
VehiCare
(Vehicle Maintenance System)

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1. ABSTRACT

The Vehicle Maintenance System App is a mobile application designed to streamline the maintenance of vehicles for fleet managers and individual vehicle owners. The app allows users to schedule regular maintenance tasks, receive notifications for upcoming maintenance, and keep track of vehicle repair history. The app is user-friendly, easy to navigate, and can be customized to meet individual user needs. The system allows users to set up custom maintenance schedules based on time or mileage intervals, record maintenance and repair history, track expenses, and generate reports on vehicle performance and cost. Some systems may also provide real-time tracking of vehicle location and status, enabling fleet managers to optimize vehicle usage and reduce downtime. The use of a Vehicle Maintenance System can help improve vehicle reliability, reduce maintenance costs, and increase overall efficiency of fleet operations. This project report provides a detailed overview of the development process, including the project requirements, design, implementation, testing, and deployment phases. The report also discusses the challenges encountered during the development process and the solutions adopted to overcome them. The app is expected to significantly improve vehicle maintenance efficiency, reduce costs, and increase overall vehicle performance. Overall, the Vehicle Maintenance System App is an innovative solution to simplify vehicle maintenance tasks and improve the reliability of vehicles. A Vehicle Maintenance System typically includes a user-friendly interface where vehicle owners and managers can input and store information related to their vehicles. This information includes the make and model of the vehicle, its registration and insurance details, and its maintenance history, among other things. Users can create custom maintenance schedules for each vehicle based on time or mileage intervals, and the system will generate reminders for upcoming maintenance tasks such as oil changes, tire rotations, and brake inspections. The system can also track any repairs that have been done on the vehicle and store this information for future reference. In addition to tracking maintenance and repairs, a Vehicle Maintenance System can also help users keep track of expenses associated with their vehicles, including fuel, parts, and labor costs. Some systems may even allow users to upload receipts and other documents related to these expenses for easy tracking and record-keeping.

LIST OF FIGURES

2. PROBLEM STATEMENT

The problem that the Vehicle Maintenance System App aims to address is the lack of a centralized, easy-to-use platform for vehicle owners and fleet managers to manage their vehicle maintenance tasks. Traditional methods of vehicle maintenance rely on manual record-keeping, which can be time-consuming, error-prone, and difficult to track. Moreover, vehicle owners often struggle to keep track of regular maintenance tasks, leading to increased repair costs and decreased vehicle performance. Additionally, fleet managers have the added challenge of managing multiple vehicles, making it even more challenging to keep track of maintenance tasks and repair history. The Vehicle Maintenance System App seeks to address these challenges by providing a user-friendly, centralized platform that simplifies vehicle maintenance tasks, reduces costs, and improves overall vehicle performance.

3. PROCESS MODELS AND STAKEHOLDERS

3.1 PROCESS MODELS

The Rapid Application Development (RAD) model is a process model that emphasizes rapid prototyping and iterative development. It is a suitable model for developing software systems with short development timelines and frequent changes in requirements. With the RAD model, developers can quickly create a working prototype of the Vehicle Maintenance System, which can be tested and evaluated by the users. Feedback from users is then used to refine the prototype and make necessary changes before moving on to the next iteration. The RAD model also allows for flexibility in the development process. Developers can adjust the scope and requirements of the system based on user feedback, without having to start from scratch. This helps to ensure that the final product meets the needs of the users and the business requirements. RAD model is particularly suitable for the development of the Vehicle Maintenance System (VMS) app due to the following reasons:

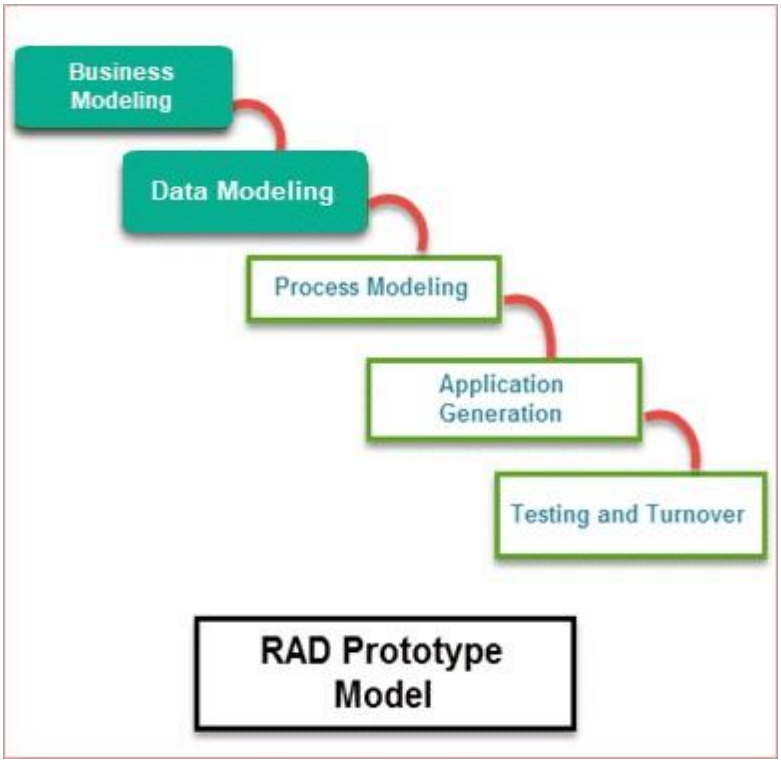


Figure 1 – Software Process Model for Vehicle Maintenance SYSTEM

3.1.1 Rapid Prototyping:
The RAD model allows for the development team to create quick prototypes of the VMS app. This is particularly useful for the VMS app because the app's interface needs to be intuitive and user-friendly. By using rapid prototyping techniques, the development team can quickly create and test different versions of the app's interface until it meets the end-users' expectations.

3.1.2 Iterative Development:
The RAD model's iterative development approach allows for frequent testing and feedback, which is essential for the VMS app. Since the VMS app is a critical system, it needs to be thoroughly tested to ensure that it is reliable, secure, and performs well. The RAD model's iterative development approach allows for frequent testing, which helps to identify and fix any issues in the app early in the development process.

3.1.3 Collaborative Approach:
The RAD model encourages collaboration between the development team and stakeholders, which is crucial for the VMS app. The VMS app is a system that involves different stakeholders, including drivers, fleet managers, and maintenance personnel. The RAD model's collaborative approach ensures that the app meets the needs and expectations of all stakeholders.

3.1.4 Time-to-Market:

The RAD model's rapid development approach allows for the VMS app to be developed and deployed quickly. This is particularly useful for the VMS app because it needs to be deployed as soon as possible to help manage and maintain the vehicle fleet. The RAD model's iterative development approach also allows for frequent releases of the app, which means that any new features or updates can be quickly rolled out to end-users.

In conclusion, the RAD model is a suitable process model for developing the Vehicle Maintenance System app due to its rapid prototyping, iterative development, collaborative approach, and quick time-to-market.

3.2 STAKEHOLDERS

Stakeholder Name	Activity/ Area /Phase	Interest	Influence	Priority (High/ Medium/ Low)
Govt. Agencies	Aiding in departments such as pollution control and road safety.	Low	High	4
Creditors	Extend money/resources for software development and testing.	High	High	2
Owners/ Car Entrepreneurs	Supply capital and have a say in how things are supposed to proceed.	High	High	1
Service Providers	Providing services like transport, store, prepare, inspect and repair vehicles.	High	High	4
Data Collectors	Data Collector responsibilities include downloading data, understanding survey objectives, and data analysis.	High	High	3
End Users	The end-user stakeholders are the people that will ultimately use your product, your services, or your solution and give feedback.	Low	High	5
Project Managers	Project manager is responsible for the planning, procurement, execution and completion of a project. He is accountable for team, failure & success of project	High	High	2
IT Department	The IT department helps lay down the ground rules for how people can use a company's technology. It also involves creating, storing data, and assisting in the use of software throughout an organization.	High	High	3
Customers	Customers are people who pay money for a product or a service and may or may not end up using it.	High	Low	6

Table 1 – Stakeholder Analysis of VMS

4. REQUIREMENTS ENGINEERING:

4.1 Functional Requirements

- **Vehicle Management:** The system should allow fleet managers to manage the vehicles in their fleet, including adding new vehicles, updating vehicle information, and removing vehicles from the system.

- **Maintenance Scheduling:** The system should allow fleet managers to schedule maintenance and repair work for their vehicles, including setting up alerts for routine maintenance and scheduling one-time repairs.

- **Work Order Management:** The system should allow maintenance personnel to receive work orders and manage them, including updating the work order status, adding notes, and tracking progress.

- **Vehicle Inspection Management:** The system should allow drivers to perform routine inspections of their vehicles, including reporting any issues or problems.

- **Maintenance Reporting:** The system should allow fleet managers to generate reports on maintenance and repair work, including costs, time spent on repairs, and parts used.

- **Integration with External Systems:** The system should allow integration with external systems, such as GPS tracking and fuel management systems, to provide real-time data on vehicle usage and fuel consumption.

- **User Management:** The system should allow fleet managers to manage user accounts and access levels, including granting or revoking access to the system.

- **Billing and Invoicing:** The system should allow the finance department to manage billing and invoicing, including generating invoices based on maintenance and repair work performed.

- **Mobile Support:** The system should support mobile devices, allowing drivers and maintenance personnel to access the system from anywhere, anytime.

4.2 Non-Functional Requirements

- **Usability:** The system should have an intuitive and user-friendly interface that is easy to learn and use by drivers, maintenance personnel, and fleet managers.

- **Reliability:** The system should be highly reliable and available at all times, with minimal downtime and disruption to the organization's operations.

- **Performance:** The system should perform efficiently and quickly, with fast response times for all user interactions.

- **Scalability:** The system should be scalable to accommodate future growth and expansion of the organization's fleet.

- **Security:** The system should be highly secure, with strong authentication and authorization mechanisms, and encryption of sensitive data.

- **Compatibility:** The system should be compatible with a wide range of hardware and software platforms, including mobile devices, GPS tracking systems, and fuel management systems.

- **Maintainability:** The system should be easy to maintain and update, with a modular and flexible architecture that allows for easy changes and modifications.

- **Interoperability:** The system should be able to integrate with other systems and software, including third-party applications and APIs.

- **Performance under Load:** The system should be able to handle heavy user loads, especially during peak usage periods, without degradation in performance.

- **Compliance:** The system should comply with relevant regulations and standards, such as those related to data privacy and security.

5. PROJECT PLAN

5.1 Integration Management

5.1.1 Governance Framework:

The governance framework acts as an essential supporting structure, a framework of rules and practices by which the board ensures accountability, fairness and transparency in how the company runs and communicates with its stakeholders.

The governance framework in project management typically includes the following components:

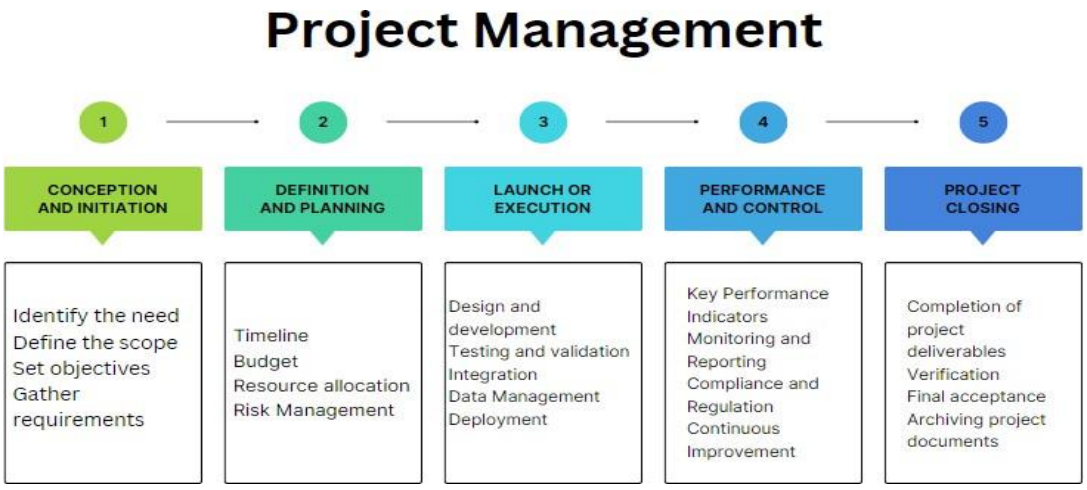


Figure 2 – Governance Framework of VMS

- **Project governance structure**: This includes the roles and responsibilities of project stakeholders, such as project sponsors, steering committees, project managers, and project teams. It outlines how decisions are made, who has the authority to make them, and how they are communicated.

- **Project management processes**: This includes the processes and procedures for planning, executing, monitoring, and controlling projects. It outlines how project objectives are defined, how resources are allocated, and how project progress is monitored and reported.

- **Project performance metrics**: This includes the measures used to evaluate project performance, such as cost, schedule, quality, and risk. It outlines how project performance is tracked and how corrective actions are taken when needed.

- **Project management tools and technology**: This includes the tools and technology used to manage projects, such as project management software, communication tools, and collaboration platforms. It outlines how these tools are used to facilitate project management processes.

- **Project management standards and best practices**: This includes the standards and best practices for project management, such as PMI's Project Management Body of Knowledge (PMBOK) and the PRINCE2 methodology. It outlines how these standards and best practices are applied to projects within the organization.

5.2 ESTIMATE EFFORT

Boehm proposed COCOMO (Constructive Cost Estimation Model) in 1981. COCOMO is one of the most widely used software estimation models in the world. COCOMO predicts the efforts and schedule of a software product based on the size of the software.

In COCOMO, projects are categorized into three types:

1. Organic
2. Semi Detached
3. Embedded

Organic: A development project can be treated as organic if it deals with developing a well-understood application program, the size of the development team is reasonably small, and the team members are experienced in developing similar types of projects.

Estimated Number of Lines of Code (SLOC) : 2500 SLOC

$$\textbf{Effort} = a(kLOC)^b$$
$$\textbf{Development Time} = c(Effort)^d$$

Effort = $2.4(2.5)^{1.05}$
= 2.4(2.617)
= 6.281 persons month

Budget Control :

Dev. Time = $2.5(6.28)^{0.38}$
= 2.5(2.01)
= 5.02 months

Controlling the budget in a vehicle maintenance system requires careful planning, monitoring, and management. Here are some key strategies to help you keep your project within budget:

Develop a detailed budget plan: Before the project begins, develop a detailed budget plan that outlines all of the costs associated with the project. This plan should include all project costs, such as labor, hardware, software, training, travel, and any other expenses. The plan should be based on realistic estimates of the costs of the project and should be periodically reviewed and updated throughout the project.

- **Monitor spending**: Monitor spending closely throughout the project to ensure that costs stay within budget. Track spending on a regular basis and compare actual costs to the budgeted costs to identify any areas where spending is exceeding the budget. This will enable the project manager to take corrective action to bring spending back within budget.

- **Use cost-saving measures**: Implement cost-saving measures where possible to reduce project costs. This may involve negotiating with vendors for better pricing, using open-source software instead of commercial software, using cloud-based resources instead of on-premises resources, and minimizing travel and other expenses.

- **Manage project scope**: Ensure that the project stays within scope and does not expand beyond the original requirements. Scope creep can cause costs to increase, so it is important to manage the scope carefully and to avoid adding unnecessary features or requirements to the project.

- **Optimize resource utilization**: Optimize the utilization of resources, including labor, equipment, and materials, to ensure that they are being used efficiently and effectively. This may involve adjusting schedules or shifting resources to different areas of the project to avoid bottlenecks and delays.

- **Use project management software**: Use project management software to track spending, manage resources, and monitor progress. This will enable the project manager to identify potential budget issues before they become significant problems and to take corrective action to keep costs under control.

- **Regularly review and adjust the budget**: Regularly review and adjust the budget throughout the project to ensure that it remains accurate and realistic. This will enable the project manager to make adjustments to the budget as needed to accommodate changes in project scope, resource requirements, or other factors.

In summary, controlling the budget in a vehicle maintenance system requires a proactive and vigilant approach to planning, monitoring, and management. By developing a detailed budget plan, monitoring spending, using cost-saving measures, managing project scope, optimizing resource utilization, using project management software, and regularly reviewing and adjusting the budget, it is possible to keep costs under control and ensure the success of the project.

6. WORK BREAKDOWN STRUCTURE AND RISK ANALYSIS

6.1 WORK BREAKDOWN STRUCTURE

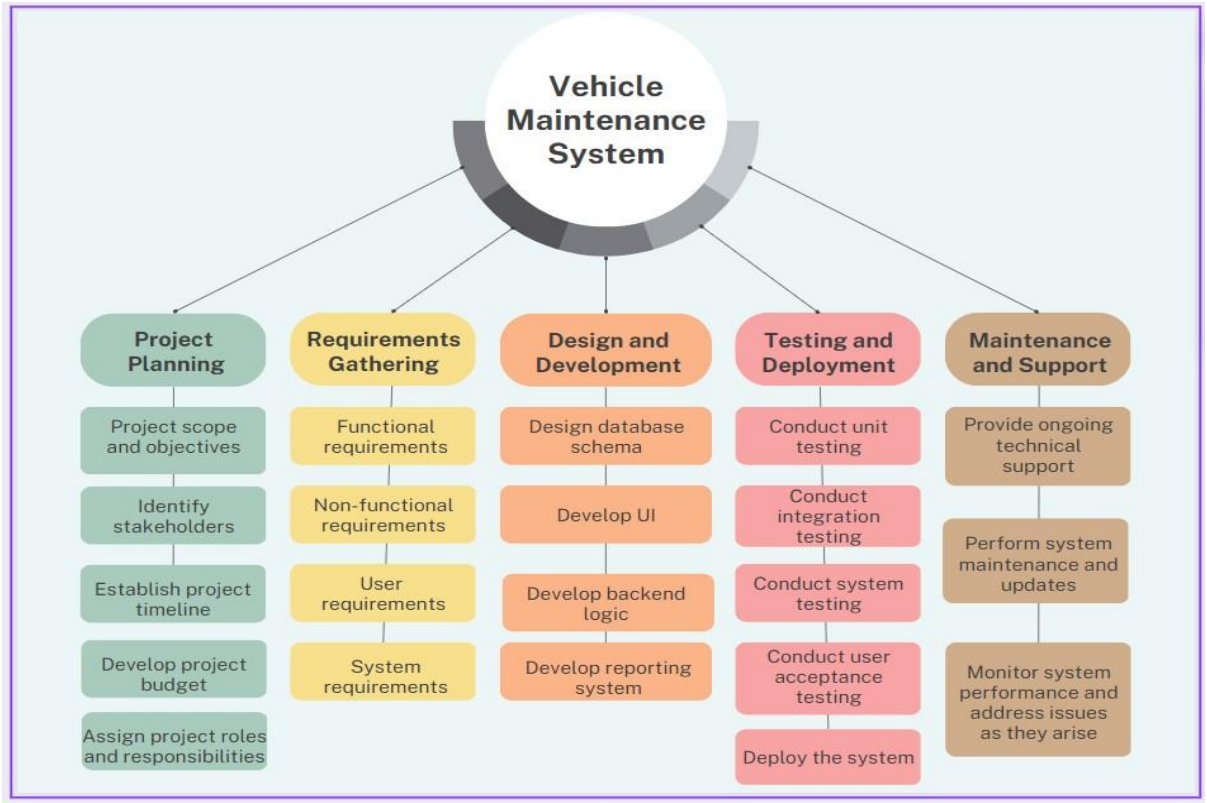


Figure 3 – Work Breakdown Structure for VMS

I. Project Planning

A. Define project scope and objectives
B. Identify stakeholders
C. Establish project timeline

D. Develop project budget
E. Assign project roles and responsibilities

II. Requirements Gathering

A. Define functional requirements
B. Define non-functional requirements
C. Define user requirements
D. Define system requirements

III. Design and Development

A. Design database schema
B. Develop user interface
C. Develop backend logic
D. Develop reporting system

IV. Testing and Deployment

A. Conduct unit testing
B. Conduct integration testing
C. Conduct system testing
D. Conduct user acceptance testing
E. Deploy the system

V. Maintenance and Support

A. Provide ongoing technical support
B. Perform system maintenance and updates
C. Monitor system performance and address issues as they arise

6.2 TIMELINE CHART

Timeline charts are highly versatile visual charts that are used to illustrate a set of events chronologically. They're an excellent tool for conceptualizing event sequences or processes to gain insights into the nuances of a project. That could include summarizing historical events, or any other time frame where you need to measure minutes, hours, dates, or years. A timeline is a chart that depicts how a set of resources are used over time. If you're managing a software project and want to illustrate who is doing what and when, or if you're organizing a conference and need to schedule meeting rooms, a timeline is often a reasonable visualization choice. One popular type of timeline is the Gantt chart.

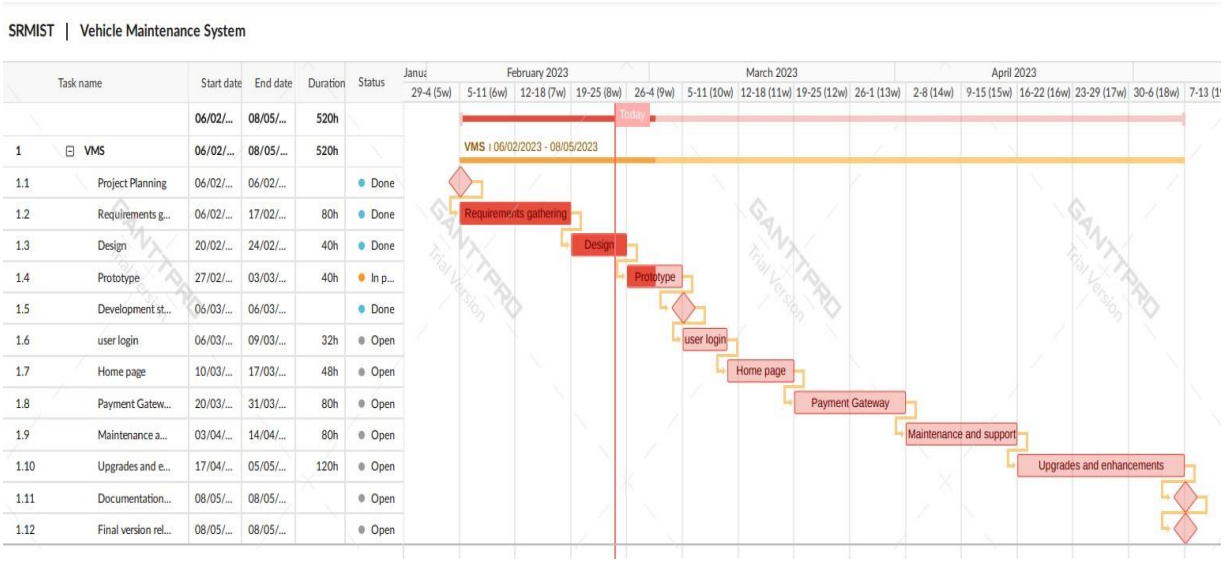


Figure 4 – Gantt Chart for VMS

6.3 RISK MANAGEMENT

6.3.1 SWOT ANALYSIS:

SWOT analysis is a useful tool for analyzing the strengths, weaknesses, opportunities, and threats of a product, service, or organization. In the case of vehicle maintenance software, a SWOT analysis might look like this:

Strengths:

- **Automation:** The software can automate many tasks, such as scheduling maintenance and generating reports, which can save time and reduce errors.
- **Customization:** The software can be customized to meet the specific needs of different users, such as fleet managers or individual car owners.
- **Data management:** The software can store data on maintenance history, repair costs, and other information that can help users make informed decisions about vehicle maintenance.
- **User-friendly interface:** The software can be designed with an intuitive interface that makes it easy to use, even for people with little technical knowledge.

Weaknesses:

- **Cost:** The software can be expensive to purchase and maintain, which can be a barrier for small businesses or individual users.

- **Technical issues:** The software may have technical glitches, bugs, or compatibility issues with other software, which can cause frustration and delays.

- **Dependence on technology:** The software relies on technology, such as computers and internet connectivity, which can be vulnerable to outages or cybersecurity threats.

Opportunities:

- **Growing market:** As more and more people rely on vehicles for transportation, the demand for vehicle maintenance software is likely to increase.

- **Expansion into related markets:** The software could be adapted to other related markets, such as trucking, aviation, or marine industries.

- **Integration with other software:** The software could be integrated with other software, such as GPS tracking or fuel management software, to offer a more comprehensive solution.

Threats:

- **Competition:** There are already many companies offering vehicle maintenance software, which means the market may be crowded and competitive.

- **Rapidly changing technology:** The software may become outdated quickly as new technologies emerge, which could make it less valuable over time.

- **Economic downturns:** A downturn in the economy could reduce demand for software as companies and individuals cut back on spending.

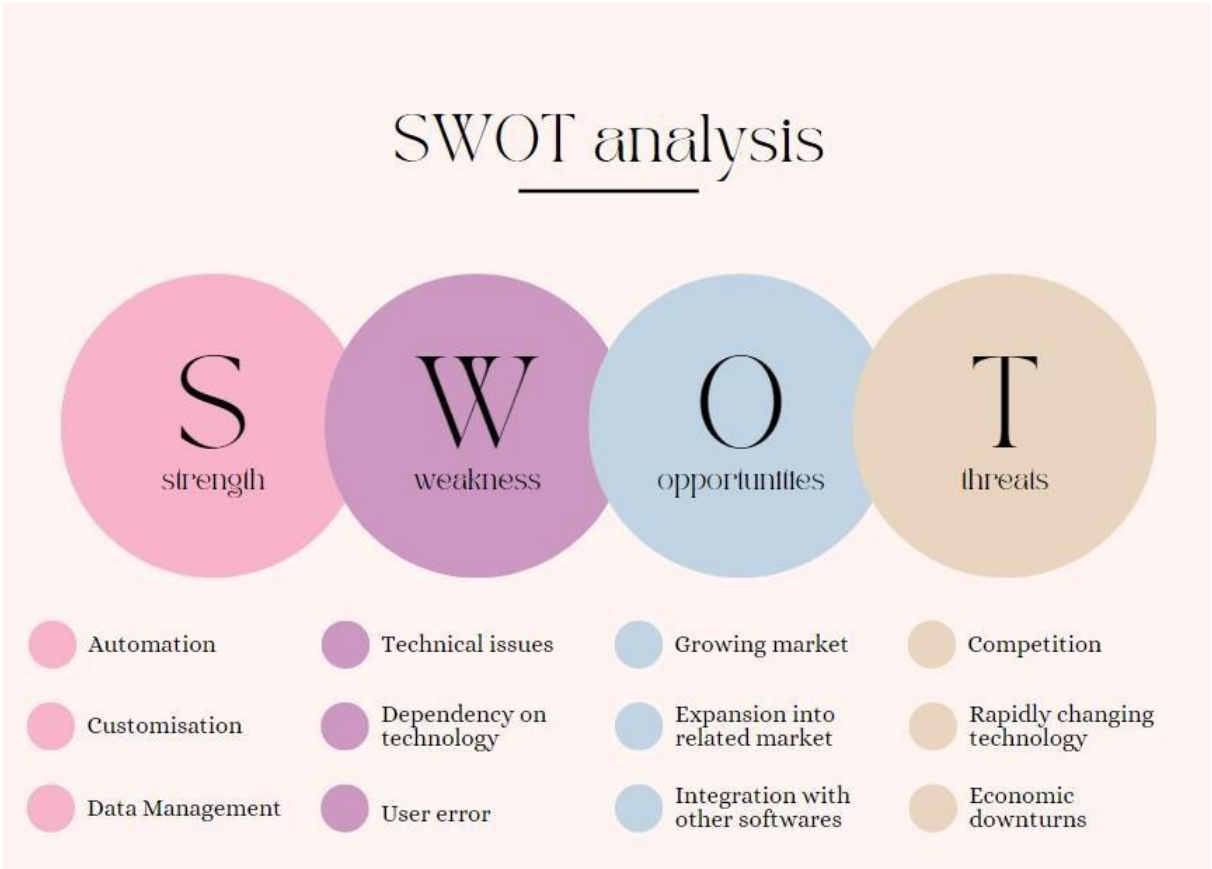


Figure 5 – SWOT Analysis for VMS

7. UML DIAGRAMS

7.1 SYSTEM ARCHITECTURE DIAGRAM

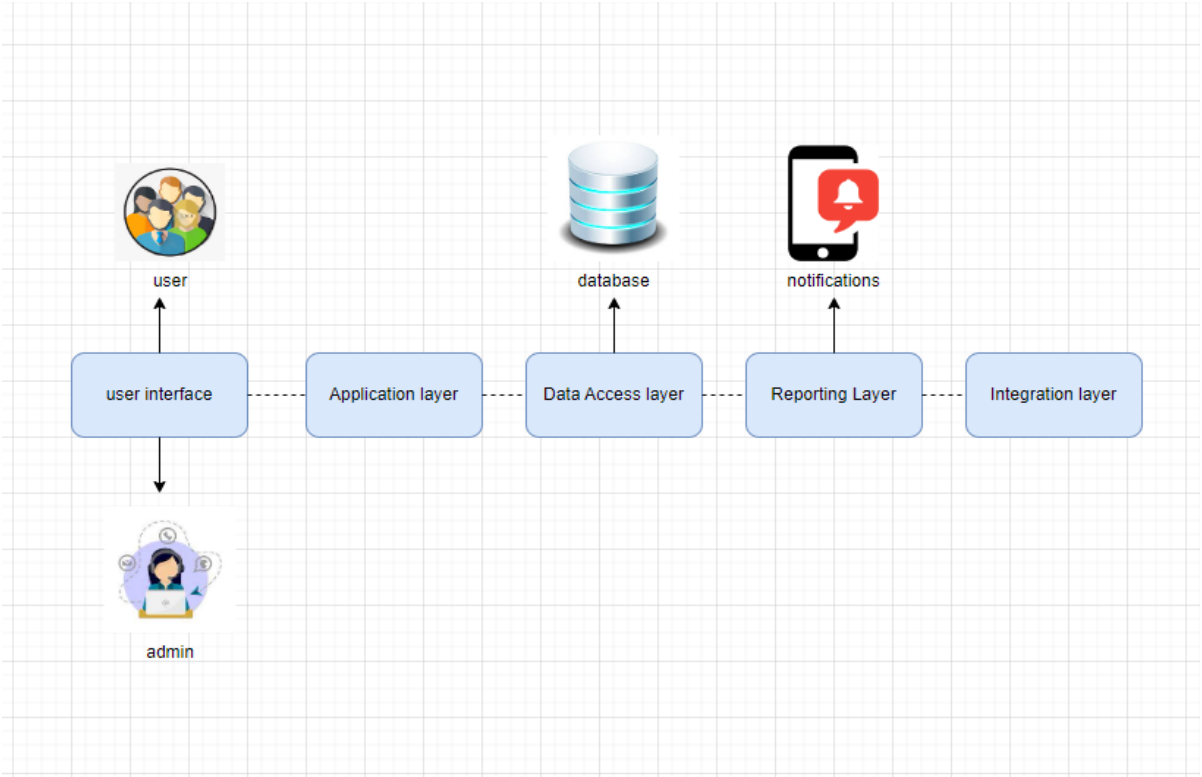


Figure 6 – System Architecture Diagram for VMS

The system architecture diagram is an abstract depiction of the system's component architecture. It provides a succinct description of the system's component architecture in order to assist in component-component relationships and system functioning.

It's a crucial tool that provides a comprehensive overview of the software system's physical deployment and development roadmap. An architectural diagram must perform a variety of tasks.

1. **User Interface:** This layer provides the graphical user interface(GUI) for the software. It allows users to interact with the system and input data.

2. **Application layer:** This layer contains business logic of the system. It processes user information and performs calculations and operations.

3. **Data Access layer:** This layer provides access to the database where all the relevant information about the vehicles and maintenance records is stored. It includes a mechanism to add, delete, and update the records.

4. **Database:** This layer stores all the information about the vehicles and their maintenance records.

5. **Reporting layer:** This layer generates reports based on the data stored in the database. It provides insights and analysis of the maintenance records.

6. **Integration layer:** This layer connects the vehicle maintenance software to the other systems such as external databases of APIs to exchange data and functionality.

7.2 USE CASE DIAGRAM

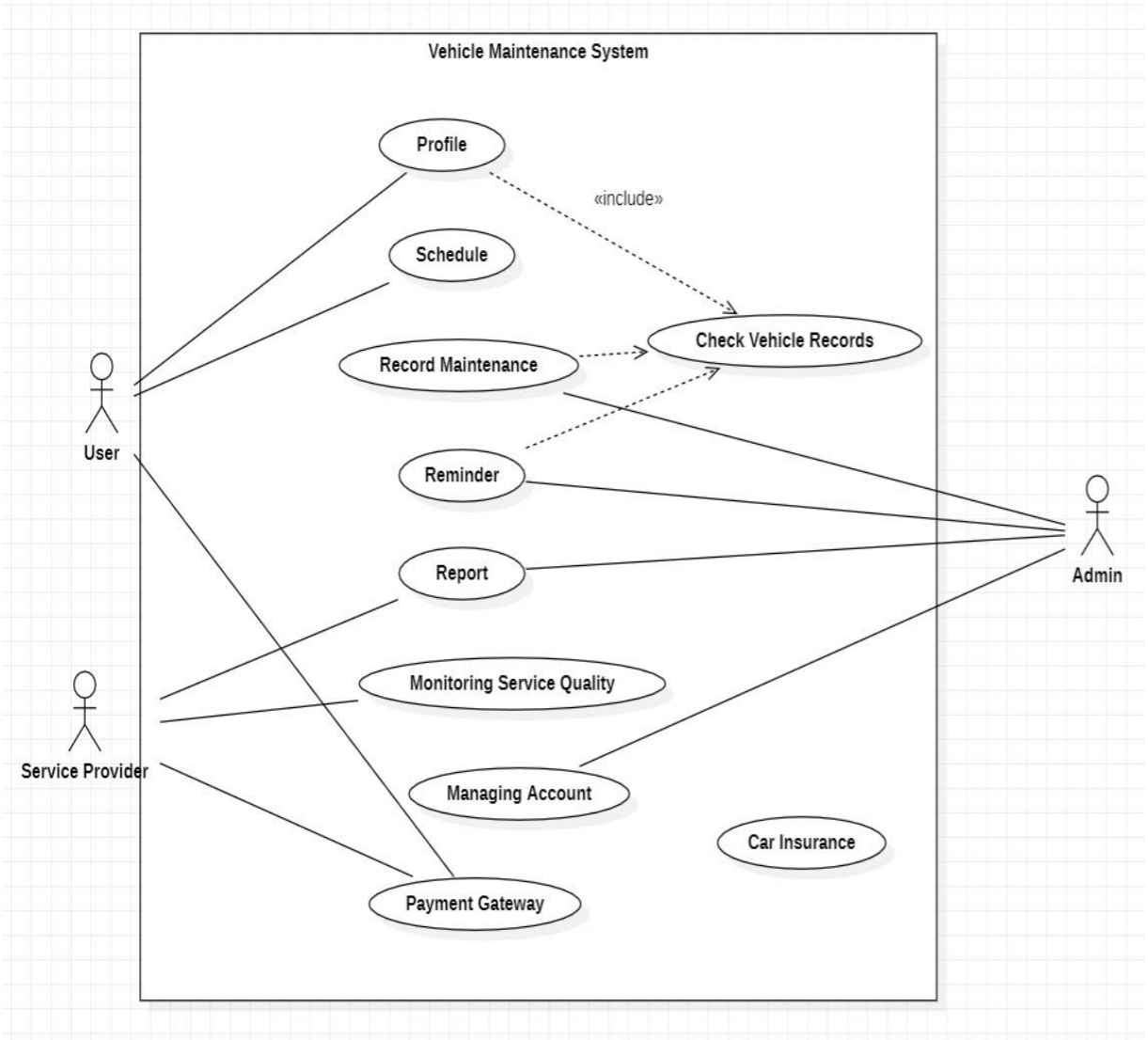


Figure 7 – Use Case Diagram for VMS

7.3 CLASS DIAGRAM

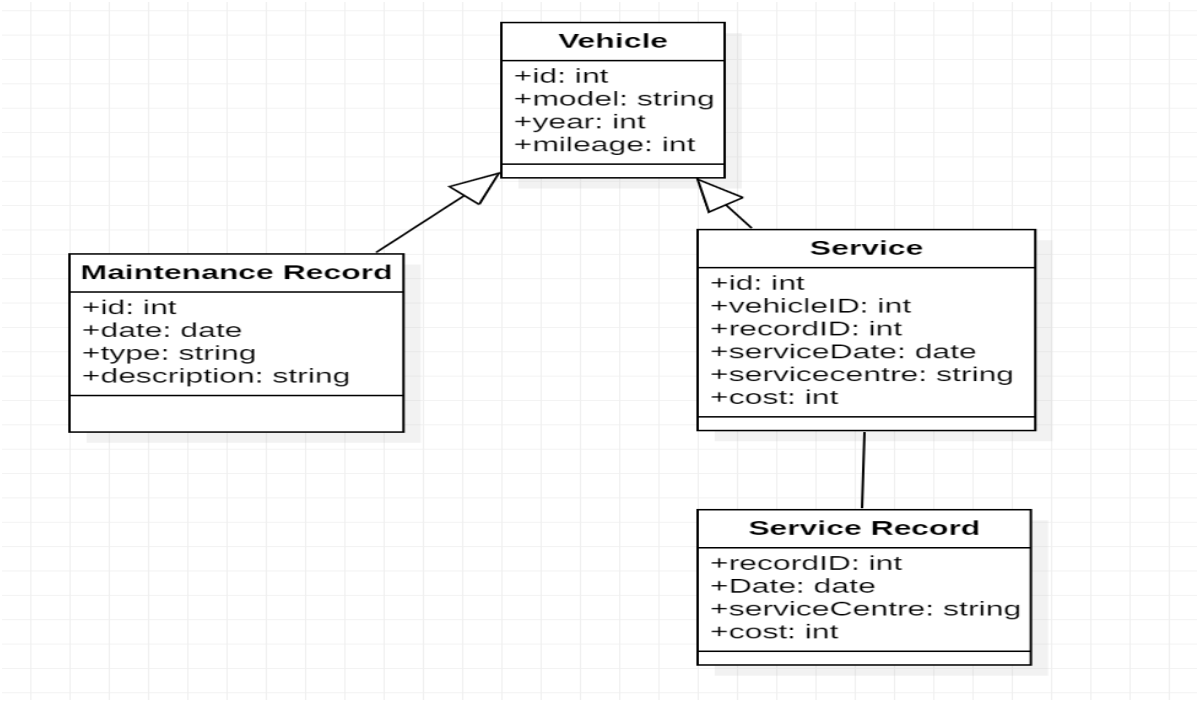


Figure 8 – Class Diagram for VMS

In this diagram, we have four classes: Vehicle, Service, Maintenance Record, and Maintenance Service.

The **Vehicle** class has properties such as an ID, model, year, and mileage.

The **Service** class represents a specific service performed on a vehicle and has properties such as an ID, date, the Vehicle object that the service was performed on, and the ServicePackage object that was used to perform the service.

The **MaintenanceRecord** class has properties such as an ID, date, type, and description.

The **MaintenanceService** class represents the association between a Vehicle and a MaintenanceRecord and has properties such as an ID, vehicle ID, record ID and service date.

The dependencies and generalization of classes are represented pictorially by connections between classes.

7.4 RELATIONAL DIAGRAM

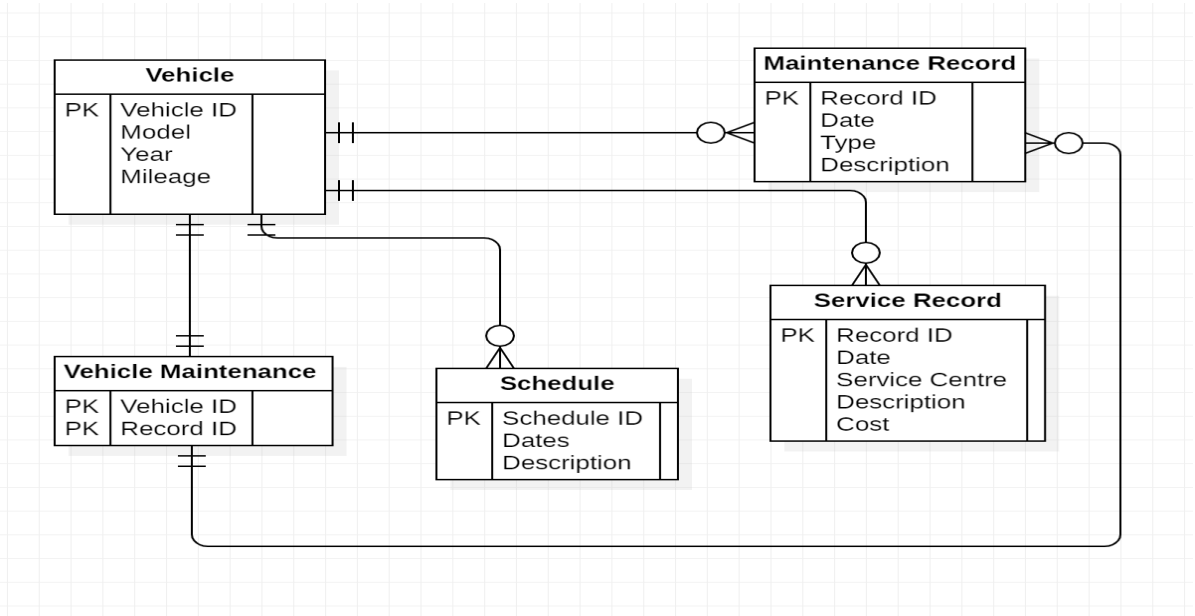


Figure 9 – Relational Diagram for VMS

In this diagram, we have five entities: Vehicle, ServiceRecord, MaintenanceRecord, VehicleMaintenance, and Schedule.

The **Vehicle** entity has properties such as an ID, make, model, year, and mileage.

The **ServiceRecord** entity has properties such as an ID, date, technician, description, and cost. This entity is associated with the Vehicle entity using a foreign key.

The **Schedule** entity represents the schedule of service appointments and has properties such as an ID, date, start time, end time, and technician ID. This entity is associated with the ServiceRecord entity using a foreign key.

The **Maintenance Record** entity has properties such as an ID, date, type, and description.

The **Vehicle Maintenance** entity represents the association between a Vehicle and a MaintenanceRecord and has foreign keys referencing the primary keys of those entities.

The relationship between entities like one-one , one-many are pictorially represented in the diagram.

7.5 ENTITY RELATION DIAGRAM

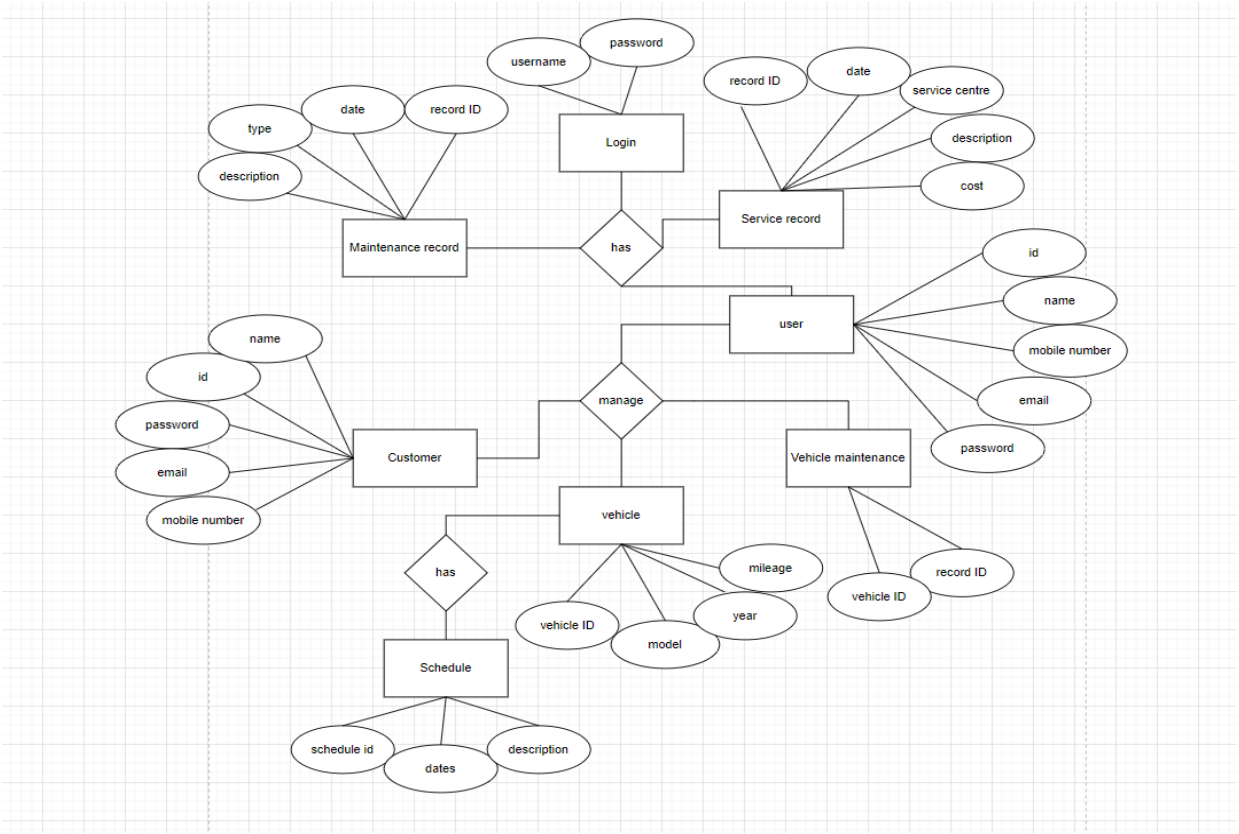


Figure 10 – Entity Relation Diagram for VMS

An entity–relationship model describes interrelated things of interest in a specific domain of knowledge. A basic ER model is composed of entity types and specifies relationships that can exist between entities.

Here there are 8 entities: login, maintenance record, service record, user, customer, vehicle, vehicle maintenance and schedule.

- The **login** entity represents the login information such as username and password.
- The **maintenance record** entity represents the record of the maintenance work done at present and has properties such as id, date, type and description.

- The **service record** entity represents the past service records of the vehicle and has properties such as id, date, service center, description and cost.

- The **user** entity has the user information such as login id, name, mobile number, email and his login password.

- The **customer** entity also represents the customer information and has properties like his id, password, name, mobile number and email address.
- The **vehicle** entity represents the information of the vehicle and has properties like vehicle id, model, year of purchase, and mileage.
- The **vehicle maintenance** entity holds the information of the current maintenance work and has properties such as vehicle id and record id.
- The **schedule** entity represents the schedule of service appointments and has properties such as schedule id, dates and description.

7.6 DATA FLOW DIAGRAM

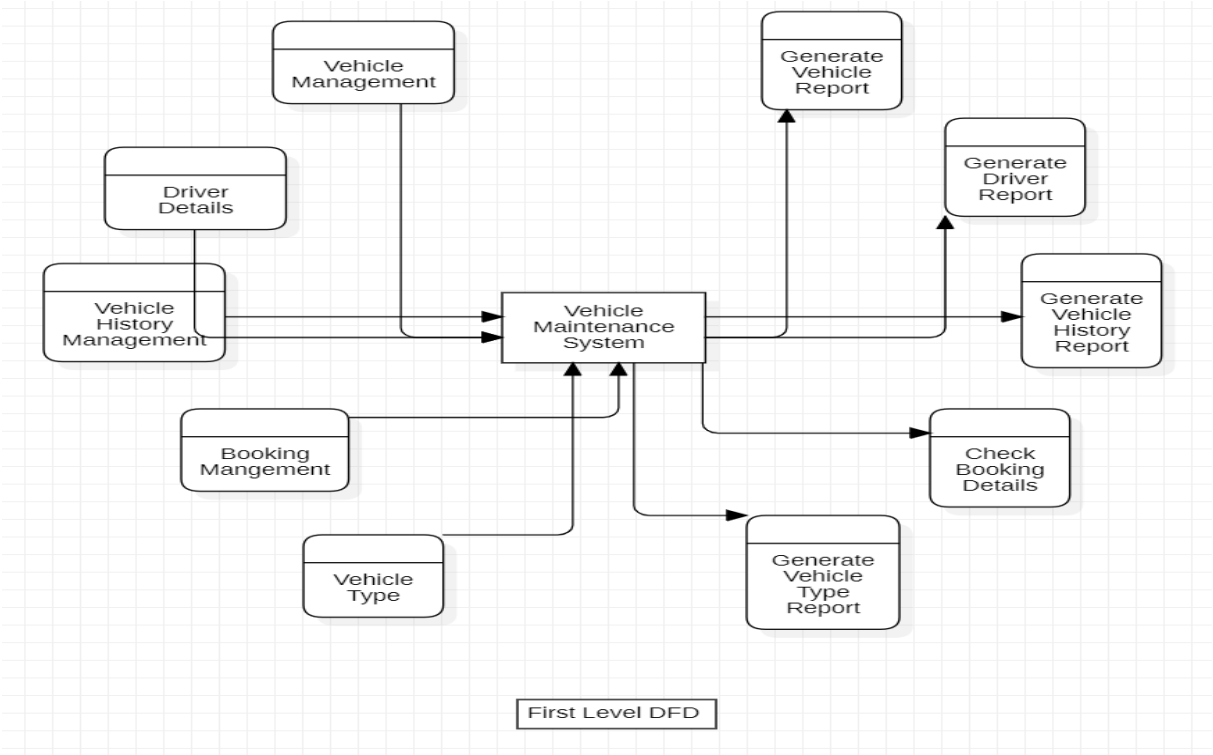


Figure 11 – Data Flow Diagram for VMS

7.7 SEQUENCE DIAGRAM:

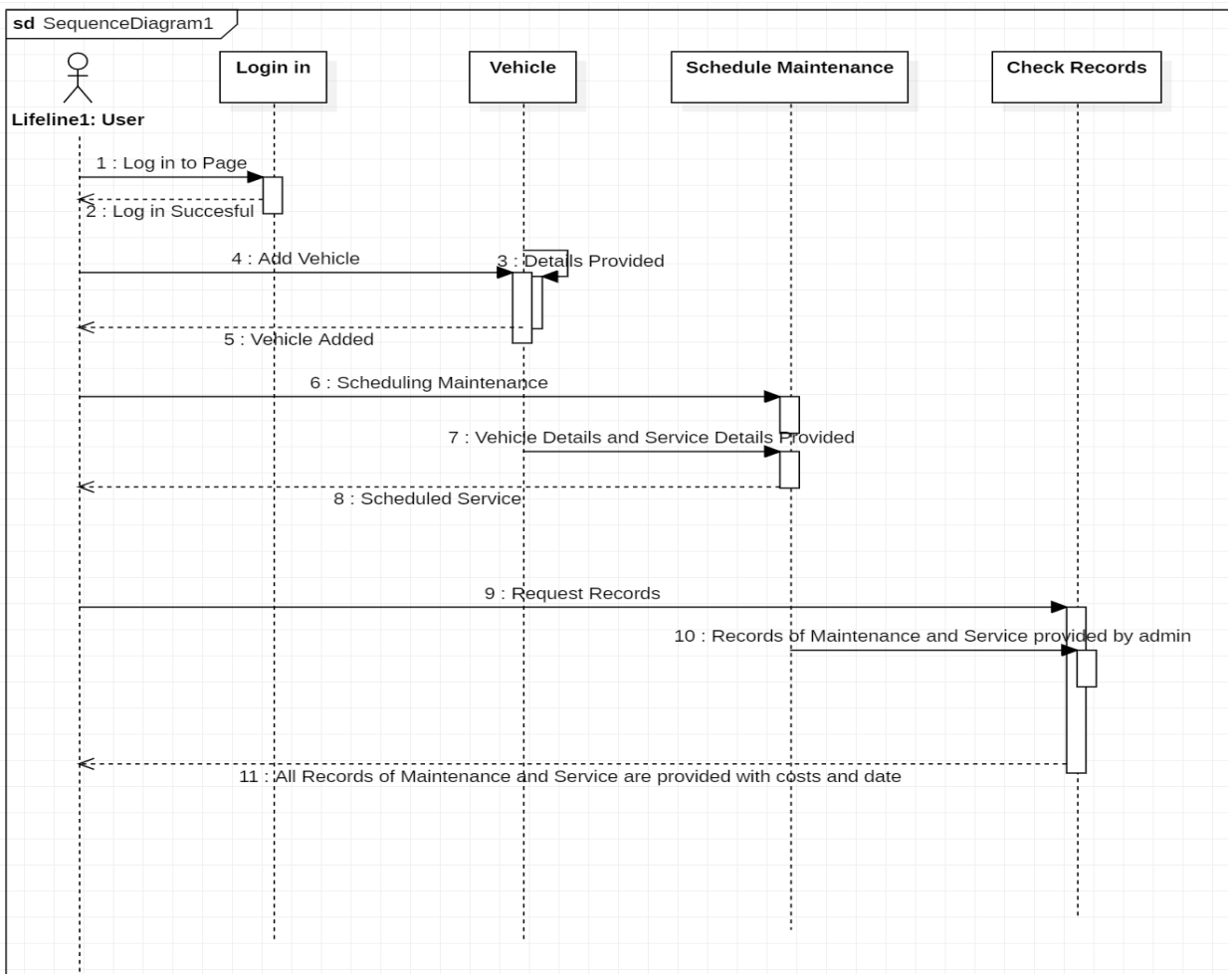


Figure 12 – Sequence Diagram for VMS

This is a Sequence Diagram for Vehicle Maintenance System, the sequence diagram represents the flow of messages in the system and is also termed as an event diagram. It helps in envisioning several dynamic scenarios. It portrays the communication between any two lifelines as a time-ordered sequence of events, such that these lifelines took part at the run time. Its purpose is to model high-level interaction among active objects within a system. It models interaction among objects inside a collaboration utilizing a use case, it either models generic interactions or some certain instances of interaction.
The various Lifelines used here are:

- Logging in for the user
- Vehicle
- Scheduling Maintenance
- Checking Records

The various sub processes with their execution time have been depicted in the sequence diagram using lifelines and wait times.

7.8 COLLABORATION DIAGRAM:

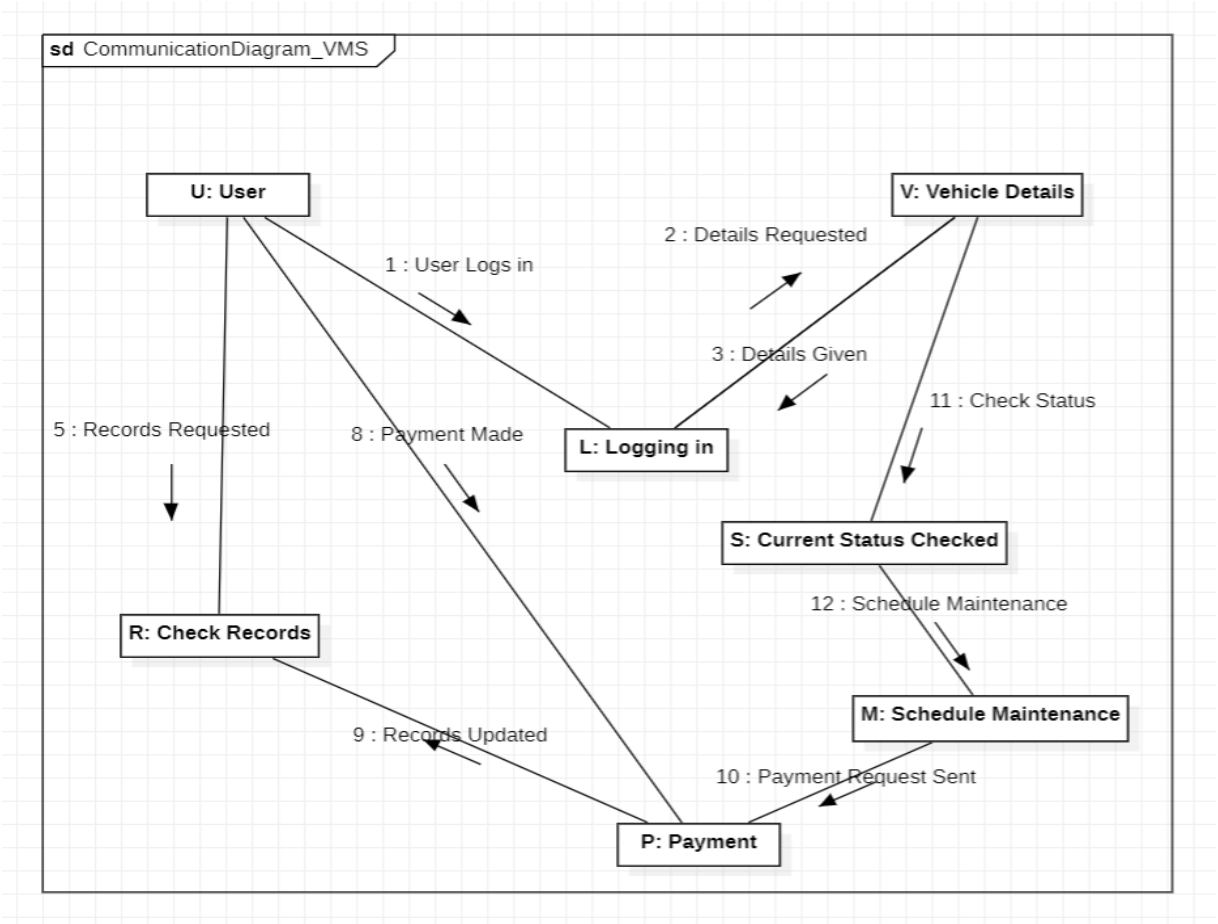


Figure 13 – Collaboration Diagram for VMS

The collaboration diagram comes under the UML representation which is used to visualize the organization of the objects and their interaction. Collaboration diagram is used to represent the structural organization of the system and the messages that are sent and received.It is better suited for depicting simpler interactions of smaller number of objects.

Here, the various objects used are:

- User
- Logging IN
- Vehicle Details
- Current Status
- Scheduling Maintenance
- Payment
- Checking Records

These objects interact with each other based on the requirements. The Messages sent and received are depicted using the arrows, between any two objects at a given point of time.

8. TESTING FRAMEWORK AND INTERFACE

8.1 Scope:

The scope of a vehicle maintenance system project can vary depending on the specific requirements of the system. However, in general, the project scope would include the development of a system that can manage and track the maintenance activities of vehicles. This would involve creating a system that can store information about vehicles, such as their make, model, and year, as well as information about their maintenance history, such as when they were serviced and what repairs were made. The system would also need to include functionality for scheduling maintenance tasks, such as oil changes and tire rotations, and for tracking the progress of these tasks. In addition, the system would need to provide reports and analytics on maintenance activities, such as how often vehicles require maintenance and which types of maintenance are most common.

8.2 Objective:

The objective of a vehicle maintenance system project is to create a system that can effectively manage and track the maintenance activities of vehicles. The primary goal of the system is to help ensure that vehicles are kept in good working order and are safe to operate. This can help to minimize the risk of breakdowns and accidents, as well as reduce the costs associated with maintenance and repairs.The system should provide a centralized platform for managing all aspects of vehicle maintenance, from scheduling routine maintenance tasks to tracking the progress of repairs. By providing real-time visibility into maintenance activities, the system can help to ensure that maintenance tasks are completed on time and that any potential issues are identified and addressed promptly.

8.3 Approach

- Begin with unit testing, which involves testing each component of the system individually to ensure that it is functioning correctly
- Use automated testing tools or manual testing methods for unit testing, depending on the complexity of the component and the resources available

- Subject the system to integration testing to test the interactions between different components of the system
- Identify any issues that may arise when different components are combined, such as conflicts between different data formats or compatibility issues with other systems
- Perform system testing to ensure that the system is functioning correctly as a whole and meets the requirements of the organization and its users
- Test the system's user interface, its functionality for managing maintenance tasks and schedules, and its reporting and analytics capabilities during system testing
- Subject the system to acceptance testing by testing it with real-world scenarios to ensure that it is meeting the needs of the organization and its users
- Test the system with a range of different vehicles and maintenance tasks during acceptance testing
- Document any issues that arise during testing and work with the development team to resolve them.

The testing phases for a vehicle maintenance system typically include the following:

- **Unit Testing**: Unit testing is the first phase of testing, where individual components of the system are tested in isolation. This is done to ensure that each component is functioning as expected and to identify any defects early in the development cycle.

- **Integration Testing**: In this phase, the individual components of the system are combined and tested together as a whole. This is done to ensure that the components are working together as expected and to identify any defects that may arise due to interactions between the components.

- **System Testing**: System testing involves testing the entire system as a whole, including all the components and their interactions. This is done to ensure that the system meets the functional and non-functional requirements and to identify any defects that may have been missed in the previous testing phases.

- **User Acceptance Testing**: User acceptance testing (UAT) is conducted to ensure that the system meets the user requirements and is easy to use. UAT is typically conducted by end-users or stakeholders who are familiar with the system requirements.

- **Performance Testing**: Performance testing is done to ensure that the system meets the performance requirements, such as response time, throughput, and

resource utilization. This is done to ensure that the system can handle the expected workload and can scale to meet future demand.

- **Security Testing**: Security testing is done to ensure that the system is secure and protected from unauthorized access or attacks. This includes testing the system's access controls, encryption, and vulnerability assessments.

- **Regression Testing**: Regression testing is conducted to ensure that the changes made to the system during the development cycle have not impacted the existing functionality of the system.

- Overall, these testing phases are conducted in a systematic manner to ensure that the vehicle maintenance system is thoroughly tested and meets the requirements and expectations of the stakeholders.

8.4 Testing Approach

The testing approach for a vehicle maintenance system app would involve the following steps:

Requirement Analysis

The first step in testing the vehicle maintenance system app would be to analyze the requirements of the app to ensure that all the features and functionalities are identified and understood.

Test Planning

After analyzing the requirements, a test plan should be created that outlines the test objectives, scope, approach, and test schedule. The test plan should also identify the testing tools and techniques that will be used.

Test Design

In this phase, test cases are designed to validate the functionality and usability of the app. Test cases should be designed to test all the features of the app, including basic functionality, error handling, performance, and security.

Test Execution

Once the test cases have been designed, they should be executed to ensure that the app functions as expected. The test results should be documented, and defects should be logged in a defect tracking system.

Test Reporting

After executing the test cases, a test report should be created that summarizes the results of the testing. The report should include information on the test coverage, test results, and any defects that were found.

Regression Testing

Regression testing should be performed after any changes or updates are made to the app to ensure that existing functionalities are not impacted and that new functionalities are working as expected.

User Acceptance Testing

After the testing has been completed, the app should be tested by end-users to ensure that it meets their needs and is easy to use.

Overall, the testing approach for a vehicle maintenance system app should be comprehensive, covering all aspects of the app's functionality, performance, usability, security, and integration with other systems. The testing should be conducted in multiple phases and should involve the use of various testing tools and techniques to ensure that the app is thoroughly tested.

8.5 Testing Environment

The testing environment for a vehicle maintenance system should be representative of the production environment in which the system will operate. This includes hardware, software, and network configurations that are similar to those in the production environment.

Here are some key components that should be included in the testing environment:

Hardware: The hardware should be similar to the production environment in terms of the type of computers, servers, and mobile devices that will be used by the end-users. This includes ensuring that the hardware has the required processing power, memory, and storage capacity to handle the application.

Software: The software used in the testing environment should be the same as that used in the production environment. This includes the operating system, database management system, web server, and any other software components used by the application.

Network: The network infrastructure used in the testing environment should be similar to the production environment in terms of the network topology, protocols, and bandwidth. This is important to ensure that the application performs well under realistic network conditions.

Test Data: The testing environment should have a representative sample of the data that will be used in the production environment. This includes customer data, transaction data, and any other data that is required to test the functionality of the application.

Test Tools: The testing environment should have all the required testing tools and software installed, including testing frameworks, test automation tools, and debugging tools.

Security: The testing environment should be secured to ensure that the application is protected from unauthorized access or attacks. This includes securing the network, servers, and any other components that are part of the application.

Overall, the testing environment should be well-designed and maintained to ensure that the testing is effective and that the application is thoroughly tested before it is released into the production environment.

Types of Testing	Methodology	Tools Required
Functional Testing	Black Box Testing	Selenium, TestComplete, Appium
Performance Testing	Load Testing	JMeter, LoadRunner
Usability Testing	User-Centered Design	UsabilityHub, UserTesting.com
Security Testing	Penetration Testing	Burp Suite, OWASP ZAP
Integration Testing	Top-Down or Bottom Up	SOAPUI, Postman
Acceptance Testing	User Acceptance Testing	Manual Testing
Regression Testing	Automated Regression Testing	Selenium, TestComplete

Table 2 – Testing Methodology for VMS

9. TESTCASES

9.1 Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status
T01	User Login/Sign up	Accept valid email id and password	1. User clicks on User Registration link 2. Enter the email address 3. Enter the password	User should be taken to the next page for entering more user details	User taken to the next page for entering more details in case of sign in, and entered the home page in case of log in.	Passed
T02	Adding/Editing a new vehicle	Accept vehicle details	1. User clicks on add vehicle Option. 2. User enters the details of the vehicle like image, model, mileage,etc.	The added vehicle should show in the home page. If edited then the data should be updated.	The added vehicle is updated in the home page. The modified data also reflects in the home page.	Passed
T03	Adding a Maintenance Task	Add the maintenance Task	User clicks on Book service under a particular vehicle. The User chooses the service centre/shop. User will provide details for the service. User will choose the date and time of delivery of the vehicle.	The Booked status should be shown in appointments along with service details.	The booking page gets expected details from the user but the status showing part is still under development	Passed

T04	Reminder	App should remind the user about upcoming services when it is due.	–	The due reminders should remind in-app like in upcoming services	The reminders mention the due service in the Upcoming Service section.	Passed
T05	View Service History	Verify that the user can view the maintenanc e history for each of their vehicles, including completed tasks.	The user clicks the option called History.	The history should show previous maintenance of the vehicle with vehicle details for each vehicle.	The past tasks of a service reflect in the history as a service is considered as completed.	Passed
T06	Search Vehicles	Verify that users can search for a vehicle by make, model, or year	Users can search for a vehicle while entering new vehicle.	Users can search for a vehicle by entering the make, model, or year and the app displays all matching vehicles	Users can search for a vehicle by entering the make, model, or year and the app displays few matching vehicles	Partiall y Passed

Table 3 – Functional Test Cases for VMS

9.2 Non-Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Expected Outcome	Actual Outcome	Status
T07	Security Testing	Verify that the app is secure and that user data is protected from unauthorized access or manipulation.	No security vulnerabilities found	2 FireBase injection vulnerabilities found, both of which were fixed	Partially Passed
T08	Performance Testing	Evaluate the app's performance under	App responds within 2 seconds	App responds within 2 seconds	Passed

		different conditions, such as high traffic or low network connectivity, to ensure that it is responsive and reliable.	under all conditions	under all conditions	
T09	Compatibility Testing	Test the app on different devices, operating systems to ensure that it works correctly and consistently across a range of platforms.	The app works consistently across all devices.	App doesn't work on iOS devices. (Still under development)	Partially Passed
T10	Usability Testing	Evaluate the app's usability and user experience, testing how easy it is for users to navigate the app and complete tasks.	Users can complete tasks easily and with minimal confusion	Users can complete tasks easily and with minimal confusion	Passed
T11	Recovery Testing	Test the app's ability to recover from failures or crashes, such as by simulating a sudden loss of network connectivity.	App can recover from failures or crashes without data loss	App loses some data when the server crashes unexpectedly	Failed
T12	User Acceptance Testing	This includes testing for factors such as user satisfaction, user engagement, and user feedback.	Users are satisfied with the app's functionality and usability	Users report dissatisfaction with the app's layout and some features	Partially Passed

Table 4 – Non-Functional Test Cases for VMS

9.3 MANUAL TESTCASES TESTING REPORT

Category	Progress Against Plan	Status	Software
Functional Testing	**Green**	**Completed**	
Log-in	**100%**	Completed	—
Add Vehicle	**100%**	Completed	—
Add Service	**100%**	Completed	—
View Service History	**100%**	Completed	—
Search Vehicles	**100%**	Completed	—
View Upcoming Services	**100%**	Completed	—
Non-Functional Testing	**Amber**	**In-Progress**	
Performance Testing	**90%**	In-Progress	Selenium
Compatibility Testing	**100%**	Completed	Selenium
Integration Testing	**100%**	Completed	SoapUI
User- Acceptance Testing	**80%**	In-Progress	—
Security Testing	**75%**	In-Progress	OWASP ZAP
Recovery Testing	**75%**	In-Progress	OWASP ZAP

Table 5 – Manual Test Cases Report for VMS

9.4 TESTING SOFTWARE REPORT

9.4.1 Selenium: (Functional Test Case Testing)

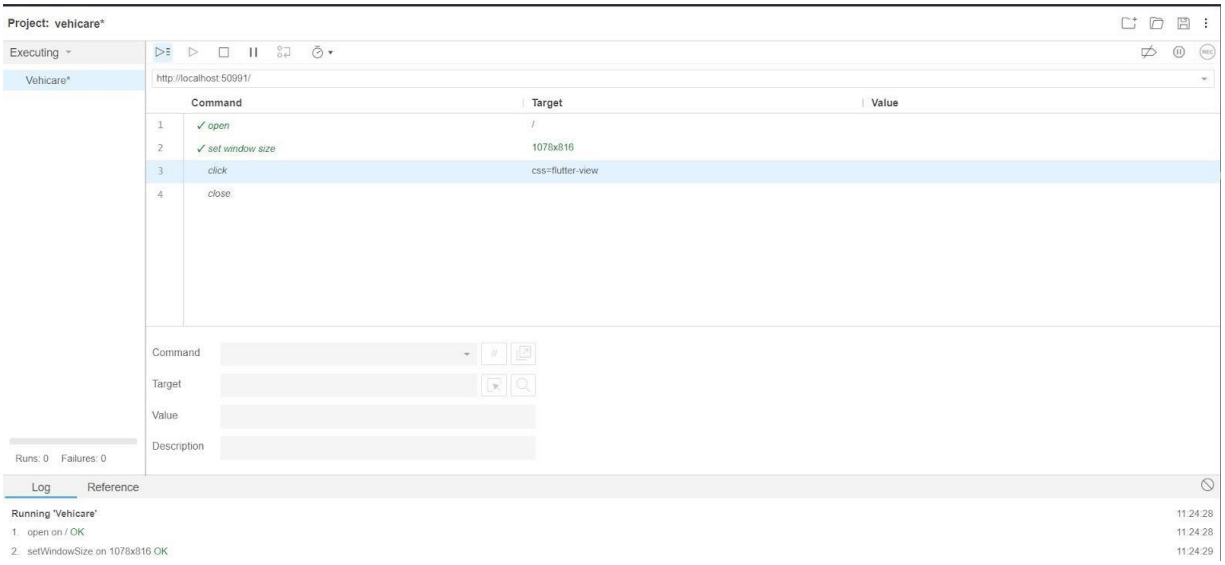


Figure 14 – Functional Testing VMS

9.4.2 OWASP ZAP: (Security Testing)

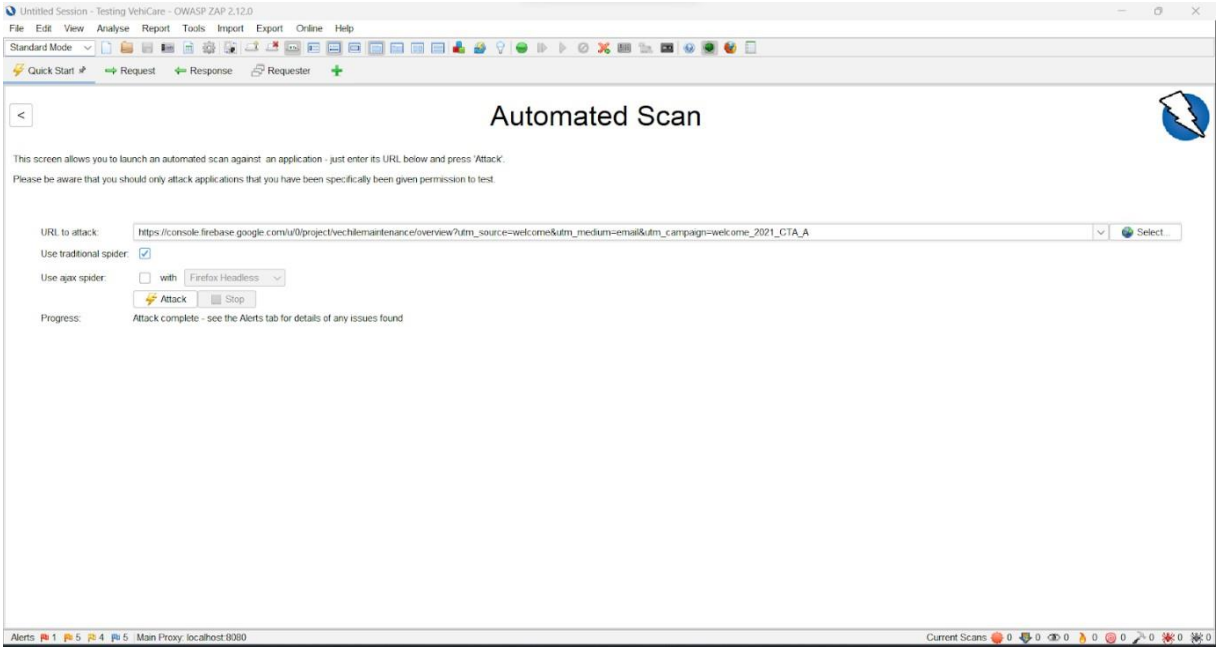


Figure 15 – Non-Functional Testing for VMS

Alert counts by risk and confidence

This table shows the number of alerts for each level of risk and confidence included in the report.

(The percentages in brackets represent the count as a percentage of the total number of alerts included in the report, rounded to one decimal place.)

		Confidence				
		User Confirmed	High	Medium	Low	Total
Risk	High	0 (0.0%)	0 (0.0%)	1 (6.7%)	0 (0.0%)	1 (6.7%)
	Medium	0 (0.0%)	4 (26.7%)	0 (0.0%)	1 (6.7%)	5 (33.3%)
	Low	0 (0.0%)	2 (13.3%)	2 (13.3%)	0 (0.0%)	4 (26.7%)
	Informational	0 (0.0%)	1 (6.7%)	2 (13.3%)	2 (13.3%)	5 (33.3%)
	Total	0 (0.0%)	7 (46.7%)	5 (33.3%)	3 (20.0%)	15 (100%)

Figure 16 – Alert Counts by Risk and Confidence for VMS

Alerts

Risk=High, Confidence=Medium (1)

https://console.firebase.google.com (1)

Cross Site Scripting (Reflected) (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=%27%3Balert%281%29%3B%27&utm_medium=email&utm_campaign=welcome_2021_CTA_A

Risk=Medium, Confidence=High (4)

https://console.firebase.google.com (4)

CSP: Wildcard Directive (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

CSP: script-src unsafe-inline (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

CSP: style-src unsafe-inline (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

Content Security Policy (CSP) Header Not Set (1)

▶ GET https://console.firebase.google.com/sitemap.xml

Figure 17 – Alert by Risks VMS

Risk=Low, Confidence=Medium (2)

https://console.firebase.google.com (2)

Cookie without SameSite Attribute (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

Cross-Domain JavaScript Source File Inclusion (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

Risk=Informational, Confidence=High (1)

https://console.firebase.google.com (1)

Content Security Policy (CSP) Report-Only Header Found (1)

▶ GET https://console.firebase.google.com/sitemap.xml

Risk=Informational, Confidence=Medium (2)

https://console.firebase.google.com (2)

Modern Web Application (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

User Agent Fuzzer (1)

▶ GET https://console.firebase.google.com/u/0/project/vechilemaintenance/overview?utm_source=welcome&utm_medium=email&utm_campaign=welcome_2021_CTA_A

Risk=Informational, Confidence=Low (2)

Figure 18 – Alert by Risks for VMS

10. CODE WITH IMPLEMENTATION

Main.dart

```
import 'package:flutter/material.dart';
import 'package:flutter/services.dart';
import 'package:vehicle_maintenance_app/checkscreen.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import 'package:vehicle_maintenance_app/ongenerateroute.dart';
import
'package:vehicle_maintenance_app/screens/addnewcar.dart';
import
'package:vehicle_maintenance_app/screens/loginpage.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/dashboard.
dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/homeparent
.dart';
import
'package:vehicle_maintenance_app/screens/payment/billingmain.da
rt';
import
'package:vehicle_maintenance_app/screens/payment/paymentscreen.
dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleappointment.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleconfirmation.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
ulereview.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleshop.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
ulesuccess.dart';
import 'package:vehicle_maintenance_app/screens/signup.dart';
import
'package:vehicle_maintenance_app/screens/payment/paymentsuccess
full.dart';
import 'package:firebase_core/firebase_core.dart';
```

```
import
'package:vehicle_maintenance_app/screens/upcoming_appointments.
dart';
import
'package:vehicle_maintenance_app/services/decision.dart';

String initialroute = '';

void main() async {
  SystemChrome.setSystemUIOverlayStyle(SystemUiOverlayStyle(
    statusBarColor: Colors.transparent,
  ));
  WidgetsFlutterBinding.ensureInitialized();
  await Firebase.initializeApp();
  initialroute = await logindecision();
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  const MyApp({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      theme: ThemeData(
        fontFamily: 'opensans',
        useMaterial3: true,
        scaffoldBackgroundColor: Colors.white,
        colorSchemeSeed: maintheme,
        elevatedButtonTheme: ElevatedButtonThemeData(
          style: ElevatedButton.styleFrom(
            surfaceTintColor: Colors.white,
            foregroundColor: maintheme,
          ),
        ),
      ),
      initialRoute: initialroute,
      onGenerateRoute: RouteGenerator.generateRoute,
    );
  }
}
```

addnewcar.dart

```
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/data.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
```

```
import
'package:vehicle_maintenance_app/widgets/loadingblock.dart';

class addNewCar extends StatefulWidget {
  const addNewCar({Key? key}) : super(key: key);

  @override
  State<addNewCar> createState() => _addNewCarState();
}

class _addNewCarState extends State<addNewCar> {
  String? carmaker;
  String? carmodel;
  UserServices userServices = UserServices();

  @override
  void initState() {
    // TODO: implement initState
    super.initState();
    if (carmaker == null) {
      carmaker = carMakers.keys.first;
      carmodel = carMakers[carmaker][0];
    }
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        leading: IconButton(
          onPressed: () {
            Navigator.pop(context);
          },
          icon: Icon(
            CupertinoIcons.left_chevron,
            color: darktext,
          ),
        ),
        title: Text(
          "Add Vehicle",
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
        actions: [
          IconButton(
            onPressed: () async {
              loadingBlock(context: context);
```

```
              await userServices.addnewcar(
                carmaker: carmaker!,
                carmodel: carmodel!,
              );
              Navigator.pop(context); // to pop dialog box
              Navigator.pop(context); // to pop screen
              print('Successfull');
            },
            icon: Icon(
              Icons.check_rounded,
              color: darktext,
            ),
          ),
        ],
      ),
      body: Container(
        padding: EdgeInsets.symmetric(horizontal: 15),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.start,
          children: [
            SizedBox(
              height: 20,
            ),

            Container(
              height: 200,
              width: MediaQuery.of(context).size.width,
              margin: EdgeInsets.symmetric(vertical: 10),
              child: ClipRRect(
                borderRadius: BorderRadius.circular(16),
                child: Image.asset(
                  'assets/images/vehicles/'                    +
carPhotos[carmodel!].toString(),
                  fit: BoxFit.cover,
                ),
              ),
              // child: Text(carmodel!),
              decoration: BoxDecoration(
                color: Colors.black.withAlpha(50),
                borderRadius: BorderRadius.circular(16),
              ),
            ),
            SizedBox(
              height: 20,
            ),
            Text(
              'Vehicle Maker',
              style: subtitle,
            ),
            SizedBox(
              height: 15,
            ),
            Container(
```

```
      padding: EdgeInsets.symmetric(horizontal: 15),
      decoration: BoxDecoration(
        borderRadius: BorderRadius.circular(12),
        border: Border.all(
          width: 1,
          color: maintheme,
        ),
      ),
      child: DropdownButton(
        value: carmaker,
        alignment: AlignmentDirectional.centerStart,
        borderRadius: BorderRadius.circular(12),
        isExpanded: true,
        style: TextStyle(
          fontSize: 16,
          color: darktext,
        ),
        underline: Container(),
        icon: Icon(
          CupertinoIcons.chevron_down,
          size: 20,
          color: darktext,
        ),
        items: [
          for (String i in carMakers.keys)
            DropdownMenuItem(
              value: i,
              child: Text(i),
            ),
        ],
        onChanged: (a) {
          setState(() {
            carmaker = a;
            carmodel = carMakers[carmaker][0];
          });
        },
      ),
    ),
    SizedBox(
      height: 20,
    ),
    Text(
      'Vehicle Model',
      style: subtitle,
    ),
    SizedBox(
      height: 15,
    ),
    Container(
      padding: EdgeInsets.symmetric(horizontal: 15),
      decoration: BoxDecoration(
        borderRadius: BorderRadius.circular(12),
        border: Border.all(
```

```
                    width: 1,
                    color: maintheme,
                  ),
                ),
                child: DropdownButton(
                  value: carmodel,
                  alignment: AlignmentDirectional.centerStart,
                  borderRadius: BorderRadius.circular(12),
                  isExpanded: true,
                  style: TextStyle(
                    fontSize: 16,
                    color: darktext,
                  ),
                  underline: Container(),
                  icon: Icon(
                    CupertinoIcons.chevron_down,
                    size: 20,
                    color: darktext,
                  ),
                  items: [
                    for (String i in carMakers[carmaker])
                      DropdownMenuItem(
                        value: i,
                        child: Text(i),
                      ),
                  ],
                  onChanged: (a) {
                    setState(() {
                      carmodel = a;
                    });
                  },
                ),
              ),
              SizedBox(
                height: 30,
              ),
            ],
          ),
        ),
      );
  }
}
```

billingmain.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/screens/payment/paymentwidgets
/paymentduesection.dart';
import
'package:vehicle_maintenance_app/screens/payment/paymentwidgets
/paymenttiles.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
import
'package:vehicle_maintenance_app/widgets/carcarousal.dart';

class billingMain extends StatefulWidget {
  const billingMain({Key? key}) : super(key: key);

  @override
  State<billingMain> createState() => _billingMainState();
}

class _billingMainState extends State<billingMain> {
  UserServices userServices = UserServices();
  List<String> carkeys = [];
  bool loaded = false;
  int currentpage = 0;
  void setcurrentpage(int page) {
    print(page);
    setState(() {
      currentpage = page;
    });
  }

  Future<QuerySnapshot> getcardata() async {
    QuerySnapshot data = await userServices.getcars();
    carkeys.clear();
    for (DocumentSnapshot snapshot in data.docs) {
      carkeys.add(snapshot.id.toString());
    }
    loaded = true;
    return data;
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        automaticallyImplyLeading: false,
```

```
        elevation:  0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        title: Text(
          "Billing",
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: Container(
        child: FutureBuilder(
          future: getcardata(),
          builder: (context, snapshot) {
            if (snapshot.hasData && snapshot.data!.size != 0) {
              return Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  SizedBox(
                    height: 15,
                  ),
                  Container(
                    height: 180,
                    child: carCarousal(
                      setCurrentpage: setcurrentpage,
                      items: [
                        for     (DocumentSnapshot     doc     in
snapshot.data!.docs)
                          buildVehiclecard(
                              carmaker: doc.get('carmaker'),
                              carmodel: doc.get('carmodel'))
                      ],
                    ),
                  ),
                  SizedBox(
                    height: 15,
                  ),
                  Expanded(
                    child: Container(
                      padding:  EdgeInsets.symmetric(horizontal:
15),
                      child: SingleChildScrollView(
                        physics: BouncingScrollPhysics(),
                        child: Column(
                          crossAxisAlignment:
CrossAxisAlignment.start,
                          mainAxisSize: MainAxisSize.min,
                          children: [
                            paymentDueSection(
                              carkey: carkeys[currentpage],
                            ),
                            SizedBox(
```

```
                                height: 15,
                              ),
                              Text(
                                'RECENT TRANSACTIONS',
                                style: subtitle.copyWith(
                                  color: darktext,
                                ),
                              ),
                              SizedBox(
                                height: 5,
                              ),
                              recentTransactionsTile(),
                            ],
                          ),
                        ),
                      ),
                    ),
                    Row(
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
                        TextButton(
                          onPressed: () {},
                          child: Text('See all Transactions'),
                        ),
                      ],
                    ),
                  ],
                );
              } else if (snapshot.hasData && snapshot.data!.size
== 0) {
                return Center(
                  child: Text(
                    'Please add Vehicle in DashBoard',
                    style: TextStyle(
                      fontSize: 18,
                      fontWeight: FontWeight.bold,
                      color: darktext,
                    ),
                  ),
                );
              }
              return Center(
                child: CircularProgressIndicator(),
              );
            },
          ),
        ),
      );
    }}
```

carcarousal.dart

```
import 'dart:ui';

import 'package:carousel_slider/carousel_slider.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/data.dart';
import 'package:vehicle_maintenance_app/global.dart';

class carCarousal extends StatefulWidget {
  final Function? setCurrentpage;
  final List items;
  const carCarousal({Key? key, this.setCurrentpage, this.items =
const []})
      : super(key: key);

  @override
  State<carCarousal> createState() => _carCarousalState();
}

class _carCarousalState extends State<carCarousal> {
  int currentpage = 0;
  @override
  Widget build(BuildContext context) {
    return Column(
      children: [
        Expanded(
          child: Container(
            // height: 180,
            width: MediaQuery.of(context).size.width,
            child: CarouselSlider(
              items: [
                for (var i in widget.items) i,
              ],
              options: CarouselOptions(
                  enableInfiniteScroll: false,
                  viewportFraction: 16 / 9,
                  enlargeFactor: 0.3,
                  enlargeCenterPage: true,
                  initialPage: 0,
                  scrollPhysics: BouncingScrollPhysics(),
                  onPageChanged: (int page, reason) {
                    if (widget.setCurrentpage != null) {
                      widget.setCurrentpage!(page);
                    }
                    setState(() {
                      currentpage = page;
                    });
                  }),
            ),
          ),
        ),
```

```
        SizedBox(
          height: 10,
        ),
        Row(
          mainAxisAlignment: MainAxisAlignment.center,
          children: [
            for (int i = 0; i < widget.items.length; i++)
              Row(
                children: [
                  AnimatedContainer(
                    duration: Duration(milliseconds: 600),
                    curve: Curves.fastLinearToSlowEaseIn,
                    height: 7,
                    width: (i == currentpage) ? (20) : (7),
                    decoration: BoxDecoration(
                      color: (i == currentpage)
                          ? (maintheme)
                          : (Colors.grey.withAlpha(150)),
                      borderRadius: BorderRadius.circular(30),
                    ),
                  ),
                  SizedBox(
                    width: 5,
                  ),
                ],
              ),
          ],
        ),
      ],
    );
  }
}

class buildVehiclecard extends StatelessWidget {
  final String carmaker;
  final String carmodel;
  const buildVehiclecard(
      {Key?    key,    required    this.carmaker,    required
this.carmodel})
      : super(key: key);

  @override
  Widget build(BuildContext context) {
    print(carPhotos[carmodel].toString());
    return ClipRRect(
      borderRadius: BorderRadius.circular(16),
      child: Container(
        height: 180,
        width: MediaQuery.of(context).size.width - 30,
        decoration: BoxDecoration(
          color: Colors.black,
        ),
        child: Stack(
```

```
            children: [
              Container(
                height: 180,
                width: MediaQuery.of(context).size.width,
                decoration: BoxDecoration(
                  image: DecorationImage(
                    fit: BoxFit.fill,
                    image: AssetImage(
                      'assets/images/vehiclebg.jpg',
                    ),
                  ),
                ),
                child: BackdropFilter(
                  filter: ImageFilter.blur(
                    sigmaX: 2,
                    sigmaY: 2,
                  ),
                  child: Container(
                    decoration: BoxDecoration(
                      color: Colors.black.withAlpha(25),
                    ),
                  ),
                ),
              ),
              Positioned(
                child: Container(
                  height: 180,
                  width: MediaQuery.of(context).size.width,
                  child: Column(
                    mainAxisAlignment:
MainAxisAlignment.spaceEvenly,
                    crossAxisAlignment:
CrossAxisAlignment.center,
                    children: [
                      Text(
                        carmaker + ' ' + carmodel,
                        style: TextStyle(
                          color: Colors.white,
                          fontSize: 18,
                          fontWeight: FontWeight.bold,
                        ),
                      ),
                      Row(
                        mainAxisAlignment:
MainAxisAlignment.spaceEvenly,
                        children: [
                          Container(
                            height: 100,
                            width: 180,
                            decoration: BoxDecoration(
                              color: Colors.white.withAlpha(150),
                              borderRadius:
BorderRadius.circular(12),
```

```
                            ),
                            child: ClipRRect(
                              borderRadius:
BorderRadius.circular(12),
                              child: Image.asset(
                                'assets/images/vehicles/' +

carPhotos[carmodel].toString(),
                                fit: BoxFit.cover,
                              ),
                            ),
                          ),
                          Column(
                            crossAxisAlignment:
CrossAxisAlignment.start,
                            children: [
                              Text(
                                'Car Maker: ',
                                style: TextStyle(
                                  fontSize: 13,
                                  color: Colors.white,
                                ),
                              ),
                              Text(
                                carmaker,
                                style: TextStyle(
                                  fontSize: 15,
                                  fontWeight: FontWeight.bold,
                                  color: Colors.white,
                                ),
                              ),
                              SizedBox(
                                height: 15,
                              ),
                              Text(
                                'Car Model: ',
                                style: TextStyle(
                                  fontSize: 13,
                                  color: Colors.white,
                                ),
                              ),
                              Text(
                                carmodel,
                                style: TextStyle(
                                  fontSize: 15,
                                  fontWeight: FontWeight.bold,
                                  color: Colors.white,
                                ),
                              ),
                            ],
                          ),
                        ],
                      ),
```

```
                  ],
                ),
              ),
            ),
          ],
        ),
      ),
    );
  }
}
```

carmodel.dart

```
class CarModel {
  String? carmaker;
  String? carmodel;

  CarModel({
    this.carmaker,
    this.carmodel,
  });
}
```

checkscreen.dart

```
import 'package:flutter/material.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';

class checkscreen extends StatefulWidget {
  const checkscreen({Key? key}) : super(key: key);

  @override
  State<checkscreen> createState() => _checkscreenState();
}

class _checkscreenState extends State<checkscreen> {
  UserServices userServices = UserServices();
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: Center(
        child: ElevatedButton(
          onPressed: () {},
          child: Text("Click me"),
        ),
      ),
```

```
    );
  }
}
```

commonvars.dart

```
List months = [
  '',
  'January',
  'February',
  'March',
  'April',
  'May',
  'June',
  'July',
  'August',
  'September',
  'October',
  'November',
  'December'
];
List days = [
  'Sun',
  'Mon',
  'Tue',
  'Wed',
  'Thu',
  'Fri',
  'Sat',
  'Sun',
];
```

constants.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';

FirebaseAuth firebaseAuth = FirebaseAuth.instance;
FirebaseFirestore firestore = FirebaseFirestore.instance;

CollectionReference userbase =
firestore.collection('userdata');

String userkey = '';
String username = '';
```

dashboard.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import 'package:vehicle_maintenance_app/global.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/homeparent
.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleshop.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
import
'package:vehicle_maintenance_app/widgets/carcarousal.dart';
import
'package:vehicle_maintenance_app/widgets/loadingblock.dart';

class Dashboard extends StatefulWidget {
  final GlobalKey<ScaffoldState> mykey;
  const Dashboard({Key? key, required this.mykey}) : super(key:
key);

  @override
  State<Dashboard> createState() => _DashboardState();
}

class _DashboardState extends State<Dashboard> {
  UserServices userServices = UserServices();
  List<String> carkeys = [];
```

```
int currentpage = 0;
bool refreshbottom = false;
void setCurrentpage(int page) {
  setState(() {
    currentpage = page;
  });
  print(currentpage.toString() + 'from dashboard');
  print(carkeys.length.toString());
  print(carkeys);
}

Future<QuerySnapshot> getcardata() async {
  QuerySnapshot data = await userServices.getcars();

  carkeys.clear();
  for (DocumentSnapshot snapshot in data.docs) {
    carkeys.add(snapshot.id.toString());
  }
  if (refreshbottom == false) {
    // to set the option visible
    refreshbottom = true;
    setState(() {});
  }
  return data;
}

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      elevation: 0,
      centerTitle: true,
      scrolledUnderElevation: 0,
      automaticallyImplyLeading: false,
      backgroundColor: Colors.white,
      title: Text(
```

```
          'Dashboard',
          style: TextStyle(
            fontWeight: FontWeight.bold,
          ),
        ),
        actions: [
          IconButton(
            onPressed: () {
              widget.mykey.currentState?.openEndDrawer();
            },
            icon: Icon(
              Icons.menu,
            ),
          ),
        ],
      ),
      body: Container(
        child: Column(
          children: [
            Container(
              margin: EdgeInsets.symmetric(horizontal:
globalpadding),
              child: Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  Text(
                    'Shops',
                    style: TextStyle(
                      fontSize: 16,
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                  SizedBox(
                    height: 10,
                  ),
                  Container(
```

```
                    // height: 70,
                    child: Row(
                      mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                      children: [
                        shopcircle(imgname: 'lg1.jpg'),
                        shopcircle(imgname: 'lg2.jpg'),
                        shopcircle(imgname: 'lg3.jpg'),
                        shopcircle(imgname: 'lg4.jpg'),
                        SizedBox(
                          width: 20,
                        ),
                        Icon(Icons.search),
                      ],
                    ),
                  ),
                  //shop circles
                  SizedBox(
                    height: 15,
                  ),
                ],
              ),
            ),
            Expanded(
              child: FutureBuilder(
                future: getcardata(),
                builder: (context, snapshot) {
                  if (snapshot.hasData && snapshot.data!.size
!= 0) {
                    return Column(
                      children: [
                        Container(
                          height: 180,
                          width:
MediaQuery.of(context).size.width,
                          child: carCarousal(
```

```
                                setCurrentpage: setCurrentpage,
                                items: [
                                  for (DocumentSnapshot
documentsnapshot
                                      in snapshot.data!.docs)
                                    Stack(
                                      children: [
                                        buildVehiclecard(
                                          carmaker:

documentsnapshot.get('carmaker'),
                                          carmodel:

documentsnapshot.get('carmodel'),
                                        ),
                                        Positioned(
                                          top: 0,
                                          right: 0,
                                          child: IconButton(
                                            icon: Icon(

Icons.delete_forever_rounded,
                                              color: Colors.white,
                                            ),
                                            onPressed: () async {
                                              bool? result =
                                                  await
getdeleteconfirmation(
                                                          context);
                                              print(result);
                                              if (result == true) {

loadingBlock(context: context);
                                                await
userServices.deleteCar(
```

```
                                                carkey:
(currentpage ==

carkeys.length)
                                                    ?
(carkeys[currentpage - 1])
                                                    :
(carkeys[currentpage]),
                                                );

Navigator.pop(context);
                                                setState(() {});
                                              }
                                            },
                                          ),
                                        )
                                      ],
                                    ),
                                    addnewvehicle(),
                                  ],
                                ),
                              ),
                              Expanded(
                                child: Container(
                                  child: Visibility(
                                    visible: (currentpage ==
carkeys.length)
                                        ? (false)
                                        : (true),
                                    child: SingleChildScrollView(
                                      physics:
BouncingScrollPhysics(),
                                      child: Column(
                                        children: [
                                          SizedBox(
                                            height: 15,
```

```
                ),
                paymentTile(
                  carkey: (currentpage ==
carkeys.length)
                      ?
(carkeys[currentpage - 1])
                      :
(carkeys[currentpage]),
                ),
                SizedBox(
                  height: 15,
                ),
                appointmentTile(
                  carkey: (currentpage ==
carkeys.length)
                      ?
(carkeys[currentpage - 1])
                      :
(carkeys[currentpage]),
                ),
                SizedBox(
                  height: 15,
                ),
                scheduleAppointmentTile(
                  carkey: (currentpage ==
carkeys.length)
                      ?
(carkeys[currentpage - 1])
                      :
(carkeys[currentpage]),
                ),
                SizedBox(
                  height: 20,
                ),
              ],
            ),
```

```
                                ),
                              ),
                            ),
                          ),
                        ],
                      );
                    } else if (snapshot.hasData &&
snapshot.data!.size == 0) {
                      return Center(
                        child: FloatingActionButton.extended(
                          onPressed: () async {
                            await Navigator.pushNamed(context,
'/addnewvehicle');
                            setState(() {});
                          },
                          backgroundColor:
maintheme.withAlpha(200),
                          foregroundColor: Colors.white,
                          label: Text('Add New Vehicle'),
                          icon: Icon(Icons.add),
                        ),
                      );
                    } else {
                      return Container(
                        height: 100,
                        width: 100,
                        child: FittedBox(
                          child: CircularProgressIndicator(
                            strokeWidth: 2,
                          ),
                        ),
                      );
                    }
                  },
                ),
              ),
```

```
        ],
      ),
    ),
  );
}

getdeleteconfirmation(context) {
  return showDialog(
      context: context,
      barrierDismissible: false,
      builder: (context) {
        return AlertDialog(
          title: Text('Delete'),
          content: Text('Do you want to delete this car?'),
          shape: RoundedRectangleBorder(
            borderRadius: BorderRadius.circular(16),
          ),
          actions: [
            TextButton(
              onPressed: () {
                Navigator.pop(context);
              },
              child: Text("Cancel"),
            ),
            FilledButton(
              onPressed: () {
                Navigator.pop(context, true);
              },
              style: FilledButton.styleFrom(
                backgroundColor: Colors.red,
              ),
              child: Text('Delete'),
            ),
          ],
        );
      });
```

```
  }

  addnewvehicle() {
    return Container(
      height: 180,
      width: MediaQuery.of(context).size.width - 30,
      decoration: BoxDecoration(
        color: maintheme.withAlpha(50),
        borderRadius: BorderRadius.circular(16),
      ),
      child: Center(
        child: FloatingActionButton.extended(
          onPressed: () async {
            await Navigator.pushNamed(context,
'/addnewvehicle');
            setState(() {});
          },
          backgroundColor: maintheme.withAlpha(200),
          foregroundColor: Colors.white,
          label: Text('Add New Vehicle'),
          icon: Icon(Icons.add),
        ),
      ),
    );
  }

  Widget shopcircle({String imgname = 'lg1.jpg'}) {
    return Container(
      height: MediaQuery.of(context).size.width / 6,
      width: MediaQuery.of(context).size.width / 6,
      decoration: BoxDecoration(
        shape: BoxShape.circle,
        border: Border.all(
          color: maintheme.withAlpha(50),
          width: 5,
        ),
```

```
      ),
      child: ClipRRect(
        borderRadius: BorderRadius.circular(100),
        child: Image.asset(
          'assets/logos/' + imgname,
          fit: BoxFit.fill,
        ),
      ),
    );
  }
}

class scheduleAppointmentTile extends StatelessWidget {
  final String carkey;
  const scheduleAppointmentTile({Key? key, required
this.carkey})
      : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Container(
      padding: EdgeInsets.symmetric(horizontal: globalpadding),
      child: ElevatedButton(
        onPressed: () {
          Navigator.pushNamed(context, '/scheduleshop',
              arguments: ServiceModel(carkey: carkey));
        },
        style: ElevatedButton.styleFrom(
          backgroundColor: Colors.white,
          foregroundColor: maintheme,
          elevation: 7,
          shape: RoundedRectangleBorder(
            borderRadius: BorderRadius.circular(16),
          ),
        ),
        child: Container(
```

```
          height: 100,
          child: Column(
            mainAxisAlignment: MainAxisAlignment.center,
            children: [
              Row(
                crossAxisAlignment: CrossAxisAlignment.center,
                children: [
                  Stack(
                    children: [
                      iconMaker(
                        iconData: Icons.calendar_month,
                      ),
                      Positioned(
                        right: 3,
                        top: 3,
                        child: Container(
                          height: 7,
                          width: 7,
                          decoration: BoxDecoration(
                              color: Colors.red,
                              borderRadius:
BorderRadius.circular(20)),
                        ),
                      ),
                    ],
                  ),
                  SizedBox(
                    width: 20,
                  ),
                  Expanded(
                    child: Column(
                      crossAxisAlignment:
CrossAxisAlignment.start,
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
```

```
                    Text(
                      "SCHEDULE APPOINTMENT",
                      style: TextStyle(
                          fontSize: 14,
                          fontWeight: FontWeight.bold,
                          color: Colors.black),
                    ),
                    SizedBox(
                      height: 5,
                    ),
                    Text(
                      "Time to give your car some love",
                      style: TextStyle(
                        fontSize: 12,
                        color: Colors.black,
                      ),
                    ),
                  ],
                ),
              ),
              IconButton(
                onPressed: () {},
                icon: Icon(
                  Icons.chevron_right_rounded,
                  size: 30,
                  color: Colors.black,
                ),
              ),
            ],
          ),
        ],
      ),
    ),
  );
}
```

```
}

class iconMaker extends StatelessWidget {
  final IconData iconData;
  const iconMaker({Key? key, this.iconData =
Icons.access_time})
      : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Container(
      height: 45,
      width: 45,
      decoration: BoxDecoration(
        color: darktext.withAlpha(30),
        shape: BoxShape.circle,
      ),
      child: Icon(
        iconData,
        color: darktext,
        size: 30,
      ),
    );
  }
}

class appointmentTile extends StatelessWidget {
  final String carkey;
  const appointmentTile({Key? key, required this.carkey}) :
super(key: key);

  @override
  Widget build(BuildContext context) {
    return Container(
      padding: EdgeInsets.symmetric(horizontal: globalpadding),
      child: ElevatedButton(
```

```
          onPressed: () {
            Navigator.pushNamed(context, '/upcomingappointments',
                arguments: [carkey, '']);
          },
          style: ElevatedButton.styleFrom(
            backgroundColor: Colors.white,
            foregroundColor: maintheme,
            elevation: 7,
            shape: RoundedRectangleBorder(
              borderRadius: BorderRadius.circular(16),
            ),
          ),
          child: Container(
            height: 100,
            child: Column(
              mainAxisAlignment: MainAxisAlignment.center,
              children: [
                Row(
                  crossAxisAlignment: CrossAxisAlignment.center,
                  children: [
                    Stack(
                      children: [
                        iconMaker(
                          iconData: Icons.timelapse_rounded,
                        ),
                        Positioned(
                          right: 3,
                          top: 3,
                          child: Container(
                            height: 7,
                            width: 7,
                            decoration: BoxDecoration(
                                color: Colors.red,
                                borderRadius:
BorderRadius.circular(20)),
                          ),
```

```
                    ),
                  ],
                ),
                SizedBox(
                  width: 20,
                ),
                Expanded(
                  child: Column(
                    crossAxisAlignment:
CrossAxisAlignment.start,
                    mainAxisAlignment:
MainAxisAlignment.center,
                    children: [
                      Text(
                        "UPCOMING APPOINTMENTS",
                        style: TextStyle(
                            fontSize: 14,
                            fontWeight: FontWeight.bold,
                            color: Colors.black),
                      ),
                      SizedBox(
                        height: 5,
                      ),
                      Text(
                        "You Have an Appointment at MIDAS in
3 days",
                        style: TextStyle(
                          fontSize: 12,
                          color: Colors.black,
                        ),
                      ),
                    ],
                  ),
                ),
                IconButton(
                  onPressed: () {},
```

```
                    icon: Icon(
                      Icons.chevron_right_rounded,
                      size: 30,
                      color: Colors.black,
                    ),
                  ),
                ],
              ),
            ],
          ),
        ),
      ),
    );
  }
}

class paymentTile extends StatefulWidget {
  final String carkey;
  const paymentTile({Key? key, required this.carkey}) :
super(key: key);

  @override
  State<paymentTile> createState() => _paymentTileState();
}

class _paymentTileState extends State<paymentTile> {
  UserServices userServices = UserServices();
  bool expanded = false;
  int totalcost = 0;
  getsnapshotlist() async {
    totalcost = 0;
    print('made 0');
    List<DocumentSnapshot> snapshots = [];
    QuerySnapshot querySnapshot =
        await userServices.getunpaidservicewithcarkey(carkey:
widget.carkey);
```

```
    for (DocumentSnapshot doc in querySnapshot.docs) {
      snapshots.add(doc);
      totalcost += int.parse(doc.get('serviceprice'));
    }
    return snapshots;
  }

  @override
  Widget build(BuildContext context) {
    return Container(
      padding: EdgeInsets.symmetric(horizontal: globalpadding),
      child: ElevatedButton(
        onPressed: () {
          setState(() {
            expanded = !expanded;
          });
        },
        style: ElevatedButton.styleFrom(
          backgroundColor: Colors.white,
          foregroundColor: maintheme,
          padding: EdgeInsets.all(0),
          elevation: 7,
          shape: RoundedRectangleBorder(
            borderRadius: BorderRadius.circular(16),
          ),
        ),
        child: AnimatedContainer(
          duration: Duration(milliseconds: 500),
          curve: Curves.fastLinearToSlowEaseIn,
          width: MediaQuery.of(context).size.width,
          padding: EdgeInsets.symmetric(horizontal: 15,
vertical: 0),
          height: (expanded) ? (180) : (100),
          child: SingleChildScrollView(
              physics: NeverScrollableScrollPhysics(),
              scrollDirection: Axis.vertical,
```

```
              child: FutureBuilder(
                future: getsnapshotlist(),
                builder: (context, snapshot) {
                  if (snapshot.hasData) {
                    return Column(
                      mainAxisAlignment:
MainAxisAlignment.start,
                      children: [
                        Container(
                          height: 100,
                          child: Column(
                            mainAxisAlignment:
MainAxisAlignment.center,
                            children: [
                              Row(
                                crossAxisAlignment:
CrossAxisAlignment.center,
                                children: [
                                  Stack(
                                    children: [
                                      iconMaker(
                                        iconData:
Icons.notifications_rounded,
                                      ),
                                      Positioned(
                                        right: 3,
                                        top: 3,
                                        child: Container(
                                          height: 7,
                                          width: 7,
                                          decoration:
BoxDecoration(
                                              color: (totalcost
> 0)
                                                  ?
(Colors.red)
```

```
                                                    :
(Colors.transparent),
                                                        borderRadius:

BorderRadius.circular(20)),
                                                  ),
                                                ),
                                              ],
                                            ),
                                            SizedBox(
                                              width: 20,
                                            ),
                                            Expanded(
                                              child: Column(
                                                crossAxisAlignment:

CrossAxisAlignment.start,
                                                mainAxisAlignment:

MainAxisAlignment.center,
                                                children: [
                                                  Text(
                                                    "PAYMENTS DUE",
                                                    style: TextStyle(
                                                      fontSize: 14,
                                                      fontWeight:

FontWeight.bold,
                                                      color: (expanded)
                                                          ?

(Colors.black.withAlpha(100))
                                                          :

(Colors.black),
                                                  ),
                                                ),
                                                SizedBox(
                                                  height: 5,
```

```
                ),
                (expanded)
                    ? (Text(
                        'Total: ₹ ' +
totalcost.toString(),
                        style:
TextStyle(
                          fontSize: 16,
                          fontWeight:
FontWeight.bold,
                          color:
Colors.black,
                        ),
                      ))
                    : (Text(
                        (totalcost > 0)
                            ? ("You
have payments due")
                            : ("You
have no payments due"),
                        style:
TextStyle(
                          fontSize: 12,
                          color:
Colors.black,
                        ),
                      )),
              ],
            ),
          ),
          SizedBox(
            width: 20,
          ),
          IconButton(
            onPressed: () {
```

```
                                        setState(() {
                                          expanded = !expanded;
                                        });
                                      },
                                      icon: AnimatedRotation(
                                        duration:
Duration(milliseconds: 500),
                                        curve:
Curves.fastLinearToSlowEaseIn,
                                        turns: ((expanded) ? (1)
: (0)) / 4,
                                        child: Icon(

Icons.chevron_right_rounded,
                                          size: 30,
                                          color: Colors.black,
                                        ),
                                      ),
                                    ),
                                  ],
                                ),
                              ],
                            ),
                          ),
                          ClipRect(
                            child: (expanded)
                                ? (Row(
                                    children: [
                                      Expanded(
                                        flex: 4,
                                        child: Text(
                                          'Oil Change, standard
checkup at Luffy Lube',
                                          style: TextStyle(
                                            fontSize: 12,
```

```
                                        fontWeight:
FontWeight.bold,
                                        color: Colors.black,
                                      ),
                                    ),
                                  ),
                                  SizedBox(
                                    width: 10,
                                  ),
                                  Expanded(
                                    flex: 2,
                                    child: OutlinedButton(
                                      onPressed: () {
                                        Navigator.pushNamed(
                                            context,
'/upcomingappointments',
                                            arguments: [
                                              widget.carkey,
                                              'Payment Dues'
                                            ]);
                                      },
                                      style:
OutlinedButton.styleFrom(
                                        backgroundColor:
Colors.white,
                                        foregroundColor:
Colors.red,
                                        shape:
RoundedRectangleBorder(
                                          borderRadius:
BorderRadius.circular(12),
                                        ),
                                        side: BorderSide(
                                          color: Colors.red,
                                          width: 1,
```

```
                                        ),
                                      ),
                                      child: Text(
                                        'Review',
                                        style: TextStyle(
                                          color: Colors.red,
                                          fontSize: 15,
                                        ),
                                      ),
                                    ),
                                  ),
                                ],
                              ))
                            : (Container()),
                        ),
                      ],
                    );
                  } else {
                    return Column(
                      mainAxisAlignment:
MainAxisAlignment.center,
                      crossAxisAlignment:
CrossAxisAlignment.center,
                      children: [
                        Row(),
                        LinearProgressIndicator(),
                      ],
                    );
                  }
                },
              )),
        ),
      ),
    );
  }
}
```

data.dart

```
import
'package:vehicle_maintenance_app/models/shop_model.dart';

Map<String, dynamic> carMakers = {
  'Mahindra': [
    'XUV300',
    'XUV500',
    'XUV700',
    'Thar',
  ],
  'Tata': [
    'Harrier',
    'Nexon',
    'Hexa',
    'Punch',
  ],
  'Hyundai': [
    'Creta',
    'Xcent',
    'Venue',
    'Verna',
  ],
  'Honda': [
    'Amaze',
    'City',
    'Accord',
    'Civic',
  ],
};

Map<String, String> carPhotos = {
  'XUV300': 'xuv300.png',
  'XUV500': 'xuv500.png',
  'XUV700': 'xuv700.png',
```

```
  'Thar': 'thar.webp',
  'Harrier': 'harrier.png',
  'Nexon': 'nexon.png',
  'Hexa': 'hexa.png',
  'Punch': 'punch.jpeg',
  'Creta': 'creta.png',
  'Xcent': 'xcent.png',
  'Venue': 'venue.png',
  'Verna': 'verna.png',
  'Amaze': 'amaze.png',
  'City': 'city.png',
  'Accord': 'accord.png',
  'Civic': 'civic.png',
};

Map<String, int> services = {
  'General check-up and inspection': 4000,
  'Engine oil change': 1770,
  'Air filter cleaning or replacement': 2300,
  'Brake system inspection and repair': 3100,
  'Wheel alignment and balancing': 1600,
  'Battery check and replacement': 2900,
  'Suspension system inspection and repair': 3500,
  'Transmission system service': 2850,
  'Fuel system cleaning': 2700,
  'Spark plug replacement': 1040,
  'Coolant system flush and refill': 1500,
  'Timing belt replacement': 3000,
  'Power steering system service': 2100,
  'AC system service and repair': 4020,
  'Exhaust system inspection and repair': 2700,
};

List<ShopModel> shopdata = [
  ShopModel(
    shopname: 'A to Z  Motor Cycle Service Center',
```

```
    shopaddress:
        'R26C+PQX, Bajanai kovil Main Rd, Kavanur R.F.R[31]C,
Tamil Nadu 603203',
    shopphone: '+91 9892327504',
  ),
  ShopModel(
    shopname: 'S-Drive Multibrand Car Service - Perumbakkam',
    shopaddress:
        'No 8, 202c, Nookampalayam Rd, Perumbakkam, Chennai,
Tamil Nadu 600126',
    shopphone: '+91 9196937586',
  ),
  ShopModel(
    shopname: 'Vijay Automobiles Kattankulathur (car and
bike)',
    shopaddress:
        'No 20 , Humming bird street, near Vgn Southern Avenue,
apts, Kattankulathur, Tamil Nadu 603203',
    shopphone: '+91 9395562173',
  ),
  ShopModel(
    shopname: 'Yamaha Service Centre (Bikes)',
    shopaddress:
        'No.50, NH-1, Vallal MGR Salai, Opp. Railway Station,
Maraimalai Nagar, Tamil Nadu 603209',
    shopphone: '+91 95660 09898',
  ),
  ShopModel(
    shopname: 'Maruti Suzuki Service (Vishnu Cars)',
    shopaddress:
        'No 19, GST Rd Potheri, Kattankulathur, Guduvancheri,
Tamil Nadu 603202',
    shopphone: '044 6620 5616',
  ),
  ShopModel(
    shopname: 'MG Automobile ( Car and Bike)',
```

```
    shopaddress: 'Pillayar Koil St, Potheri, Kattankulathur,
Tamil Nadu 603203',
    shopphone: '+91 9854056414',
  ),
  ShopModel(
    shopname: 'MAHARAJA AUTO MOBILE & GARAGE (Car and Bike)',
    shopaddress:
        'Thailavaram Bus Stop, Thailavaram Village R2JW+9MG
Chennai - Theni Highway, Chennai - Theni Hwy, Potheri,
Kattankulathur, TamilNadu 603202',
    shopphone: '+91 9618683380',
  ),
];

Map finaldata = {
  // sample
  'name': 'dhanush',
  'cars': {
    'key': {
      'carmaker': 'carmaker',
      'carmodel': 'carmodel',
    },
  },
  'services': {
    'servicekey': {
      'carkey': 'carkey',
      'shopname': 'shopname',
      'servicename': 'servicename',
      'serviceprice': 'serviceprice',
      'servicedate': 'servicedate',
      'servicetime': 'servicetime',
      'notes': 'notes of the service',
      'paymentstatus': 'paymentstatus', //  completed, pending
    },
  },
};
```

decision.dart

```
import 'package:flutter/material.dart';
import 'package:shared_preferences/shared_preferences.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';

logindecision() async {
  SharedPreferences sharedpref = await
SharedPreferences.getInstance();
  String? spuserkey = sharedpref.getString('userkey');
  String? spusername = sharedpref.getString('username');

  if (spuserkey != null &&
      spusername != null &&
      spuserkey != '' &&
      spusername != '') {
    print(spuserkey);
    userkey = spuserkey;
    username = spusername;
    return '/home';
  } else {
    return '/login';
  }
}
```

global.dart

```
import 'package:flutter/material.dart';

double globalpadding = 15;
```

```
const Color maintheme = Color(0xff5658D6);
const Color darktext = Color(0xff090446);
TextStyle subtitle = TextStyle(
  fontSize: 16,
  fontWeight: FontWeight.bold,
  color: darktext,
);
```

historyscreen.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
import
'package:vehicle_maintenance_app/widgets/servicetile.dart';

class historyScreen extends StatefulWidget {
  const historyScreen({Key? key}) : super(key: key);

  @override
  State<historyScreen> createState() => _historyScreenState();
}

class _historyScreenState extends State<historyScreen> {
  Map<String, List<DocumentSnapshot>> carservices = {};

  final UserServices userServices = UserServices();

  Future<Map<String, List<DocumentSnapshot>>> getdata() async {
    QuerySnapshot querySnapshot = await
userServices.getserviceswithuserkey();
    carservices.clear();
    for (DocumentSnapshot documentSnapshot in
querySnapshot.docs) {
      carservices.putIfAbsent(documentSnapshot.get('carkey'),
() => []);
      carservices[documentSnapshot.get('carkey').toString()]
          ?.add(documentSnapshot);
    }
    return carservices;
  }

  @override
  Widget build(BuildContext context) {
```

```
    return Scaffold(
      appBar: AppBar(
        elevation:  0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        automaticallyImplyLeading: false,
        backgroundColor: Colors.white,
        title: Text(
          'History',
          style: TextStyle(
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: Container(
        child: FutureBuilder(
          future: getdata(),
          builder: (context, snapshot) {
            if (snapshot.hasData && snapshot.data!.length != 0)
{
              return ListView.builder(
                padding: EdgeInsets.symmetric(vertical: 15),
                physics:  BouncingScrollPhysics(),
                itemCount: snapshot.data!.length,
                itemBuilder: (context, i) {
                  return section(
                    carkey: snapshot.data!.keys.elementAt(i),
                    documentSnapshot:
snapshot.data!.values.elementAt(i),
                  );
                },
              );
            } else if (snapshot.hasData && snapshot.data!.length
== 0) {
              return Center(
                child: Text(
                  'No Service History Found',
                  style: TextStyle(
                    fontSize: 16,
                    fontWeight: FontWeight.bold,
                    color: darktext,
                  ),
                ),
              );
            } else
              return Center(child: CircularProgressIndicator());
          },
        ),
      ),
    );
  }

  Widget section(
```

```
      {required String carkey,
      required List<DocumentSnapshot> documentSnapshot}) {
    return Column(
      crossAxisAlignment: CrossAxisAlignment.start,
      children: [
        SizedBox(
          height: 5,
        ),
        Container(
          padding:     EdgeInsets.symmetric(horizontal:     15,
vertical: 10),
          child: FutureBuilder(
              future:

userbase.doc(userkey).collection('cars').doc(carkey).get(),
              builder: (context, snapshot) {
                if (snapshot.hasData) {
                  return Text(
                    snapshot.data!.get('carmaker') +
                        ' ' +
                        snapshot.data!.get('carmodel') +
                        ": ",
                    style: TextStyle(
                      fontSize: 16,
                      fontWeight: FontWeight.bold,
                      color: darktext,
                    ),
                  );
                } else
                  return Container(
                    padding: EdgeInsets.symmetric(vertical: 10),
                    width: 60,
                    child: LinearProgressIndicator(),
                  );
              }),
        ),
        Column(
          children: [
            for (DocumentSnapshot ds in documentSnapshot)
              serviceTile(documentSnapshot: ds),
          ],
        ),
      ],
    );
  }
}
```

homescreen.dart

```
import 'package:flutter/material.dart';

import 'package:shared_preferences/shared_preferences.dart';
```

```
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/dashboard.
dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/historyscr
een.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/schedulesc
reen.dart';
import
'package:vehicle_maintenance_app/screens/payment/billingmain.da
rt';
import
'package:vehicle_maintenance_app/services/constants.dart';
import
'package:vehicle_maintenance_app/widgets/loadingblock.dart';

class homeParent extends StatefulWidget {
  const homeParent({Key? key}) : super(key: key);

  @override
  State<homeParent> createState() => _homeParentState();
}

class _homeParentState extends State<homeParent> {
  late PageController pageController;

  int bottomindex = 2;
  double globalpadding = 15;
  TextStyle dummystyle = TextStyle(
    fontSize: 25,
    fontWeight: FontWeight.bold,
    color: darktext,
  );
```

```
  GlobalKey<ScaffoldState> _globalKey =
GlobalKey<ScaffoldState>();

  void changePage(int pageindex) {
    setState(() {
      bottomindex = pageindex;
      pageController.animateToPage(pageindex,
          duration: Duration(milliseconds: 500),
          curve: Curves.fastLinearToSlowEaseIn);
    });
  }

  @override
  void initState() {
    // TODO: implement initState
    super.initState();
    pageController = PageController(initialPage: bottomindex);
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      key: _globalKey,
      // appBar: AppBar(),
      body: PageView(
        controller: pageController,
        physics: BouncingScrollPhysics(),
        onPageChanged: (i) {
          setState(() {
            bottomindex = i;
          });
        },
        children: [
          billingMain(),
          // Container(
          //   alignment: Alignment.center,
```

```
    //   child: Text(
    //     'Schedule',
    //     style: dummystyle,
    //   ),
    // ),
    scheduleScreen(),
    Dashboard(mykey: _globalKey),
    historyScreen(),
    // Container(
    //   alignment: Alignment.center,
    //   child: Text(
    //     'History',
    //     style: dummystyle,
    //   ),
    // ),
    Container(
      alignment: Alignment.center,
      child: Text(
        'Messages',
        style: dummystyle,
      ),
    ),
  ],
),
endDrawer: Drawer(
  backgroundColor: maintheme,
  width: 300,
  shape: RoundedRectangleBorder(
    borderRadius: BorderRadius.only(
      topLeft: Radius.circular(22),
      bottomLeft: Radius.circular(22),
    ),
  ),
  child: Container(
    child: Column(
      children: [
```

```
                SizedBox(
                  height: 100,
                ),
                Container(
                  margin: EdgeInsets.only(left: 25),
                  child: Row(
                    children: [
                      Card(
                        elevation: 7,
                        shape: CircleBorder(),
                        child: CircleAvatar(
                          radius: 35,
                          child: ClipRRect(
                            borderRadius:
BorderRadius.circular(200),
                            child:
Image.asset('assets/images/profilephoto.png'),
                          ),
                          backgroundColor: Colors.black,
                        ),
                      ),
                      SizedBox(
                        width: 15,
                      ),
                      Expanded(
                        child: Column(
                          crossAxisAlignment:
CrossAxisAlignment.start,
                          children: [
                            Text(
                              'Welcome',
                              style: TextStyle(
                                fontWeight: FontWeight.bold,
                                fontSize: 20,
                                color: Colors.white,
                              ),
```

```
            ),
            SizedBox(
              height: 5,
            ),
            Text(
              username,
              maxLines: 1,
              overflow: TextOverflow.ellipsis,
              style: TextStyle(
                fontSize: 18,
                color: Colors.white,
              ),
            ),
          ],
        ),
      ),
      SizedBox(
        width: 15,
      ),
    ],
  ),
),
SizedBox(
  height: 35,
),
Column(
  children: [
    draweritem(
      title: 'Vehicle',
      icon: Icons.car_rental_rounded,
    ),
    draweritem(
      title: 'Settings',
      icon: Icons.settings_rounded,
    ),
    draweritem(
```

```
                    title: 'Help',
                    icon: Icons.help_outline_rounded,
                  ),
                  draweritem(
                    title: 'About',
                    icon: Icons.info_outline_rounded,
                  ),
                  draweritem(
                    title: 'Invite',
                    icon: Icons.insert_invitation_rounded,
                  ),
                  draweritem(
                    title: 'Log Out',
                    icon: Icons.logout_rounded,
                    onPressed: () async {
                      loadingBlock(context: context);
                      await firebaseAuth.signOut();
                      SharedPreferences sharedpref =
                          await
SharedPreferences.getInstance();
                      sharedpref.setString('userkey', '');
                      sharedpref.setString('username', '');
                      Navigator.pop(context);
                      Navigator.pushReplacementNamed(context,
'/login');
                    },
                  ),
                ],
              ),
              Spacer(),
              Row(
                mainAxisAlignment: MainAxisAlignment.center,
                children: [
                  Text(
                    'VehiCare',
                    style: TextStyle(
```

```
            fontWeight: FontWeight.bold,
            fontSize: 30,
            color: Colors.white,
          ),
        ),
        SizedBox(
          width: 20,
        ),
        // Icon(
        //   Icons.car_crash_rounded,
        //   color: Colors.red,
        //   size: 60,
        // ),
        Container(
          height: 60,
          width: 60,
          decoration: BoxDecoration(
            boxShadow: [
              BoxShadow(
                blurRadius: 20,
                color: Colors.black.withAlpha(50),
              ),
            ],
          ),
          child: Image.asset(
            'assets/images/logo_black.png',
            color: Colors.white,
          ),
        ),
      ],
    ),
    SizedBox(
      height: 30,
    ),
  ],
),
```

```
    ),
  ),
  bottomNavigationBar: BottomNavigationBar(
    backgroundColor: maintheme,
    type: BottomNavigationBarType.fixed,
    currentIndex: bottomindex,
    selectedFontSize: 12,
    unselectedFontSize: 10,
    iconSize: 25,
    selectedItemColor: Colors.white,
    unselectedItemColor: Colors.white.withAlpha(150),
    onTap: (index) {
      setState(() {
        changePage(index);
      });
    },
    items: [
      BottomNavigationBarItem(
        icon: Icon(Icons.currency_rupee_rounded),
        label: 'Billing',
      ),
      BottomNavigationBarItem(
        icon: Icon(Icons.schedule_rounded),
        label: 'Schedule',
      ),
      BottomNavigationBarItem(
        icon: Icon(Icons.dashboard_customize_rounded),
        label: 'Dashboard',
      ),
      BottomNavigationBarItem(
        icon: Icon(Icons.history_edu_rounded),
        label: 'History',
      ),
      BottomNavigationBarItem(
        icon: Icon(Icons.message_rounded),
        label: 'Messages',
```

```
          ),
        ],
      ),
    );
  }

  Widget draweritem(
      {title = 'title', required IconData icon, Function?
onPressed}) {
    return TextButton(
      onPressed: () {
        if (onPressed != null) {
          onPressed();
        }
      },
      style: TextButton.styleFrom(
        foregroundColor: Colors.white,
        shape: RoundedRectangleBorder(
          borderRadius: BorderRadius.circular(16),
        ),
      ),
      child: Container(
        margin: EdgeInsets.only(top: 8, bottom: 8, left: 35),
        child: Row(
          children: [
            Icon(
              icon,
              size: 20,
              color: Colors.white,
            ),
            SizedBox(
              width: 15,
            ),
            Text(
              title,
              style: TextStyle(
```

```
                fontSize: 18,
                color: Colors.white,
              ),
            ),
          ],
        ),
      ),
    );
  }
}
```

loadingblock.dart

```
import 'package:flutter/material.dart';

loadingBlock({required BuildContext context, bool exitable =
false}) {
  showDialog(
    context: context,
    barrierDismissible: false,
    builder: (context) => WillPopScope(
      onWillPop: () async {
        return exitable;
      },
      child: AlertDialog(
        contentPadding: EdgeInsets.symmetric(vertical: 30),
        content: Container(
          height: 50,
          width: 50,
```

```
          child: FittedBox(
            child: CircularProgressIndicator(
              strokeWidth: 3,
            ),
          ),
        ),
      ),
    ),
  );
}
```

loginpage.dart

```
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/homeparent
.dart';
import 'package:vehicle_maintenance_app/screens/signup.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';
import
'package:vehicle_maintenance_app/services/user_auth.dart';

class LoginPage extends StatefulWidget {
  const LoginPage({Key? key}) : super(key: key);

  @override
  State<LoginPage> createState() => _LoginPageState();
}

class _LoginPageState extends State<LoginPage> {
  TextEditingController emailcontroller =
TextEditingController();
```

```
  TextEditingController passwordcontroller =
TextEditingController();
  Authentication _authentication = Authentication();

  String errortext = '';
  bool obscurepassword = true;
  bool loading = false;
  bool remember = true;

  login() async {
    String email, password;
    setState(() {
      loading = true;
    });

    email = emailcontroller.text;
    password = passwordcontroller.text;
    if (email != '' && password != '') {
      var result = await _authentication.loginUser(email,
password);
      if (result.runtimeType == UserCredential) {
        Navigator.pushReplacementNamed(context, '/home');
      } else if (result.toString().contains('invalid-email')) {
        setState(() {
          errortext = 'Invalid email Format';
        });
      } else if (result.toString().contains('user-not-found'))
{
        showDialog(
          context: context,
          builder: (context) => AlertDialog(
            contentPadding: EdgeInsets.all(50),
            title: Text(
              'User not Found',
              style: TextStyle(
                fontWeight: FontWeight.bold,
```

```
                fontSize: 20,
              ),
            ),
            content: Text(
              "Do you Want to SIGNUP ??",
              style: TextStyle(
                fontSize: 18,
              ),
            ),
            actions: [
              TextButton(
                onPressed: () {
                  Navigator.pop(context);
                },
                style: TextButton.styleFrom(),
                child: Text(
                  "Cancel",
                  style: TextStyle(),
                ),
              ),
              SizedBox(
                width: 10,
              ),
              OutlinedButton(
                onPressed: () {
                  Navigator.pushReplacementNamed(context,
'/signup');
                },
                style: TextButton.styleFrom(
                  backgroundColor: maintheme,
                  foregroundColor: Colors.white,
                ),
                child: Text(
                  "Sign Up",
                  style: TextStyle(
                    color: Colors.white,
```

```
                    fontWeight: FontWeight.bold,
                  ),
                ),
              ),
            ],
          ),
        );
      } else if (result.toString().contains('wrong-password'))
{
        setState(() {
          errortext = 'Oops, Wrong Password!!';
        });
      } else {
        setState(() {
          errortext = 'Login Successfully Failed';
        });
      }
    }
    setState(() {
      loading = false;
    });
  }

  bool rem = true;
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: SafeArea(
        child: Container(
          padding: EdgeInsets.symmetric(horizontal: 15),
          child: Column(
            children: [
              Row(
                mainAxisAlignment: MainAxisAlignment.end,
                children: [
                  TextButton(
```

```
                    onPressed: () {
                      Navigator.pushReplacementNamed(context,
'/signup');
                    },
                    child: Text(
                      "Sign Up",
                      style: TextStyle(
                        fontWeight: FontWeight.bold,
                      ),
                    ),
                  ),
                ],
              ),
              Expanded(
                child: SingleChildScrollView(
                  physics: BouncingScrollPhysics(),
                  child: Container(
                    // height:
MediaQuery.of(context).size.height,
                    child: Column(
                      mainAxisAlignment:
MainAxisAlignment.center,
                      crossAxisAlignment:
CrossAxisAlignment.center,
                      children: [
                        SizedBox(
                          height: 50,
                        ),
                        Row(),
                        // Container(
                        //   child: Icon(
                        //     Icons.car_crash_sharp,
                        //     color: Colors.redAccent,
                        //     size: 100,
                        //   ),
                        // ),
```

```
                    Container(
                      height: 150,
                      width: 150,
                      child: Image.asset(
                        'assets/images/logo_color.png',
                      ),
                    ),
                    SizedBox(
                      height: 10,
                    ),
                    Text(
                      "VehiCare",
                      style: TextStyle(
                        color: maintheme,
                        fontWeight: FontWeight.bold,
                        fontSize: 35,
                      ),
                    ),
                    SizedBox(
                      height: 30,
                    ),
                    Container(
                      height: 60,
                      child: TextField(
                        controller: emailcontroller,
                        style: TextStyle(
                          fontSize: 18,
                        ),
                        decoration: InputDecoration(
                          hintText: 'Email',
                          hintStyle: TextStyle(
                            color: Colors.grey,
                            fontSize: 18,
                          ),
                          focusedBorder:
OutlineInputBorder(
```

```
                                borderRadius:
BorderRadius.circular(12),
                                borderSide: BorderSide(
                                  color: maintheme,
                                  width: 1,
                                ),
                              ),
                              enabledBorder:
OutlineInputBorder(
                                borderRadius:
BorderRadius.circular(12),
                                borderSide: BorderSide(
                                  color: maintheme,
                                  width: 0.5,
                                ),
                              ),
                            ),
                          ),
                        ),
                        SizedBox(
                          height: 20,
                        ),
                        Row(
                          children: [
                            Expanded(
                              child: Container(
                                height: 60,
                                child: TextField(
                                  controller:
passwordcontroller,
                                  style: TextStyle(
                                    fontSize: 18,
                                  ),
                                  obscureText: obscurepassword,
                                  obscuringCharacter: '*',
                                  decoration: InputDecoration(
```

```
                                    hintText: 'Password',
                                    hintStyle: TextStyle(
                                      color: Colors.grey,
                                      fontSize: 18,
                                    ),
                                    focusedBorder:
OutlineInputBorder(
                                      borderRadius:
BorderRadius.circular(12),
                                      borderSide: BorderSide(
                                        color: maintheme,
                                        width: 1,
                                      ),
                                    ),
                                    enabledBorder:
OutlineInputBorder(
                                      borderRadius:
BorderRadius.circular(12),
                                      borderSide: BorderSide(
                                        color: maintheme,
                                        width: 0.5,
                                      ),
                                    ),
                                  ),
                                ),
                              ),
                            ),
                          ),
                          SizedBox(
                            width: 5,
                          ),
                          IconButton(
                            onPressed: () {
                              setState(() {
                                obscurepassword =
!obscurepassword;
                              });
```

```
                                },
                                icon: (obscurepassword)
                                    ?
(Icon(Icons.visibility_outlined))
                                    :
(Icon(Icons.visibility_off_outlined)),
                                ),
                            ],
                          ),
                          SizedBox(
                            height: 5,
                          ),
                          Row(
                            children: [
                              TextButton(
                                onPressed: () {
                                  setState(() {
                                    remember =
                                        (remember == true) ?
(false) : (true);
                                  });
                                },
                                style: TextButton.styleFrom(
                                  padding: EdgeInsets.only(right:
15),
                                ),
                                child: Row(
                                  children: [
                                    Checkbox(
                                      value: remember,
                                      shape: CircleBorder(),
                                      activeColor: maintheme,
                                      checkColor: Colors.white,
                                      onChanged: (res) {},
                                    ),
                                    Text(
```

```
                'Remember Me',
                style: TextStyle(
                  color: Colors.black,
                  fontSize: 12,
                ),
              ),
            ],
          ),
        ),
        Spacer(),
        TextButton(
          onPressed: () {},
          child: Text(
            'Forgot Password?',
            style: TextStyle(
              color: maintheme,
              fontSize: 14,
            ),
          ),
        ),
      ],
    ),
    SizedBox(
      height: 20,
    ),
    TextButton(
      onPressed: (loading == true)
          ? (null)
          : (() {
              login();
            }),
      style: TextButton.styleFrom(
        backgroundColor: maintheme,
        foregroundColor: Colors.white,
        padding: EdgeInsets.zero,
        shape: RoundedRectangleBorder(
```

```
                        borderRadius:
BorderRadius.circular(12),
                      ),
                    ),
                    child: Row(
                      mainAxisSize: MainAxisSize.max,
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
                        (loading == true)
                            ? (CircularProgressIndicator(
                                color: Colors.white,
                              ))
                            : (Container(
                                height: 60,
                                alignment:
Alignment.center,
                                child: Text(
                                  "Log in",
                                  style: TextStyle(
                                    color: Colors.white,
                                    fontSize: 20,
                                  ),
                                ),
                              )),
                      ],
                    ),
                  ),
                  SizedBox(
                    height: 50,
                  ),
                  Text(
                    errortext,
                    style: TextStyle(
                      color: Colors.red,
                      fontWeight: FontWeight.bold,
```

```
                        ),
                      ),
                    ],
                  ),
                ),
              ),
            ),
          ],
        ),
      ),
    ),
  );
 }
}
```

ongenerateroute.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/material.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/screens/addnewcar.dart';
import
'package:vehicle_maintenance_app/screens/loginpage.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/homeparent
.dart';
import
'package:vehicle_maintenance_app/screens/payment/paymentscreen.
dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleappointment.dart';
```

```
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleconfirmation.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
ulereview.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleshop.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
ulesuccess.dart';
import 'package:vehicle_maintenance_app/screens/signup.dart';
import
'package:vehicle_maintenance_app/screens/upcoming_appointments.
dart';

class RouteGenerator {
  static Route generateRoute(RouteSettings settings) {
    final args = settings.arguments;
    switch (settings.name) {
      // main screens
      case '/login':
        return MaterialPageRoute(builder: (_) => LoginPage());

      case '/signup':
        return MaterialPageRoute(builder: (_) => SignUp());

      case '/home':
        return MaterialPageRoute(builder: (_) => homeParent());

      //anonymous
      case '/addnewvehicle':
        return MaterialPageRoute(builder: (_) => addNewCar());

      case '/upcomingappointments':
```

```
        if (args is List) {
          return MaterialPageRoute(
              builder: (_) => upcomingAppointmentScreen(
                    carkey: args[0],
                    title: args[1],
                  ));
        } else
          return errorroute();

      //scheduling routes
      case '/scheduleshop':
        if (args is ServiceModel) {
          return MaterialPageRoute(
              builder: (_) => scheduleShop(serviceModel:
args));
        } else
          return errorroute();
      case '/schedulereview':
        if (args is ServiceModel)
          return MaterialPageRoute(
              builder: (_) => scheduleReview(serviceModel:
args));
        else
          return errorroute();
      case '/scheduleappointment':
        if (args is ServiceModel)
          return MaterialPageRoute(
              builder: (_) => scheduleAppointment(serviceModel:
args));
        else
          return errorroute();
      case '/scheduleconfirmation':
        if (args is ServiceModel)
          return MaterialPageRoute(
              builder: (_) =>
scheduleConfirmation(serviceModel: args));
```

```
        else
          return errorroute();

      case '/schedulesuccess':
        return MaterialPageRoute(builder: (_) =>
scheduleSuccess());

      //payment screen routes
      case '/paymentscreen':
        if (args is List<DocumentSnapshot>)
          return MaterialPageRoute(
              builder: (_) => paymentScreen(
                    servicesnapshots: args,
                ));
        else
          return errorroute();

      // default
      default:
        return errorroute();
    }
  }

  static Route errorroute() {
    return MaterialPageRoute(builder: (_) {
      return Scaffold(
        appBar: AppBar(
          title: Text("Error Page"),
        ),
      );
    });
  }
}

// schedule order
```

```
// 1. schedule shop
// 2. schedule review
// 3. schedule appointment
// 4. schedule confirmation
// 5. schedule success
```

payment_services.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';

class PaymentServices {
  payforService(List<DocumentSnapshot> snapshots) async {
    for (DocumentSnapshot doc in snapshots) {
      await
userbase.doc(userkey).collection('services').doc(doc.id).update
({
        'paymentstatus': 'completed',
      });
    }
  }
}
```

paymentscreen.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/screens/payment/paymentsuccess
full.dart';
import
'package:vehicle_maintenance_app/services/payment_services.dart
';
```

```
import
'package:vehicle_maintenance_app/widgets/carcarousal.dart';
import
'package:vehicle_maintenance_app/widgets/loadingblock.dart';

TextStyle cardhead = TextStyle(
  fontSize: 13,
  color: Colors.white,
);
TextStyle cardans = TextStyle(
  fontSize: 15,
  color: Colors.white,
);

class paymentScreen extends StatefulWidget {
  final List<DocumentSnapshot> servicesnapshots;
  const paymentScreen({Key? key, required
this.servicesnapshots})
      : super(key: key);

  @override
  State<paymentScreen> createState() => _paymentScreenState();
}

class _paymentScreenState extends State<paymentScreen> {
  int totalprice = 0;
  PaymentServices paymentServices = PaymentServices();

  payservices() async {
    await
paymentServices.payforService(widget.servicesnapshots);
    print('completed');
  }

  getConfirmation(BuildContext context) {
    showDialog(
```

```
      context: context,
      builder: (context) {
        return CupertinoAlertDialog(
          title: Text('Are you sure you want to complete
payment?\n₹ ' +
              totalprice.toString()),
          actions: [
            CupertinoDialogAction(
              child: Text('Cancel'),
              onPressed: () {
                Navigator.pop(context);
              },
            ),
            CupertinoDialogAction(
              child: Text('Yes'),
              onPressed: () async {
                loadingBlock(context: context);
                await payservices();
                Navigator.pop(context); // to pop loading block
                Navigator.pop(context); // to pop dialog box
                Navigator.pushNamedAndRemoveUntil(
                  context,
                  '/home',
                  (route) => false,
                );
                Navigator.push(
                    context,
                    MaterialPageRoute(
                        builder: (context) =>
paymentSuccessfullScreen()));
              },
            ),
          ],
        );
      },
    );
```

```
}

calculatetotal() {
  for (DocumentSnapshot doc in widget.servicesnapshots) {
    totalprice += int.parse(doc.get('serviceprice'));
  }
}

@override
void initState() {
  // TODO: implement initState
  super.initState();
  calculatetotal();
}

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      automaticallyImplyLeading: false,
      backgroundColor: Colors.white,
      elevation: 0,
      centerTitle: true,
      scrolledUnderElevation: 0,
      leading: TextButton(
        onPressed: () {
          Navigator.pop(context);
        },
        child: Text(
          'Cancel',
          style: TextStyle(
            fontWeight: FontWeight.bold,
            fontSize: 15,
          ),
        ),
      ),
```

```
  leadingWidth: 100,
  title: Text(
    "Payment",
    style: TextStyle(
      color: darktext,
      fontWeight: FontWeight.bold,
    ),
  ),
),
body: Container(
  // padding: EdgeInsets.symmetric(horizontal: 15),
  child: Column(
    children: [
      SizedBox(
        height: 15,
      ),
      Row(
        children: [
          SizedBox(
            width: 20,
          ),
          Text(
            'LINKED CARDS',
            style: TextStyle(
              fontSize: 14,
              fontWeight: FontWeight.bold,
            ),
          ),
          Spacer(),
          Text(
            'ADD NEW',
            style: TextStyle(
              fontSize: 14,
              color: maintheme,
              fontWeight: FontWeight.bold,
            ),
```

```
            ),
            SizedBox(
              width: 20,
            ),
          ],
        ),
        SizedBox(
          height: 10,
        ),
        Container(
          height: 260,
          child: carCarousal(
            items: [
              buildCreditCard(),
              buildCreditCard(),
              buildCreditCard(),
            ],
          ),
        ),
        SizedBox(
          height: 15,
        ),
        Expanded(
          child: Padding(
            padding: EdgeInsets.symmetric(horizontal: 15),
            child: Column(
              children: [
                Expanded(
                  child: Card(
                    elevation: 7,
                    surfaceTintColor: Colors.white,
                    color: Colors.white,
                    child: Container(
                      padding: EdgeInsets.all(25),
                      width:
MediaQuery.of(context).size.width,
```

```
                        child: Column(
                          children: [
                            Row(
                              mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                              children: [
                                Expanded(
                                  child: Column(
                                    crossAxisAlignment:
CrossAxisAlignment.start,
                                    mainAxisAlignment:
MainAxisAlignment.start,
                                    children: [
                                      Text(
widget.servicesnapshots.first
                                          .get('shopname'),
                                        style: TextStyle(
                                          fontSize: 16,
                                          fontWeight:
FontWeight.bold,
                                        ),
                                      ),
                                      SizedBox(
                                        height: 5,
                                      ),
                                      Text(
widget.servicesnapshots.first
.get('servicedate'),
                                        style: TextStyle(
                                          fontSize: 14,
```

```
                                        fontWeight:
FontWeight.bold,
                                        color:
darktext.withAlpha(100),
                                      ),
                                    ),
                                  ],
                                ),
                              ),
                              IconButton(
                                onPressed: () {},
                                icon: Icon(

Icons.info_outline_rounded,
                                  color: maintheme,
                                ),
                              ),
                            ],
                          ),
                          SizedBox(
                            height: 15,
                          ),
                          Expanded(
                            child: ListView.builder(
                                itemCount:
widget.servicesnapshots.length,
                                physics:
BouncingScrollPhysics(),
                                itemBuilder: (context, i) {
                                  return billdetails(
                                    servicename:
widget.servicesnapshots[i]

.get('servicename'),
                                    price:
widget.servicesnapshots[i]
```

```
.get('serviceprice'),
                                    );
                                }),
                            ),
                            SizedBox(
                              height: 10,
                            ),
                            Row(
                              mainAxisAlignment:
MainAxisAlignment.end,
                              children: [
                                Text(
                                  'Total: ₹ ' +
totalprice.toString(),
                                  style: TextStyle(
                                    color: maintheme,
                                    fontSize: 18,
                                    fontWeight:
FontWeight.bold,
                                  ),
                                ),
                              ],
                            ),
                            SizedBox(
                              height: 10,
                            ),
                            Row(
                              children: [
                                ClipRRect(
                                  borderRadius:
BorderRadius.circular(10),
                                  child: Container(
                                    height: 30,
                                    width: 50,
                                    child: Image.asset(
```

```
'assets/images/creditcardbg.jpg',
                                    ),
                                  ),
                                ),
                                SizedBox(
                                  width: 10,
                                ),
                                Text(
                                  'My Personal Card',
                                  style: TextStyle(
                                    color: Colors.black,
                                    fontSize: 14,
                                    fontWeight:
FontWeight.bold,
                                  ),
                                ),
                              ],
                            )
                          ],
                        ),
                      ),
                    ),
                    SizedBox(
                      height: 15,
                    ),
                  ],
                ),
              ),
            ),
            Padding(
              padding: EdgeInsets.symmetric(vertical: 15,
horizontal: 15),
              child: OutlinedButton(
                onPressed: () {
```

```
                getConfirmation(context);
              },
              style: OutlinedButton.styleFrom(
                backgroundColor: Colors.white,
                foregroundColor: Colors.red,
                padding: EdgeInsets.symmetric(vertical: 17),
                shape: RoundedRectangleBorder(
                  borderRadius: BorderRadius.circular(12),
                ),
                side: BorderSide(
                  width: 1,
                  color: Colors.red,
                ),
              ),
              child: Row(
                mainAxisAlignment: MainAxisAlignment.center,
                children: [
                  Text(
                    'Complete Payment',
                    style: TextStyle(
                      fontSize: 18,
                      fontWeight: FontWeight.bold,
                      color: Colors.red,
                    ),
                  ),
                ],
              ),
            ),
          ),
        ],
      ),
    ),
  );
 }
}
```

```
class billdetails extends StatelessWidget {
  final String servicename;
  final String price;
  const billdetails({Key? key, this.servicename = 'Detail',
this.price = '50'})
      : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Container(
      padding: EdgeInsets.symmetric(vertical: 2),
      child: Row(
        children: [
          Expanded(
            child: Text(
              servicename,
              maxLines: 1,
              overflow: TextOverflow.ellipsis,
              style: TextStyle(
                fontSize: 14,
                fontWeight: FontWeight.bold,
                color: darktext,
              ),
            ),
          ),
          SizedBox(
            width: 15,
          ),
          Text(
            '₹ ' + price.toString(),
            style: TextStyle(
              fontSize: 14,
              fontWeight: FontWeight.bold,
              color: darktext,
            ),
          ),
```

```
        ],
      ),
    );
  }
}

class buildCreditCard extends StatelessWidget {
  const buildCreditCard({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return ClipRRect(
      borderRadius: BorderRadius.circular(22),
      child: Container(
        height: 240,
        alignment: Alignment.center,
        width: MediaQuery.of(context).size.width - 30,
        child: Stack(
          children: [
            Container(
              // height: 240,
              width: MediaQuery.of(context).size.width,
              child: Image.asset(
                'assets/images/creditcardbg.jpg',
                fit: BoxFit.fill,
              ),
            ),
            Container(
              // height: 240,
              // width: MediaQuery.of(context).size.width,
              padding: EdgeInsets.all(25),
              child: Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                mainAxisSize: MainAxisSize.max,
                children: [
                  Text(
```

```
                    'My Personal Card',
                    style: TextStyle(
                      fontSize: 18,
                      color: Colors.white,
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                  SizedBox(
                    height: 25,
                  ),
                  Expanded(
                    child: Row(
                      crossAxisAlignment:
CrossAxisAlignment.stretch,
                      children: [
                        Expanded(
                          flex: 5,
                          child: Column(
                            crossAxisAlignment:
CrossAxisAlignment.start,
                            mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                            children: [
                              Column(
                                crossAxisAlignment:
CrossAxisAlignment.start,
                                mainAxisSize: MainAxisSize.min,
                                children: [
                                  Text(
                                    'Credit Card Number',
                                    style: cardhead,
                                  ),
                                  Text(
                                    'xxxx - xxxx - xxxx -
4783',
                                    style: cardans,
```

```
                                ),
                              ],
                            ),
                            Column(
                              crossAxisAlignment:
CrossAxisAlignment.start,
                              mainAxisSize: MainAxisSize.min,
                              children: [
                                Text(
                                  'Name on the Card',
                                  style: cardhead,
                                ),
                                Text(
                                  'DREW FULLER',
                                  style: cardans,
                                ),
                              ],
                            ),
                          ],
                        ),
                      ),
                      Expanded(
                        flex: 2,
                        child: Column(
                          crossAxisAlignment:
CrossAxisAlignment.start,
                          mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                          children: [
                            Column(
                              crossAxisAlignment:
CrossAxisAlignment.start,
                              mainAxisSize: MainAxisSize.min,
                              children: [
                                Text(
                                  'Expiration',
```

```
                style: cardhead,
              ),
              Text(
                '09/23',
                style: cardans,
              ),
            ],
          ),
          Column(
            crossAxisAlignment:
CrossAxisAlignment.start,
            mainAxisSize: MainAxisSize.min,
            children: [
              Text(
                'CVV/CVS',
                style: cardhead,
              ),
              Text(
                '***',
                style: cardans,
              ),
            ],
          ),
          // Text(
          //   'Credit Card Number',
          //   style: cardhead,
          // ),
          // Text(
          //   'xxxx - xxxx - xxxx - 4783',
          //   style: cardans,
          // ),
          // Text(
          //   'Credit Card Number',
          //   style: cardhead,
          // ),
          // Text(
```

```
                                //   'xxxx - xxxx - xxxx - 4783',
                                //   style: cardans,
                                // ),
                              ],
                            ),
                          ),
                        ],
                      ),
                    ),
                    SizedBox(
                      height: 15,
                    ),
                  ],
                ),
              ),
              Positioned(
                bottom: 10,
                right: 10,
                child: IconButton(
                  onPressed: () {},
                  icon: Icon(
                    Icons.edit_outlined,
                    color: Colors.white.withAlpha(150),
                    size: 20,
                  ),
                ),
              ),
            ],
          ),
        ),
      );
  }
}
```

paymentsuccessful.dart

```
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';

class paymentSuccessfullScreen extends StatelessWidget {
  const paymentSuccessfullScreen({Key? key}) : super(key: key);
  final String servicehead = "Successfully Paid";
  final String servicedes = "Your Payment has been Successfully
Completed";
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        automaticallyImplyLeading: false,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        title: Text(
          "Confirmation",
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: Container(
        padding: EdgeInsets.all(35),
        child: Column(
          mainAxisAlignment: MainAxisAlignment.spaceAround,
          children: [
            Text(
              servicehead,
              textAlign: TextAlign.center,
```

```
    style: TextStyle(
      fontSize: 30,
      fontWeight: FontWeight.bold,
      color: darktext,
    ),
  ),
  Text(
    servicedes,
    textAlign: TextAlign.center,
    style: TextStyle(
      fontSize: 18,
    ),
  ),
  OutlinedButton(
    onPressed: () {
      Navigator.pop(context);
    },
    style: OutlinedButton.styleFrom(
      side: BorderSide(
        color: maintheme,
      ),
      shape: RoundedRectangleBorder(
        borderRadius: BorderRadius.circular(16),
      ),
    ),
    child: Container(
      padding: EdgeInsets.all(15),
      child: Text(
        'Back to Billing Menu',
        style: TextStyle(
          fontSize: 16,
          fontWeight: FontWeight.bold,
        ),
      ),
    ),
  ),
```

```
            Container(
              height: 150,
              width: 150,
              child: Image.asset(
                'assets/images/logo_color.png',
              ),
            ),
            SizedBox(
              height: 60,
            ),
          ],
        ),
      ),
    );
  }
}
```

paymenttiles.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';

class recentTransactionsTile extends StatelessWidget {
  const recentTransactionsTile({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Column(
      children: [
        TextButton(
          onPressed: () {},
          style: TextButton.styleFrom(
            backgroundColor: Colors.white,
```

```
            foregroundColor: maintheme,
            shape: RoundedRectangleBorder(
              borderRadius: BorderRadius.circular(10),
            ),
          ),
          child: Container(
            child: Row(
              children: [
                Expanded(
                  child: Column(
                    crossAxisAlignment:
CrossAxisAlignment.start,
                    children: [
                      SizedBox(
                        height: 5,
                      ),
                      Text(
                        'MIDAS',
                        style: TextStyle(
                          color: darktext,
                          fontSize: 14,
                          fontWeight: FontWeight.bold,
                        ),
                      ),
                      SizedBox(
                        height: 5,
                      ),
                      Text(
                        'February 02, 2019',
                        style: TextStyle(
                          color: darktext.withAlpha(100),
                          fontSize: 13,
                        ),
                      ),
                      Text(
                        'Tires, Brakes',
```

```
                        style: TextStyle(
                          color: darktext.withAlpha(100),
                          fontSize: 13,
                        ),
                      ),
                    ],
                  ),
                ),
                Row(
                  children: [
                    Text(
                      '\$ 125',
                      style: TextStyle(
                        fontSize: 20,
                        color: maintheme,
                        fontWeight: FontWeight.bold,
                      ),
                    ),
                    Icon(
                      Icons.chevron_right_rounded,
                      color: darktext,
                      size: 35,
                    ),
                  ],
                ),
              ],
            ),
          ),
        ),
        Divider(
          color: darktext.withAlpha(100),
        ),
      ],
    );
  }
}
```

```
class PaynowTile extends StatelessWidget {
  final DocumentSnapshot snapshot;
  const PaynowTile({Key? key, required this.snapshot}) :
super(key: key);

  @override
  Widget build(BuildContext context) {
    return Card(
      shape: RoundedRectangleBorder(
        borderRadius: BorderRadius.circular(16),
      ),
      color: Colors.white,
      elevation: 7,
      surfaceTintColor: Colors.white,
      child: Container(
        padding: EdgeInsets.all(15),
        child: Row(
          children: [
            Expanded(
              child: Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  Text(
                    snapshot.get('shopname'),
                    maxLines: 1,
                    overflow: TextOverflow.ellipsis,
                    style: subtitle.copyWith(
                      fontSize: 15,
                    ),
                  ),
                  SizedBox(
                    height: 7,
                  ),
                  Text(
                    snapshot.get('servicedate'),
```

```
                    style: TextStyle(
                      color: darktext.withAlpha(100),
                      fontSize: 13,
                    ),
                  ),
                  SizedBox(
                    height: 4,
                  ),
                  Text(
                    snapshot.get('servicename'),
                    style: TextStyle(
                      color: darktext.withAlpha(100),
                      fontSize: 13,
                    ),
                  ),
                ],
              ),
            ),
            SizedBox(
              width: 15,
            ),
            Column(
              children: [
                Text(
                  '₹ ' +
snapshot.get('serviceprice').toString(),
                  style: TextStyle(
                    fontSize: 18,
                    fontWeight: FontWeight.bold,
                    color: maintheme,
                  ),
                ),
                SizedBox(
                  height: 10,
                ),
                OutlinedButton(
```

```
                    onPressed: () {
                      Navigator.pushNamed(
                        context,
                        '/paymentscreen',
                        arguments: [snapshot],
                      );
                    },
                    style: OutlinedButton.styleFrom(
                      backgroundColor: Colors.white,
                      foregroundColor: Colors.red,
                      shape: RoundedRectangleBorder(
                        borderRadius: BorderRadius.circular(12),
                      ),
                      side: BorderSide(
                        color: Colors.red,
                        width: 1,
                      ),
                    ),
                    child: Text(
                      'Pay Now',
                      style: TextStyle(
                        color: Colors.red,
                        fontSize: 15,
                      ),
                    ),
                  ),
                ],
              ),
            ],
          ),
        ),
      );
    }
}
```

scheduleappointment.dart

```
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/commonvars.dart';
import 'package:vehicle_maintenance_app/data.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleconfirmation.dart';

class scheduleAppointment extends StatefulWidget {
  final ServiceModel serviceModel;
  const scheduleAppointment({Key? key, required
this.serviceModel})
      : super(key: key);

  @override
  State<scheduleAppointment> createState() =>
_scheduleAppointmentState();
}

class _scheduleAppointmentState extends
State<scheduleAppointment> {
  int? servicevalue;
  DateTime selecteddate = DateTime.now();
  TimeOfDay selectedtime =
TimeOfDay.fromDateTime(DateTime.now());
  TextEditingController notes = TextEditingController();

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      resizeToAvoidBottomInset: false,
```

```
appBar: AppBar(
  backgroundColor: Colors.white,
  elevation: 0,
  centerTitle: true,
  scrolledUnderElevation: 0,
  leading: IconButton(
    onPressed: () {
      Navigator.pop(context);
    },
    icon: Icon(
      CupertinoIcons.left_chevron,
      color: darktext,
    ),
  ),
  title: Text(
    "Schedule",
    style: TextStyle(
      color: darktext,
      fontWeight: FontWeight.bold,
    ),
  ),
),
body: Container(
  padding: EdgeInsets.symmetric(horizontal: 15),
  child: Column(
    children: [
      Expanded(
        child: SingleChildScrollView(
          physics: BouncingScrollPhysics(),
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              SizedBox(
                height: 15,
              ),
              Text(
```

```
                    'SELECT SERVICE',
                    style: subtitle,
                  ),
                  SizedBox(
                    height: 10,
                  ),
                  Row(
                    children: [
                      Expanded(
                        child: Container(
                          padding:
EdgeInsets.symmetric(horizontal: 15),
                          decoration: BoxDecoration(
                            borderRadius:
BorderRadius.circular(12),
                            border: Border.all(
                              width: 1,
                              color: maintheme,
                            ),
                          ),
                          child: DropdownButton(
                            items: [
                              for (int i = 0; i <
services.length; i++)
                                DropdownMenuItem(
                                  value: i,
                                  child:
Text(services.keys.elementAt(i)),
                                ),
                            ],
                            value: servicevalue,
                            alignment:
AlignmentDirectional.centerStart,
                            borderRadius:
BorderRadius.circular(12),
                            isExpanded: true,
```

```
            style: TextStyle(
              fontSize: 16,
              color: darktext,
            ),
            underline: Container(),
            hint: Text('Services'),
            icon: Icon(
              CupertinoIcons.chevron_down,
              size: 20,
              color: darktext,
            ),
            onChanged: (a) {
              setState(() {
                servicevalue = a;
              });
            },
          ),
        ),
      ),
    ],
  ),
  SizedBox(
    height: 20,
  ),
  Text(
    'SELECT DATE AND TIME',
    style: subtitle,
  ),
  SizedBox(
    height: 10,
  ),
  Row(
    children: [
      Expanded(
        flex: 5,
        child: TextButton(
```

```
                            onPressed: () async {
                              DateTime? picked = await
showDatePicker(
                                context: context,
                                initialDate: selecteddate,
                                firstDate: DateTime.now(),
                                lastDate: DateTime(2025, 2),
                              );
                              if (picked != null && picked !=
selecteddate) {
                                setState(() {
                                  selecteddate = picked;
                                  print(selecteddate);
                                });
                              }
                            },
                            style: TextButton.styleFrom(
                              side: BorderSide(
                                width: 1,
                                color: maintheme,
                              ),
                              shape: RoundedRectangleBorder(
                                borderRadius:
BorderRadius.circular(12),
                              ),
                            ),
                            child: Container(
                              padding:
EdgeInsets.symmetric(vertical: 5),
                              child: Text(
                                selecteddate.day.toString() +
                                    ' / ' +
                                    months[selecteddate.month]
+
                                    ' / ' +
```

```
selecteddate.year.toString() +
                                    '  ( ' +
                                    days[selecteddate.weekday]
+
                                    ' )',
                                style: TextStyle(
                                  color: darktext,
                                  fontWeight: FontWeight.bold,
                                ),
                              ),
                            ),
                          ),
                        ),
                        SizedBox(
                          width: 10,
                        ),
                        Expanded(
                          flex: 3,
                          child: TextButton(
                            onPressed: () async {
                              TimeOfDay? pickedtime = await
showTimePicker(
                                context: context,
                                initialTime:

TimeOfDay.fromDateTime(DateTime.now()),
                              );
                              if (pickedtime != null) {
                                setState(() {
                                  selectedtime = pickedtime;
                                });
                              }
                            },
                            style: TextButton.styleFrom(
                              side: BorderSide(
```

```
                                width: 1,
                                color: maintheme,
                              ),
                              shape: RoundedRectangleBorder(
                                borderRadius:
BorderRadius.circular(12),
                              ),
                            ),
                            child: Container(
                              padding:
EdgeInsets.symmetric(vertical: 5),
                              child: Text(

selectedtime.hourOfPeriod.toString() +
                                      ' : ' +

selectedtime.minute.toString() +
                                      '   ' +

selectedtime.period.name.toUpperCase(),
                                style: TextStyle(
                                  color: darktext,
                                  fontWeight: FontWeight.bold,
                                ),
                              ),
                            ),
                          ),
                        ),
                      ),
                    ],
                  ),
                  SizedBox(
                    height: 10,
                  ),
                  Text(
                    "Note: The date and time will be
confirmed by the service provider within 24 hours after
```

```
scheduling through Vehicle Manager. You'll be notified by
email, text or a phone call, based on your preference.",
                        textAlign: TextAlign.justify,
                        style: TextStyle(
                          fontSize: 13,
                          color: darktext.withAlpha(100),
                        ),
                      ),
                      SizedBox(
                        height: 20,
                      ),
                      Row(
                        mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                        children: [
                          Text(
                            'NOTES',
                            style: subtitle,
                          ),
                          IconButton(
                            onPressed: () {},
                            icon: Icon(
                              Icons.info_outline_rounded,
                              color: maintheme,
                            ),
                          )
                        ],
                      ),
                      SizedBox(
                        height: 10,
                      ),
                      Container(
                        child: TextField(
                          controller: notes,
                          keyboardType: TextInputType.multiline,
```

```
                        minLines: 5,
                        maxLines: 5,
                        // expands: true,
                        decoration: InputDecoration(
                          hintText:
                              'Add additional notes about your
visit and/or maintenance need',
                          border: OutlineInputBorder(
                            borderRadius:
BorderRadius.circular(12),
                            borderSide: BorderSide(
                              color: maintheme,
                              width: 1,
                            ),
                          ),
                        ),
                      ),
                    ),
                    SizedBox(
                      height: 500,
                    ),
                  ],
                ),
              ),
            ),
            TextButton(
              onPressed: () {
                if (servicevalue != null &&
                    selecteddate != null &&
                    selectedtime != null) {
                  print(servicevalue);
                  print(selecteddate.day);
                  print(selectedtime);
                  widget.serviceModel.servicename =
                      services.keys.elementAt(servicevalue!);
                  widget.serviceModel.serviceprice =
```

```
services.values.elementAt(servicevalue!).toString();

                  widget.serviceModel.day =
selecteddate.day.toString();
                  widget.serviceModel.month =
(selecteddate.month).toString();
                  widget.serviceModel.year =
selecteddate.year.toString();
                  widget.serviceModel.hours =
selectedtime.hour.toString();
                  widget.serviceModel.minutes =
selectedtime.minute.toString();
                  widget.serviceModel.notes = notes.text;

                  Navigator.pushNamed(context,
'/scheduleconfirmation',
                      arguments: widget.serviceModel);
                }
                widget.serviceModel.printer();
              },
              style: TextButton.styleFrom(
                backgroundColor: Colors.white,
                foregroundColor: maintheme,
                padding: EdgeInsets.symmetric(vertical: 17),
                shape: RoundedRectangleBorder(
                  borderRadius: BorderRadius.circular(12),
                ),
                side: BorderSide(
                  width: 0.5,
                  color: darktext,
                ),
              ),
              child: Row(
                mainAxisAlignment: MainAxisAlignment.center,
                children: [
```

```
                  Text(
                    'Continue',
                    style: TextStyle(
                      fontSize: 18,
                      fontWeight: FontWeight.bold,
                      color: darktext,
                    ),
                  ),
                ],
              ),
            ),
            SizedBox(
              height: 15,
            ),
          ],
        ),
      ),
    );
  }
}
```

scheduleconfirmation.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/commonvars.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/dashboard.
dart';
```

```
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
ulesuccess.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
import
'package:vehicle_maintenance_app/widgets/loadingblock.dart';

class scheduleConfirmation extends StatelessWidget {
  final ServiceModel serviceModel;
  scheduleConfirmation({Key? key, required this.serviceModel})
      : super(key: key);
  final UserServices userServices = UserServices();
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        leading: IconButton(
          onPressed: () {
            Navigator.pop(context);
          },
          icon: Icon(
            CupertinoIcons.left_chevron,
            color: darktext,
          ),
        ),
        title: Text(
          "Schedule",
          style: TextStyle(
            color: darktext,
```

```
      fontWeight: FontWeight.bold,
    ),
  ),
),
body: Container(
  padding: EdgeInsets.symmetric(horizontal: 15),
  child: Column(
    crossAxisAlignment: CrossAxisAlignment.start,
    children: [
      SizedBox(
        height: 15,
      ),
      Text(
        'IS EVERYTHING CORRECT?',
        style: subtitle,
      ),
      SizedBox(
        height: 10,
      ),
      Card(
        surfaceTintColor: Colors.white,
        elevation: 7,
        color: Colors.white,
        shape: RoundedRectangleBorder(
          borderRadius: BorderRadius.circular(16),
        ),
        child: Container(
          padding: EdgeInsets.all(15),
          child: Column(
            children: [
              Text(
                // "Oil Change at Jiffy Lube",
                serviceModel.servicename! +
                    ' at ' +
                    serviceModel.shopmodel!.shopname,
                textAlign: TextAlign.center,
```

```
                        style: TextStyle(
                          fontSize: 18,
                          fontWeight: FontWeight.bold,
                          color: darktext,
                        ),
                      ),
                      SizedBox(
                        height: 20,
                      ),
                      Row(
                        mainAxisSize: MainAxisSize.min,
                        mainAxisAlignment:
MainAxisAlignment.start,
                        children: [
                          iconMaker(
                            iconData: CupertinoIcons.clock,
                          ),
                          SizedBox(
                            width: 20,
                          ),
                          Container(
                            width: 250,
                            child: Text(
                              // 'Monday, April 8 at 5:30 PM',

months[int.parse(serviceModel.month!)] +
                                  ' ' +
                                  serviceModel.day  +
                                  ' at ' +
                                  serviceModel.hours +
                                  ':' +
                                  serviceModel.minutes,
                              style: TextStyle(
                                fontSize: 13,
                                color: darktext.withAlpha(100),
                                fontWeight: FontWeight.bold,
```

```
                        ),
                      ),
                    ),
                  ],
                ),
                SizedBox(
                  height: 20,
                ),
                Row(
                  mainAxisSize: MainAxisSize.min,
                  mainAxisAlignment:
MainAxisAlignment.start,
                  children: [
                    iconMaker(
                      iconData: Icons.location_on_outlined,
                    ),
                    SizedBox(
                      width: 20,
                    ),
                    Expanded(
                      child: Container(
                        child: Text(
                          // 'Jiffy Lube\n756, Barrington
Road,\nHanover Park',
                          serviceModel.shopmodel!.shopname
+
                              '\n' +

serviceModel.shopmodel!.shopaddress,
                          textAlign: TextAlign.start,
                          style: TextStyle(
                            fontSize: 13,
                            color: darktext.withAlpha(100),
                            fontWeight: FontWeight.bold,
                          ),
                        ),
```

```
                    ),
                  ),
                ],
              ),
            ],
          ),
        ),
      ),
      SizedBox(
        height: 20,
      ),
      Text(
        'CONTACT INFO',
        style: subtitle,
      ),
      SizedBox(
        height: 10,
      ),
      Card(
        surfaceTintColor: Colors.white,
        color:  Colors.white,
        elevation: 7,
        shape: RoundedRectangleBorder(
          borderRadius: BorderRadius.circular(16),
        ),
        child: Container(
          padding: EdgeInsets.all(25),
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              Row(
                mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                children: [
                  Text(
                    username,
```

```
        style: TextStyle(
          color: maintheme,
          fontSize: 18,
          fontWeight: FontWeight.bold,
        ),
      ),
      IconButton(
        onPressed: () {},
        icon: Icon(
          Icons.edit_outlined,
          color: darktext,
          size: 20,
        ),
      ),
    ],
  ),
  SizedBox(
    height: 10,
  ),
  Text(
    '+91 1234567890',
    style: TextStyle(
      color: maintheme,
      fontSize: 14,
      fontWeight: FontWeight.bold,
    ),
  ),
  SizedBox(
    height: 5,
  ),
  Text(
    'themailid@gmail.com',
    style: TextStyle(
      color: maintheme,
      fontSize: 14,
      fontWeight: FontWeight.bold,
```

```
                    ),
                  ),
                ],
              ),
            ),
          ),
          Spacer(),
          TextButton(
            onPressed: () async {
              loadingBlock(context: context);
              await userServices.addSchedule(serviceModel:
serviceModel);
              Navigator.pop(context);
              Navigator.pushNamedAndRemoveUntil(
                context,
                '/home',
                ModalRoute.withName('/'),
              );
              Navigator.pushNamed(context,
'/schedulesuccess');
              // removing all from stack and
              // pushing home under schedule succes screen
            },
            style: TextButton.styleFrom(
              backgroundColor: darktext,
              foregroundColor: Colors.white,
              padding: EdgeInsets.symmetric(vertical: 17),
              shape: RoundedRectangleBorder(
                borderRadius: BorderRadius.circular(12),
              ),
              side: BorderSide(
                width: 0.5,
                color: darktext,
              ),
            ),
            child: Row(
```

```
                mainAxisAlignment: MainAxisAlignment.center,
                children: [
                  Text(
                    'Schedule appointment',
                    style: TextStyle(
                      fontSize: 18,
                      fontWeight: FontWeight.bold,
                      color: Colors.white,
                    ),
                  ),
                ],
              ),
            ),
            SizedBox(
              height: 15,
            ),
          ],
        ),
      ),
    );
  }
}
```

schedulereview.dart

```
import 'dart:developer';

import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/homeparent
.dart';
```

```
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
uleappointment.dart';

class scheduleReview extends StatelessWidget {
  final ServiceModel serviceModel;
  const scheduleReview({Key? key, required this.serviceModel})
      : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        leading: IconButton(
          onPressed: () {
            Navigator.pop(context);
          },
          icon: Icon(
            CupertinoIcons.left_chevron,
            color: darktext,
          ),
        ),
        title: Text(
          "Schedule",
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: Container(
        padding: EdgeInsets.symmetric(horizontal: 15),
```

```
          child: Column(
            children: [
              Card(
                surfaceTintColor: Colors.white,
                color:  Colors.white,
                elevation: 7,
                shape: RoundedRectangleBorder(
                  borderRadius: BorderRadius.circular(16),
                ),
                child: Container(
                  width: MediaQuery.of(context).size.width,
                  padding: EdgeInsets.all(20),
                  child: Column(
                    crossAxisAlignment: CrossAxisAlignment.start,
                    children: [
                      Row(
                        mainAxisAlignment:
MainAxisAlignment.spaceBetween,
                        children: [
                          Expanded(
                            child: Text(
                              // 'Jiffy Lube',

serviceModel.shopmodel!.shopname.toString(),
                              style: TextStyle(
                                fontSize: 18,
                                fontWeight: FontWeight.bold,
                                color: darktext,
                              ),
                            ),
                          ),
                          IconButton(
                            onPressed: () {},
                            icon: Icon(
                              Icons.favorite_border_rounded,
                              size: 30,
```

```
                    ),
                  ),
                ],
              ),
              SizedBox(
                height: 5,
              ),
              ReviewStar(),
              SizedBox(
                height: 10,
              ),
              Text(
                // '756, Barrington Road, Hanover Park
5245',
                serviceModel.shopmodel!.shopaddress,
                style: subtitle.copyWith(
                  fontSize: 13,
                  color: darktext.withAlpha(100),
                ),
              ),
              SizedBox(
                height: 5,
              ),
              linkfunc(
                icon: Icons.call_outlined,
                text: 'Call  ' +

serviceModel.shopmodel!.shopphone.toString(),
              ),
              linkfunc(
                icon: Icons.location_on_outlined,
                text: 'Get Directions',
              ),
              linkfunc(
                icon: Icons.browse_gallery_outlined,
                text: 'Go to Website',
```

```
                    ),
                    SizedBox(
                      height: 15,
                    ),
                    TextButton(
                      onPressed: () {
                        Navigator.pushNamed(context,
'/scheduleappointment',
                            arguments: serviceModel);
                      },
                      style: TextButton.styleFrom(
                        backgroundColor: Colors.white,
                        foregroundColor: maintheme,
                        padding: EdgeInsets.symmetric(vertical:
17),
                        shape: RoundedRectangleBorder(
                          borderRadius:
BorderRadius.circular(12),
                        ),
                        side: BorderSide(
                          width: 0.5,
                          color: darktext,
                        ),
                      ),
                      child: Row(
                        mainAxisAlignment:
MainAxisAlignment.center,
                        children: [
                          Text(
                            'Schedule Appoinement',
                            style: TextStyle(
                              fontSize: 18,
                              fontWeight: FontWeight.bold,
                              color: darktext,
                            ),
                          ),
```

```
            ],
          ),
        ),
      ],
    ),
  ),
),
SizedBox(
  height: 5,
),
Row(
  children: [
    SizedBox(
      width: 10,
    ),
    Text(
      "REVIEWS",
      style: subtitle,
    ),
    Spacer(),
    IconButton(
      onPressed: () {},
      icon: Icon(
        Icons.filter_alt_outlined,
        size: 25,
        color: darktext,
      ),
    ),
    SizedBox(
      width: 10,
    ),
  ],
),
SizedBox(
  height: 0,
),
```

```
            Expanded(
              child: SingleChildScrollView(
                physics: BouncingScrollPhysics(),
                child: Column(
                  children: [
                    for (int i = 0; i < 3; i++) ReviewTile(),
                  ],
                ),
              ),
            ),
            TextButton(
              onPressed: () {},
              child: Text('See all Reviews'),
            ),
          ],
        ),
      ),
    );
  }

  Widget linkfunc({required IconData icon, required String
text}) {
    return TextButton(
      onPressed: () {},
      style: TextButton.styleFrom(
        padding: EdgeInsets.symmetric(
          vertical: 0,
          horizontal: 10,
        ),
      ),
      child: Row(
        children: [
          Icon(
            icon,
            color: maintheme,
            size: 20,
```

```
          ),
          SizedBox(
            width: 10,
          ),
          Text(
            text,
            style: TextStyle(
              color: darktext,
              fontSize: 14,
              fontWeight: FontWeight.bold,
            ),
          )
        ],
      ),
    );
  }
}

class ReviewTile extends StatelessWidget {
  const ReviewTile({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Column(
      children: [
        TextButton(
          onPressed: () {},
          style: TextButton.styleFrom(
            backgroundColor: Colors.white,
            foregroundColor: maintheme,
            shape: RoundedRectangleBorder(
              borderRadius: BorderRadius.circular(10),
            ),
          ),
          child: Container(
            child: Row(
```

```
                children: [
                  Expanded(
                    child: Column(
                      crossAxisAlignment:
CrossAxisAlignment.start,
                      children: [
                        Row(
                          children: [
                            ReviewStar(
                              a: 2,
                            ),
                            SizedBox(
                              width: 10,
                            ),
                            Text(
                              '1 Week ago',
                              style: TextStyle(
                                color: darktext.withAlpha(100),
                                fontSize: 13,
                              ),
                            ),
                          ],
                        ),
                        SizedBox(
                          height: 5,
                        ),
                        Text(
                          'by John Butler',
                          style: TextStyle(
                            color: darktext.withAlpha(100),
                            fontSize: 13,
                          ),
                        ),
                        SizedBox(
                          height: 5,
                        ),
```

```
                    Text(
                      'Bad Experience with customer service
and adnfnasdfnasdfna ads f asdf as df asdf ',
                      style: TextStyle(
                        color: darktext.withAlpha(100),
                        fontSize: 13,
                      ),
                    ),
                  ],
                ),
              ),
              Icon(
                Icons.chevron_right_rounded,
                color: darktext,
                size: 35,
              ),
            ],
          ),
        ),
      ),
      Divider(
        color: darktext.withAlpha(100),
      ),
    ],
  );
 }
}

class ReviewStar extends StatelessWidget {
 final int a;
 const ReviewStar({Key? key, this.a = 3}) : super(key: key);

 @override
 Widget build(BuildContext context) {
   return Row(
     children: [
```

```
        for (int i = 0; i < a; i++)
          Icon(
            Icons.star,
            size: 20,
            color: darktext,
          ),
        for (int i = 0; i < 5 - a; i++)
          Icon(
            Icons.star,
            size: 20,
            color: darktext.withAlpha(100),
          ),
      ],
    );
  }
}
```

schedulescreen.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
import
'package:vehicle_maintenance_app/widgets/servicetile.dart';

class scheduleScreen extends StatefulWidget {
  const scheduleScreen({Key? key}) : super(key: key);

  @override
  State<scheduleScreen> createState() =>
_scheduleScreenState();
}
```

```
class _scheduleScreenState extends State<scheduleScreen> {
  int totalcost = 0;
  Map<String, List<DocumentSnapshot>> carservices = {};
  final UserServices userServices = UserServices();
  Future<Map<String, List<DocumentSnapshot>>> getdata() async {
    QuerySnapshot querySnapshot =
        await userServices.getunpaidservicewithuserkey();
    totalcost = 0;
    carservices.clear();
    for (DocumentSnapshot documentSnapshot in
querySnapshot.docs) {
      carservices.putIfAbsent(documentSnapshot.get('carkey'),
() => []);
      carservices[documentSnapshot.get('carkey').toString()]
          ?.add(documentSnapshot);

      totalcost +=
int.parse(documentSnapshot.get('serviceprice').toString());
    }
    return carservices;
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        automaticallyImplyLeading: false,
        title: Text(
          "Schedules",
          style: TextStyle(
            fontWeight: FontWeight.bold,
```

```
            color: darktext,
          ),
        ),
      ),
      body: FutureBuilder(
          future: getdata(),
          builder: (context, snapshot) {
            if (snapshot.hasData && snapshot.data!.length != 0)
{
              return Column(
                children: [
                  Expanded(
                    child: ListView.builder(
                        padding: EdgeInsets.symmetric(vertical:
10),
                        physics: BouncingScrollPhysics(),
                        itemCount: snapshot.data!.length,
                        itemBuilder: (context, i) {
                          return section(
                              carkey:
snapshot.data!.keys.elementAt(i),
                              documentSnapshot:

snapshot.data!.values.elementAt(i));
                        }),
                  ),
                  Container(
                    padding: EdgeInsets.symmetric(vertical:
10),
                    child: Row(
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
                        Text(
                          'Total Cost: ',
                          style: TextStyle(
```

```
                            fontSize: 16,
                            fontWeight: FontWeight.bold,
                          ),
                        ),
                        Text(
                          '₹ ' + totalcost.toString(),
                          style: TextStyle(
                            fontSize: 18,
                            fontWeight: FontWeight.bold,
                          ),
                        ),
                      ],
                    ),
                  ),
                ],
              );
            } else if (snapshot.hasData &&
snapshot.data!.length == 0) {
              return Center(
                child: Text(
                  'No Services Booked Yet!!',
                  style: TextStyle(
                    fontSize: 20,
                    fontWeight: FontWeight.bold,
                    color: darktext,
                  ),
                ),
              );
            } else {
              return Center(
                child: CircularProgressIndicator(),
              );
            }
          }),
    );
  }
```

```
  Widget section(
      {required String carkey,
      required List<DocumentSnapshot> documentSnapshot}) {
    return Column(
      crossAxisAlignment: CrossAxisAlignment.start,
      children: [
        SizedBox(
          height: 5,
        ),
        Container(
          padding: EdgeInsets.symmetric(horizontal: 15,
vertical: 10),
          child: FutureBuilder(
              future:

userbase.doc(userkey).collection('cars').doc(carkey).get(),
              builder: (context, snapshot) {
                if (snapshot.hasData) {
                  return Text(
                    snapshot.data!.get('carmaker') +
                        ' ' +
                        snapshot.data!.get('carmodel') +
                        ": ",
                    style: TextStyle(
                      fontSize: 16,
                      fontWeight: FontWeight.bold,
                      color: darktext,
                    ),
                  );
                } else
                  return Container(
                    padding: EdgeInsets.symmetric(vertical:
10),
                    width: 60,
                    child: LinearProgressIndicator(),
```

```
                );
              }),
        ),
        Column(
          children: [
            for (DocumentSnapshot ds in documentSnapshot)
              serviceTile(documentSnapshot: ds),
          ],
        ),
      ],
    );
  }
}
```

scheduleshop.dart

```
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/data.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/models/shop_model.dart';
import
'package:vehicle_maintenance_app/screens/mainscreens/homeparent
.dart';
import
'package:vehicle_maintenance_app/screens/schedules_screen/sched
ulereview.dart';

class scheduleShop extends StatefulWidget {
  final ServiceModel serviceModel;
  const scheduleShop({Key? key, required this.serviceModel}) :
super(key: key);
```

```
  @override
  State<scheduleShop> createState() => _scheduleShopState();
}

class _scheduleShopState extends State<scheduleShop> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        leading: IconButton(
          onPressed: () {
            Navigator.pop(context);
          },
          icon: Icon(
            CupertinoIcons.left_chevron,
            color: darktext,
          ),
        ),
        title: Text(
          "Schedule",
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: Container(
        margin: EdgeInsets.only(top: 15),
        child: Column(
          children: [
            Row(
```

```
              // mainAxisAlignment:
MainAxisAlignment.spaceBetween,
              children: [
                SizedBox(
                  width: 25,
                ),
                Text(
                  'RECENT SHOPS',
                  style: subtitle,
                ),
                Spacer(),
                Icon(
                  Icons.more_horiz_rounded,
                  color: darktext,
                ),
                SizedBox(
                  width: 30,
                ),
              ],
            ),
            SizedBox(
              height: 10,
            ),
            Expanded(
              child: ListView.builder(
                physics: BouncingScrollPhysics(),
                padding: EdgeInsets.only(bottom: 20),
                itemCount: shopdata.length,
                itemBuilder: (context, i) {
                  return shopTile(
                    shopmodel: shopdata[i],
                  );
                },
              ),
            ),
          ],
```

```
        ),
      ),
    );
  }

  Widget shopTile({required ShopModel shopmodel}) {
    return Container(
      margin: EdgeInsets.symmetric(vertical: 5, horizontal:
15),
      child: ElevatedButton(
        onPressed: () {
          widget.serviceModel.shopmodel = shopmodel;
          Navigator.pushNamed(context, '/schedulereview',
              arguments: widget.serviceModel);
        },
        style: ElevatedButton.styleFrom(
          backgroundColor: Colors.white,
          // foregroundColor: maintheme,
          elevation: 2,
          surfaceTintColor: Colors.white,
          padding: EdgeInsets.all(0),
          shape: RoundedRectangleBorder(
            borderRadius: BorderRadius.circular(12),
          ),
        ),
        child: Container(
          padding: EdgeInsets.symmetric(
            vertical: 15,
            horizontal: 15,
          ),
          child: Row(
            children: [
              Expanded(
                child: Column(
                  crossAxisAlignment: CrossAxisAlignment.start,
                  children: [
```

```
                    Text(
                      // 'Jiff y Lube',
                      shopmodel.shopname,
                      style: subtitle.copyWith(
                        fontSize: 15,
                      ),
                    ),
                    SizedBox(
                      height: 5,
                    ),
                    ReviewStar(
                      a: 3,
                    ),
                    SizedBox(
                      height: 5,
                    ),
                    Text(
                      // '756, Barrington Road, Hanover Park
5245',
                      shopmodel.shopaddress,
                      style: subtitle.copyWith(
                        fontSize: 12,
                        color: darktext.withAlpha(100),
                      ),
                    ),
                  ],
                ),
              ),
              Icon(
                Icons.chevron_right_rounded,
                color: darktext,
                size: 25,
              ),
            ],
          ),
        ),
```

```
      ),
    );
  }
}
```

schedulesuccess.dart

```
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';

class scheduleSuccess extends StatelessWidget {
  const scheduleSuccess({Key? key}) : super(key: key);

  final String t2 =
      "You'll receive a confirmation email from Jiffy Lube to
confirm your requredted date and time.";

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        automaticallyImplyLeading: false,
        scrolledUnderElevation: 0,
        title: Text(
          "Confirmation",
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: Container(
```

```
        padding: EdgeInsets.symmetric(vertical: 25, horizontal:
30),
        child: Column(
          mainAxisAlignment: MainAxisAlignment.spaceAround,
          children: [
            Text(
              'Thanks for Scheduling your next Service',
              textAlign: TextAlign.center,
              style: TextStyle(
                fontSize: 24,
                color: darktext,
                fontWeight: FontWeight.bold,
              ),
            ),
            Text(
              t2,
              textAlign: TextAlign.center,
              style: TextStyle(
                color: darktext,
                fontSize: 18,
              ),
            ),
            OutlinedButton(
              onPressed: () {
                Navigator.pop(context);
              },
              style: OutlinedButton.styleFrom(
                foregroundColor: maintheme,
                side: BorderSide(
                  color: maintheme,
                ),
                shape: RoundedRectangleBorder(
                  borderRadius: BorderRadius.circular(12),
                ),
              ),
              child: Container(
```

```
                padding: EdgeInsets.symmetric(vertical: 15,
horizontal: 15),
                child: Text(
                  'Back to Dashboard',
                  style: TextStyle(
                    fontWeight: FontWeight.bold,
                  ),
                ),
              ),
            ),
            SizedBox(
              height: 10,
            ),
            Container(
              height: 150,
              width: 150,
              child: Image.asset(
                'assets/images/logo_color.png',
              ),
            ),
            SizedBox(
              height: 20,
            ),
          ],
        ),
      ),
    );
  }
}
```

servicemodel.dart

```
import
'package:vehicle_maintenance_app/models/shop_model.dart';

class ServiceModel {
```

```
String? carkey;
ShopModel? shopmodel;
String? servicename;
String? serviceprice;
String? day;
String? month;
String? year;
String? hours;
String? minutes;
String? notes;
String? paymentstatus;

ServiceModel({
  this.carkey,
  this.shopmodel,
  this.servicename,
  this.serviceprice,
  this.day,
  this.month,
  this.year,
  this.hours,
  this.minutes,
  this.notes = '',
  this.paymentstatus = 'pending',
});

void printer() {
  print(this.carkey);
  print(this.shopmodel);
  print(this.servicename);
  print(this.serviceprice);
  print(this.day);
  print(this.month);
  print(this.year);
  print(this.hours);
  print(this.minutes);
```

```
    print(this.notes);
    print(this.paymentstatus);
  }
}
```

servicetile.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';

class serviceTile extends StatelessWidget {
  final DocumentSnapshot documentSnapshot;
  const serviceTile({Key? key, required this.documentSnapshot})
      : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Container(
      padding: EdgeInsets.symmetric(horizontal: 15, vertical:
5),
      child: ElevatedButton(
        onPressed: () {},
        style: ElevatedButton.styleFrom(
          foregroundColor: maintheme,
          elevation: 7,
          shape: RoundedRectangleBorder(
            borderRadius: BorderRadius.circular(16),
          ),
        ),
        child: Container(
          padding: EdgeInsets.symmetric(vertical: 15,
horizontal: 10),
          child: Row(
            children: [
              Expanded(
```

```
                child: Column(
                  crossAxisAlignment: CrossAxisAlignment.start,
                  children: [
                    Text(

documentSnapshot.get('servicename').toString(),
                      maxLines: 1,
                      overflow: TextOverflow.ellipsis,
                      style: subtitle,
                    ),
                    Text(
                      'at ' +
documentSnapshot.get('shopname').toString(),
                      maxLines: 1,
                      overflow: TextOverflow.ellipsis,
                      style: subtitle.copyWith(
                        fontSize: 13,
                        fontWeight: FontWeight.normal,
                      ),
                    ),
                    SizedBox(
                      height: 5,
                    ),
                    Row(
                      children: [
                        Text(

documentSnapshot.get('servicedate').toString(),
                          style: TextStyle(
                            color: darktext,
                            fontWeight: FontWeight.bold,
                          ),
                        ),
                        SizedBox(
                          width: 15,
                        ),
```

```
                        Text(

documentSnapshot.get('servicetime').toString(),
                          style: TextStyle(
                            color: darktext,
                            fontWeight: FontWeight.bold,
                          ),
                        ),
                      ],
                    ),
                  ],
                ),
              ),
              SizedBox(
                width: 20,
              ),
              Column(
                children: [
                  Text(
                    '₹ ' +
documentSnapshot.get('serviceprice').toString(),
                    style: TextStyle(
                      fontWeight: FontWeight.bold,
                      color: darktext,
                      fontSize: 18,
                    ),
                  ),
                  SizedBox(
                    height: 10,
                  ),
                  paidBadge(
                      paid:
(documentSnapshot.get('paymentstatus').toString() ==
                              'pending')
                          ? (false)
                          : (true)),
```

```
                ],
              ),
            ],
          ),
        ),
      ),
    );
  }
}

paidBadge({bool paid = true}) {
  if (paid == true) {
    return Row(
      children: [
        Icon(
          Icons.check_circle_outline_rounded,
          color: Colors.green,
          size: 15,
        ),
        SizedBox(
          width: 5,
        ),
        Text(
          'Paid',
          style: TextStyle(
            fontSize: 13,
            color: Colors.green,
            fontWeight: FontWeight.bold,
          ),
        ),
      ],
    );
  } else {
    {
      return Row(
        children: [
```

```
            Icon(
              Icons.not_interested_rounded,
              color: Colors.red,
              size: 15,
            ),
            SizedBox(
              width: 5,
            ),
            Text(
              'Not Paid',
              style: TextStyle(
                fontSize: 13,
                color: Colors.red,
                fontWeight: FontWeight.bold,
              ),
            ),
          ],
        );
      }
    }
}
```

shop_model.dart

```
class ShopModel {
  final String shopname;
  final String shopaddress;
  final String shopphone;

  ShopModel({
    required this.shopname,
    required this.shopaddress,
    required this.shopphone,
  });
}
```

signup.dart

```
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/screens/loginpage.dart';
import
'package:vehicle_maintenance_app/services/user_auth.dart';

class SignUp extends StatefulWidget {
  const SignUp({Key? key}) : super(key: key);

  @override
  State<SignUp> createState() => _SignUpState();
}

class _SignUpState extends State<SignUp> {
  TextEditingController name = TextEditingController();
  TextEditingController email = TextEditingController();
  TextEditingController password = TextEditingController();
  String errortext = '';
  bool obscurepassword = true;
  Authentication _authentication = Authentication();
  bool loading = false;

  bool validate() {
    if (email.text != '' && name.text != '' && password.text !=
'') {
      //signup
      return true;
    } else {
      setState(() {
        errortext = '';
        if (email.text == '') {
          errortext += 'Enter Email Id\n';
```

```
      }
      if (name.text == '') {
        errortext += 'Enter Name\n';
      }
      if (password.text == '') {
        errortext += 'Enter Password Id\n';
      }
    });
    return false;
  }
}

showSuccess() async {
  await showDialog(
    context: context,
    barrierDismissible: false,
    builder: (context) => AlertDialog(
      title: Text('Sign Up Successfull'),
      content: Text('You can Login Now'),
      contentPadding: EdgeInsets.all(30),
      actions: [
        TextButton(
          onPressed: () {
            Navigator.pop(context);
          },
          child: Text('Go to Login Page'),
        ),
      ],
    ),
  );
}

signup() async {
  setState(() {
    loading = true;
  });
```

```
    var result =
        await _authentication.createUser(name.text, email.text,
password.text);
    if (result.runtimeType == bool && result == true) {
      //success
      await showSuccess();

      Navigator.pushReplacementNamed(context, '/login');
    } else if (result.toString().contains('email-already-in-
use')) {
      setState(() {
        errortext = 'Email Already in Use\nTry Logging in';
      });
    } else {
      setState(() {
        errortext = 'Sign up successfully Failed';
      });
    }
    setState(() {
      loading = false;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: SafeArea(
        child: Container(
          padding: EdgeInsets.symmetric(horizontal: 15),
          child: Column(children: [
            Row(
              mainAxisAlignment: MainAxisAlignment.end,
              children: [
                TextButton(
                  onPressed: () async {
```

```
                    Navigator.pushReplacementNamed(context,
'/login');
                  },
                  child: Text(
                    "Login",
                    style: TextStyle(
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                ),
              ],
            ),
            Expanded(
              child: SingleChildScrollView(
                physics: BouncingScrollPhysics(),
                child: Container(
                  child: Column(
                    mainAxisAlignment:
MainAxisAlignment.center,
                    crossAxisAlignment:
CrossAxisAlignment.center,
                    children: [
                      SizedBox(
                        height: 50,
                      ),
                      Row(),
                      // Container(
                      //   child: Icon(
                      //     Icons.car_crash_sharp,
                      //     color: Colors.redAccent,
                      //     size: 100,
                      //   ),
                      // ),
                      Container(
                        height: 150,
                        width: 150,
```

```
                child: Image.asset(
                  'assets/images/logo_color.png',
                ),
              ),
              SizedBox(
                height: 10,
              ),
              Text(
                "VehiCare",
                style: TextStyle(
                  color: maintheme,
                  fontWeight: FontWeight.bold,
                  fontSize: 35,
                ),
              ),
              SizedBox(
                height: 30,
              ),
              Container(
                height: 60,
                child: TextField(
                  controller: name,
                  style: TextStyle(
                    fontSize: 18,
                  ),
                  decoration: InputDecoration(
                    hintText: 'Name',
                    hintStyle: TextStyle(
                      color: Colors.grey,
                      fontSize: 18,
                    ),
                    focusedBorder: OutlineInputBorder(
                      borderRadius:
BorderRadius.circular(12),
                      borderSide: BorderSide(
                        color: maintheme,
```

```
                                width: 1,
                              ),
                            ),
                            enabledBorder: OutlineInputBorder(
                              borderRadius:
BorderRadius.circular(12),
                              borderSide: BorderSide(
                                color: maintheme,
                                width: 0.5,
                              ),
                            ),
                          ),
                        ),
                      ),
                      SizedBox(
                        height: 20,
                      ),
                      Container(
                        height: 60,
                        child: TextField(
                          controller: email,
                          style: TextStyle(
                            fontSize: 18,
                          ),
                          decoration: InputDecoration(
                            hintText: 'Email',
                            hintStyle: TextStyle(
                              color: Colors.grey,
                              fontSize: 18,
                            ),
                            focusedBorder: OutlineInputBorder(
                              borderRadius:
BorderRadius.circular(12),
                              borderSide: BorderSide(
                                color: maintheme,
                                width: 1,
```

```
                    ),
                  ),
                  enabledBorder: OutlineInputBorder(
                    borderRadius:
BorderRadius.circular(12),
                    borderSide: BorderSide(
                      color: maintheme,
                      width: 0.5,
                    ),
                  ),
                ),
              ),
            ),
            SizedBox(
              height: 20,
            ),
            Row(
              children: [
                Expanded(
                  child: Container(
                    height: 60,
                    child: TextField(
                      controller: password,
                      style: TextStyle(
                        fontSize: 18,
                      ),
                      obscureText: obscurepassword,
                      obscuringCharacter: '*',
                      decoration: InputDecoration(
                        hintText: 'Password',
                        hintStyle: TextStyle(
                          color: Colors.grey,
                          fontSize: 18,
                        ),
                        focusedBorder:
OutlineInputBorder(
```

```
                                    borderRadius:
BorderRadius.circular(12),
                                    borderSide: BorderSide(
                                      color: maintheme,
                                      width: 1,
                                    ),
                                  ),
                                  enabledBorder:
OutlineInputBorder(
                                    borderRadius:
BorderRadius.circular(12),
                                    borderSide: BorderSide(
                                      color: maintheme,
                                      width: 0.5,
                                    ),
                                  ),
                                ),
                              ),
                            ),
                          ),
                          SizedBox(
                            width: 5,
                          ),
                          IconButton(
                            onPressed: () {
                              setState(() {
                                obscurepassword =
!obscurepassword;
                              });
                            },
                            icon: (obscurepassword)
                                ?
(Icon(Icons.visibility_outlined))
                                :
(Icon(Icons.visibility_off_outlined)),
                          ),
```

```
                    ],
                  ),
                  SizedBox(
                    height: 5,
                  ),
                  SizedBox(
                    height: 30,
                  ),
                  TextButton(
                    onPressed: (loading == true)
                        ? (null)
                        : (() {
                            if (validate() == true) {
                              signup();
                            }
                          }),
                    style: TextButton.styleFrom(
                      backgroundColor: maintheme,
                      foregroundColor: Colors.white,
                      padding: EdgeInsets.zero,
                      shape: RoundedRectangleBorder(
                        borderRadius:
BorderRadius.circular(12),
                      ),
                    ),
                    child: Row(
                      mainAxisSize: MainAxisSize.max,
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
                        (loading == true)
                            ? Container(
                                padding:
EdgeInsets.symmetric(vertical: 10),
                                child:
(CircularProgressIndicator(
```

```
                                    color: Colors.white,
                                  )),
                                )
                              : (Container(
                                  height: 60,
                                  alignment:
Alignment.center,
                                  child: Text(
                                    "Sign Up",
                                    style: TextStyle(
                                      color: Colors.white,
                                      fontSize: 20,
                                    ),
                                  ),
                                ))
                          ],
                        ),
                      ),
                      SizedBox(
                        height: 50,
                      ),
                      Text(
                        errortext,
                        style: TextStyle(
                          color: Colors.red,
                          fontWeight: FontWeight.bold,
                        ),
                      ),
                    ],
                  ),
                ),
              ),
            ),
          ]),
        ),
      ),
```

```
    );
  }
}
```

upcoming_appointments.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:vehicle_maintenance_app/global.dart';
import
'package:vehicle_maintenance_app/services/user_services.dart';
import
'package:vehicle_maintenance_app/widgets/servicetile.dart';

class upcomingAppointmentScreen extends StatefulWidget {
  final String carkey;
  final String title;
  upcomingAppointmentScreen(
      {Key? key,
      this.carkey = 'IgoC6hm8VmVNKjlleTET',
      this.title = 'Upcoming Appointments'})
      : super(key: key);

  @override
  State<upcomingAppointmentScreen> createState() =>
      _upcomingAppointmentScreenState();
}

class _upcomingAppointmentScreenState extends
State<upcomingAppointmentScreen> {
  int totalcost = 0;
  final UserServices userServices = UserServices();
  Future<List<DocumentSnapshot>> getdata() async {
    QuerySnapshot querySnapshot =
```

```
        await userServices.getunpaidservicewithcarkey(carkey:
widget.carkey);
    List<DocumentSnapshot> documentsnapshots = [];
    totalcost = 0;
    for (DocumentSnapshot documentSnapshot in
querySnapshot.docs) {
      documentsnapshots.add(documentSnapshot);
      totalcost +=
int.parse(documentSnapshot.get('serviceprice').toString());
    }
    return documentsnapshots;
  }

  @override
  void initState() {
    // TODO: implement initState
    super.initState();
    getdata();
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        centerTitle: true,
        scrolledUnderElevation: 0,
        leading: IconButton(
          onPressed: () {
            Navigator.pop(context);
          },
          icon: Icon(
            CupertinoIcons.left_chevron,
            color: darktext,
          ),
```

```
        ),
        title: Text(
          (widget.title == '') ? ("Upcoming Appointments") :
(widget.title),
          style: TextStyle(
            color: darktext,
            fontWeight: FontWeight.bold,
          ),
        ),
      ),
      body: FutureBuilder(
          future: getdata(),
          builder: (context, snapshot) {
            if (snapshot.hasData && snapshot.data!.length != 0)
{
              return Column(
                children: [
                  Expanded(
                    child: ListView.builder(
                        physics: BouncingScrollPhysics(),
                        itemCount: snapshot.data!.length,
                        itemBuilder: (context, i) {
                          return serviceTile(
                            documentSnapshot:
snapshot.data![i],
                          );
                        }),
                  ),
                  Container(
                    padding: EdgeInsets.symmetric(vertical: 10,
horizontal: 15),
                    child: Row(
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
                        Text(
```

```
                    'Total Cost: ',
                    style: TextStyle(
                      fontSize: 16,
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                  Text(
                    '₹ ' + totalcost.toString(),
                    style: TextStyle(
                      fontSize: 18,
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                  Spacer(),
                  OutlinedButton(
                    onPressed: () {
                      Navigator.pushNamed(
                        context,
                        '/paymentscreen',
                        arguments: snapshot.data!,
                      );
                    },
                    style: OutlinedButton.styleFrom(
                      backgroundColor: Colors.white,
                      foregroundColor: Colors.red,
                      shape: RoundedRectangleBorder(
                        borderRadius:
BorderRadius.circular(12),
                      ),
                      side: BorderSide(
                        color: Colors.red,
                        width: 1,
                      ),
                    ),
                    child: Text(
                      'Pay All',
```

```
                              style: TextStyle(
                                color: Colors.red,
                                fontSize: 15,
                              ),
                            ),
                          ),
                        ),
                      ),
                    ),
                  ],
                );
              } else if (snapshot.hasData &&
snapshot.data!.length == 0) {
                return Center(
                  child: Text(
                    'No Services Booked Yet!!',
                    style: TextStyle(
                      fontSize: 20,
                      fontWeight: FontWeight.bold,
                      color: darktext,
                    ),
                  ),
                );
              } else {
                return Center(
                  child: CircularProgressIndicator(),
                );
              }
            }),
      );
    }
}
```

user_auth.dart

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:shared_preferences/shared_preferences.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';

class Authentication {
  createUser(String name, String email, String password) async
{
    UserCredential user;
    try {
      user = await firebaseAuth.createUserWithEmailAndPassword(
          email: email, password: password);
    } catch (e) {
      print(e);
      return e;
    }
    if (user.additionalUserInfo!.isNewUser) {
      userbase.doc(user.user!.uid.toString()).set({
        'name': name,
        'cars': {},
        'services': {},
      });
    }
    return true;
  }

  loginUser(String email, String password) async {
    UserCredential user;
    try {
      user = await firebaseAuth.signInWithEmailAndPassword(
          email: email, password: password);

      //getting instance for local storage
```

```
      SharedPreferences sharedPreferences =
          await SharedPreferences.getInstance();
      //getting snapshot for username
      DocumentSnapshot documentSnapshot =
          await userbase.doc(user.user!.uid).get();

      // storing userkey and user name in local variable
      username = documentSnapshot.get('name');
      userkey = user.user!.uid.toString();

      // storing userkey and user name in local storage
      sharedPreferences.setString('userkey', user.user!.uid);
      sharedPreferences.setString('username',
documentSnapshot.get('name'));
    } catch (e) {
      print(e);
      return e;
    }
    // print(user.user!.uid.toString());

    return user;
    // print(user);
  }
}
```

user_services.dart

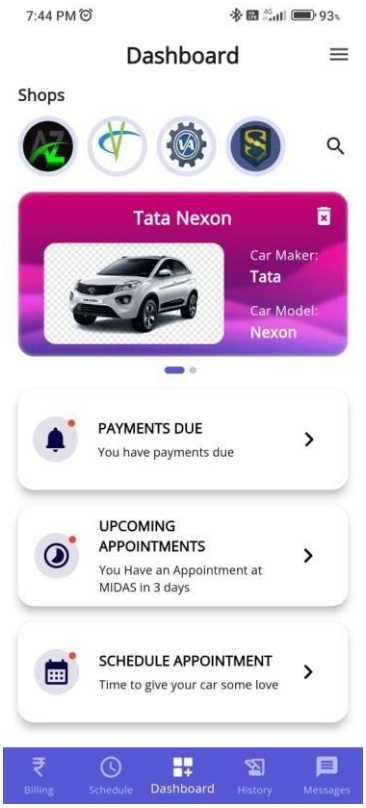
```
import 'package:cloud_firestore/cloud_firestore.dart';
import
'package:vehicle_maintenance_app/models/servicemodel.dart';
import
'package:vehicle_maintenance_app/services/constants.dart';

class UserServices {
  addnewcar({required String carmaker, required String
carmodel}) async {
```

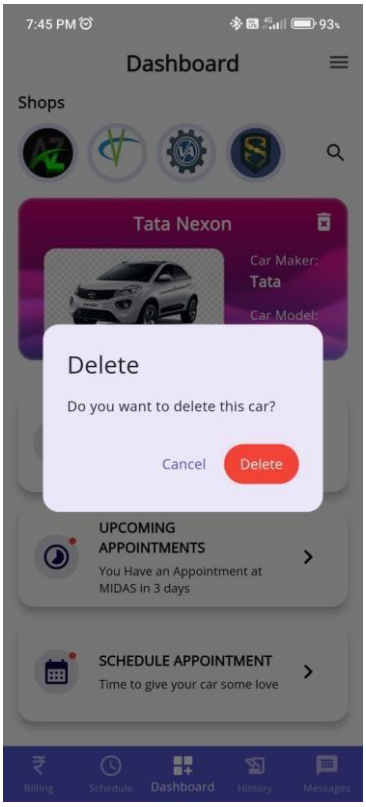
```
    await userbase.doc(userkey).collection('cars').add({
      'carmaker': carmaker,
      'carmodel': carmodel,
    });
    print('Success');
  }

  addSchedule({required ServiceModel serviceModel}) async {
    var result = await
userbase.doc(userkey).collection('services').add({
      'carkey': serviceModel.carkey,
      'shopname': serviceModel.shopmodel!.shopname,
      'servicename': serviceModel.servicename,
      'serviceprice': serviceModel.serviceprice.toString(),
      'servicedate': serviceModel.day.toString() +
          '/' +
          serviceModel.month.toString() +
          '/' +
          serviceModel.year.toString(),
      'servicetime':
          serviceModel.hours.toString() + ':' +
serviceModel.minutes.toString(),
      'servicenotes': serviceModel.notes,
      'paymentstatus': serviceModel.paymentstatus,
    });
    return result;
  }

  Future<QuerySnapshot> getcars() async {
    QuerySnapshot querySnapshot =
        await userbase.doc(userkey).collection('cars').get();
    return querySnapshot;
  }

  Future<QuerySnapshot> getserviceswithcarkey({required String
carkey}) async {
```

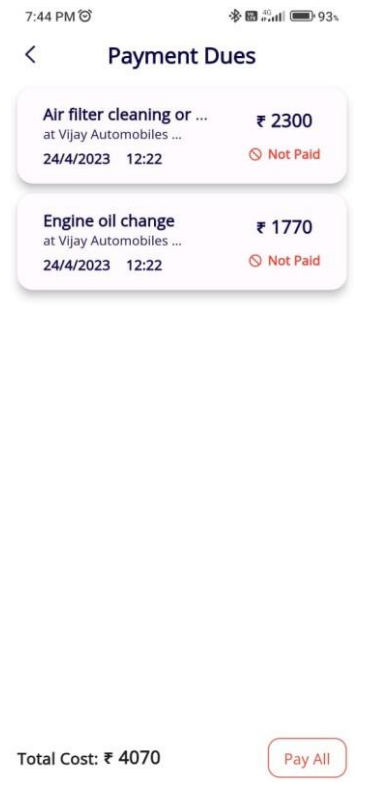
```
    QuerySnapshot snapshot = await userbase
        .doc(userkey)
        .collection('services')
        .where('carkey', isEqualTo: carkey)
        .get();
    return snapshot;
  }

  Future<QuerySnapshot> getserviceswithuserkey() async {
    QuerySnapshot querySnapshot =
        await
userbase.doc(userkey).collection('services').get();
    return querySnapshot;
  }

  Future<QuerySnapshot> getunpaidservicewithcarkey(
      {required String carkey}) async {
    QuerySnapshot querySnapshot = await userbase
        .doc(userkey)
        .collection('services')
        .where('carkey', isEqualTo: carkey)
        .where('paymentstatus', isEqualTo: 'pending')
        .get();
    return querySnapshot;
  }

  Future<QuerySnapshot> getunpaidservicewithuserkey() async {
    QuerySnapshot querySnapshot = await userbase
        .doc(userkey)
        .collection('services')
        .where('paymentstatus', isEqualTo: 'pending')
        .get();
    return querySnapshot;
  }

  deleteCar({required String carkey}) async {
```

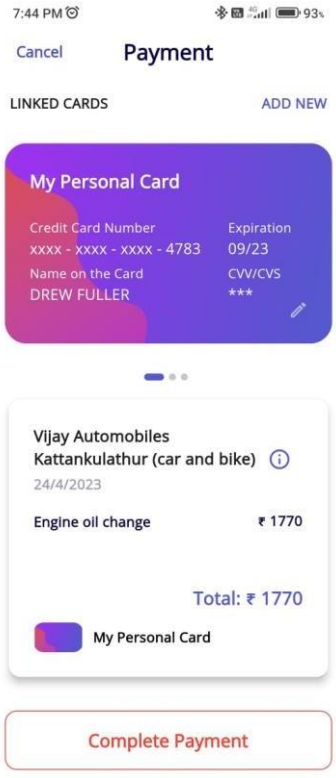
```
    // to delete document from car collection
    await
userbase.doc(userkey).collection('cars').doc(carkey).delete();
    print('user deleted');
    // to delete its services
    QuerySnapshot querySnapshot = await userbase
        .doc(userkey)
        .collection('services')
        .where('carkey', isEqualTo: carkey)
        .get();
    for (DocumentSnapshot doc in querySnapshot.docs) {
      await
userbase.doc(userkey).collection('services').doc(doc.id).delete
();
    }
    print('services deleted');
  }
}
```

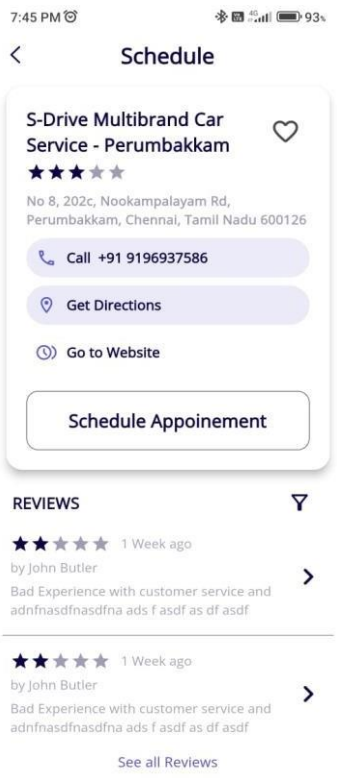
IMPLEMENTATION OF APP











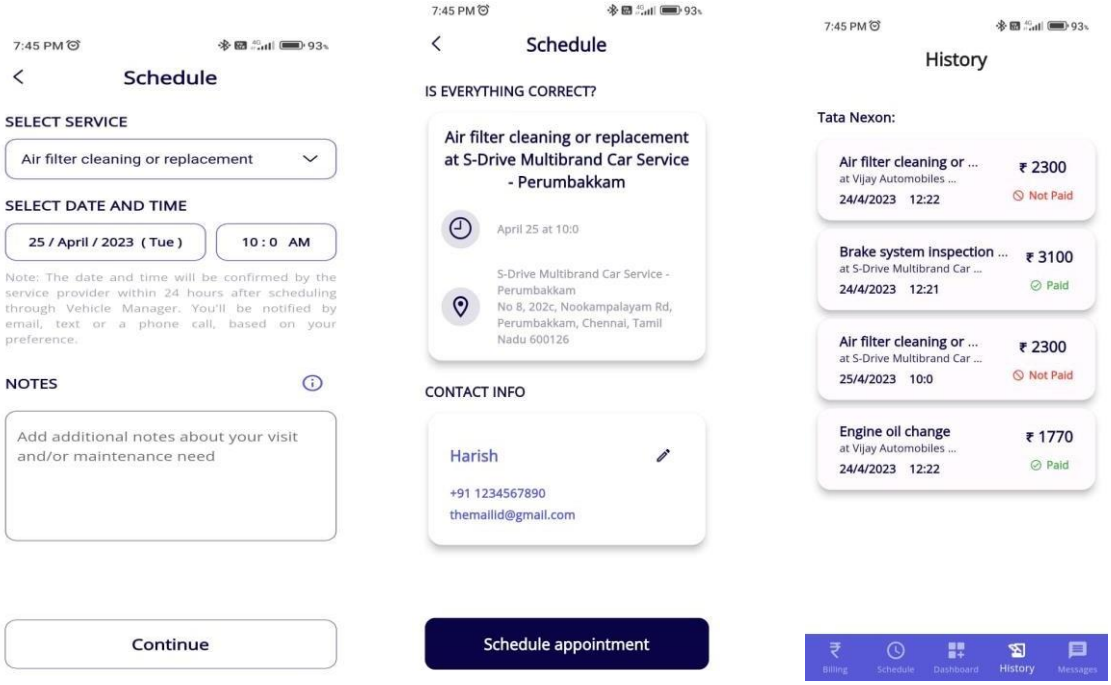


Figure 19 – Implementation and User Interfaces for VMS

11. CONCLUSION

In conclusion, the Vehicle Maintenance System project has been successfully completed, and the resulting system has met all the functional and non-functional requirements identified at the outset of the project. The system provides an efficient and effective way for fleet managers to manage their vehicles, schedule maintenance and repairs, and track maintenance costs and vehicle usage.

The RAD model was used for the project, which allowed for rapid development and iteration, and facilitated effective communication and collaboration between the development team and the stakeholders. The use of agile methodologies, including regular sprint reviews and retrospectives, helped to ensure that the project remained on track and that any issues were identified and addressed in a timely manner.

Throughout the project, a user-centered design approach was adopted, with a focus on creating a system that is intuitive and easy to use for drivers, maintenance personnel, and fleet managers. The system's interface is designed to be user-friendly, with clear navigation and easily accessible information, and the system is compatible with a wide range of devices and software platforms.

In conclusion, the Vehicle Maintenance System project has been a success, and the resulting system is a valuable tool for managing fleet maintenance and repairs.

12. REFERENCES

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