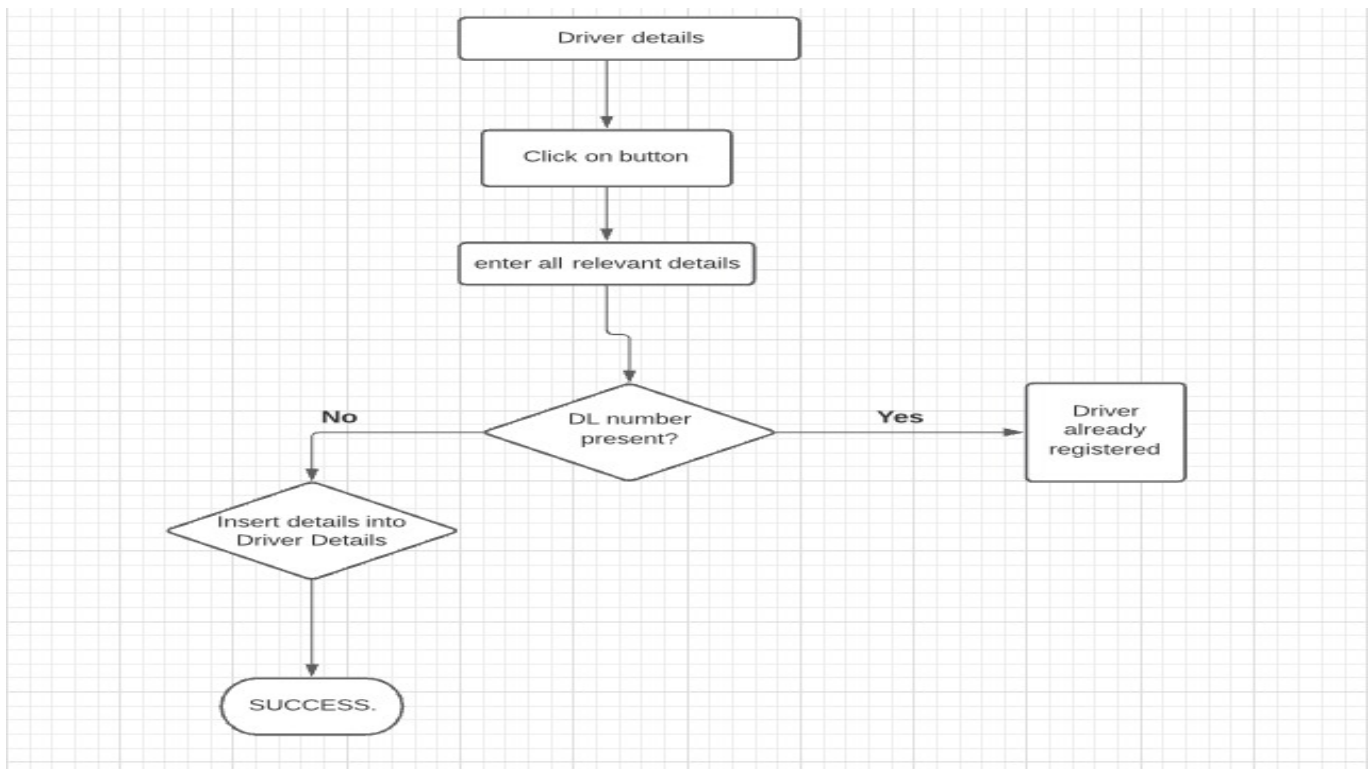


3) FLOW DIAGRAMS:

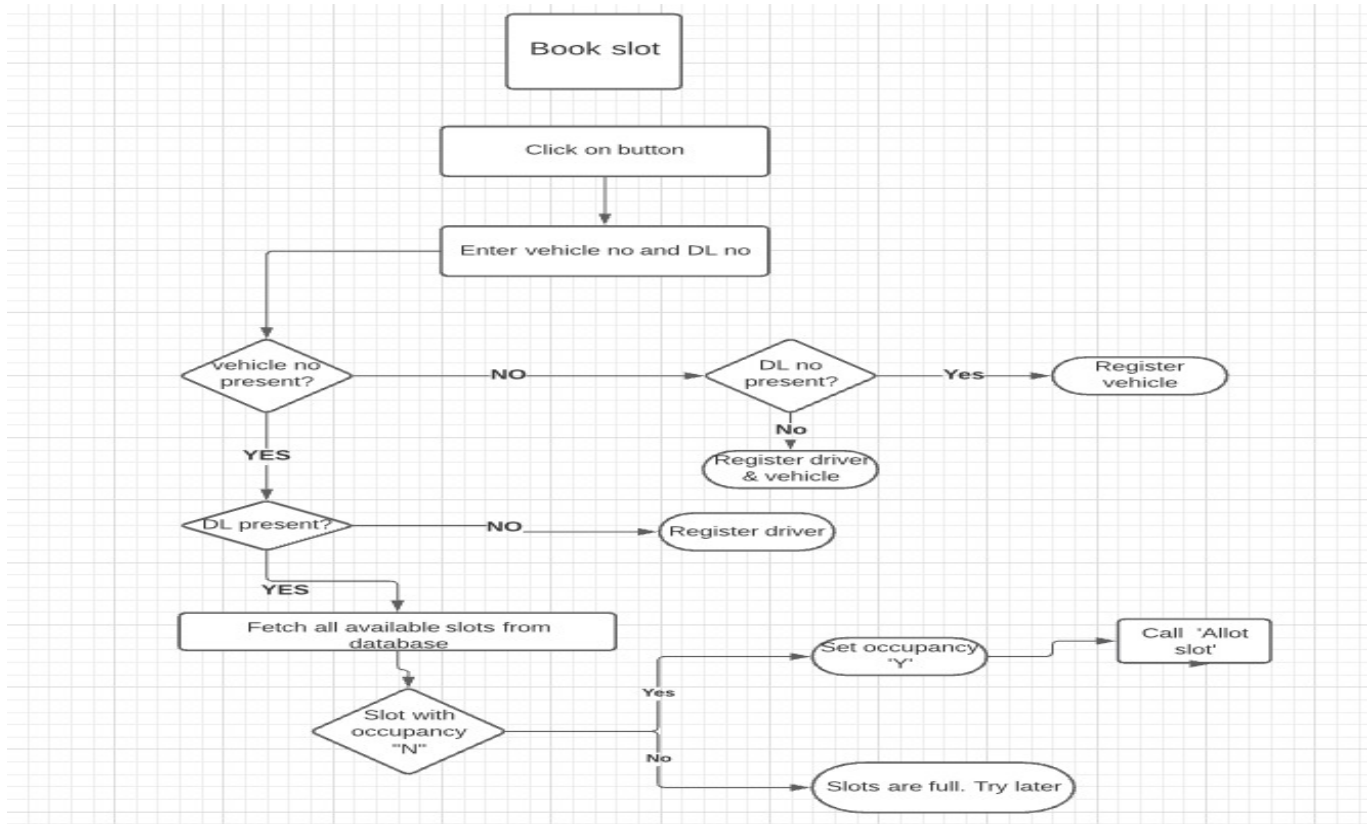
a) Registering a Vehicle:



b) Registering a driver:



c) Book Slot:



Sample Data:

a) Charge

	Type	Charge
►	BIKE	0.025
	CAR	0.05

b) Slot

Slot	Type	Occupancy
13	CAR	N
14	CAR	N
15	CAR	N
16	BIKE	N
17	BIKE	N
18	BIKE	N
19	BIKE	N
20	BIKE	N
21	BIKE	N

c) VehicleDetails

VehicleNumber	Type	Company	Model	Colour	FuelType	EngineNumber	ChassisNumber
KA26AC9953	BIKE	SUZUKI	ACCESS	BROWN	PETROL	GEX93493782	5NMSH73E77H031936
KA26AF6966	BIKE	TVS	SPORT	WHITE	PETROL	OAX40682789	5GAER23758J218863
KA29OV4333	BIKE	HONDA	HORNET	BLUE	PETROL	MEB05822038	19UUA56663A067919
KA32DN5008	BIKE	HONDA	GRAZIA	BLACK	PETROL	BHT30014068	1GNCS13W1W2130550
KA59QP1589	BIKE	TVS	JUPITER	BROWN	PETROL	UAU16446836	2T2ZK1BAXDC112616
KL02WT2513	CAR	TATA	HARRIER	WHITE	DIESEL	COE05573254	2C4GP54L04R564125
KL03CX7308	CAR	FIAT	ADVENTURE	ORANGE	PETROL	VMH57272251	4T3ZA3BB2EU086533
KL03IR5998	CAR	SKODA	OCTAVIA	BLUE	DIESEL	JZA87260780	5J8TB4H56FL013939
KL04NW8748	CAR	TATA	SAFARI	BLACK	DIESEL	UHZ84783012	5XXGR4A68DG181125
KL04VZ2216	CAR	SKODA	SUPERB	INDIGO	DIESEL	AKT40233424	JTHBK1EGXB2465728
KL05JW1823	CAR	TATA	ALTROZ	BLACK	DIESEL	GLH89902084	5GAKVBED6BJ145365
KL05NC4741	CAR	FIAT	AVVENTURE	RED	DIESEL	YTF15897654	WP0AD299X8S796293

d) OwnerDetails:

IDNumber	IDProof	Name	MobileNumber	Address
868474661677	AADHAR	RAMYA	8860743522	VIJAYA NAGARA
879874898344	AADHAR	VANI	6842519600	MANASA GANGOTRI
906486157074	AADHAR	ANJALI	6638384132	BHOGADI
AP238021947...	DL	ADITYA	9835502411	MANASA GANGOTRI
AP256987412...	DL	NAMAN	9185355193	BHOGADI
AP569874123...	DL	PRANAY	9415531413	BANNIMANTAP
AP756897452...	DL	THANMAI	9091937206	KUVEMPU NAGARA
D4596717	PASSPO...	TARUN	9201590956	KUVEMPU NAGARA
J9595659	PASSPO...	TEJASHWI	6907408438	BHOGADI
KA011615333...	DL	HARSH	9018585459	BANNIMANTAP
KA122200962...	DL	VIVEK	8910757191	VIJAYA NAGARA
KA163544130...	DL	VIJAY	9239396632	BANNIMANTAP

e) VehicleOwnership:

VehicleNumber	IDNumber
KA12UL1052	868474661677
KA14VQ3431	879874898344
KA32DN5008	906486157074
KL04VZ2216	AP2380219472789
KL09WX1877	AP2569874123300
KL03IR5998	AP5698741236123
KL06LZ1741	AP7568974526456
TN18UW0259	D4596717
KA22PG5543	J9595659
AP06UJ8051	KA0116153338456
KA17OZ5090	KA0116153338456
KL05NC4741	KA0116153338456

f) DriverDetails:

DLNumber	Name	MobileNumber
AP2569874123300	NAMAN	9185355193
AP5698741236123	PRANAY	9415531413
AP7568974526456	THANMAI	9091937206
KA0116153338456	HARSH	9018585459
KA1220050456732	DEEPAK	8976543201
KA1220098600788	ANIKETH	9078563412
KA1222009621456	VIVEK	8910757191
KA1635441300789	VIJAY	9239396632
KA1650322703123	MEGHANATH	8791914728
KA2302656106456	ARYAN	8658137551
KA3490450786789	MOUNIKA	9362199734
KA4437564037123	KARAN	9272551692

g) SlotAllotment:

VehicleNumber	InTime	OutTime	State	Charge	Slot	DLNumber	Tow
TN17WL0579	2021-05-24 11:41:00	2021-05-24 11:46:00	0	15	1	KA0116153338456	0
TN18UW0259	2021-05-24 11:41:00	2021-05-24 11:46:00	0	15	2	KA8559318708456	0
KL05JW1823	2021-05-25 08:41:49	2021-05-25 11:41:48	0	539.95	6	TS4776625277229	0
TN02GJ8084	2021-05-25 08:41:49	2021-05-25 08:42:00	0	0.55	3	AP2120045600188	0
TN04YO3554	2021-05-25 08:41:49	2021-05-25 08:42:00	0	0.55	1	KA1220098600788	0
TN05SL2861	2021-05-25 08:41:49	2021-05-25 08:42:00	0	0.55	4	TS4856336096059	0
TN09DJ1847	2021-05-25 08:41:49	2021-05-25 11:41:49	0	540	5	TS7398170770922	1
TN16ZX3533	2021-05-25 08:41:49	2021-05-25 08:42:00	0	0.55	2	KA1220050456732	0
AP06UJ8051	2021-05-26 11:41:00	2021-05-26 11:46:00	0	7.5	20	AP2569874123300	0
AP20CF2356	2021-05-26 11:41:00	2021-05-26 11:46:00	0	7.5	19	AP1290050000198	0
KA14VQ3431	2021-05-26 11:41:00	2021-05-26 11:46:00	0	7.5	21	KA1220050456732	0
TN09DG4165	2021-05-26 11:41:00	2021-05-26 11:46:00	0	7.5	17	KA4900720050123	0

Hardware Requirements: (PC Only)

Windows:

1. Processor: Intel Core i3 and above
2. RAM: 4 GB or more
3. Storage: At Least 1GB free space
4. Stable Internet Connection

Mac OS:

1. Processor: Intel Core i3 and above
2. RAM: 4 GB or more
3. Storage: At Least 1GB free space
4. Stable Internet Connection

Linux:

1. Processor: Intel Core i3 and above or AMD Ryzen 3 and above
2. RAM: 4 GB or more
3. Storage: At Least 1GB free space
4. Stable Internet Connection

Software Requirements:

1. Mozilla Firefox v89.0 (Preferred Browser) or Google Chrome v
2. XAMPP Control Panel v3.3.0
3. PhP v8.0.7
4. MySQL Server
5. MySQL Workbench 8.0 CE
6. Microsoft Visual Studio Code (Editor)

Steps to run the Project:

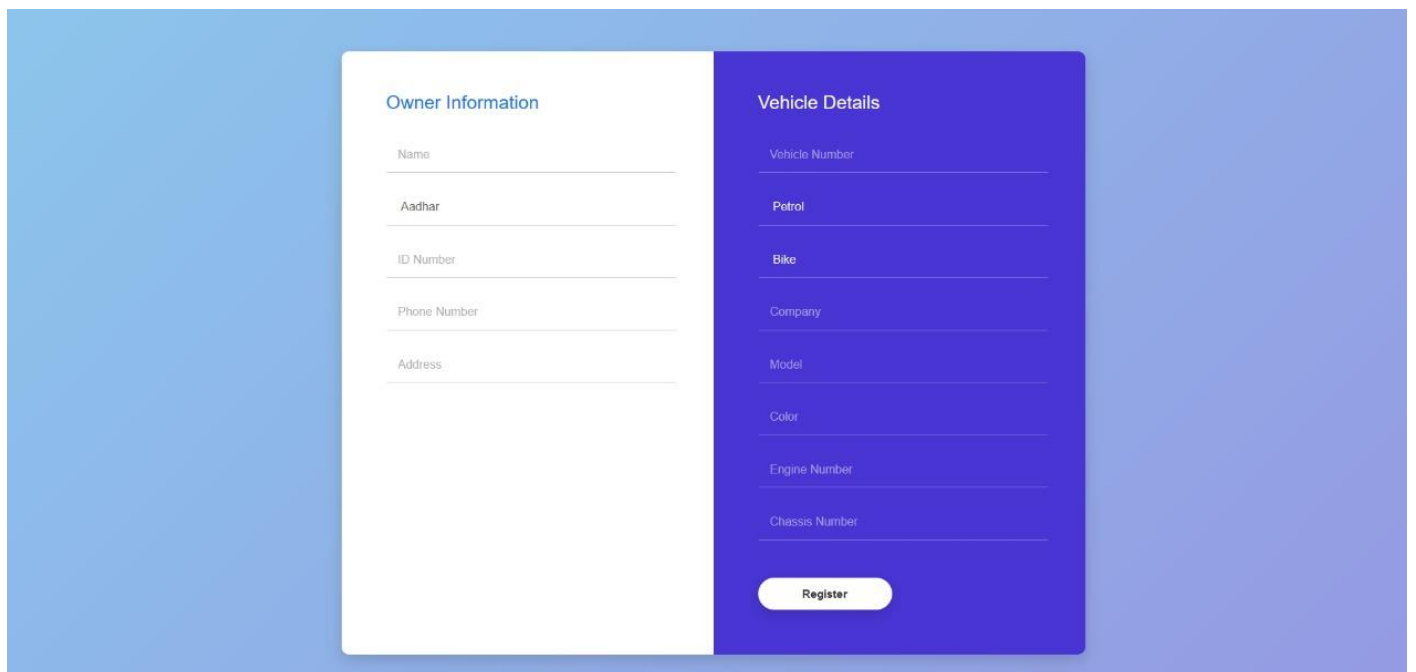
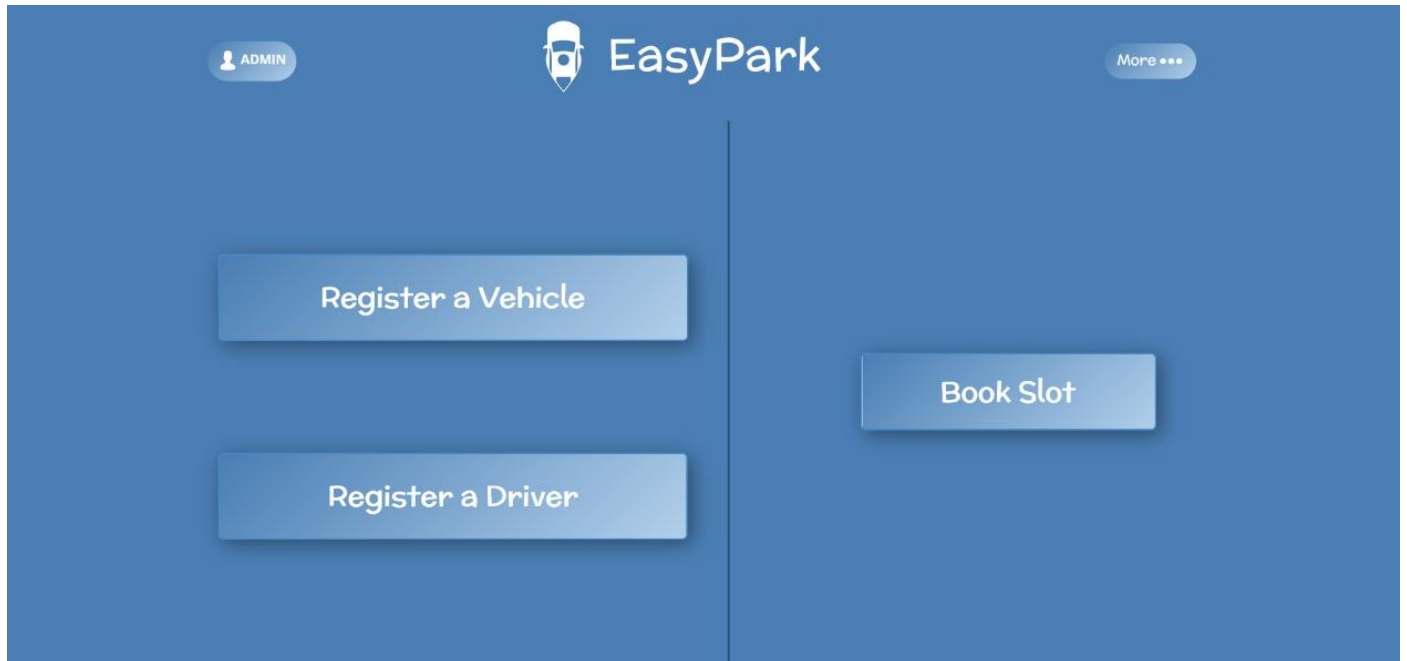
Step 1: Download XAMPP for Windows

from <https://www.apachefriends.org/index.html>

Step 2: While installation, make sure you **only** check the **'APACHE'** option to install.

- Step 3: Download MySQL Community Edition from <https://dev.mysql.com/downloads/mysql/>
- Step 4: Download all the required add on softwares that is asked while installation.
- Step 5: Set up a MySQL Server with a password.
- Step 6: Set up a MySQL connection with a name of your choice.
- Step 7: Copy the code from the VPMS.sql and paste it in the query tab.
- Step 8: Save the query file.
- Step 9: Download VS Code from <https://code.visualstudio.com/>
- Step 10: Download and Extract the VP folder to c:\xampp\htdocs\
- Step 11: Open the folder VP in the VS Code.
- Step 12: For every PhP file, there is a field \$password = “<Your_Password_Here>”, change that field to the password you have submitted during MySQL server setup.
- Step 13: Make sure that MySQL server is running and run the query using the ⚡ symbol.
- Step 14: Open XAMPP Control Panel and start the APACHE server.
- Step 15: Open the browser that is mentioned in the software requirements. (Mozilla Firefox is preferred).
- Step 16: In the address bar type **<http://localhost/vp/home.html>**
- Step 17: The project is up and running now. You can choose any functionality.
- Step 18: To use the Admin section, UserName is Meghanath and Password is 1234.
- Step 19: After using the website, Close the browser window.
- Step 20: Open XAMPP and stop the APACHE server.
- Step 21: Close the MySQL connection.

Snapshots



This image shows a vehicle registration form with two main sections: 'Owner Information' and 'Vehicle Details'.

Owner Information

- Name
- Aadhar
- ID Number
- Phone Number
- Address

Vehicle Details

- Vehicle Number
- Petrol
- Bike
- Company
- Model
- Color
- Engine Number
- Chassis Number

Register

Driver Information

Name

DL Number

Mobile

Register

Book a Slot

Vehicle Number

DI Number

Book

Login

Username

Password

Login

Choose An Option

Report between two dates

Daily Report

Slot Details

Number of Vehicles Processed

Owner of a Vehicle

Driver of a Vehicle

Home

Your Slot Number is 3

00:00:27

TIME REMAINING

Free Slot

Your total charge is ₹ 0.75
Your vehicle is being towed.
Thank you. Have a nice day.

Home

Your total charge is: ₹ 0.025
Thank you. Have a nice day.

[Home](#)

Report

Vehicle Number	In Time	Out Time	Slot	Charge
KA05GF4563	2021-06-19 16:26:06	2021-06-19 16:26:10	1	0.2
AP21AE4421	2021-06-19 16:26:15	2021-06-19 16:26:16	3	0.025
AP21AE4421	2021-06-19 20:34:46	2021-06-19 20:35:16	3	0.75
AP21AE4421	2021-06-19 20:35:50	2021-06-19 20:35:51	3	0.025

[Go Back](#)

Future Scope:

The software developed runs well and can handle multitudes of data. It can be also used by law enforcement agencies to keep track of vehicles in busy roads in metropolitan cities. This will greatly reduce any kind of wrongdoings in such a crowded place. The software UI can further simplify to provide a more hassle-free experience to the consumer. All of the vehicle details can be brought up instantly by linking the software with a government-based vehicle repository which would eliminate the need for the user to enter all details him/herself. The application speeds can also be increased greatly by hosting it over a private server and a native mobile application can also be built for users' convenience.

Conclusion:

The software developed is implemented according to the aforementioned design principles and constraints. The system runs as expected with each of our project goals being satisfied.