Parking Spot Finder

A Dissertation Submitted to SAGE University, Indore

Towards Partial fulfilment for the award of

Master of Computer Application (MCA) degree

Supervised by

Prof. Harshita Joshi

Submitted by

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Institute of Computer Application

SAGE University, Indore

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Approval Sheet

The project entitled "**PARKING SPOT FINDER**" submitted by **NANDLAL PATWARE** approved as partial fulfilment for the award of the **MASTER OF COMPUTER APPLICATION (MCA)** by SAGE University, Indore.

Internal Examiner **External Examiner**

Date: **Date:**

SAGE University, Indore

CERTIFICATE

This is to certify that the project work entitled "**PARKING SPOT FINDER**" has been carried out by **NANDLAL PATWARE** student of **MASTER OF COMPUTER APPLICATION** under our supervision and guidance. They have submitted this project report towards partial fulfilment for the award of the **Master of Computer Application** by **SAGE University**, Indore.

Mr. Leeladhar Chourasiya

(HOD)

Prof. Harshita Joshi

(Supervisor)

Dr. Pankaj Dashore

Head of Institute

RECOMMENDATION

The project entitled "**PARKING SPOT FINDER**" submitted by **NANDLAL PATWARE** is a satisfactory account of the bonafide work done under our supervision is recommended towards partial fulfilment for the award of the **Master of Computer Application** by **SAGE University**, **Indore**.

Date:

Mr. Leeladhar Chourasiya **Prof. Harshita Joshi**

(HOD) **(Supervisor)**

ACKNOWLEDGEMENTS

First and foremost, I would like to express my thankfulness towards **Prof. Harshita Joshi** of INSTIUTE OF COMPUTER APPLICATION for extending all the facilities needed to carry out this work, we take pride in saying that we have successfully completed our Dissertation/ project work under her able guidance. She was a major support to me throughout project, being available at odd hours with his ideas, inspiration and encouragement. It is a through her masterful guidance that we have been able to complete our Dissertation/ project work.

I am also thankful to **Mr. Leeladhar Chourasiya (HOD),** for giving their guidance throughout the Dissertation/project phase. I am also thankful to **Dr. Pankaj Dashore (HOI)**, SAGE University, Indore for extending all the facilities needed to carry out this work.

NANDLAL PATWARE

CANDIDATE DECLARATION

I hereby declare that the work which is being presented in this project report entitled "**PARKING SPOT FINDER**" in partial fulfilment for the award of **Master of Computer Application** is an authentic record of my own work carried out under the supervision and guidance of **Prof. Harshita Joshi (Assistant Professor), SAGE University**, Indore.

I am fully responsible for the matter embodied in this report and it has not been submitted elsewhere for the award of any other degree.

Date: **NANDLAL PATWARE**

Place: Indore

INTRODUCTION

My Project **Parking Spot Finder** is based on Android Application, which I have developed using the Flutter Framework which is provided by Google incorporation. The Flutter framework uses Dart language for developing a Mobile application. By using this Flutter platform, we can develop cross functional apps that means we can develop app for both Android and IOS just by doing some changes in our base code, so it provides us code reusability and we can develop web application also. apart from that I have used Firebase which is acts as database and used for cloud based Authentication and generating notifications on user's mobile screen, and I have used google map integration for tracking and finding the parking locations so google provides some Api's that are free and we can use them for google map integration.

And by parking our vehicle in secure place increases the security of our vehicle, because parking lot owner providing camera protection facility and security guards are also available at parking lot for checking the vehicles and to park the vehicle to his booked slot in the parking lot as compare to other places like road side areas or any other places.

By using smart parking system application use can easily get the parking location and he can book his slot online that saves lots of time, because in big cities people consumes lots of time in getting the parking places, so our application saves time.

Generally searching for parking spots burns consumes 1 million barrel of fuel daily, and because of it pollution is also increases. So if the user uses that application getting the parking spots easily that reduces the fuel consumption and can take part in reducing pollution.

As soon he opens the application het get two options one is for login and other one is for registration if he has already been registered then he can move to login directly otherwise he has to be register first. In my application I have provided two panels one is for user who is searching for parking spots, and one is for parking service provider who is providing parking services to the user so at the time of registration he has to registered as service provide if he is providing service so he has to fill all the information's like parking slots and booking price and his location and all the facilities that he has. and if the is the user than he can login normally by doing registration. In our application we have developed the UI (user interface) in such a way that user can easily understand free space or booked space.

The booked space will be marked with Red colour and it is not available for any user for particular interval of time. and the available space is marked with Green colour. And this application provides an additional feature to user that he can cancel his booking at any time. and user can make payment using credit card and after payment user get notification of his booking on his mobile with unique parking number. And he can check his booking on his profile.

ABSTRACT/ PROBLEM STATEMENT

I have to develop an android mobile application that finds and informs the user about the available parking spots in adjacent area to user so he can easily park his vehicle at affordable cost and that helps in saving the fuel and helps to driver so he can easily focus on his driving and that also minimizes the chances of accident because of lake of concentration on road during driving. And also help in managing the traffic on the road inside the cities.

"Parking Spot Finder" is an Android mobile application that provide some facilities to android user but in future can also build this application for IOS users also so we can attract more customers in market. Our Flutter framework provide us the facility to make an application that works for both Android and IOS so we have to make some changes in the code so the application is also available to IOS users.

OBJECTIVE

The objective of a project is to build an android based mobile application that is low in cost, reliable and scalable Parking Spot Finder Application that can be used for booking the parking spots.

The aim is to provide the good visual user interface screens so that the customer and service provider both can easily understand the application, that helps to grow in business for service provider and customer get satisfied with the services. And customers can easily find the parking spots and he can get the information from the app that how much slots are available and for how much particular interval of time. and in future we can add many more things in the application.

HYPOTHESIS

Parking Spot Finder is the best application that can fulfil the user's requirements of finding the parking space in the commercial area.

The best thing in the application is that the user will get the wonderful user interface (UI) so it will be easy to understand for everyone.

Our aim is to provide the customer satisfaction in terms of services for both the service provider and client who is finding the parking lot.

In future we can update our application with more improved ui and lots of other functionalities. It is easy to use and the application saves lots of time in finding the parking space.

FUNCTIONAL REQUIREMENTS

Functional requirement defines the working operations and functions of the application. It describes the input, output and behaviour of the system.
It describes all the activities of the application like the requirements user login, registration, slot booking, parking lot availability, time slot availability and etc.

- Parking Provider need to give all details about Parking lot and cost of each niche.
- Admin need to enter all details for registration or enrollment
- Admin need to save all the details of client and niche places
- Provider can recoup the details of client.
- Provider must induce a report for payment of reserved niche.

NON FUNCTIONAL REQUIREMENTS

- These App has applicable user interface and acceptable information to guide the user in order to use the application.
- Portability: The website is portable as it is online website running across the net
- Inflexibility: Its veritably flexible.
- Security: This App gives user and authentication so that only the licit users are allowed to use the website
- Maintainability: These App is able to secure the data and fluently recoup the data.
- Scalability: we can further modify this application in future.

SOFTWARE REQUIREMENTS

- Operating System -Windows XP or Windows 7(ultimate, enterprise)
- Frontend - Flutter, Dart
- Backend - Firebase
- Ide - Visual studio 2008
- Ide - Android Studio
- Browser -

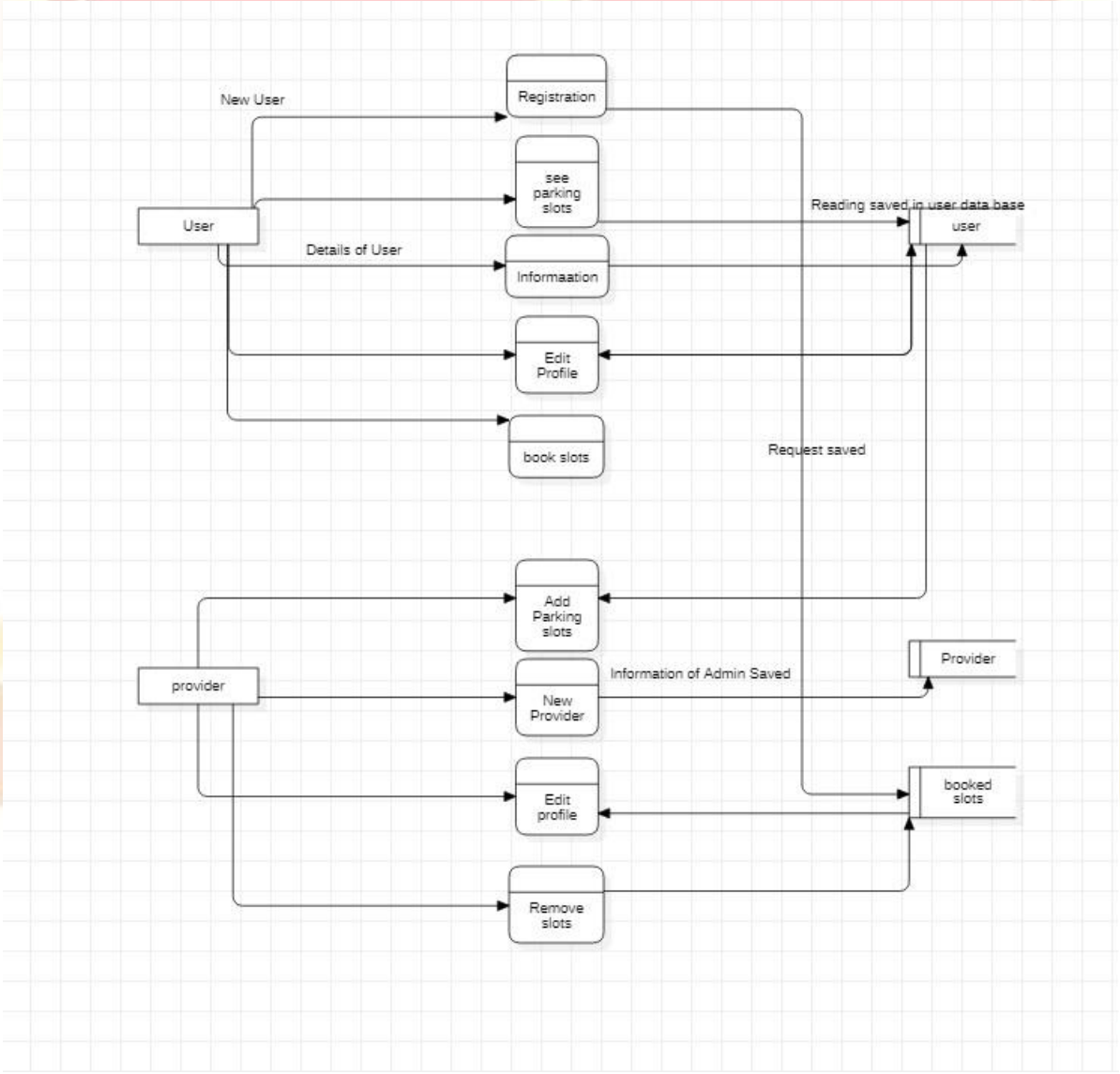
1. Google Chrome
2. Mozilla Firefox
3. Microsoft edge.

Hardware Requirements

- Processor - i3 (10^{th} or 11^{th} Generation)
- Hard Disk - 15gb
- Ram memory - 4gb
- Android Device (version greater then Marshmallow)

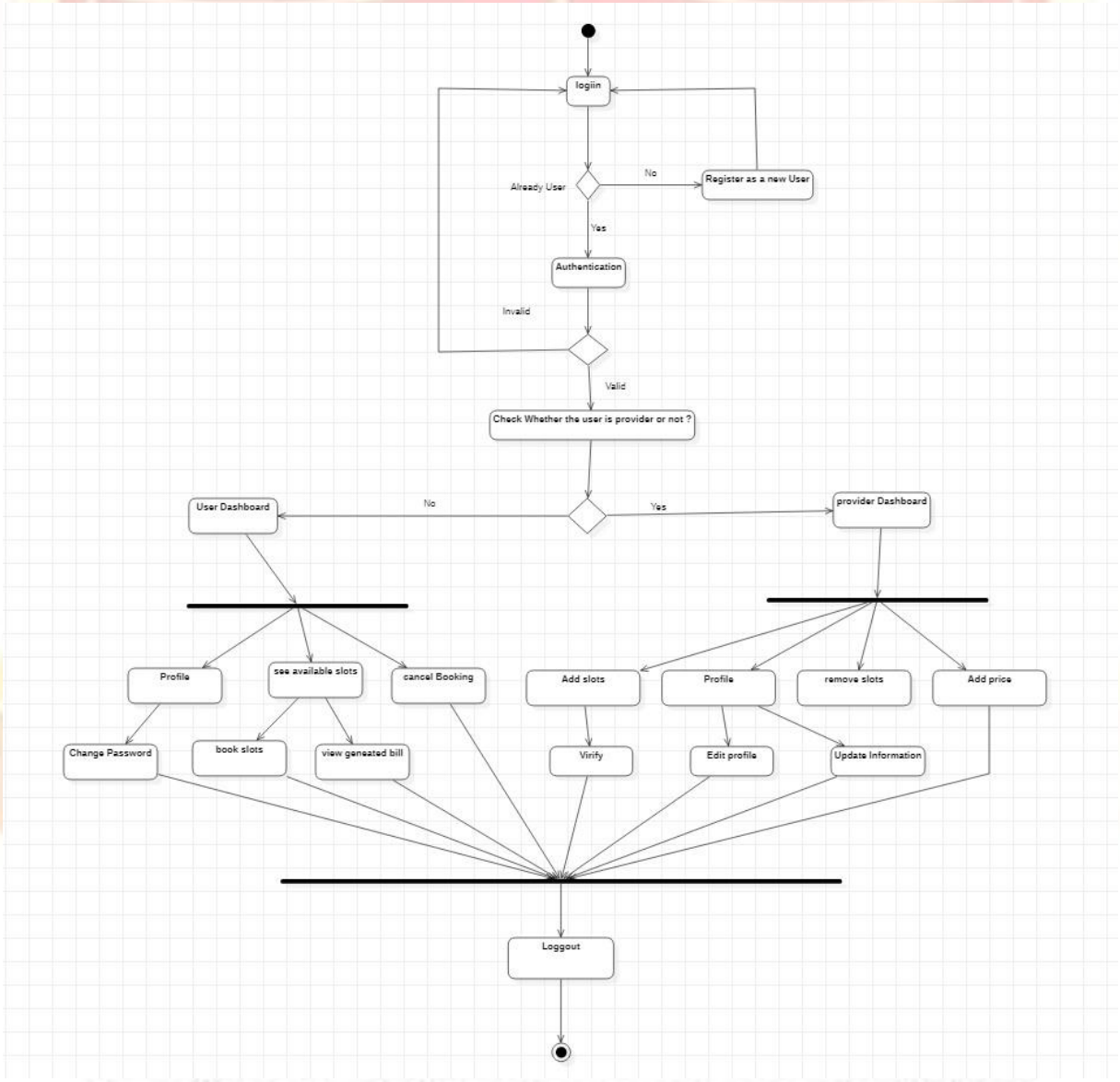
DFD DIAGRAM

DFD describes the overall functionality of the application or data flow. It is also known as bubble chart which graphically represent the flow of data information of the application. DFD makes it easy to understand the overall functionalities of the application.



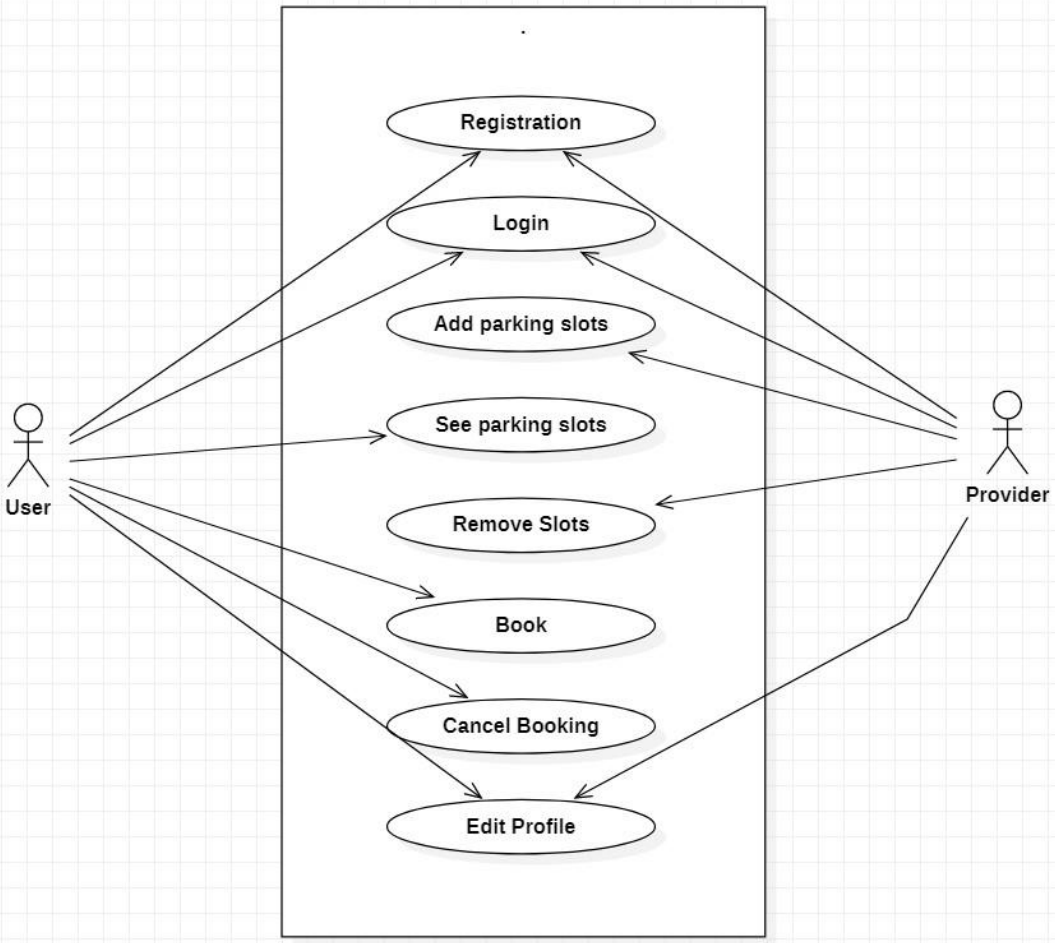
ER DIAGRAM

ER means the Entity – Relationship - Diagram (ERD). It is the data modelling technique that graphically represent the system entities and their relationship. An ERD is a theoretical and realistic model of data used to represent the entity framework substructure.



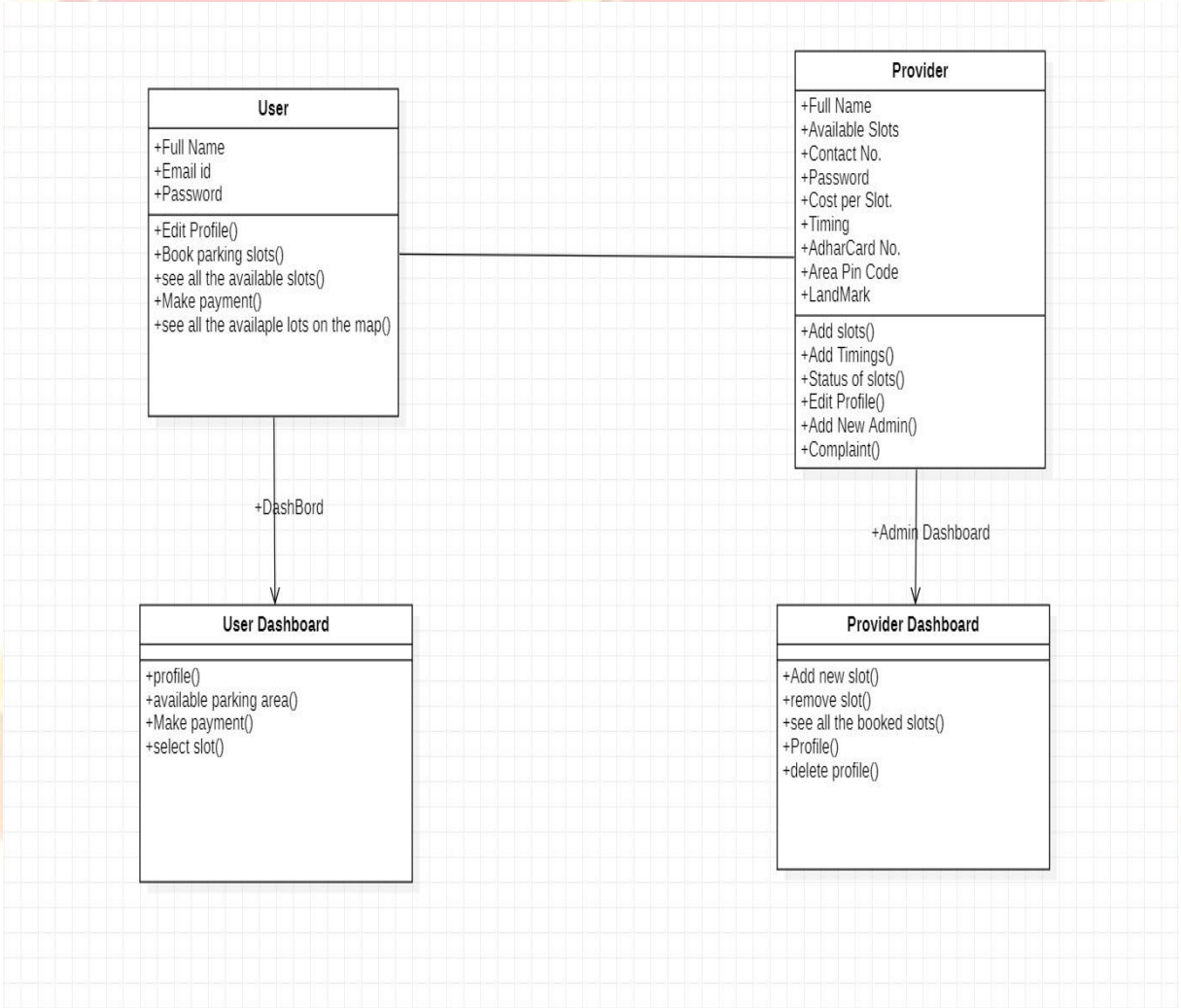
USE CASE DIAGRAM

The use-case diagram describes all the functions and scope of the system. These diagrams also identify the interconnection between the system and its actors.

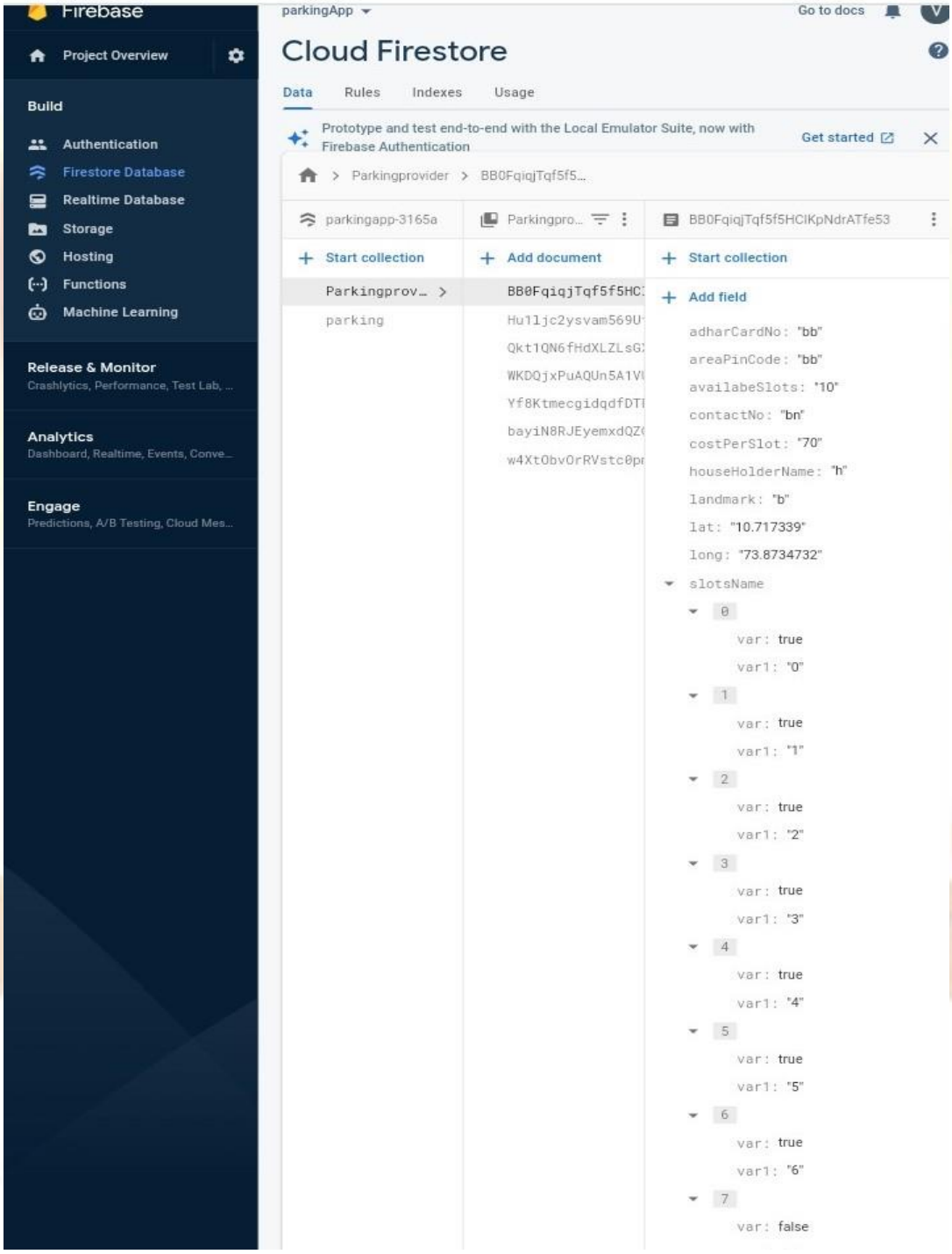


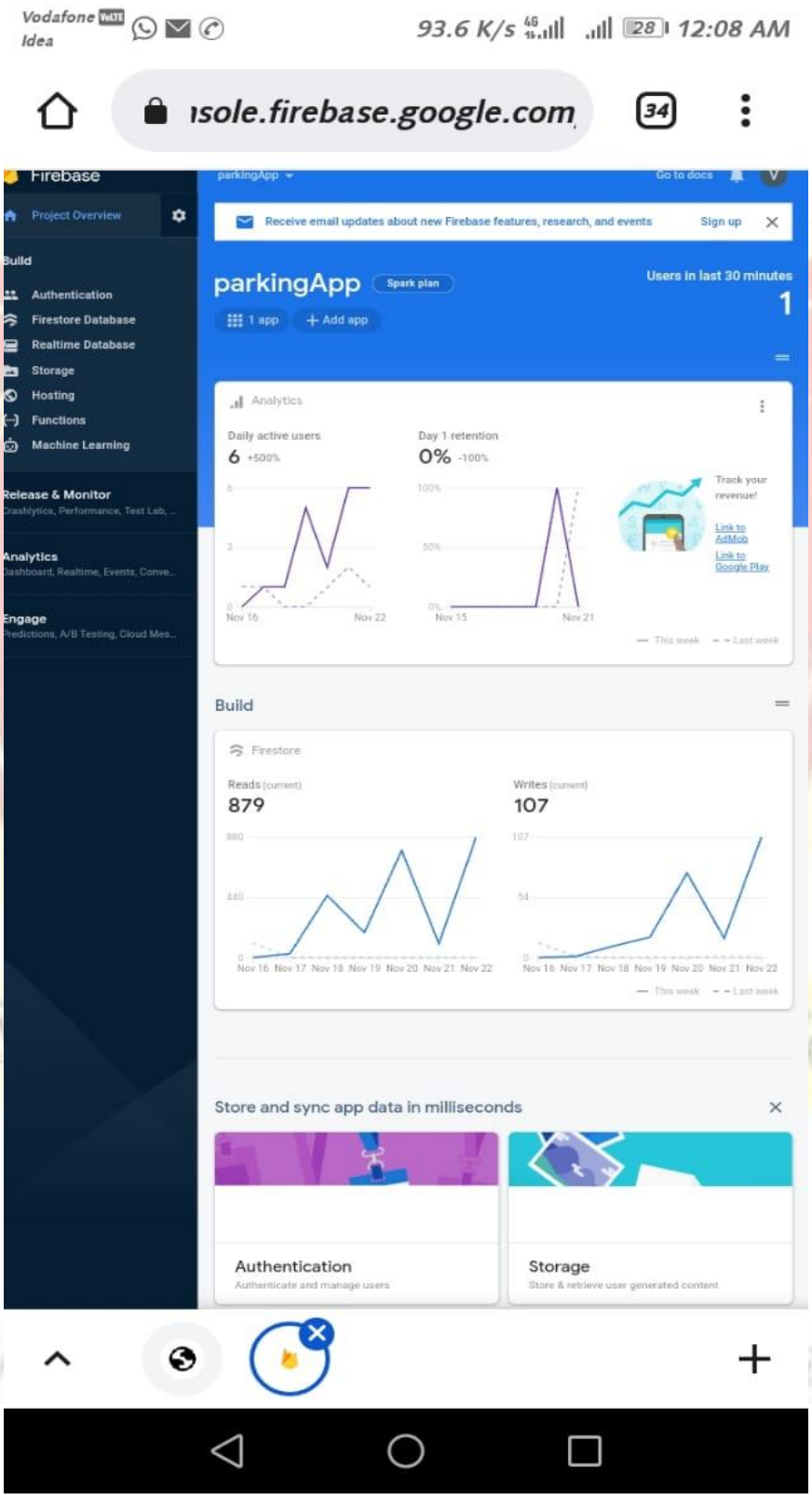
CLASS DIAGRAM

A class diagram is the sketch of the relationships and source code needs among classes in the Unified Modelling Language (UML). It is the collection of class and interface, their associations and their relationship. The most common diagrams founded in modelling object-oriented system. Address a static design view of the system. It contains the active classes their addresses and static design view of the system.



DATABASE TABLE

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Realtime Database
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Hosting
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Machine Learning
Release & Monitor
Analytics
Engage
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Go to docs
Receive email updates about new Firebase features, research, and events
Sign up
parkingApp
Spark plan
1 app
Add app
Users in last 30 minutes
1
Analytics
Daily active users
6 +500%
Day 1 retention
0% -100%
Track your revenue!
Link to AdMob
Link to Google Play
Nov 16
Nov 22
Nov 15
Nov 21
This week
Last week
Build
Firestore
Reads (current)
879
Writes (current)
107
Nov 16 Nov 17 Nov 18 Nov 19 Nov 20 Nov 21 Nov 22
Store and sync app data in milliseconds
Authentication
Authenticate and manage users
Storage
Store & retrieve user generated content

LIMITATIONS

In my project "Parking Spot Finder" I have achieved all my goals and other scenarios of the requirement. In future we can easily make enhancement in the project according to our needs or requirements.

Some limitations of the project are following which are mentioned below.

1) We have used google map integration in our project, but if the services of google get down for some time then we have to face problems.
2) If mobile network in not proper, then also we have to face problem.
3) Booking system based on first in first out order.

FUTURE SCOPE

In future we can add multiple functionalities in the application that can be very useful for the users. As we know that the future generation is the generation of Electric vehicle so in the electric domain we can add multiple functionalities like we can provide multiple charging stations where user can charge their vehicle. And we will provide the facility of slot booking and can provide online payment options.

In our ongoing project we can provide vouchers to the users so they can get offers and can lower the booing charges.

We can add printer in future. And we can give more advance software for online car parking system including many more facilities in the application.

We can create the master and slave database structure in the application to reduce the overload of the database queries. And we can implement the backup mechanism for taking backup of codebase.

We can also add options of the vehicle service. We can connect with various garages in the city and by our booking system we can provide that service by booking the slot and can provide the home service options.

CONCLUSION

The Parking Spot Finder is flutter based mobile application that will help to users in terms of service provider and service getter.

Flutter is very rapid growing technology for mobile application development in the world. I have used flutter for its simplicity and its UI implementation is very productive as compare to other technology, in flutter we can make application for both Android devices and IOS devices and day by day it is becoming the best choice of client worldwide.

Online Parking Booking System application is very easy to use for users its UI is very attractive and everyone can easily understand the flow of application. And application provide lots of services and employment to the people and many people can grow their business by connecting with the application.

We describe the requirement Specifications of the system and the actions that can be done on these things. We understand the problem domain and produce a model of the system, which describes operations that can be performed on the system.

During that project I have learned a lot about new technologies like flutter, dart, and firebase. During that I got many errors and I have solved them and build confidence. And by that I have improved my technical skills that will surely help to me in growing my career.

REFERENCES

In my project I have referenced from many YouTube videos from them I have learned many things that I have implemented in my project.

I have taken reference from flutter documentation provided by Google. And getting help from people who are already working in organizations. I have solved many errors by doing R&D and I got mostly solutions from stack overflow website where real time developer publish their errors and their solutions.

And I have visited many websites for taking help in project and these websites are following-

1) https://www. tutorialspoint.com/flutter
2) https://www. geeksforgeeks.org/flutter-tutorial/amp/
3) https://www.javatpoint.com/flutter
4) https://stackoverflow.com
5) https://www. youtube.com/flutter
6) https://docs.flutter.dev