



An-Najah National University
Faculty of Engineering
Computer Engineering Department

Graduation Project I

Drive Smart

Authors:
Ahmad Dweikat
Ibraheem Qadi

Supervisor:
Dr. Sufyan Samara

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Disclaimer

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Abstract

The Drive Master is a registered software designed to drive the day-to-day business activities of a driving school using a combination of a web and mobile application. It has a system that automatically does essential tasks such as registering a user, lesson planning, and progress tracking, enabling ease of use for students and trainers alike. With features such as chatting, notifications, and integration with other tools such as Google Calendar, the platform promotes easy communication and coordination. This project is particularly important, as it promotes operational effectiveness and reduces the low-level manual task effort while providing an updated and user-friendly system for managing driving lessons and other activities. It is anticipated that the Drive Master driving school management will provide tools that ease the administrative burden for trainers and enhance the learning experience of the students.

The Drive Master system was designed to optimize and automate most of the standard day-to-day activities within driving schools. This extended to automating the processes of registration of users, scheduling of lessons, tracking of progress, and enabling communication between students and instructors.

With the use of current approaches to programming, the system is designed and developed. It incorporates web and mobile technology that enables real-time communication, receives notifications, and connects with Google Calendar. The system offers secure role-based access, interactive tools for theoretical exam preparation, as well as an advanced lesson booking and progress tracking system.

As a result of the implementation of Drive Master, operational effectiveness increased, the administrative burden decreased, and user satisfaction increased. This has reduced the number of scheduling mistakes made, communication has improved, and the overall user experience of the program has been very positive. Comparison to the traditional approach has shown significant reductions in the amount of work done manually and improvement in the operational effectiveness of the driving school.

Introduction

4.1 General Background

The driving schools are base institutions that educate on safe and responsible driving, building a great platform for road safety and driver competence. Conventionally, driving schools operate their activities through paper-based sign-ups, calls for scheduling, and on-site feedback. Functioning, they generally tend to be more inefficient, time-consuming, and prone to errors; such methods can face difficulties in managing ever-growing student intake and maintaining coherent communication among the stakeholders.

With the increased usage of digital technologies in various sectors, it has also become clear how big a difference automation and smoothing of workflows can make. In education and training, software solutions have been crucial in enhancing operations efficiency, improving communication, and offering a better user experience. However, driving schools have hardly benefited from comprehensive digital tools that would respond to their very specific needs.

It was because of such gaps that the development of the Drive Master system began. This project targets updating and driving school management through designing and implementing an integrated web and mobile application platform. Among these proposed features of the system are automatic scheduling of lessons, real-time notification, and progress monitoring. They are aimed at eliminating inefficiency, reducing workload, and adding value to learning for the students.

Moreover, the Drive Master system is designed to provide instructors and administrators with tools that would lighten their workload to the extent that they could spend more time on quality instruction. The concept of this project is to implement a scalable, user-friendly solution that would address the needs at hand while simultaneously laying a framework for further improvement in driver education management.

4.2 Objectives

The primary objective of this project is to develop a user-friendly system that is modern and simplifies to management of driving schools. The specific aims are as follows:

- **Automate Administrative Tasks:** simplify processes of user registration, lesson scheduling, and progress tracking to reduce manual effort and minimize errors.
- **Enhance Communication:** one of the problems of traditional management is difficulty reaching the instructor, which hurts the reputation of the school or the instructor.
- **Improve Scheduling Efficiency:** Provide a strong system for scheduling lessons with real-time availability management and integration with external tools like Google Calendar to eliminate scheduling conflicts.
- **Track Student Progress:** Enable students to know about their learning journey by providing details like the number of lessons taken, the time of the lesson, the instructor's name, and the car that will take the lesson on it.
- **Support Evaluation and Feedback:** Develop a system that has theoretical quizzes that practice for the student to be ready for an official exam and provide feedback for lessons that the student has taken and feedback from student to instructor.

The overarching purpose of this project is to enhance the overall efficiency, effectiveness, and experience of driving school operations.

4.3 Significance or importance of our work

The Drive Master system addresses the growing demand for efficiency and simplification in driving school operations. Driving schools are increasingly in demand due to growing demand for driver education and an increase in the number of vehicles; thus, updating driving school management is of utmost importance.

- **Market Demand:** With the increased number of vehicles, drivers, and driving schools, the demand for quality driving education will keep on increasing. Driving schools have to advance efficient management systems to accommodate more and more students without compromising quality with the help of Drive Master, managing schools is easier.
- **Operational Efficiency:** Traditional management systems are highly manual and hence non-scalable. Through automation at each step, right from scheduling and progress tracking to communication, the Drive Master radically reduces administrative overhead and allows schools to focus on delivering effective education.
- **Enhanced User Experience:** The modern user would look forward to a digital solution that will offer convenience, accessibility, and real-time updates. The web and mobile platforms of the Drive Master system meet the expectations for ease and simplicity in usage for both students and instructors.
- **Impact on Road Safety:** Well-trained drivers translate to safer roads. By equipping the student with tools for progress tracking, exam preparation, and personalized feedback, the system contributes toward competent and confident drivers who will be an asset to society.
- **Competitive Advantage:** Driving schools using innovative management solutions like Drive Master outperform their rivals by offering more value to their students, resulting in higher enrollment and completion rates.

4.4 Report Outline

The report is structured into seven distinct phases. It commences with an introductory section, followed by a comprehensive exploration of constraints, standards, and codes. Subsequently, we delve into an analysis of the previous coursework that pertains to the project and emphasize the primary challenges encountered. The report also encompasses a chapter dedicated to a thorough literature review and another chapter that outlines the methodology employed, including the various stages of project development and the tools and technologies utilized. Our results and discussion section offers a meticulous account of the obstacles surmounted and the accomplishments attained. Lastly, the conclusion chapter presents recommendations and sets forth goals for future development.

Methodology

The Drive Master system represents a significant improvement in driving the school management system by offering all-inclusive solutions for scheduling and automating daily operations. It provides every important feature needed, including lesson tracking and an efficient scheduling system, using external tools like Google Calendar for real-time scheduling. This section outlines the tools, methods, and systems employed in the development of the Drive Master application for both web and mobile platforms while presenting the processes and approaches that guided the creation of its features.

5.1 Standards and Specifications

Drive Master projects are in accordance with many engineering standards that guarantee efficiency, safety, and compliance with industrial norms. In this section, it specifies the standards used in Design Relations and the guidelines used to meet the needs. There are also discussions on alternative design guidelines consistent with these standards.

5.2 Constraints

- We did face many challenges in identifying and integrating all the key features required to meet the diversifying needs of driving schools, students, and trainers. The search for an optimum balance among these to fit the different needs of users of the platform proved to be a big limitation while developing the system.
- The tight four-month deadline and many parallel commitments of the team members determined the development timeline of the Drive Master platform. Since this was my first experience in developing a web with React and a mobile app using React Native, a lion's share of the project time was taken by the learning curve to master the necessary technologies.
- Most of the development and testing for the project were done on web browsers and Android devices due to resource constraints with respect to iOS devices and cross-browser tests. These limitations meant our inability to make full compatibility across all platforms, though the focus was to deliver a robust and stable application within the resources available to us.

5.3 Earlier coursework

The academic coursework research conducted under our Computer Engineering program provided us with foundational knowledge that could be directly applied in developing the Drive Master platform. Concepts learned under modules such as Software Engineering and Web Development were what formed the foundation of developing the app. The subjects acquainted us with central concepts about front-end and back-end development, project management, and system design.

In order to complement our expertise, we advanced with other online education materials, including courses in React and React Native, which allowed us to create a responsive and cross-platform application. We also gained comprehensive knowledge in database design and management through learning in Database Systems, which was crucial in the achievement of the platform's secure and efficient storage of data.

The integration of university education with self-learning offered a good technical background, which allowed effective development of the Drive Master platform as well as fulfilling the varied requirements of students as well as instructors.

5.4 Tools, Methods, and Programming Languages

To Develop the Drive Master application, we have used a variety of tools, methodologies, and programming languages. For the front-end development, we used React for the web and styling the pages using tailwind CSS applications to make the user interface. For the mobile application, we used React Native using typescript file.tsx to make the user interfaces for back-end development we used Node.js to establish a RESTful API responsible for managing the application's data and logic. Additionally, we used MySQL to design relations database schema the same for web and mobile platforms, facilitating the storage and organization of the application's data. Throughout the development process, we made effective use of Git for version control, ensuring seamless collaboration and efficient management among team members.

5.4.1 Client Side

- **Design:** The design of the Drive Master system began with thorough brainstorming and research into the operations of driving schools. Our findings revealed a lack of effective management systems to manage relationships between students and schools. This insight inspired us to develop a system that streamlines and enhances the student journey within driving schools. Instead of using any provided solution, we designed our system from scratch, introducing dashboards that would make the management of a driving school easier. The design focuses on modernity and simplicity for beauty, ensuring ease of use. We used the findings from our research, user needs, and the best practices in the industry. It made it possible to provide a custom, intuitive, and visually appealing design that matched the general theme of the application with regard to branding. Careful attention was put into choosing a color scheme that would enhance the user experience and create comfort when using the application.

- Framework:** Our front-end development is implemented using React, chosen for the client side of our web application, and React Native for mobile. The popular open-source frameworks maintained by Meta ex-Facebook maintain React, a library used to construct user interfaces, and React Native can be used for constructing native mobile applications with a single codebase for IOS and Android mobile operating systems.

React and React Native provide a wide array of features like component-based development, vast ecosystems of libraries supporting them, and fast iteration with tools such as Fast Refresh. React Native lets us create cross-platform mobile applications, enabling us to write code once without further native programming for each platform. We chose React and React Native due to their exceptional performance, active developer community, and strong cross-platform capability. This approach would save time and effort while the user experience remains consistent across the devices. With their proven track record and flexibility, React and React Native have proven to be ideal choices for our driving school management system.
- Programming Languages:** JavaScript is the main programming language used in developing client-side logic with React and React Native. JavaScript is a multi-paradigm, object-oriented language used extensively in web and mobile development. Our choice of JavaScript was influenced by its broad adoption, ease of learning, and familiarity gained both in our academic and personal projects. JavaScript's flexibility and vast ecosystem also turn it into a perfect choice for developing modern, interactive user interfaces. In addition, having a lot of libraries and tools like Redux and Axios accelerates the development and speeds up the implementation of complex features. Its popularity and constant evolution make the language relevant in contemporary development landscapes-a good choice for robust, scalable, and user-friendly applications.



Figure 1:client architecture

5.4.2 Server Side

- **Architecture:** We chose a client-server architecture for our Drive Master system, which allows multiple clients to easily utilize the same API. The server infrastructure was carefully designed to support a RESTful API, ensuring smooth communication between the clients and the server.
- **Framework:** We have employed Node.js and Express.js as the primary framework for our server-side environment. These selections were made based on several factors, including the ease of learning, extensive documentation, scalability, and exceptional performance of Node.js - all of which align perfectly with our project requirements. Moreover, Express.js, widely acknowledged as the standard server framework in the Node ecosystem, has proven to be an excellent choice for our back-end development needs. By combining the capabilities of Node and Express, we have established a robust and efficient server-side architecture for our application.



Figure 2: Server architecture

5.4.3 Database Side

Having an effective database design is essential for any system development project. It entails defining the structure, organization, and relationships of data within a database. In the context of our Drive Master system, the database design has been meticulously crafted to capture and manage all the requisite information for efficient driving school's management.

We chose SQLDB as our database management system. It is an open-source reliable system, specially designed to manage relational databases. SQLDB creates, stores, and manipulates data in an organized manner. The major aim of this design is to facilitate various applications of databases and to provide powerful features for data storage, access, and management.

In our database design for the management system of Drive Master, we have some comprehensive sets of tables which represent the essence of the core components of the system, including students, instructors, school owners, school, Lessons, each table consists of different fields that describe the attributes or characteristics of the corresponding element. For example, Example fields that can be contained in the lesson details table include ID, date, status, and price.

Relationships between these tables will be made to explain how data in one table depends on data within another. For example, the lesson booking can identify which trainers are assigned for a particular lesson and what students are involved in each booking by relating that to both the trainer and student tables.

This relational structure further contributes to the cohesiveness and workability of the Drive Master management system database for data management and retrieval efficiency.

In addition to the tables and the relationships, another important set of constraints are part of the database design, which essentially is very crucial for data integrity and consistency. The constraints stipulate a set of rules and conditions that any data must meet before insertion or updating in the database. For example, the lesson status field in the lesson booking table can have some restrictions on the values it is to take, such as "Pending," "Accepted," or "Rejected."

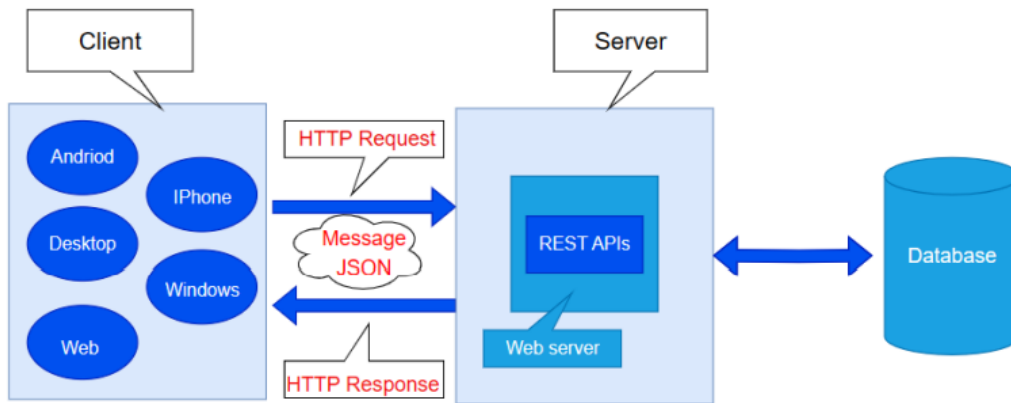


Figure 3: client-server architecture

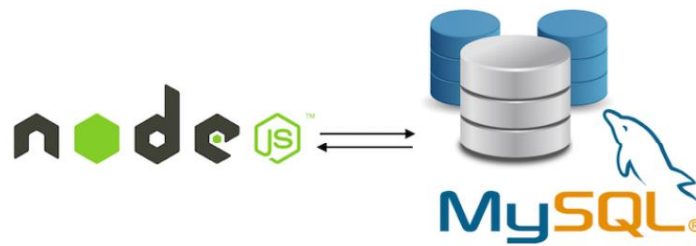


Figure 4: MYSQLDB with nodejs server

The database design plays an important role in the architecture of the management system of Drive Master since it provides a structured framework whereby data can be organized, stored, and retrieved. It creates a framework for driving school operations to be managed with efficiency and effectiveness. With the selection of SQLDB as the database management system, we have a powerful tool that would go a long way in contributing to the success of the project.

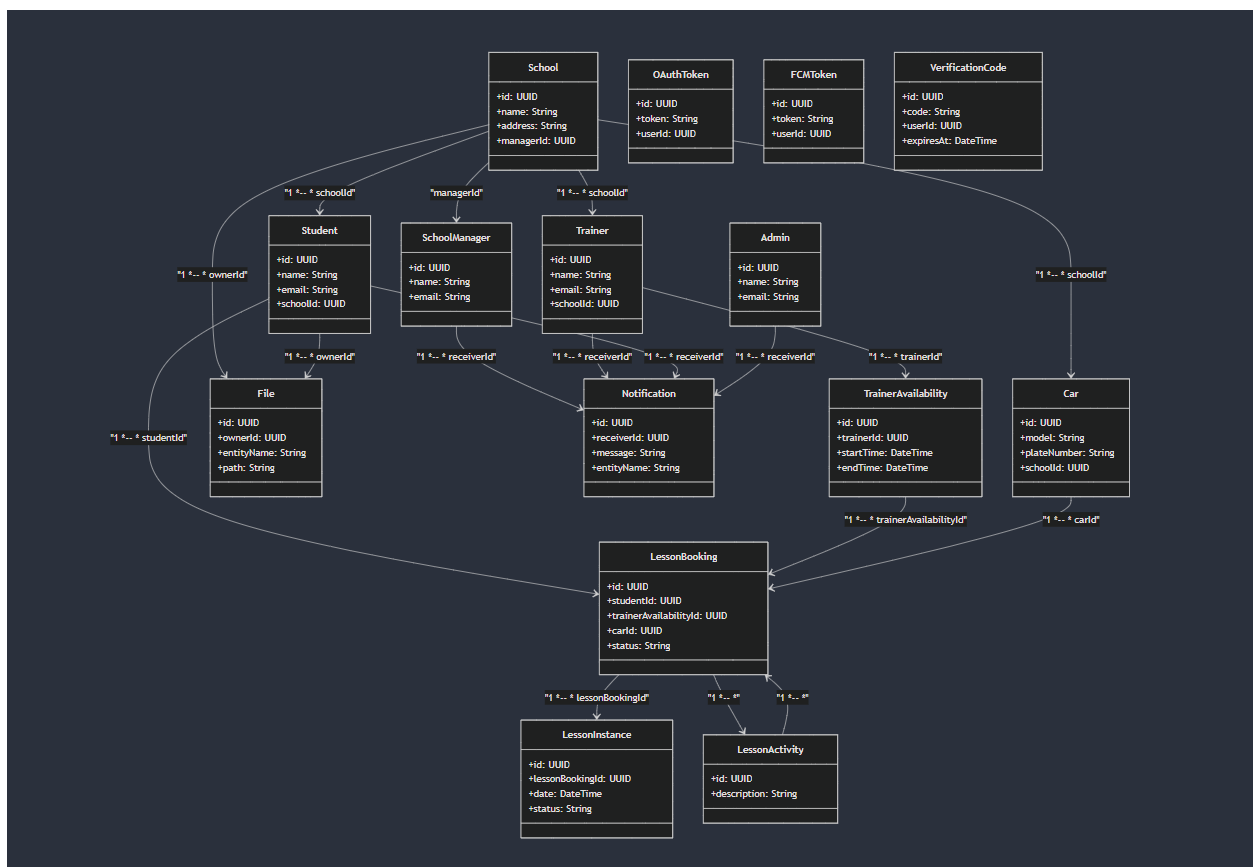


Figure 5: The UML diagram for the database.

5.5 System Features and Implementation

5.5.1 Login and Registration Feature

5.5.1.1 Main Page

The Drive Master Home Page is the main area where users can get the latest information and data about the driving license process in Palestine. It gives necessary information on the working hours of the different departments handling licensing procedures, which simplifies the visitors' planning. In addition, the page provides data on driving schools located in different cities across Palestine. This feature permits users to find schools in their city, simplifying the process of getting to the schools. The search process can be improved using several filtering options. Users can refine the search based on the school's rating, making them prioritize top-rated institutions. They can also limit the list of schools by choosing a specific city or by the type of license the school offers, for either private or commercial purposes.

There is also an available search bar for those users who prefer to search for a particular driving school by its name. This search can be quite useful because it targets only the users who know what school they are interested in and would like to have immediate access to its details.

Generally, the page is user-friendly and simple to use, which allows the users to quickly find the information they are looking for in an orderly manner. The Drive Master Home Page will be able to flawlessly offer all the desired details about driving schools and licensing departments in Palestine thanks to its filtering options and straightforward navigation.

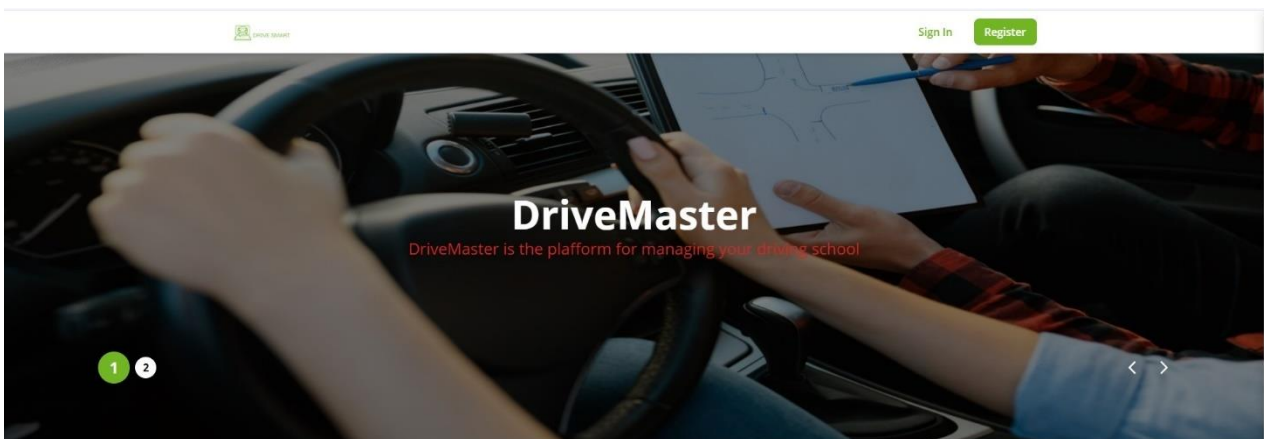


Figure 6 Home Page

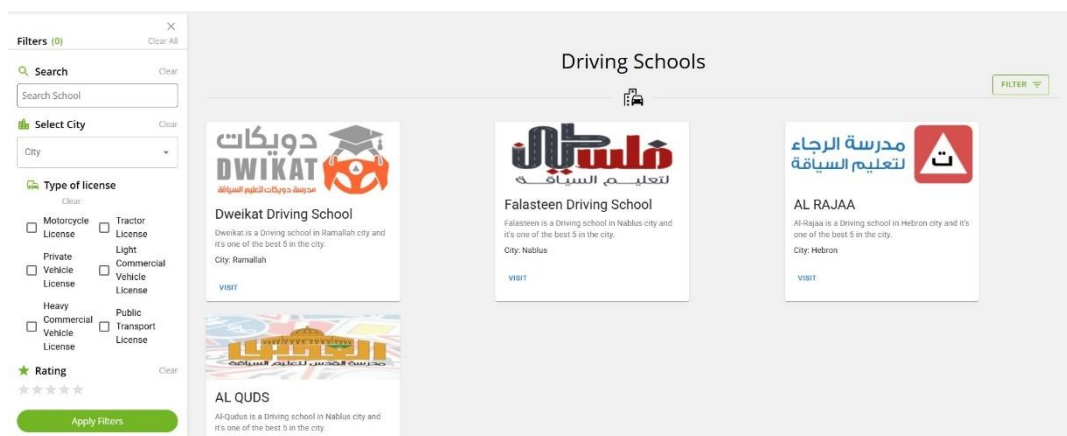
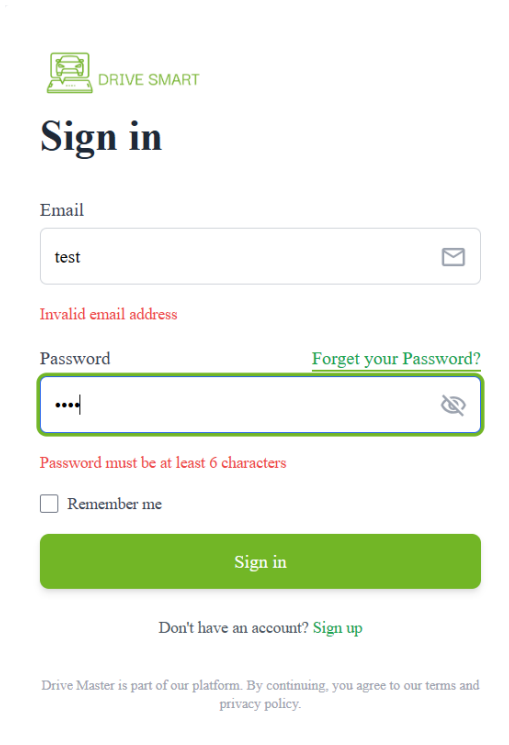


Figure 7: schools page

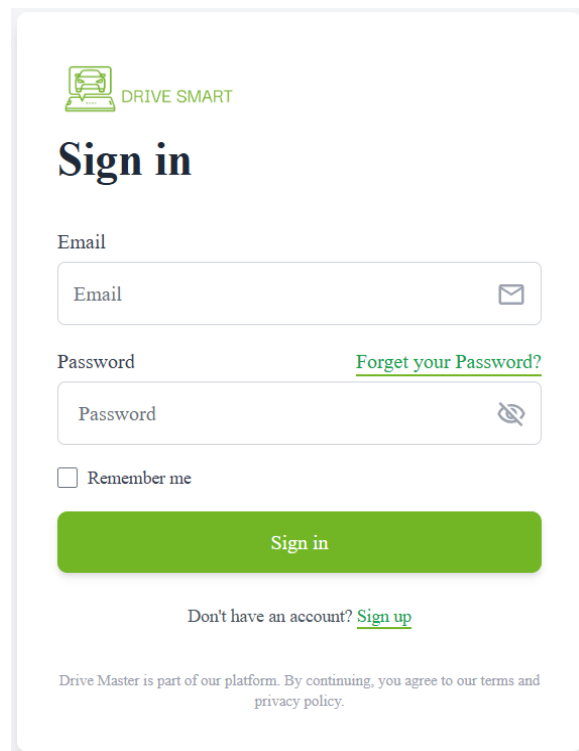
5.5.1.2 Login

The sign-in page is one of the major concern components of any application, having users with the management system, which is a critical component user interface. It is the entrance for an end-user to get authenticated before accessing his account. We have performed a robust validation technique at the time of sign-in both in the email and password fields to keep the user's information secure and accurate. The verification through e-mail checks whether the identity of the email is of the correct format and whether the password has a correct format just entering numbers. We have also included a "Remember Me" button to make things a bit easier for users. When clicked, it can safely store the user's log-in information to quickly access their accounts even when the application is closed and reopened. This will further improve the user login experience, especially for returning users, because it would be much quicker. Furthermore, the Login page offers choices for users who do not have an account to sign up: The user will then be taken to another page for the creation of a new account upon clicking the sign-up button. Besides, there is a "Forgot Password" button in case one forgets his password. This button will trigger a password recovery process, which is dependent on the user's email. Further details of this process are given in the dedicated password recovery section. In this way, all these features together provide an assured smooth and safe log-in environment to every end.



The screenshot shows the 'Sign in' page for 'DRIVE SMART'. The email field contains 'test' and has a red error message 'Invalid email address' below it. The password field contains '...' and has a red error message 'Password must be at least 6 characters' below it. There is a 'Remember me' checkbox and a green 'Sign in' button. At the bottom, there is a link for 'Sign up' and a footer note: 'Drive Master is part of our platform. By continuing, you agree to our terms and privacy policy.'

Figure 7: Login page validation



The screenshot shows the 'Sign in' page for 'DRIVE SMART'. The email field contains 'Email' and the password field contains 'Password'. There is a 'Remember me' checkbox and a green 'Sign in' button. At the bottom, there is a link for 'Sign up' and a footer note: 'Drive Master is part of our platform. By continuing, you agree to our terms and privacy policy.'

Figure 6: Login Page

5.5.1.3 Registration

A. Student Role

The Registration Page is a gateway that is crucial for students who want to join a driving school and take their first driving lessons. The page, which is characterized by simplicity and ease of use, is a collection of account creation and the selection of a school into a single and smooth procedure. This page aims at allowing students to select their favorite school and license type while they are entering the saved information in a structured and user-friendly interface.

This page is where the students can choose a driving school, read more about the school on the left panel and see the name, description, contact information (email, phone, and address), and the selected license type. The license details are the most critical like the kind of license, the period of the course, and the total cost, which are honesty and decision making must.

The students fill in the registration form in the right panel which contains the first name, last name, email address, and phone number. Moreover, they must also provide their city, gender, and password as their demographic data, thus making their account personalized and secure. The form contains password confirmation fields and real-time validation to minimize errors, ensuring a very simple and expedient registration process.

By juxtaposing school selection with account creation, candidates will feel more confident that they are indeed enrolled. After the students have provided their details, the registration brings the step of confirmation, and a student is then finally part of the platform. This page has a combination of ease and functionality and as such, it gives the user a clear experience as the student wants.

AL QUDS

School Information
Al-Qudus is a Driving school in Nablus city and it's one of the best 5 in the city.

Contact
Email: alquds@example.com
Phone: 2322222
Address: Amnan Street

Selected License Details
Type: Private Vehicle License

DRIVE SMART

Registration

First Name: Ibraheem
Last Name: Qadi
Email: Ibra444hemgmail (Invalid email address)
City: Nablus
Phone number: +970 597167501
Gender: Male Female
Password: (Password must be at least 8 characters)
Confirm Password: (Passwords don't match)
Next Step

Figure 8: Register page info

In this case, the same page is used, but all fields on it are completed using a standard format for uniformity and correctness.

AL RAJAA

School Information
Al-Rajaa is a Driving school in Nablus city and it's one of the best 5 in the city.

Contact
Email: alraja@example.com
Phone: 2322222
Address: Hebron Street

Selected License Details
Type: Private Vehicle License
Duration: 3 months
Price: ₪2,500

DRIVE SMART

Registration

First Name: Ibraheem
Last Name: Qadi
Email: ibra444hem@gmail.com
City: Nablu
Phone number: +970 599999999
Gender: Male Female
Password: ibra444hem@gmail.comQ
Confirm Password: ibra444hem@gmail.comQ

Next Step

Figure 9: Register page

Then we have the second page of registration that contain the blood type and student id and driving transaction paper that must me uploaded.

AL RAJAA

School Information
Al-Rajaa is a Driving school in Nablus city and it's one of the best 5 in the city.

Contact
Email: alraja@example.com
Phone: 2322222
Address: Hebron Street

Selected License Details
Type: Private Vehicle License
Duration: 3 months
Price: ₪2,500

DRIVE SMART

Registration

Blood Type: A-
Student ID: 999323232
Upload Image or PDF: Choose File No file chosen

Back Submit Registration

Figure 10: Second Register page

Once all the fields have been filled in correctly and the required format has been met, a success message appears. After that, the student has to check their e-mail address, verify their account, and thus complete the registration process.

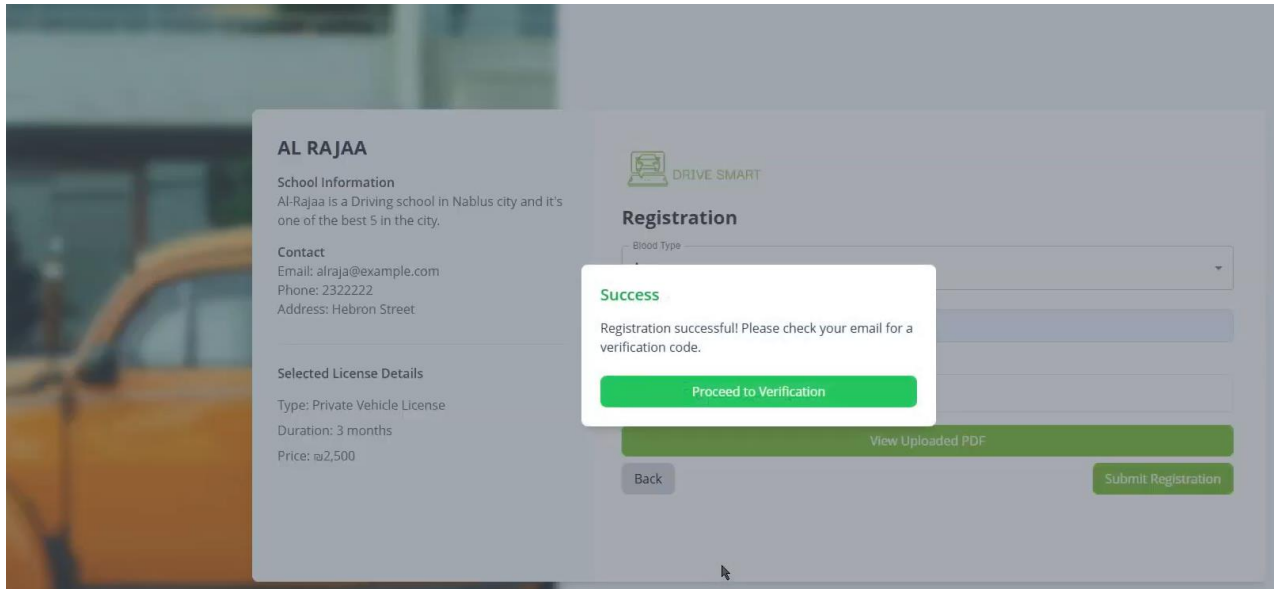


Figure 11: Successful Registration

Here the code sent from Drive Master to registered email to verify account.

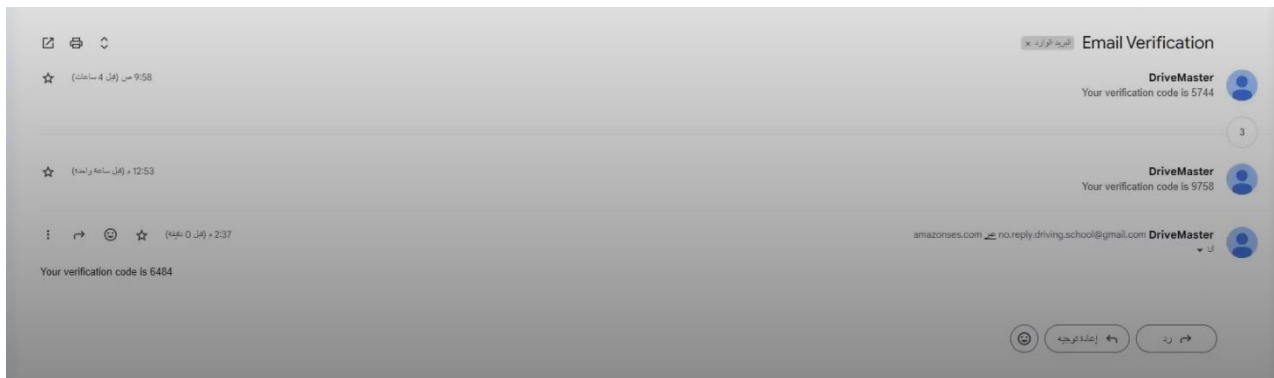


Figure 14: Email Code

Here page to enter the code.

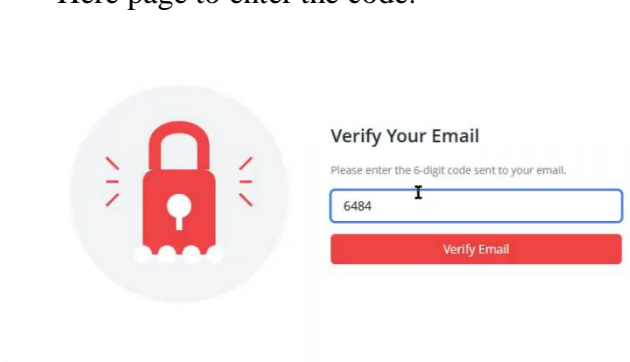


Figure 13: Enter Code

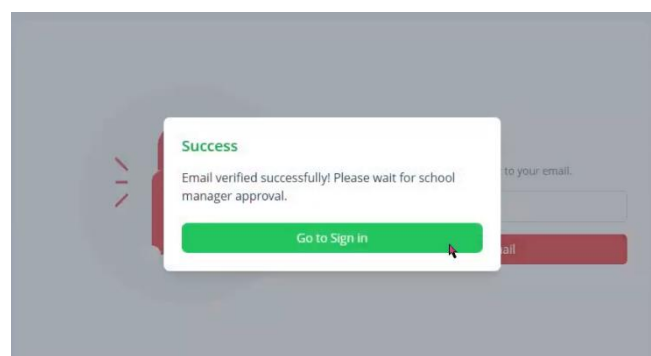


Figure 12: Successful Registration after enter code

B. Trainer Role

The Trainer Registration Page is designed for smooth entrance for instructors to enroll on the platform with an invite link that a school manager shares with them. The invitation system ensures that the trainers are recommended to the school, hence ensuring quality and building the integrity of the platform.

The link for invitation will directly take the trainers to the registration page, where the smooth onboarding process of a trainer will start. It will capture all the information a school needs, having in mind a specific inviting school's requirements.

In the left panel, the trainers can visualize information about the school: the name, description, and the contact information at their email, phone, and address. This clears up any doubts about the institution they will be joining and strengthens their perception of the values and expectations of the school.

The right panel contains the form for registration, where the trainers have to fill in the following:

- **First Name and Last Name:** Identification and official records.
- **Email Address:** For communication and verification.
- **Password and Confirm Password:** To create a secure account with built-in validation to avoid errors.
- **License Number:** To verify the trainer's professional certification.
- **Years of Experience:** To reflect their expertise and establish credibility.
- **License Types:** A selection to specify the categories of driving licenses the trainer is authorized to teach.

Drive Your Career Forward

Join our community of professional driving instructors and make a lasting impact

- Professional Development**
Continuous training and support
- Flexible Opportunities**
Work on your own terms

Instructor Registration

Create your professional profile

First Name: Enter first name Last Name: Enter last name

Email Address: you@example.com

Password: Enter password Confirm Password: Confirm password

License Number: DIL 123456 Years of Experience: Years of experi

License Types

Motorcycle Tractor Personal Vehicle

Commercial Vehicle Public Transport Heavy Vehicle

Create Account

Figure 15:Trainer Register page

Once all the required fields have been filled in, trainers get a success message that their information has been submitted. Then, they are supposed to check their email in order to verify the account. With this verification of the email, trainers will have full access to the platform and are officially associated with the inviting school.

This invitation-based sign-up ensures that the onboarding process for the trainers is secure and personalized, instilling trust and alignment towards the standards set by the school, while making integration of qualified instructors into the platform easier.

The image shows a registration form titled "Instructor Registration" with the subtitle "Create your professional profile". The form is divided into two main sections: a blue gradient sidebar on the left and a white main content area on the right. The sidebar contains the heading "Drive Your Career Forward" and two bullet points: "Professional Development" (Continuous training and support) and "Flexible Opportunities" (Work on your own terms). The main content area contains the following fields and options:

- First Name:** Ahmad
- Last Name:** Dweikat
- Email Address:** a.dweikat.1998@outlook.com
- Password:** [Redacted]
- Confirm Password:** [Redacted]
- License Number:** DIL1234
- Years of Experience:** 5
- License Types:**
 - Motorcycle
 - Tractor
 - Personal Vehicle
 - Commercial Vehicle
 - Public Transport
 - Heavy Vehicle

A blue "Create Account" button is located at the bottom of the form.

Figure 16:Trainer Register filled information

5.5.1.4 Password Recovery

The Drive Master Password Recovery page, on one hand, allows the end user an easy, friendly, and safe recovery into their accounts. This occurs when any end user submits their email address for a linked user account. On submitting the email, a system-generated 4-digit code for recovery goes ahead and sends to the email provided by the said subject. This is a security recovery code that ensures only the authorized user proceeds to reset their password.

After receiving the recovery code, users enter the given digits on the password recovery page. The system checks the entered code; if correct, it allows users to reset their password. This whole account recovery process entails several steps, which make it secure and easy at the same time; hence, it keeps user information safe and prohibits unauthorized access.

Also, the Password Recovery page checks whether the email provided actually corresponds to an existing account. Such a check ensures that only registered and valid e-mail addresses can start the recovery process, securing the platform in all ways.

The Password Recovery page in Drive Master balances ease with strong security to give users confidence in convenience while regaining access to their accounts.

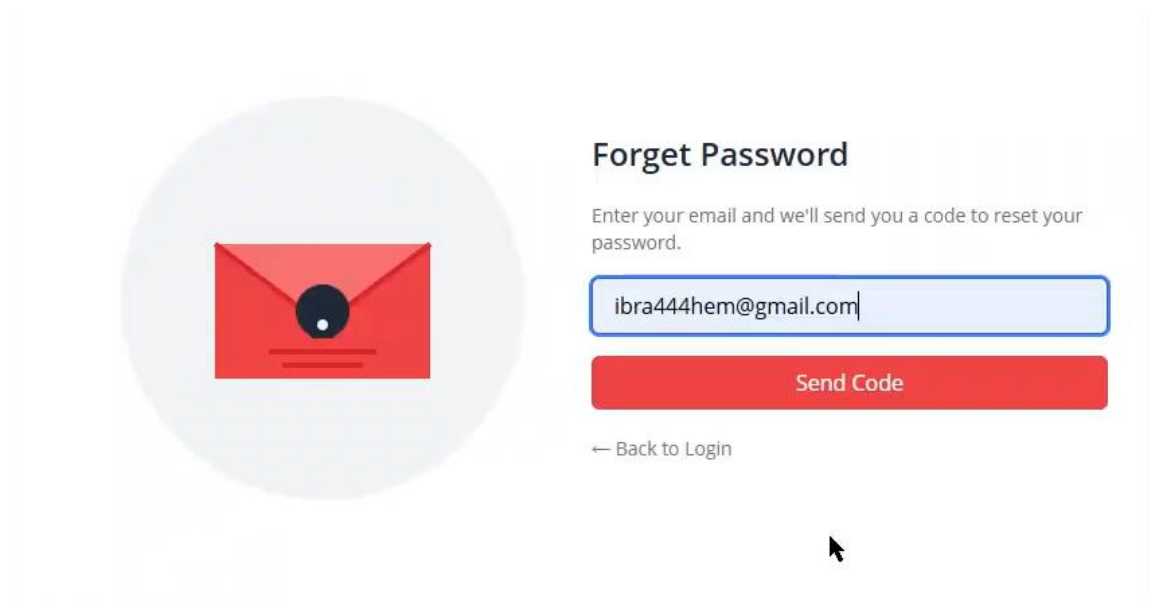
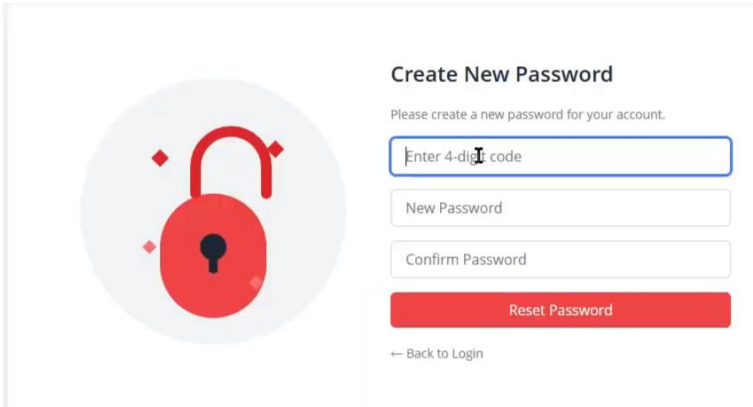


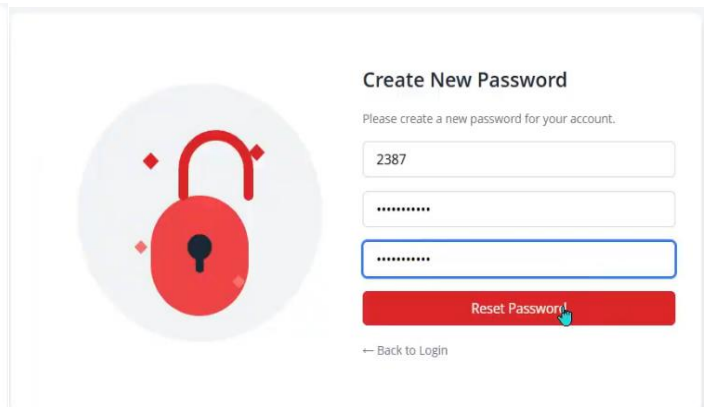
Figure 17: Recovery Password

Now after send code to this email will receive a code then the new password page will appear to let him change the password.



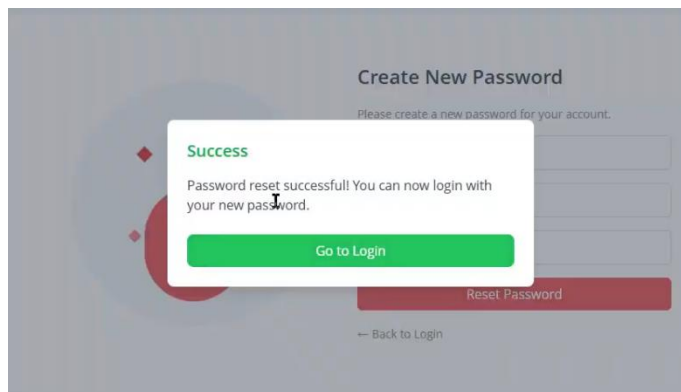
The screenshot shows a web form titled "Create New Password" with a red padlock icon on the left. The form includes a sub-header "Please create a new password for your account." and four input fields: "Enter 4-digit code" (highlighted with a blue border), "New Password", "Confirm Password", and a red "Reset Password" button. A "Back to Login" link is at the bottom left.

Figure 19: Code, New Password



The screenshot shows the same "Create New Password" form, but now the "Enter 4-digit code" field contains "2387", the "New Password" field contains "*****", and the "Confirm Password" field also contains "*****". The "Reset Password" button is highlighted with a blue border and a mouse cursor. The "Back to Login" link remains at the bottom left.

Figure 18: Code, New Password Filled



The screenshot shows the "Create New Password" form with a semi-transparent grey overlay. A white success message box is centered, containing the text "Success" in green, followed by "Password reset successful! You can now login with your new password." and a green "Go to Login" button. The "Reset Password" button and "Back to Login" link are visible in the background.

Figure 20: Successful New Password

5.5.2 Users Screen and Features

Once the user logs in successfully, they will be automatically redirected to the School home page.

5.5.2.1 School Home

The Student's Dashboard is the imperative feature in the Drive Master system for presenting each student with critical information in an easy manner. One of its key parts is the Home School Page; it is an aggregate page in a school the student has registered through. All the critical school information is rendered here, well organized and accessible to all, inclusive of:

- **Name of the school:** The name of the school is at the top of the page.
- **Contact Information:** The official email of the school, contact number, and address have been given for it to be contacted by students or parents when necessary.
- **Website Link:** The website link has been given to ensure an easy reach to the school's site for further details.

For example, a student enrolled in "MEKKAWI" school will have the name of that school appearing on the top part of the dashboard, complete with its contact and other information. This will keep students and parents from searching through so many other schools for what they need, since they will easily find whatever they are looking for.

The convenience of this dashboard is a design meant for managing and accessing school details efficiently. The Students Dashboard is thus very instrumental.

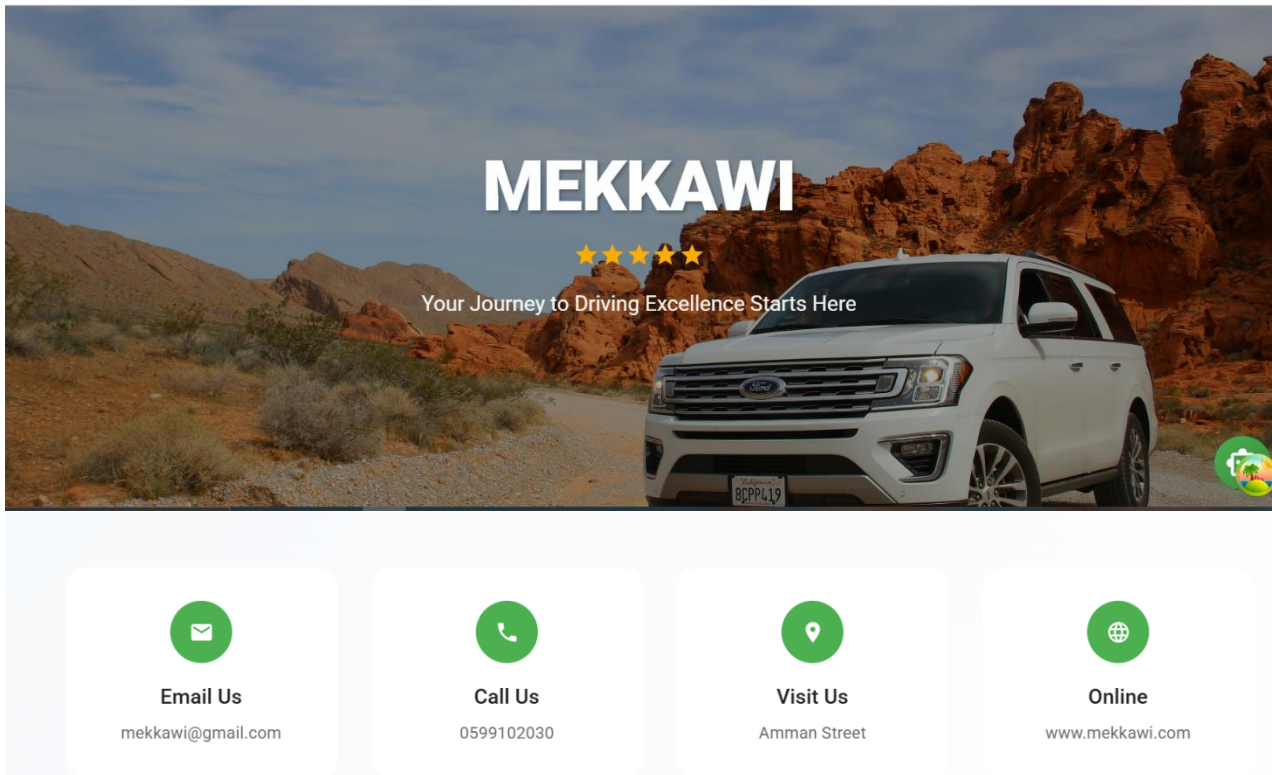


Figure 21: School Home page

under the contact details, there are 4 tabs about, school trainers, cars, and gallery the about page contains the owners of the school either one or more. Here first tab that talk about school managers.

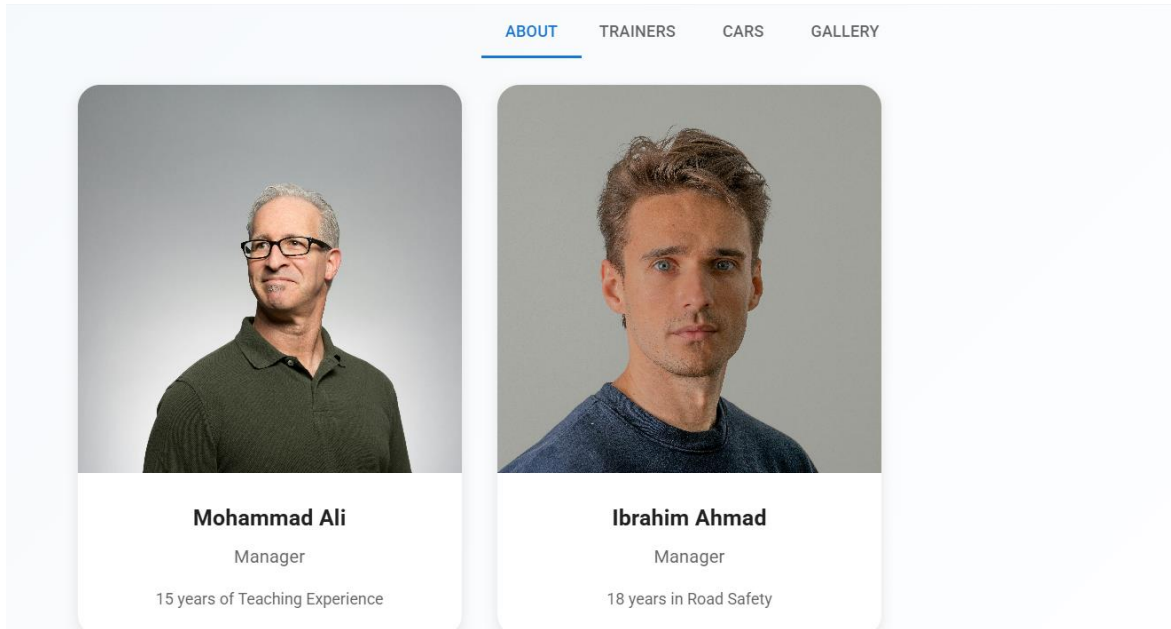


Figure 22: About Tab

Then we have a trainers' tab that gives details about the trainer of the school likes rate of trainer, type of licenses

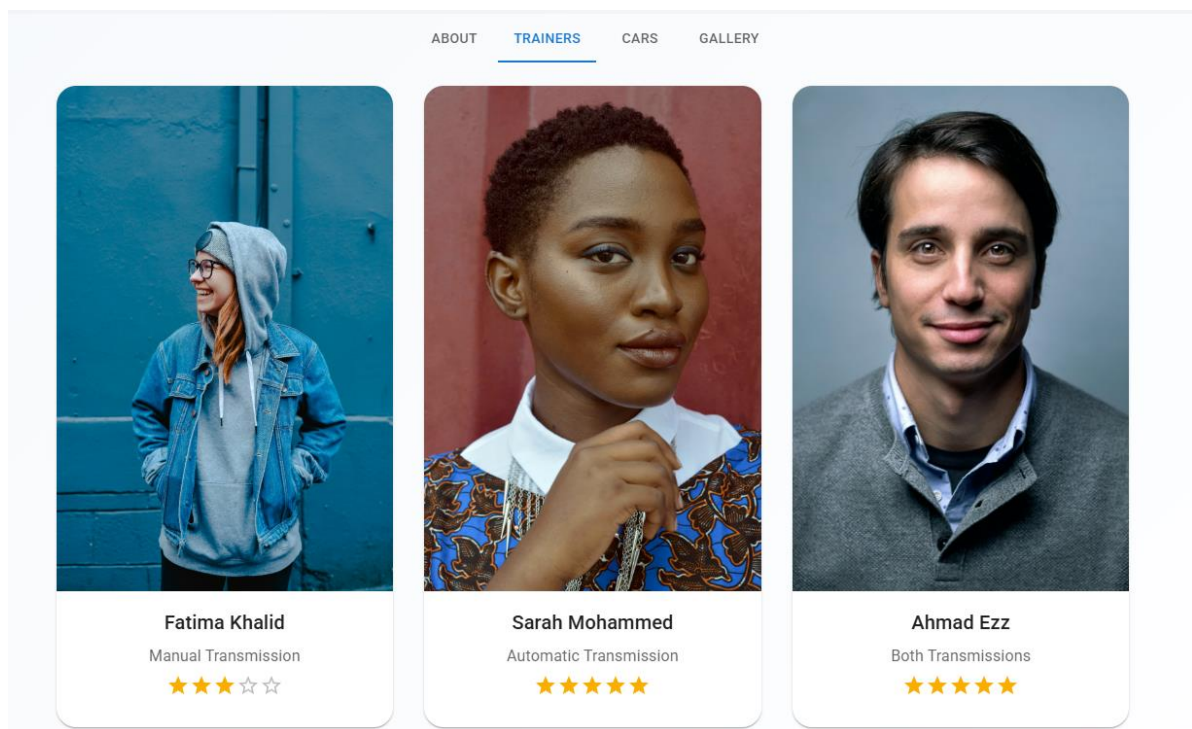


Figure 23: Trainers Tab

For the cars tab that display the cars of the school and model and the type of gear to make the user able to choose between vehicles in the school.

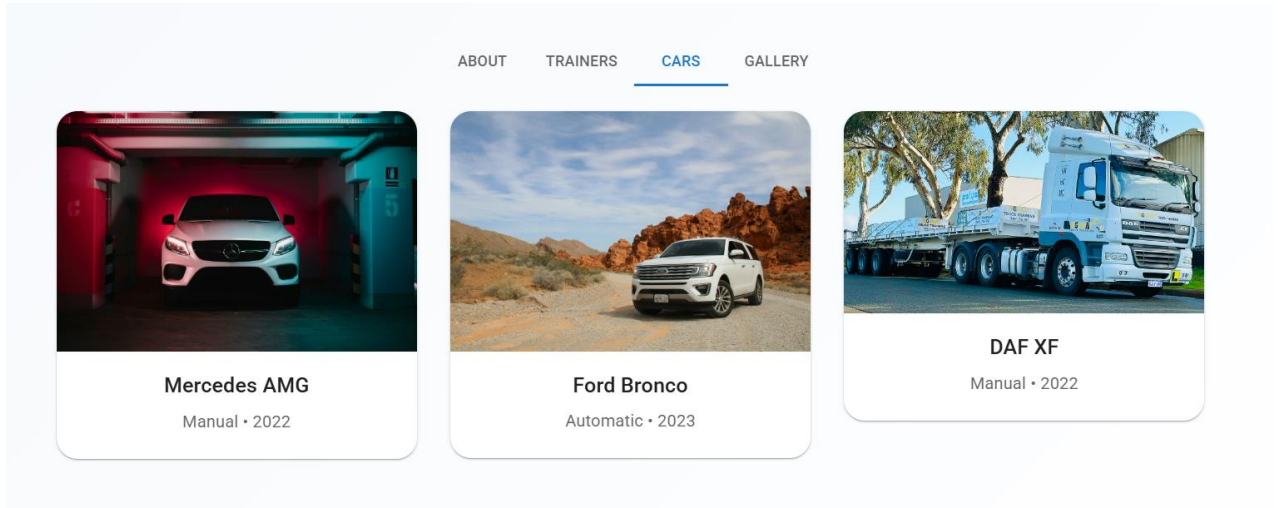


Figure 24: Cars Tab

Now for the gallery tab that contains a picture about the school either at training or in the office

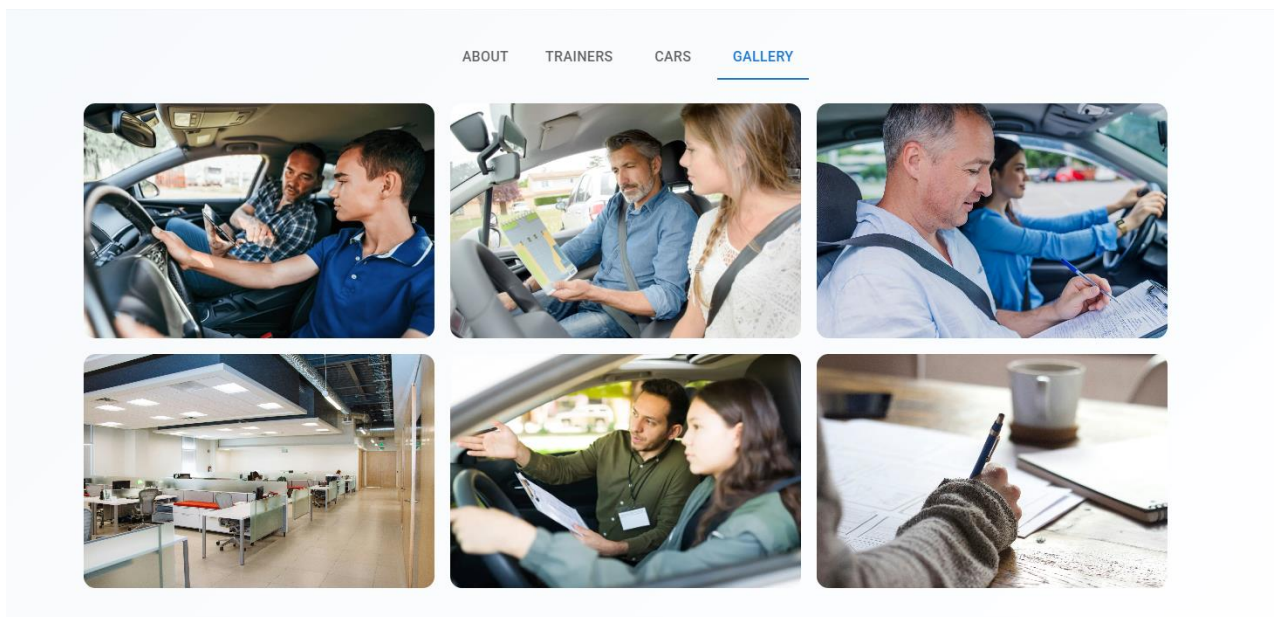


Figure 25: Gallery Tab

5.5.2.2 Drive Master Bot

The Drive Master Bot is an AI-powered assistant designed to help users inside the Drive Master app, enabling them to have quick intelligent interactions for creating value in user experience. This would include advanced and refined natural language processing with OpenAI's GPT-4o Mini to enable students and trainers to reach their goals and answer questions.

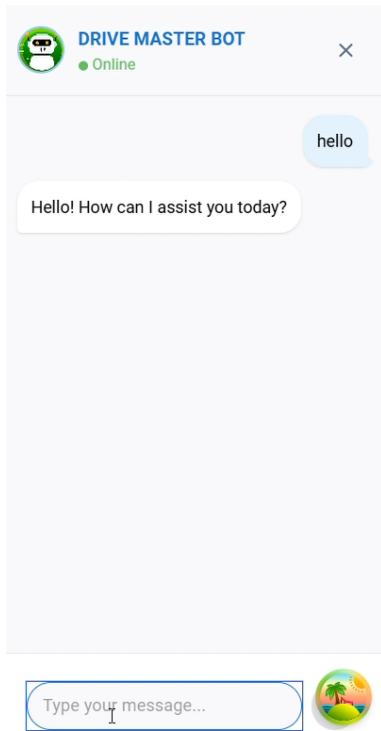


Figure 27: Chabot messages 1

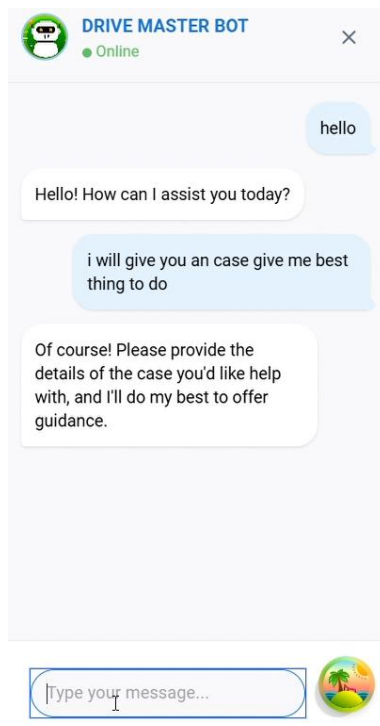


Figure 26: Chabot messages 2

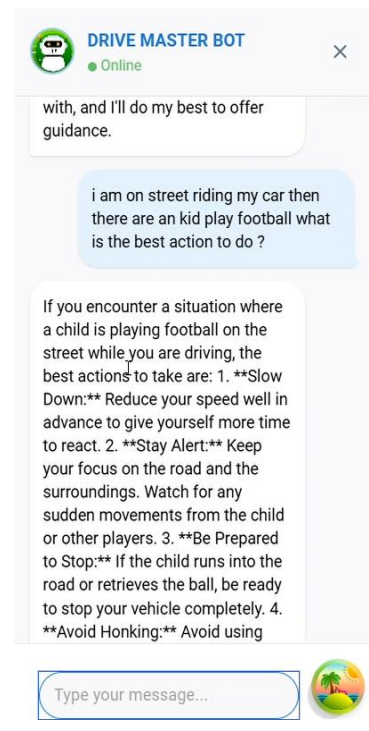


Figure 28: Chabot messages 3

5.5.2.3 Lessons Page

Lessons Page on the Students Dashboard: This displays all lessons that a certain student has booked in detail. This helps students have ease in tracking the lessons and keeps them organized in their learning process. Of course, there is a search bar to search for specific lessons and rate filter using stars to filter lessons on rating.

Lesson Categories

Hence, the lessons are, accordingly, in one of the four possible statuses that allow seeing the current student's progress and schedule explicitly:

1. Upcoming:

- Displays all the lessons that are scheduled for the future.
- Include the details of each future lesson like date, and time.
- Helps students stay informed about their next steps in their driving training.

2. Completed:

- Display all the lessons that are taken by student.
- Included the rating, feedback, and notes about the lesson.
- Rating and Feedback from student to trainer.

3. Canceled:

- Display the lessons canceled by either student or trainer.
- Provide reason of cancelation.

4. Out of date:

- Display lessons that are scheduled but for some reason the student or trainer missed the time of lesson without provide the reason.
- You can schedule another lesson but in not same time from booking page.

5.5.2.4 Booking and Scheduling

The Booking Page is now ultra-easy and transparent for students-in control-when it is linked with their schedules for recording learning plans and the comfort of studying.

The Booking Page is an important part of the Students' Dashboard, which will enable students to book lessons at the most preferred time. It is user-friendly in such a way that it makes the booking smooth and fast.

This page allows students to search for a particular lesson that best fits their preferences. Students can filter their search using the following options:

- **Choose Trainer:** Allow selecting a particular trainer for the lesson.
- **Select Car:** Choose the car that the session will require.
- **Select Day(s):** Choose one or more days that fit best.
- **Select Start Time:** Provide a preferred starting time for the lesson.

A lesson that fits the search criteria will be presented for the student to review and book if such exists. After booking a lesson it will go to pending requests waiting trainer to accept or reject the lesson this page wants the student to connect with it Google Calendar here we authenticate the Gmail with Drive Master

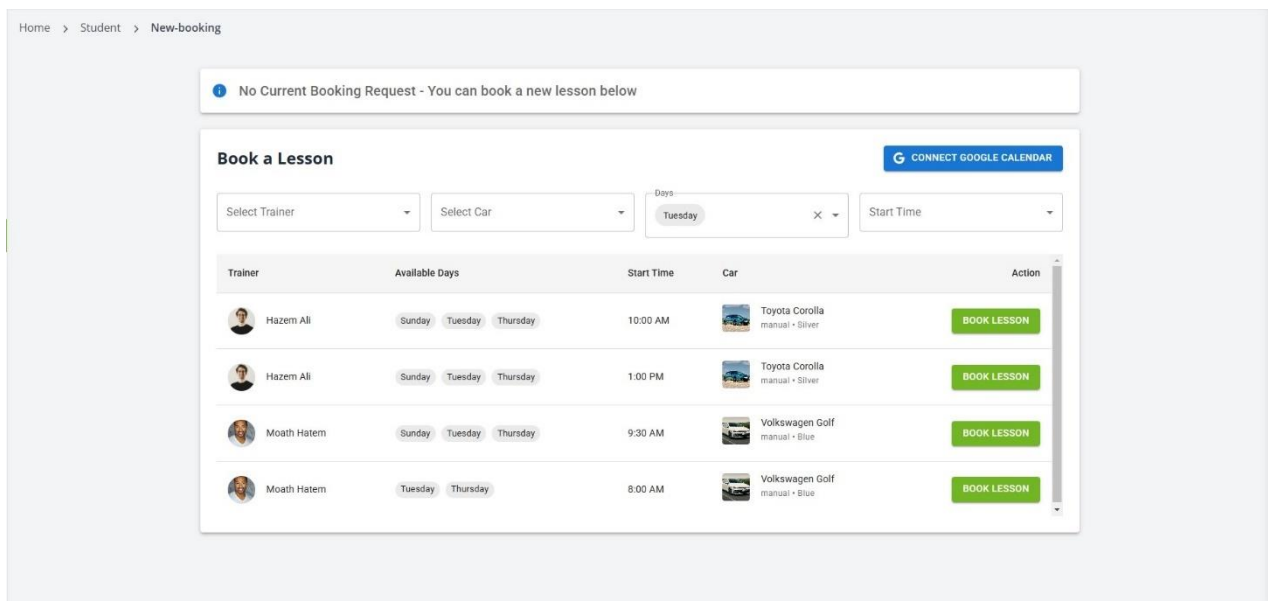


Figure 29: Booking Lesson

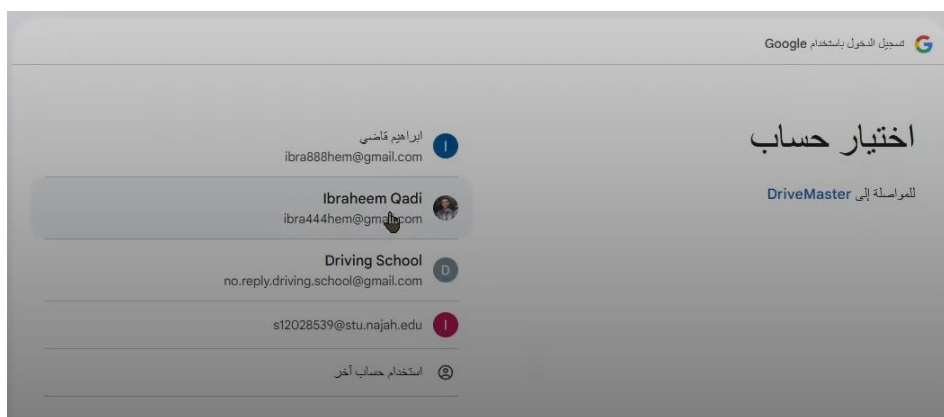


Figure 30: Authenticate Gmail to access Calendar

In that respect, it ensures smooth scheduling and organization by the students since the system works in jungles with Google Calendar-once a trainer accepts a booking, lesson details would pop up on the student's Google Calendar.

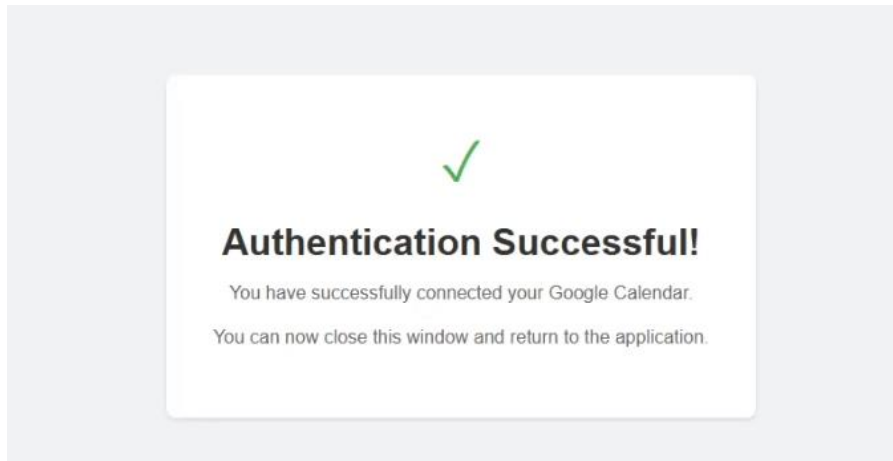


Figure 31: Authentication Successful

After connect the account with google calendar now the user able to book a lesson using “BOOK LESSON” button after choose a lesson it will go to pending request.

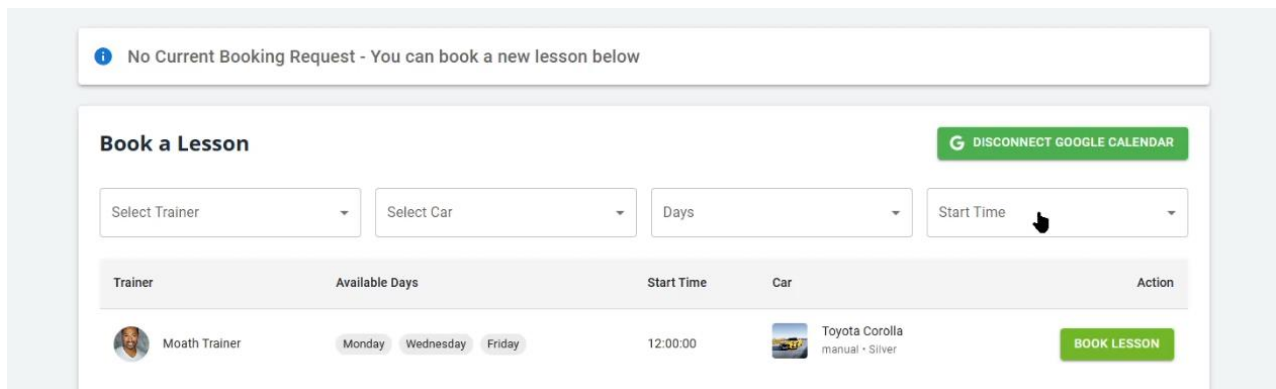


Figure 32:Authintication success now can book an lesson

Here an image of booking an lesson you have choice to cancel the booking while it in pending state.

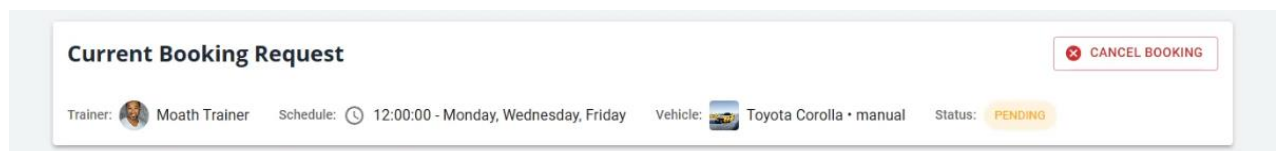


Figure 33: Booked an Lesson (Pending status)

When a lesson booking is accepted by the trainer, the system updates the lesson's status to Accepted, and the student is notified of the confirmation. This ensures clarity and keeps the student informed about their schedule.

Current Booking Request




Trainer:  Moath Trainer Schedule: ⌚ 12:00:00 - Monday, Wednesday, Friday Vehicle:  Toyota Corolla • manual Status: ACCEPTED


Figure 34: Accepted Booking

Notifications ×

You have 1 unread notifications

1 new Mark all as read

 **Booking Accepted**
Your booking request has been accepted by the trainer
Dec 25, 2024 12:06

 **Complete Your Profile**
Please take a moment to complete your profile information to get the most out of our services.
Dec 25, 2024 11:57


 **Welcome to Driving School**
Thank you for joining our platform! Your journey to becoming a skilled driver starts here.
Dec 25, 2024 11:57

Figure 35: Notification about Booking status

5.5.2.5 Quizzes Page

The Quizzes Page on the Students' Dashboard gives an overview of all the quizzes the student has undertaken, which may be quite useful in analyzing performance and progress. This page is intended to help students keep track of their readiness for the official driving exam by having an easy-to-navigate interface that allows reviewing quiz results and success rates.

While viewing the quizzes, students can see an attempt history: the title of each quiz taken with the date and result-passed or failed. In this case, students can get a view about where their strengths and weaknesses lie. Besides, there is also a filter option available that will allow students to sort their quiz results bypassed/fail or to see all attempts in one place.

Featured on the page will be the success rate tracker, which compares the number of quizzes passed with the total quizzes taken. Success rate gives one a clear and concise measure against which to scale their performance in general. It is when the success rate exceeds 85 percent that the student can request the right to an Official Exam. This will pop up a special button, "Official Exam Request", which will enable the student to request an official driving exam.

This feature helps students stay motivated not only by tracking their progress but also by providing a clear path to their goal official exam. It will ensure a smooth transition from theoretical learning to the practical exam phase so that when the time comes, the students will be fully prepared and confident

The Quizzes Page is, therefore, the key that will help students keep on track, supervising them improvement and taking whatever steps are essential toward their driving aims

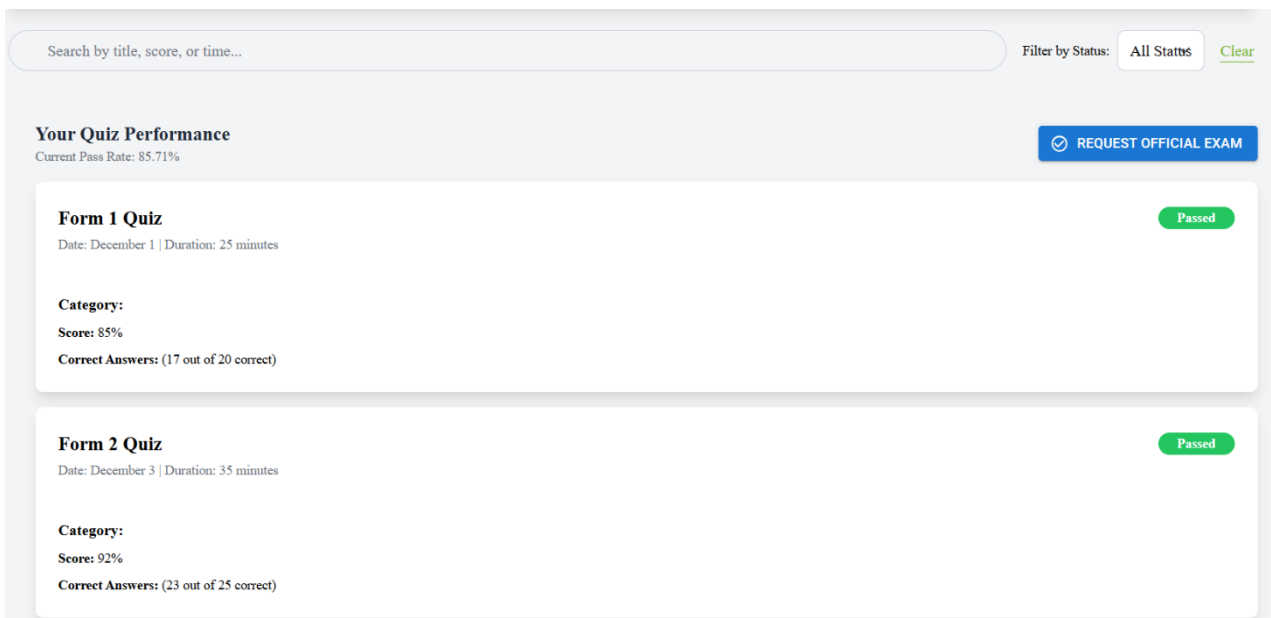


Figure 36: Quizzes Page

5.5.2.6 Messages Page

The messages page in the student dashboard is a workspace meant for students to check their conversations about driving lessons. It is an establishment where communication is facilitated so that students can stay in real-time touch with their driving instructors, school administration, or any other relevant personnel.

The all-important conversation pages are organized for easy browsing so that students may catch up with messages quickly. Be it a reminder about an upcoming lesson, feedback by an instructor, and school announcements-all these are stowed away in one archive for easy retrieval.

Each conversation is depicted in an orderly fashion, which allows the student to follow the flow of discussion and track important details concerning a conversation. It upholds both incoming and outgoing messages, allowing a fluid communication environment for the student in the event they have to ask for help or clarification.

Messages Page ensures that students can always stay connected to the supporting people in their learning journey, creating a unique atmosphere and being fully aware or up to date with their lessons, exams, and any sort of thing important and worth telling.

Here are the conversations of students with trainers here a simple example of design in the

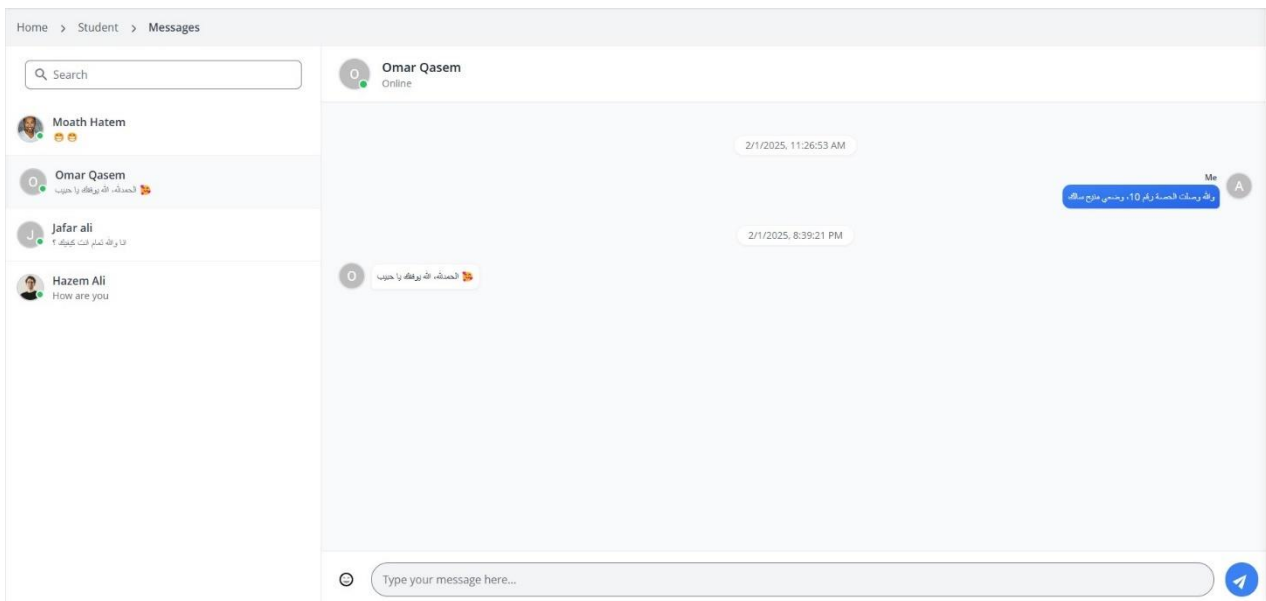


Figure 37: Chatting

Trainer-Student Communication via Real-Time Chat point I will talk more and give an example of

5.5.2.7 Student Resources Page

Students Dashboard Student Resources Page is an informative page that endeavors to provide students with essential tools and resources so that they can adequately prepare for writing their driving exams. The page contains several resources essential for theory and practical driving preparation.

The Available Resources:

- **Practice Quizzes for Theory Exam:** A plethora of quizzes at your disposal to practice for the theory test. The miscellaneous subject quizzes include road signs, traffic rules, defensive driving skills, you name it. You can practice them as many times as needed to take in additional info to start building confidence for the eventual theory test.
- **Road Signs:** There is also a specific chapter on road signs to get the students used to the key symbols that they will have to identify while driving. The chapter provides brief descriptions and pictures of common road signs to allow the students to identify them and what to do when encountering
- **Manual Driving PDF:**
For students learning to drive a manual car, a detailed PDF guide is available that covers everything from basic gear shifting to advanced techniques. This resource provides step-by-step instructions, tips, and best practices for mastering manual driving, making it easier for students to grasp the skills needed for the driving test.

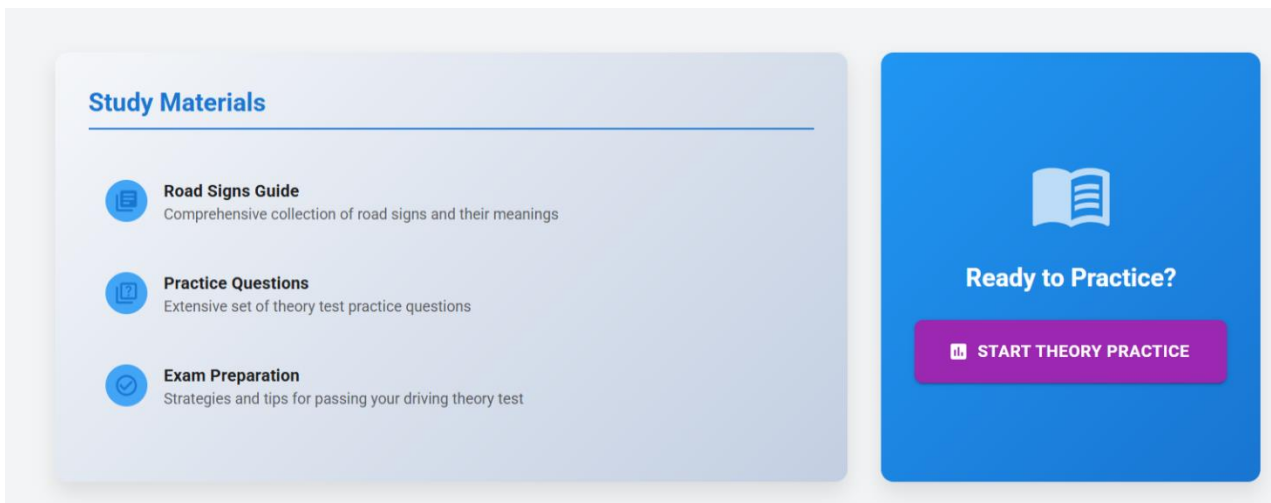


Figure 42:material

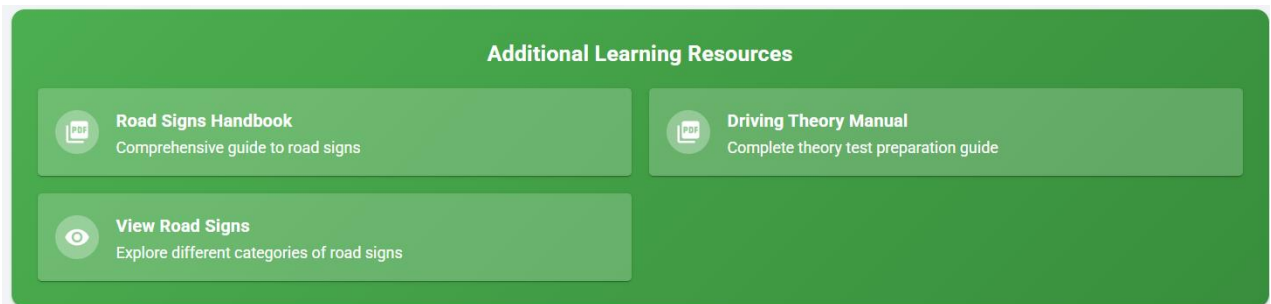


Figure 40:Books

When click on the “START THEORY PRACTICE” button you will move to the theory page to display the quizzes depending on the student licenses

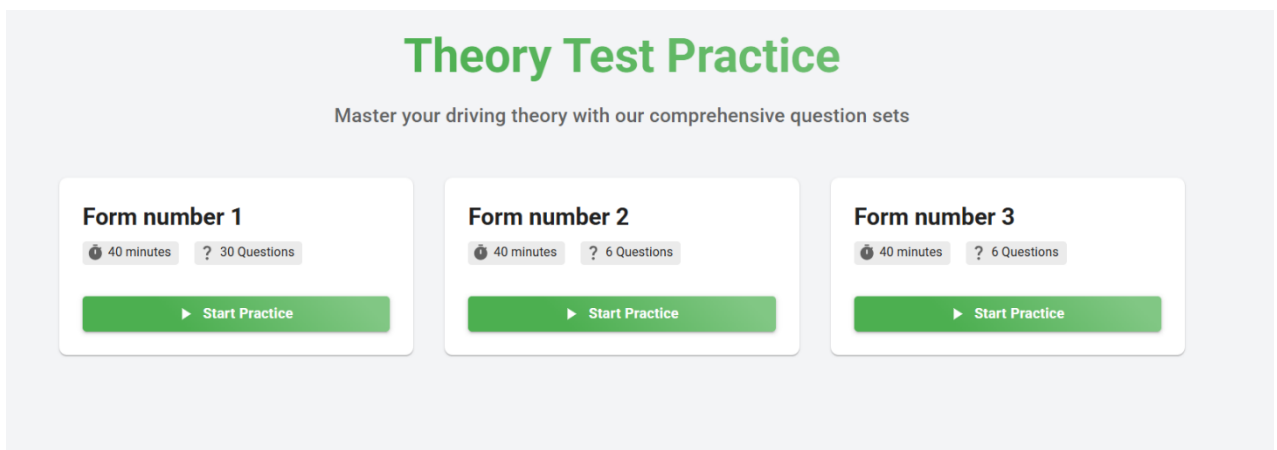


Figure 39:Theory

On this page, students will find a list of available quizzes to practice for their theory exam. Each quiz is displayed along with the time limit for completion and the number of questions it contains, giving students a clear overview of what to expect. When a student opens a quiz form, it begins immediately, presenting the first question to start the practice session.

The quiz uses an auto-move feature, meaning after a student answers a question, the system will automatically proceed to the next question. This feature helps students stay focused and prevents distractions, keeping the quiz experience smooth and uninterrupted.

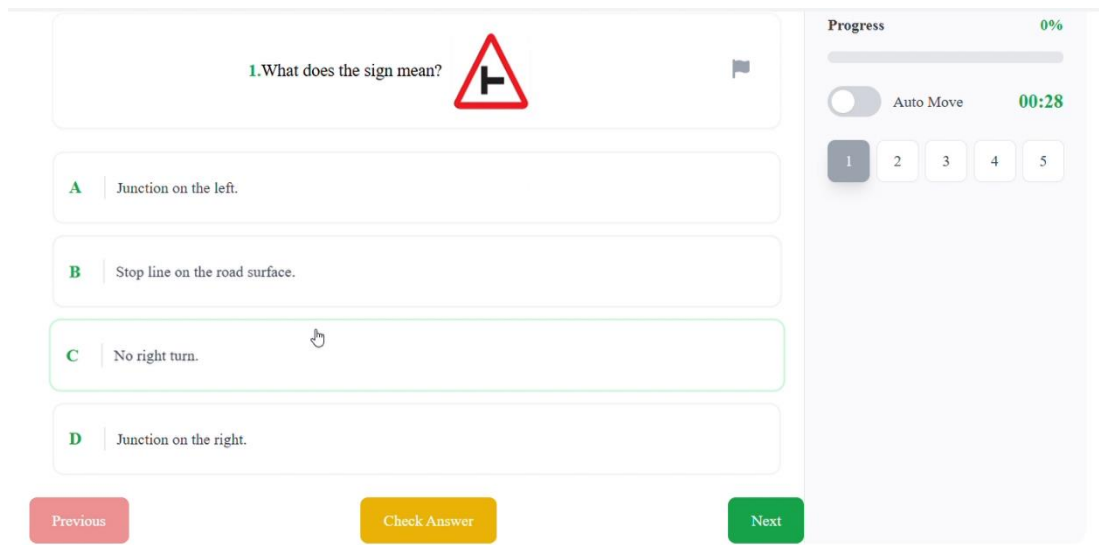


Figure 43: Quiz app

Once the quiz is completed, students are immediately shown their results, which include the total score, the number of correct answers, and the number of incorrect answers. After viewing their score, students can review their answers to understand which questions they answered correctly or incorrectly. This feature helps students to reflect on their performance, identify areas for improvement, and better prepare for their official exam.

The answer review section will display the correct answers next to the student's responses, allowing for a thorough analysis. Students can also access explanations for incorrect answers, ensuring that they fully understand the material. And there a check answer button to know the answer before answer question but it will count false.

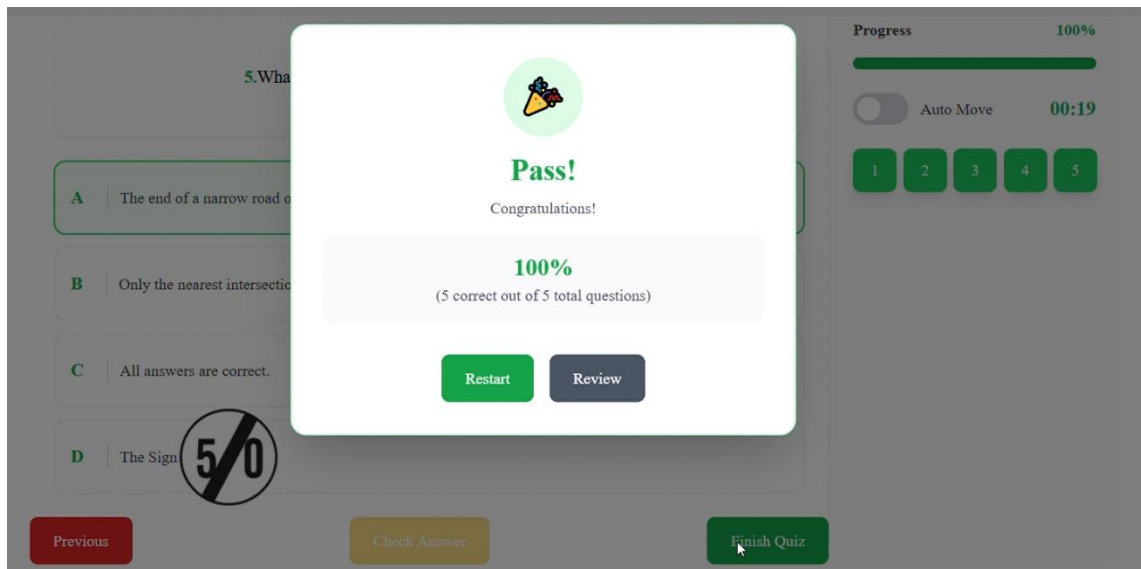


Figure 45: result

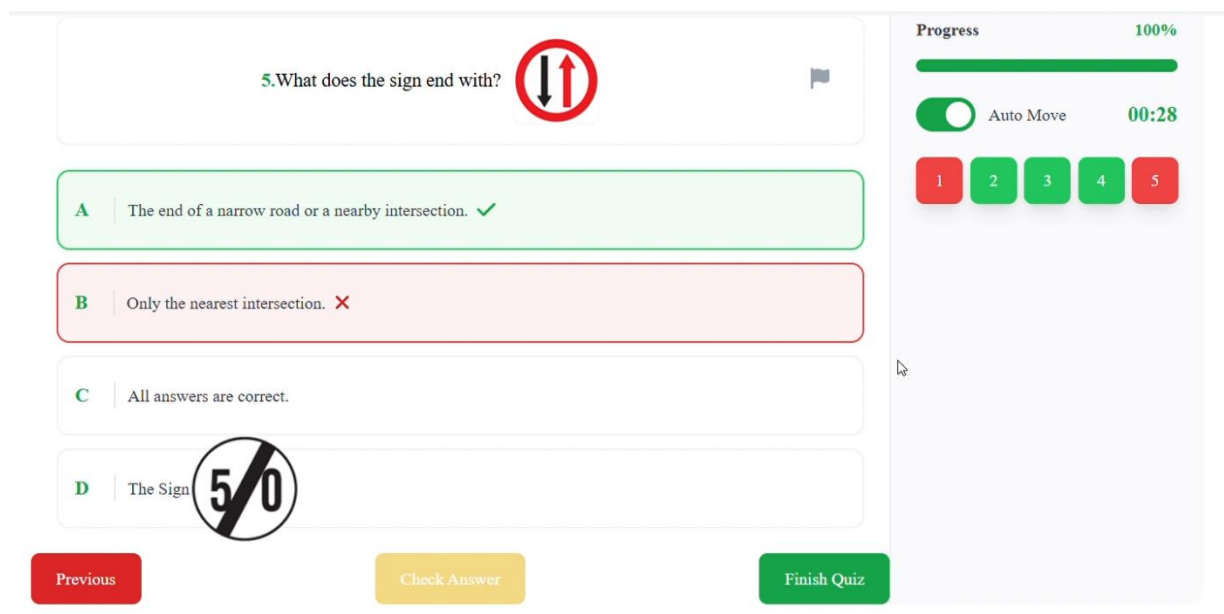


Figure 44: options

Here the signs pdf file contains above 100 street signs.

Road Signs Categories



Figure 46: Signs

5.5.2.8 Profile Page

The Profile Page on the Students Dashboard is where students can view and manage their personal information. This page contains important details that help identify and personalize the student's account, ensuring that all records are accurate and up to date.

Profile Details Include:

- **First Name & Last Name:**
The student's full name is displayed for easy identification. This ensures that all communications and records are properly linked to the correct individual.
- **ID Number:**
The unique identification number assigned to each student is also shown. This number is important for administrative purposes and helps the school keep track of student records.
- **Blood Group:**
The student's blood group is listed, which can be useful in case of emergencies or for medical records, ensuring the school and trainers have necessary information on hand.
- **Gender:**
The gender of the student is displayed, ensuring that the student's information is complete and accurately recorded.
- **Birthdate:**
The student's birthdate is shown to help verify their age and eligibility for certain exams or courses. This also helps the school maintain accurate records for age-related requirements.
- **City & Street:**
The student's address details, including the city and street, are displayed for administrative purposes. This ensures the school has correct contact information, which may be needed for sending important documents or for emergency situations.

The profile can be editable to edit some data like date of birth for example the id is not changeable.

The image shows a 'My Profile' form with the following fields and values:

- Profile Picture: Placeholder with 'Change Photo' link
- First Name: Ahmad
- Last Name: Dweikat
- ID Number: 123456789
- Blood Group: Select Blood Group
- Gender: Male
- Date of Birth: MM/DD/YYYY
- City: Nablus
- Street: Amman Street

Buttons: Save (green), Cancel (red)

Figure 47: profile page

5.5.3 Trainers Screen and Features

As the student after successful sign in the trainer go to trainer dashboard

5.5.3.1 School Home

Among some other critical capabilities provided in this module of Drive Master system for Trainers Dashboard-a dashboard giving views with essential data: On a centralized dashboard view called Home School Page-an overview that pertains to an organization and has most things well linked at their locations in relation. An organized source through which, but not restricted to the school at large will ensure this flow-easy to work upon from trainers regarding everything associated:

- **Name of the school:** The name of the school is at the top of the page.
- **Contact Information:** The official email of the school, contact number, and address have been given for it to be contacted by students or parents when necessary.
- **Website Link:** The website link has been given to ensure an easy reach to the school's site for further details.

For instance, a trainer working with the "MEKKAWI" school opens his dashboard and views across the top the name of the school, the contact information, and any details. This saves time from the trainer's perspective, which could be used in searching through many schools for relevant information.

This dashboard is designed to facilitate ease in managing and accessing the school details with speed. The Trainer's Dashboard is the most important tool for the trainers of the Drive Master system.

5.5.3.2 Students Information's

The Students page on the Trainer Dashboard is a structured presentation of core information for each student. It is laid out in table format for easy reading and managing of the information on the students. This is how it goes:

The table has several columns, each representing one important piece of information about the student. This format allows the trainer to easily review the data and track their students' progress. Some data to display:

- **Student Name:** The full name used in his registration, hence making it easy for a trainer to identify and manage his/her students.
- **Gender:** The gender of the student is indicated, which may be helpful in scheduling or personalizing lessons where appropriate.
- **License Type:** It means the class of license, such as Class A or Class B Driving License, a student is applying for. It will keep the trainers informed at what stage the learning process each student stands.
- **Contact Number:** This is a very important column for student contact numbers so that trainers may easily get in touch with them regarding scheduling lessons, answering questions, or providing any other information to them.
- **Lessons Taken:** The number of lessons taken by the student. This is important to track for the trainers in order for them to understand when to take the student on the road and prepare him or her for the driving test.
- **Blood Group:** This might sound a little strange, but in case of an emergency, this is important for your driving practical lessons. When this information is available, the trainers will be prepared for any medical situation.

Student List Search students...

Student	Gender	License Type	Contact Number	Lessons Taken	Blood Type
John Doe	Male	Class A	123-456-7890	12 lessons	A+
Jane Smith	Female	Class B	098-765-4321	8 lessons	O-
Emily Davis	Female	Class B	555-123-4567	15 lessons	B+
Michael Johnson	Male	Class A	777-888-9999	10 lessons	AB-
Sarah Wilson	Female	Class B	444-555-6666	6 lessons	O+

< 1 >

Figure 48: Students

5.5.3.3 Trainers Lessons

The Lessons page inside the Trainer's Dashboard is where the trainer manages and tracks his/her lessons. It is divided into several tabs, which help in organizing the lessons by status. Here's how each tab is structured:

Tabs on Trainer's Lessons Page:

- **Out of Date:**
 - This tab highlights the lessons which were scheduled and missed without any reasons being given by the student or the trainer for failing to take place. This covers those lessons whose time has lapsed and no re-schedule or update is made.
 - **Purpose:** This helps the trainers track and follow up on the lessons that were missed without proper explanation or rescheduling.

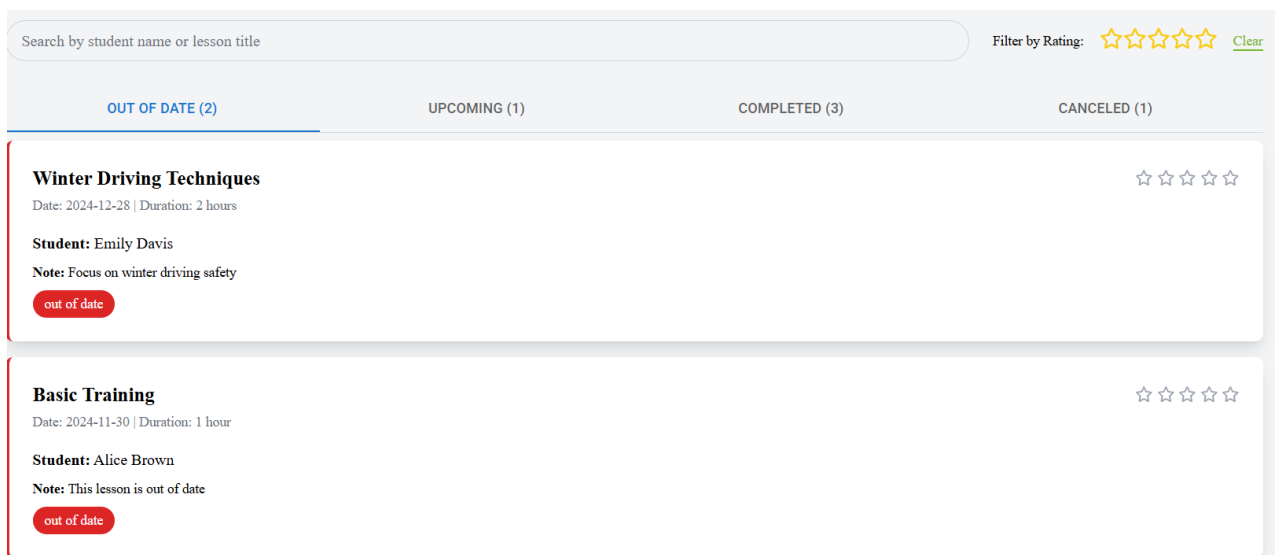


Figure 49: Out of date lessons

- **Upcoming:**
 - This tab lists the lessons scheduled for the future and provides the trainer with a view of upcoming appointments.
 - **Purpose:** This allows trainers to prepare in advance for upcoming lessons, ensuring they are organized and prepared to provide the needed instruction to their students.

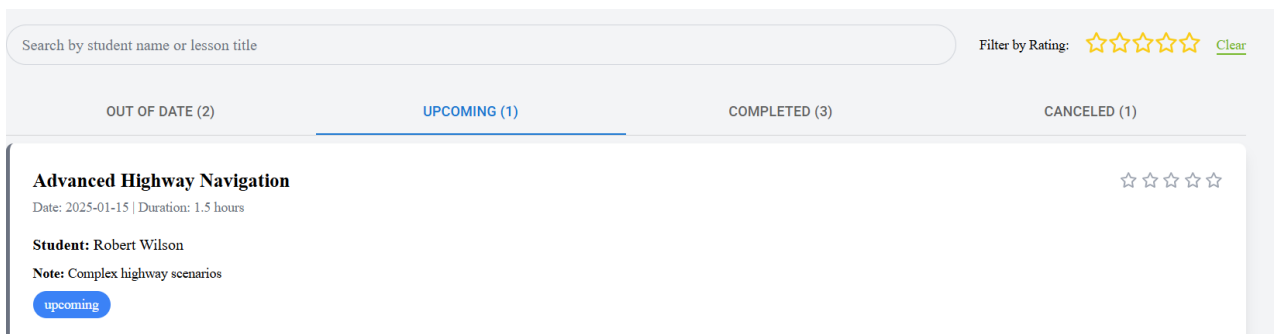


Figure 50: Upcoming lessons

Of course we can join to details of lesson by click on the lesson then the page will be the details page. And the trainer has ability to cancel the lesson with giving the reason.

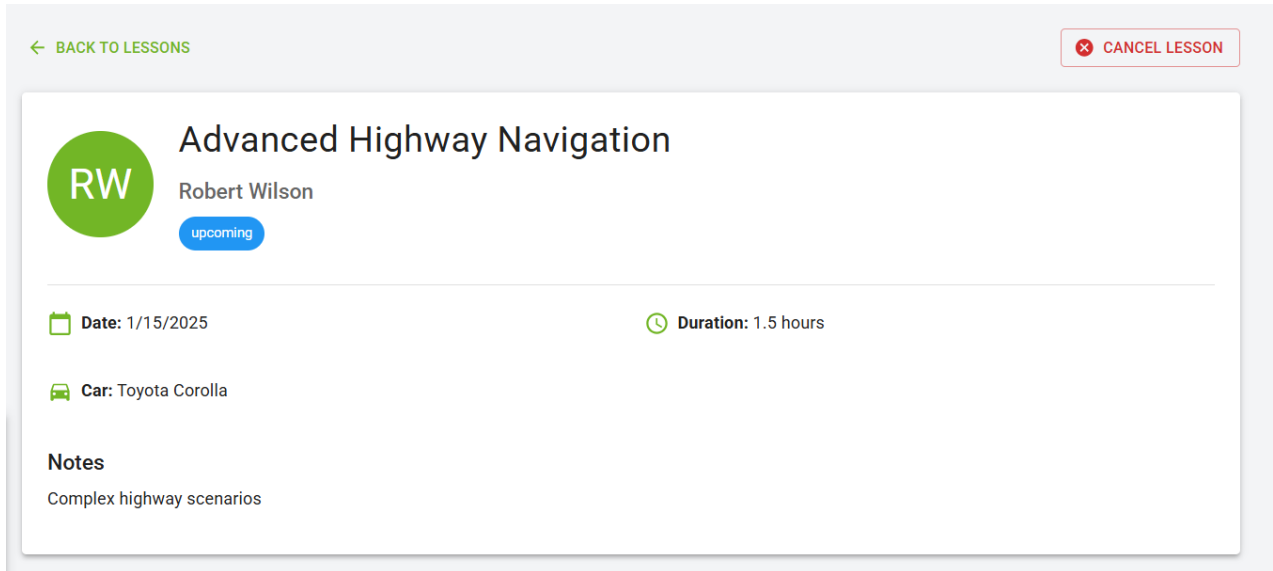


Figure 51: lesson description page

Here after canceled a lesson the details will be changed and the reason will have colored with red.

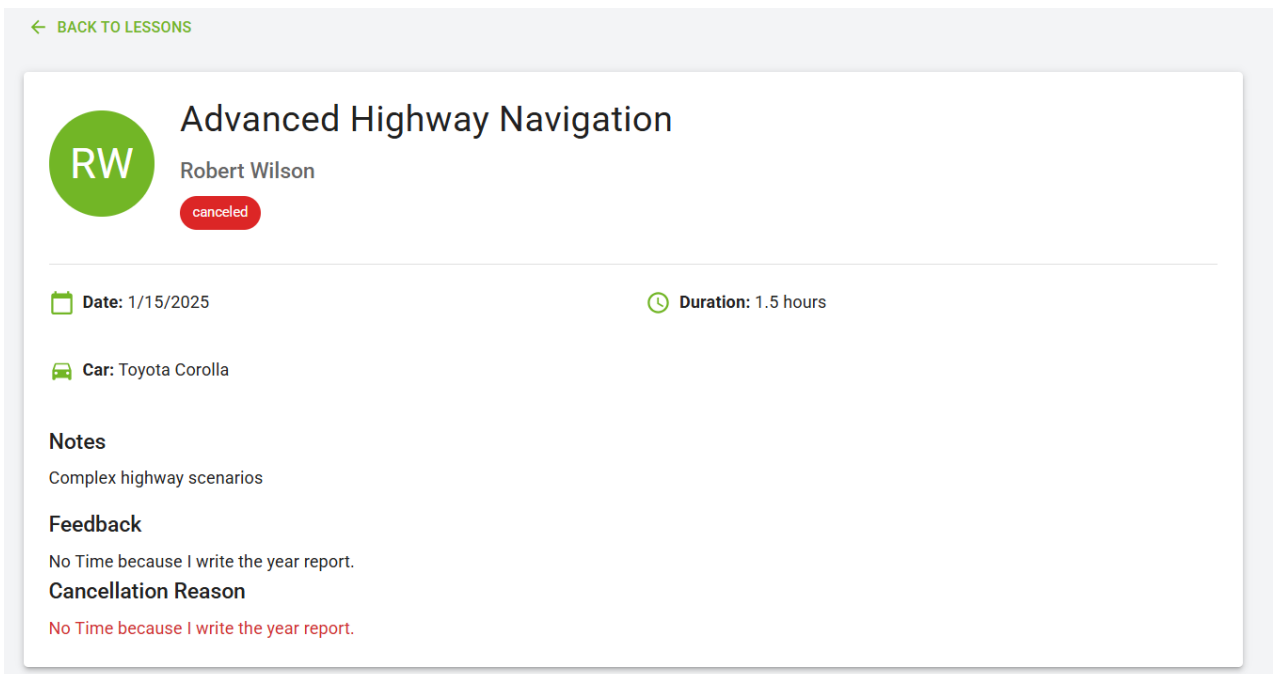


Figure 52: A canceled lesson

Now if we open the canceled tab we will see the lesson that been canceled we will take more about it in canceled topic.

- **Completed:**

This tab is divided into two sub-tabs:

- **Completed with Rate:** Those are lessons that a student has finished, rated, and provided feedback about. This enables the trainers to know their areas of performance and improvement.

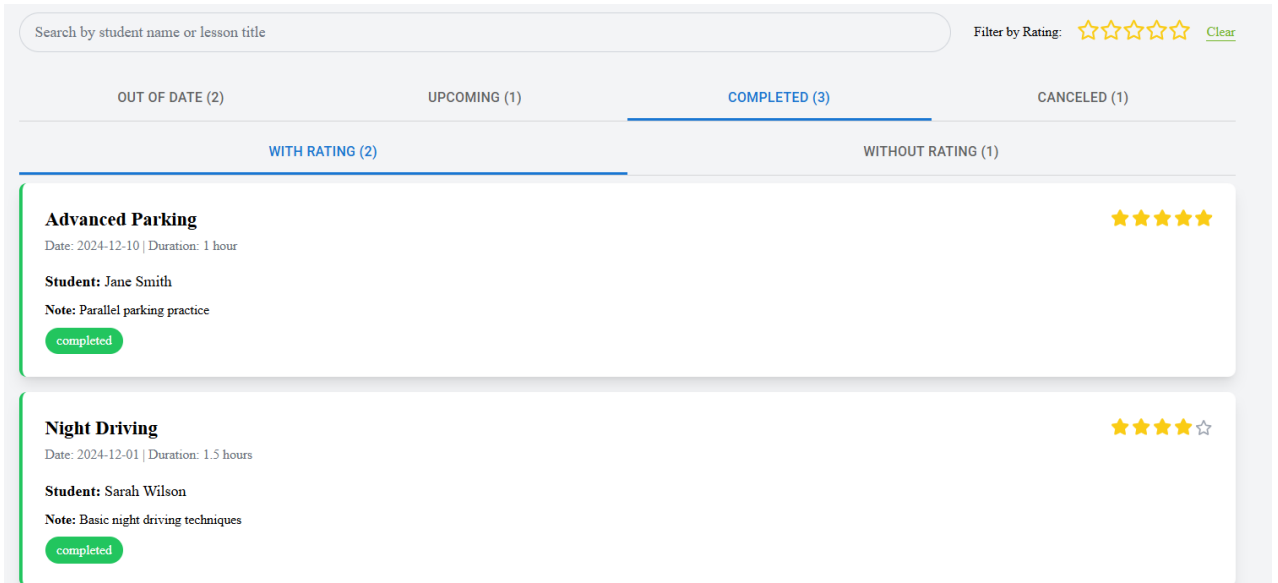


Figure 53: Completed

We can apply filter on lessons by rate then will display like this.

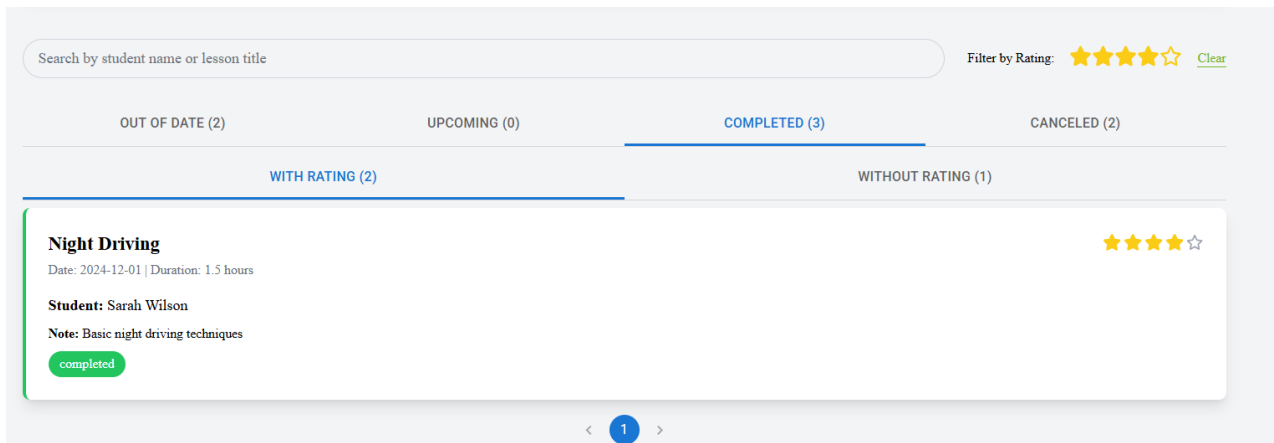


Figure 54: Completed

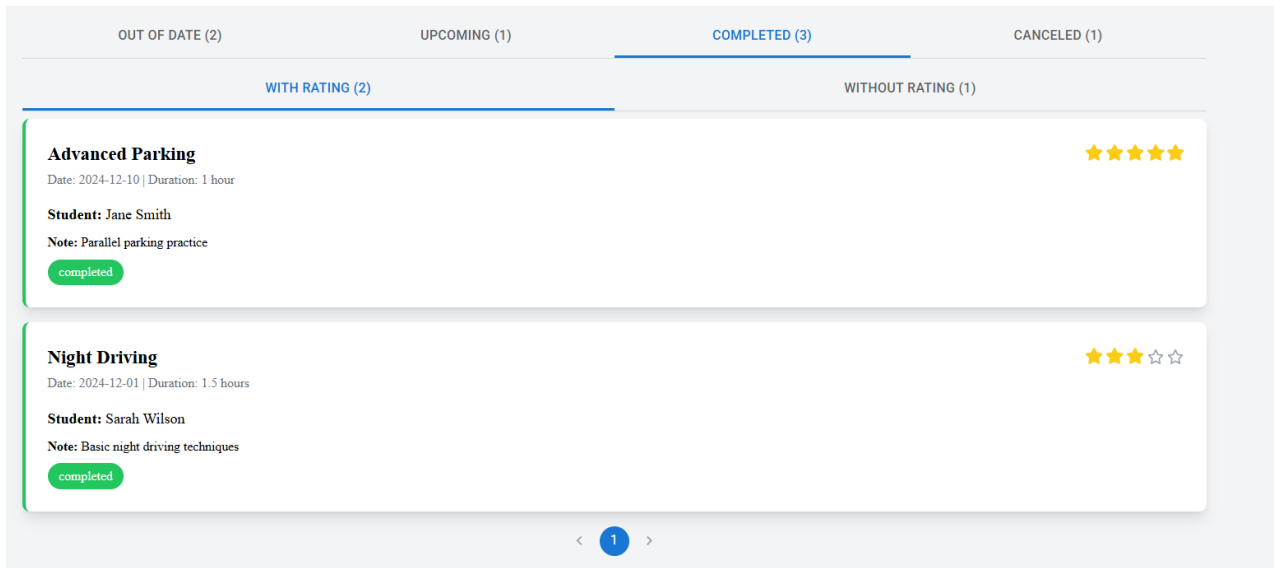


Figure 56

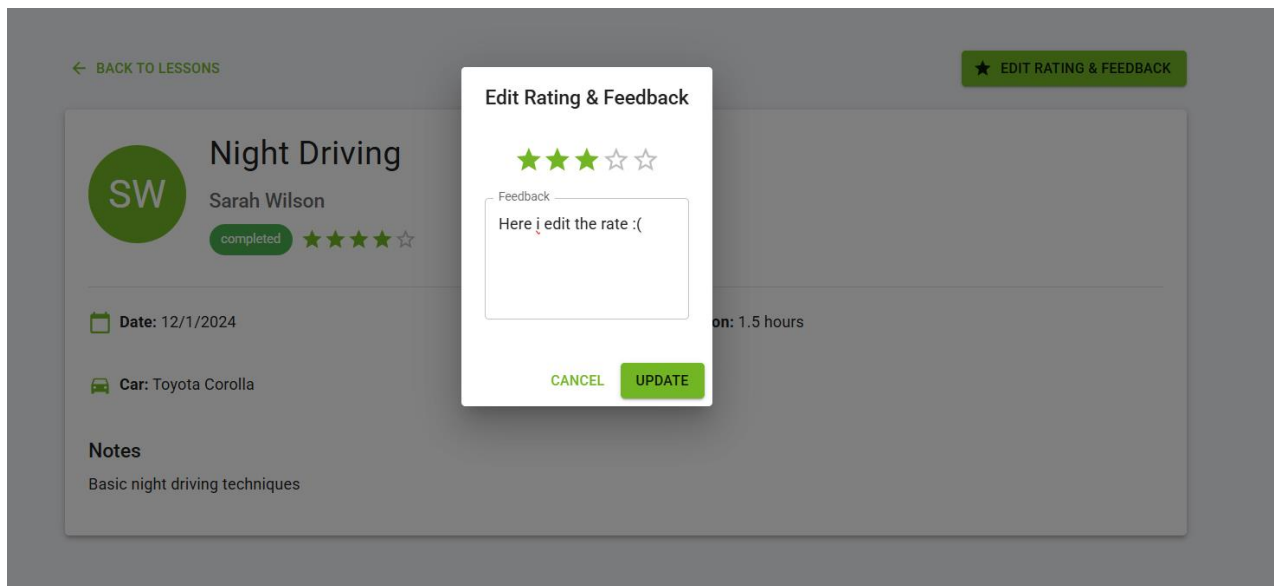


Figure 55: Feedback

- **Completed without Rate:** Those are lessons that have been completed but the students have not given any rating or feedback. This section is useful in tracking lessons that still need feedback or review.
- **Purpose:** The "Completed" section helps the trainers keep a record of their lessons and assess their performance according to the feedback of the students, as well as follow up with students who have not rated their lesson yet.

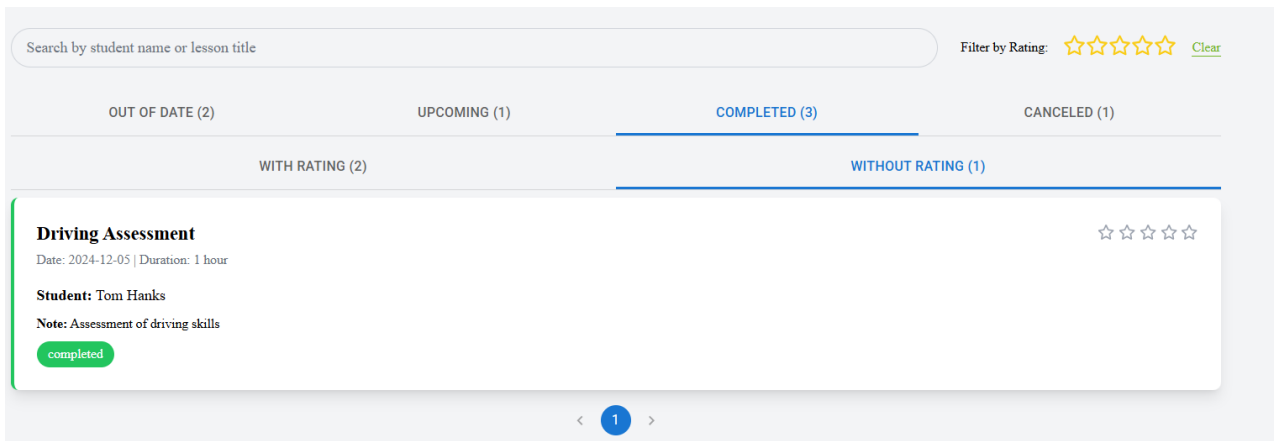


Figure 57: Add Feedback

Here the details page of lesson but here we can add rating & feedback.

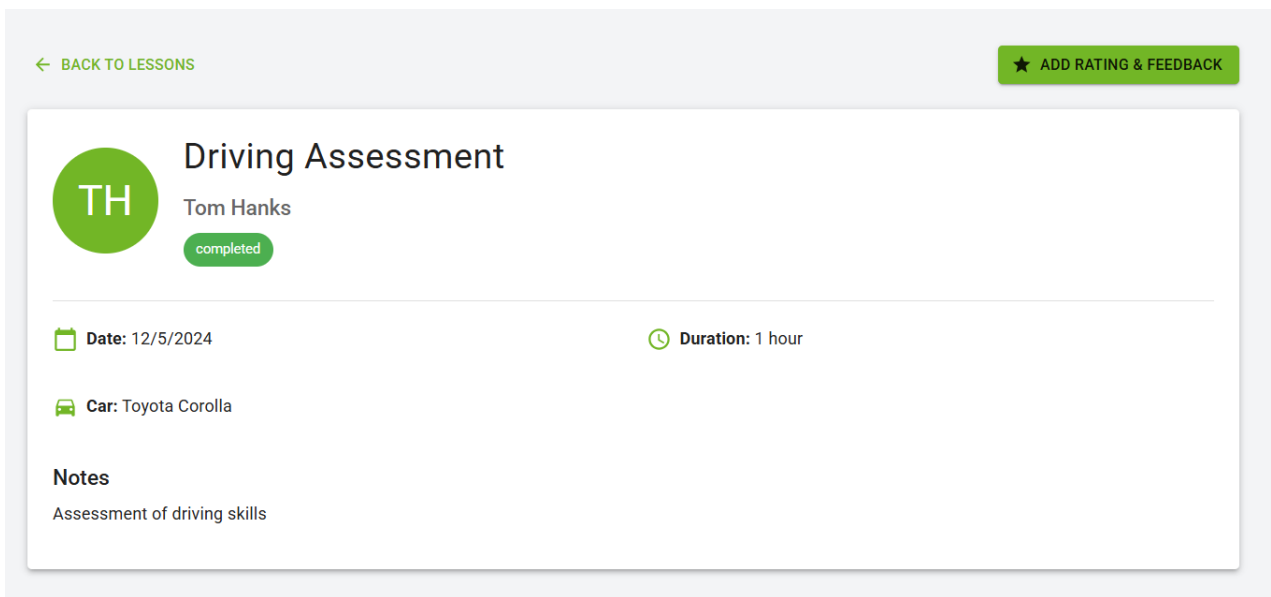


Figure 58: Details

Here after add rating and feedback the lesson will go to completed with rate tab.

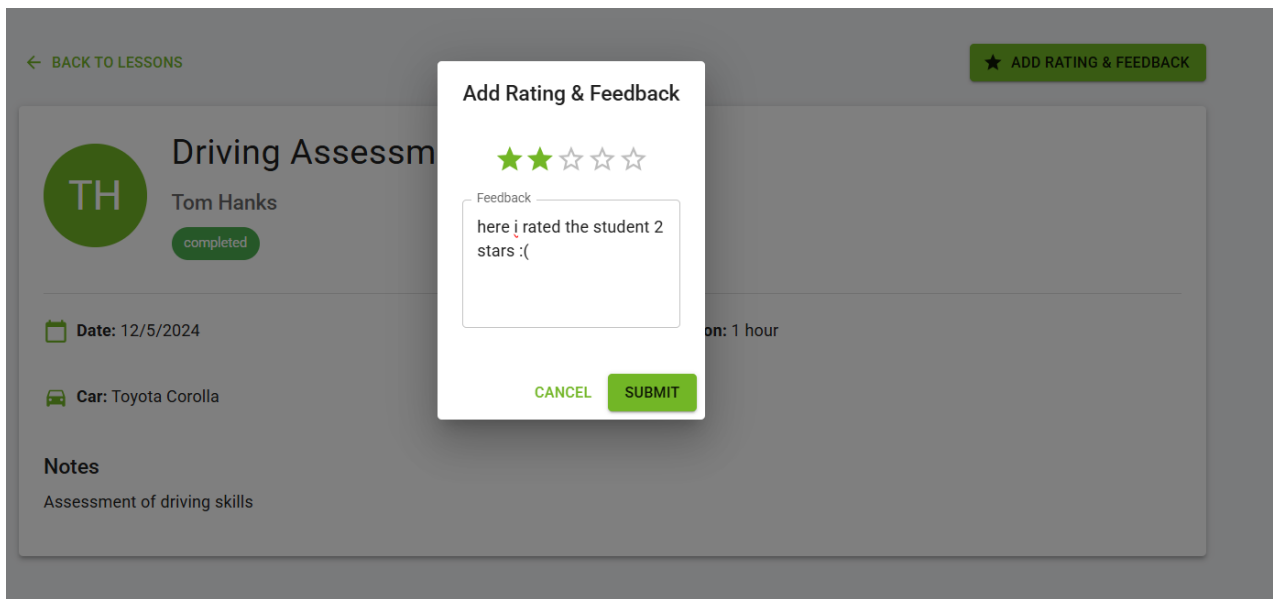


Figure 59: Raing and feedback

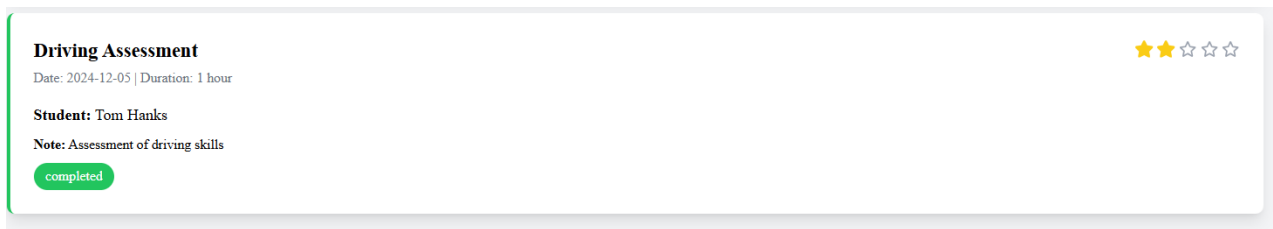


Figure 60: Result of rating

- **Canceled:**
 - This tab gives the details of the lessons scheduled but cancelled by the trainer, and includes the reason for such cancellation.
 - **Purpose:** This "Cancelled" section allows the trainer to log a lesson cancellation to further give him opportunities of rescheduling or communicating a cancellation to the student. This column highlights the reason for the cancellation for the sake of transparency.

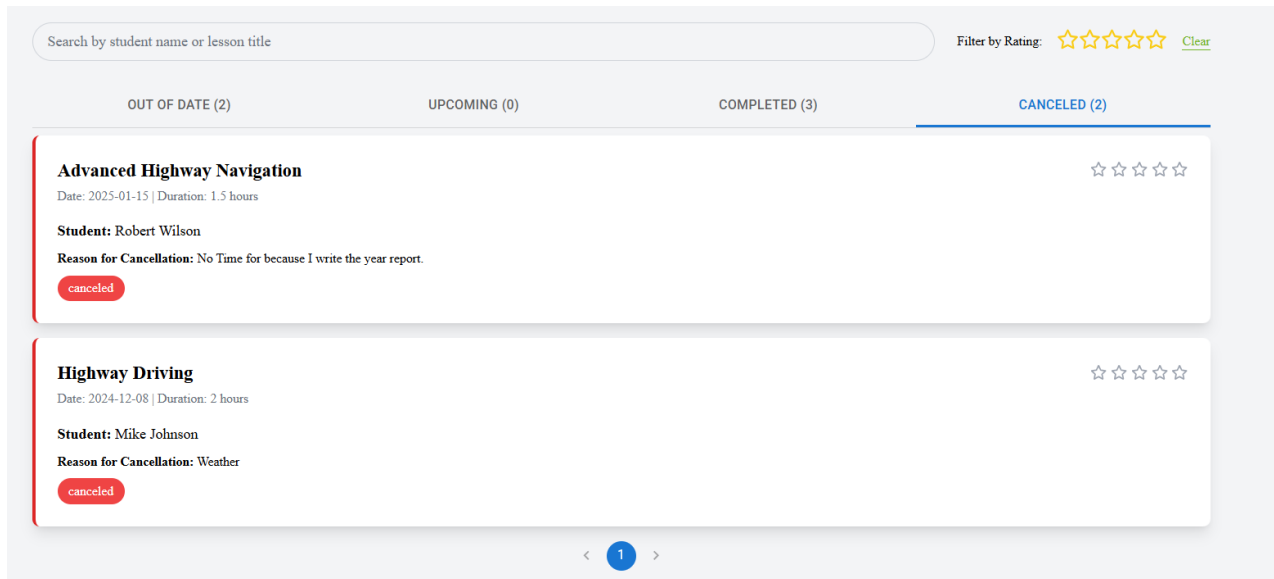


Figure 61: Canceled

Here as we see the lesson that we canceled before now moved to canceled tab.

5.5.3.4 Trainers Availability

The Trainer Availability Maker is a key feature on the Trainer's Dashboard that enables trainers to organize their schedules and set their time available for lessons efficiently. This system enables the trainers to add lesson slots either as recurring lessons or at a certain date and time, hence smooth and organized in managing their availability.

In setting up recurring lessons, trainers may stipulate the frequency, whether daily, weekly, or monthly, and the time that they are free to take lessons. For instance, a trainer who is available every Monday and Wednesday at 10 AM is able to schedule such recurring lessons. Once set, the recurring lessons are automatically put into the system by the trainer's preference without having to put in each individual lesson time. This saves the trainer a great amount of time and keeps them consistently available because students can now book lessons based on the set recurring time slots.

This feature simplifies scheduling for a trainer, which makes it easy for them to have regular availability. It will easily help the students go through the booking process as they can identify and book their lessons in the recurring availability of the trainers. The automation process will help this system avoid any potential conflict of scheduling times, whereby managing the time of the trainers accordingly.

Here the lesson creator.

Create Lesson

Recurring Lesson

Monday Tuesday Wednesday Thursday Saturday Sunday

Start Time
--:-- --

Create Lesson

Figure 62:Recurring

Now I will make a lesson at 10 AM for specific days and recurring it for Monday and Tuesday then I will try to make and lesson at same time for Tuesday.

Scheduled Lessons

All Days mm/dd/yyyy --:-- -- Clear Filters

SCHEDULE	TIME	TYPE	ACTIONS
Mon Tue	10:00	Recurring	Edit Delete

< 1 >

Figure 63:Table

Hereafter make a lesson Monday and Tuesday and this is result if I try to create lesson with same time and day.

Create Lesson

A lesson already exists at this time slot

Recurring Lesson

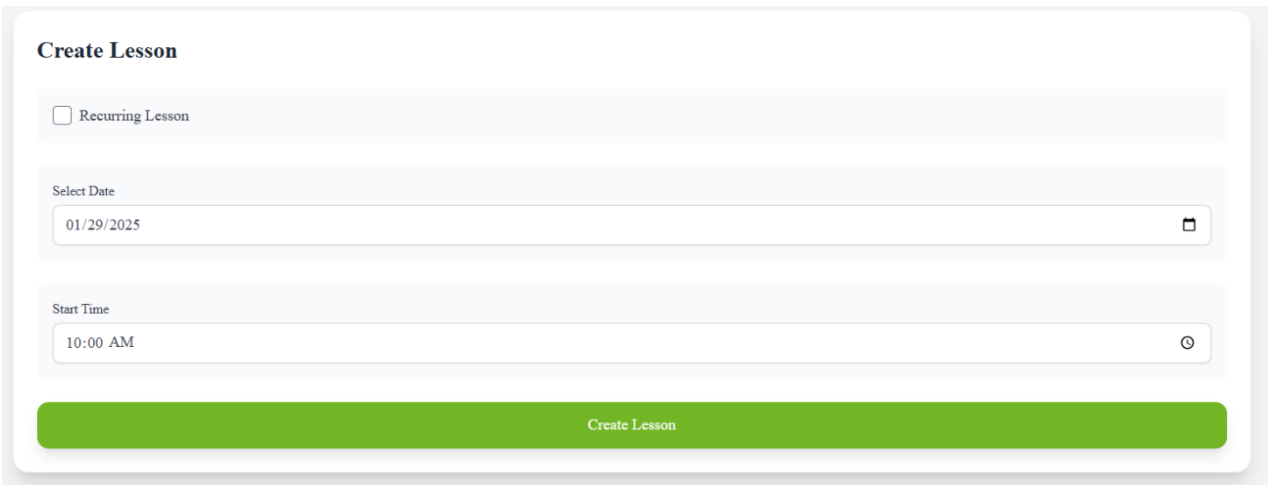
Monday Tuesday Wednesday Thursday Saturday Sunday

Start Time
10:00 AM

Create Lesson

Figure 64:Exist Lesson

Now there are second type of lessons creator that create lesson with specific date that lesson is not recurring.

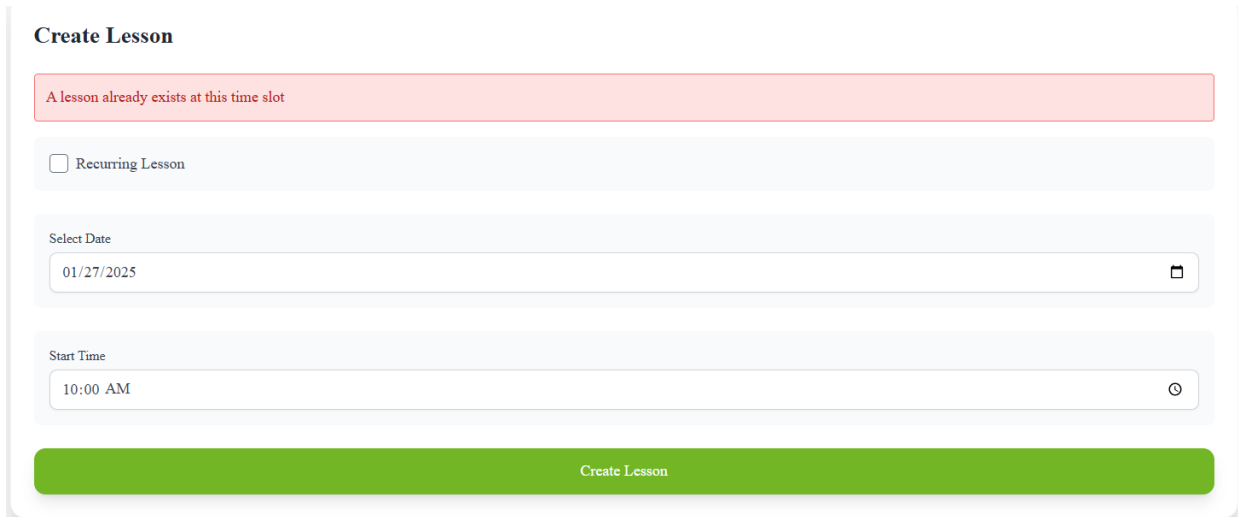


The screenshot shows a 'Create Lesson' form with the following elements:

- Recurring Lesson:** A checkbox labeled 'Recurring Lesson' which is unchecked.
- Select Date:** A date input field containing '01/29/2025' with a calendar icon on the right.
- Start Time:** A time input field containing '10:00 AM' with a clock icon on the right.
- Create Lesson Button:** A prominent green button at the bottom labeled 'Create Lesson'.

Figure 65:non-Recurring

Now if I try to create lesson with date that apply the Monday and Tuesday days with same time it will give me error message.



The screenshot shows the 'Create Lesson' form with an error message displayed at the top:

- Error Message:** A red-bordered box containing the text 'A lesson already exists at this time slot'.
- Recurring Lesson:** A checkbox labeled 'Recurring Lesson' which is unchecked.
- Select Date:** A date input field containing '01/27/2025' with a calendar icon on the right.
- Start Time:** A time input field containing '10:00 AM' with a clock icon on the right.
- Create Lesson Button:** A prominent green button at the bottom labeled 'Create Lesson'.

Figure 66:exist NonRecurring lesson

Here after create a lesson with specific date and not repeated time and days.

Scheduled Lessons

All Days 10:00 AM Clear Filters

SCHEDULE	TIME	TYPE	ACTIONS
Mon Tue	10:00	Recurring	Edit Delete
January 29, 2025	10:00	One-time	Edit Delete

< 1 >

Figure 67:Result

And we can apply filters on this Scheduled lessons likes days, date, and time.

Scheduled Lessons

Monday 10:00 AM Clear Filters

SCHEDULE	TIME	TYPE	ACTIONS
Mon Tue	10:00	Recurring	Edit Delete

< 1 >

Figure 68:Apply filter

Scheduled Lessons

All Days 10:00 AM Clear Filters

SCHEDULE	TIME	TYPE	ACTIONS
January 29, 2025	10:00	One-time	Edit Delete

< 1 >

Figure 69:Date filter

Also we can edit a lesson edit days or time or either.

Edit Lesson

Recurring Lesson

Monday Tuesday Wednesday Thursday Saturday Sunday

Start Time
10:30 AM

Save Changes Cancel

Figure 70: Edit an lesson

Here the result of the edit

Scheduled Lessons

All Days mm/dd/yyyy --:-- -- Clear Filters

SCHEDULE	TIME	TYPE	ACTIONS
Mon Tue	10:30	Recurring	Edit Delete
January 29, 2025	10:00	One-time	Edit Delete

< 1 >

Figure 71: Result of editing

5.5.3.5 Trainers Booked Lessons

In the Trainer's Dashboard, the 'Trainer Booked Lessons' section is an essential feature to maintain the lessons the students have booked with them. In this tab, there are a total of three tabs: pending, accepted, and rejected.

The Pending tab shows the classes booked by the students, but not confirmed by the trainer himself. Once the student selects their time from the available ones set by the trainer, the lesson shall appear in this Pending tab; here, they need to get reviewed and possibly accepted or rejected by him. The classes in this tab continue to be there in limbo until confirmation is made by a trainer.

After the trainer accepts a lesson request, it moves to the Accepted tab. These are the lessons that the trainer has accepted and thus is scheduled to conduct. An accepted lesson simply means it has been finalized and is okayed to take place at the time and date specified.

On the other hand, a lesson refused by the trainer goes to the Rejected tab. It can be for conflict in the schedule or simply just for the personal preference of the trainer. In any case, however, the system allows reason for rejection if needed. This feature helps the trainer to remember what lessons he had declined.

The system ensures that lessons are well organized through clear indications of pending, accepted, and rejected bookings. Besides that, this feature not only keeps the trainers organized but also presents the students with transparency in the status of their bookings for smooth communication between the parties. And we can apply days' filter











Student	License Type	Days / Date	Time	Car	Status	Actions
John Doe	A	Monday, Wednesday, Friday	10:00 AM	Toyota Corolla	pending	
Sarah Wilson	B	January 20, 2024	3:30 PM	Honda Civic	pending	
Emily Davis	B	February 5, 2024	1:00 PM	Honda Civic	pending	
James Wilson	A	Monday, Wednesday, Friday	2:30 PM	Toyota Corolla	pending	
Oliver Martin	A	Tuesday, Thursday	3:00 PM	Toyota Camry	pending	

Figure 72: Pending Tab

then we have accepted tab

Search by student name... Select Days

PENDING (5) **ACCEPTED (5)** DECLINED (2)

Student	License Type	Days / Date	Time	Car	Status
 Jane Smith	B	January 15, 2024	11:00 AM	 Honda Civic	accepted
 David Brown	A	Monday, Friday, Sunday	9:00 AM	 Toyota Corolla	accepted
 Michael Lee	A	Wednesday	4:00 PM	 Toyota Camry	accepted
 Emma Taylor	B	February 10, 2024	11:30 AM	 Honda Civic	accepted
 Sophia Clark	B	February 15, 2024	9:30 AM	 Honda Civic	accepted





< 1 >

Figure 73: Accepted Tab

last we have rejected tab

Search by student name... Select Days

PENDING (5) ACCEPTED (5) **DECLINED (2)**

Student	License Type	Days / Date	Time	Car	Status
 Mike Johnson	A	Tuesday, Thursday	2:00 PM	 Toyota Camry	declined
 Lisa Anderson	B	January 25, 2024	10:30 AM	 Honda Civic	declined

< 1 >

Figure 74: Rejected Tab

Here after apply a days filter

Student	License Type	Days / Date	Time	Car	Status	Actions
John Doe	A	Monday, Wednesday, Friday	10:00 AM	T Toyota Corolla	pending	✓ ✗
James Wilson	A	Monday, Wednesday, Friday	2:30 PM	T Toyota Corolla	pending	✓ ✗

Figure 75:Applying filter

5.5.3.6 Quizzes Maker

The Quiz Maker in the Drive Master system is a very important tool that will help the trainer or administrator in creating and managing quizzes for the students to help them study for driving exams. It provides a user-friendly interface where a trainer or an administrator can add quizzes by filling out a form with key details. The form requests the Quiz Name, which is the title of the quiz and describes what it is and into which category it falls, such as "Car Driving Theory" or "Motorcycle Safety." This form will also allow the trainer to specify the Number of Questions within the quiz they want to suit the needs and right preparation level for the students. Moreover, quizzes can be made for particular Categories like Motorcycle, Car, Truck, or Bus, and more enabling the content to be tailor-made for different types of vehicles. This feature will ensure that students will only focus on the relevant information needed for their specific exams.

The Quiz Maker allows a trainer or administrator to edit or delete a quiz once it has been created. This flexibility ensures that quizzes can be adjusted as needed or removed when they are no longer required. Overall, the Quiz Maker helps create customized quizzes that align with the students' learning needs and the driving school's curriculum.

Quiz Management											
Create and manage quizzes for different license types											
A - Motorcycle + ADD QUIZ <table border="1"> <thead> <tr> <th>Title</th> <th>Questions</th> <th>Created</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td colspan="4">No quizzes available</td> </tr> </tbody> </table>				Title	Questions	Created	Actions	No quizzes available			
Title	Questions	Created	Actions								
No quizzes available											
B - Car + ADD QUIZ <table border="1"> <thead> <tr> <th>Title</th> <th>Questions</th> <th>Created</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td colspan="4">No quizzes available</td> </tr> </tbody> </table>				Title	Questions	Created	Actions	No quizzes available			
Title	Questions	Created	Actions								
No quizzes available											
C - Truck + ADD QUIZ <table border="1"> <thead> <tr> <th>Title</th> <th>Questions</th> <th>Created</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td colspan="4">No quizzes available</td> </tr> </tbody> </table>				Title	Questions	Created	Actions	No quizzes available			
Title	Questions	Created	Actions								
No quizzes available											
D - Bus + ADD QUIZ <table border="1"> <thead> <tr> <th>Title</th> <th>Questions</th> <th>Created</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td colspan="4">No quizzes available</td> </tr> </tbody> </table>				Title	Questions	Created	Actions	No quizzes available			
Title	Questions	Created	Actions								
No quizzes available											

Figure 76:Quizzes maker

Now we will make a form for car (private licenses) with 3 questions and form name is Form 2025

Form 2025

1 Q1 ————— 2 Q2 ————— 3 Q3

Question 1

Text Image

Question Text *

Options (Select the correct answer)

Text Image

Option 1 Text *

Text Image

Option 2 Text *

Figure 77: Questions Form

The trainer can enter question either text or image or together and for 4 options too and choose correct answer. Here the form made and set in theory page of student and student can attempt the form.

Theory Test Practice

Master your driving theory with our comprehensive question sets

Form number 1

🕒 40 minutes ❓ 30 Questions

[▶ Start Practice](#)

Form number 2

🕒 40 minutes ❓ 6 Questions

[▶ Start Practice](#)

Form number 3

🕒 40 minutes ❓ 6 Questions

[▶ Start Practice](#)

Form 2025

🕒 40 minutes ❓ 3 Questions

[▶ Start Practice](#)

Figure 78: Result of adding form

5.5.3.7 Messages Page

The Messages module inside the Drive Master system is designed to allow trainers to communicate with their students seamlessly and in a well-organized manner. This feature is meant for better communication between trainers and students so that both parties will always be informed on any recent updates, lesson reminders, feedback, or any other information.

They are able to message a single student or even a group of students. These can be changes in lesson schedules, feedback from previous lessons, preparation for upcoming lessons, or advice in general. The messaging system is integrated within the platform, ensuring all communications are securely stored and easily accessible to both the trainer and the student.

The messaging interface is really user-friendly, with clear options for composing and sending text. Trainers can select the student or group of students they want to message, enter the message content, and send it directly through the system. Moreover, trainers can attach files, such as documents or images, if necessary, to enhance their communication.

In this messaging system, students can easily view messages from the trainer and respond in time. This system ensures at all times that students receive timely notifications whenever a new message is sent, thus keeping updated with the latest information or changes.

Overall, this feature will facilitate very effective communication between the trainers and students, help provide a supportive learning environment, and keep them on the same page in the training process.

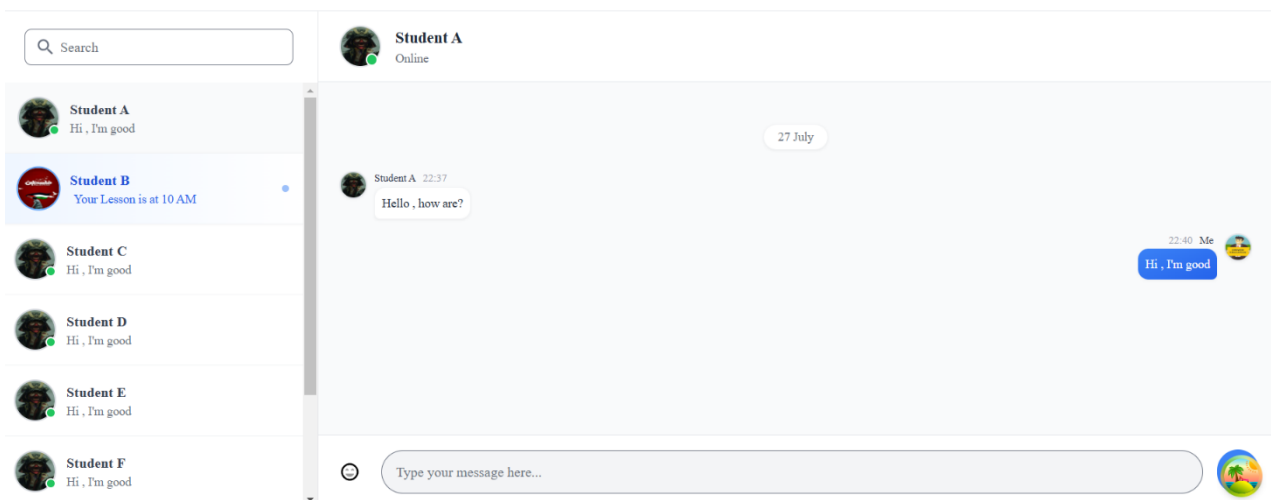


Figure 79: Chatting between trainer and student

5.5.3.8 Profile Page

The Profile Page of the trainer in the Drive Master system is a profile page where the trainers can view and manage their personal information, professional details, and account settings. It is designed to be organized and easy to navigate, providing trainers with a convenient space where they can update their profiles, manage their availability, and track their teaching activities.

The first profile page a trainer will have includes personal information: full name, contact details like email and phone, and a profile picture. This section shall act as a guide to the trainers so that they update their information from time to time.

Moreover, the trainers maintain their professional information such as qualifications, certification, and experience. It includes the certifications given to driving instructors, areas of specialization such as car, motorcycle, or truck, and years of teaching experience. This will provide an overview to the students about the qualifications and expertise that a particular trainer possesses in order to help them make informed decisions while booking their lessons.

The profile page is a place where the trainer can easily update and manage their professional and personal information so that they are able to offer a streamlined and professional experience for their students.

5.5.4 School Manager Screen and Features

5.5.4.1 School Home Page

Included among the key competencies provided within this module of the Drive Master system for School Managers is a dashboard showing key information. The summary view, entitled the Home School Page, acts like an overview that pertains to the organization and is designed with all the necessary details linked effectively. This is laid out in such a manner that everything associated with the school can be accessed from this single page, thus making it easy for the school manager to manage the operations.

The name of the school on top of the page gives immediate identification. At the top of this page, beneath the name is the contact info section that identifies the official school email address and phone number address, and the physical location. This keeps the mode of contact quicker and easier, whether it is towards the students or parents, in case anyone has to contact at any moment. Also, it includes a website link that will directly connect to the school's website for all details and resources. For example, the name of the school, the contact information of the school, and other information relevant to a school manager when he/she logs in to the "MEKKAWI" school will be displayed on the dashboard. This saves time in searching for information, hence more efficient for the school manager.

This is a well-thought-out-designed dashboard to manage and share information about schools. The School Manager's Dashboard is going to be a key tool in the Drive Master system for any school manager; it will provide him easy access, management, and updating of essential details in no time with great efficiency.

5.5.4.2 School Students Request

The Student Request Page in the Drive Master system allows the school managers to review and manage the joining applications of students. This page contains a table in tabular form that gives an overview of all student requests for quick handling of admissions. The page contain 3 tabs Pending, Accepted, and Rejected.

The table consists of the following key fields: -

- **Student:** This indicates the name of the applying student to join school.
- **Email:** Provides the email address of the student for easy contact.
- **License Type:** Type of license which the student is applying for, such as Car, Motorcycle, Truck, Bus.
- **Submission Date:** When the student has submitted their application; this enables prioritization by the date, with the older requests.
- **Status:** Current status of the application; for example, Pending, Approved, Rejected.
- **Documents:** Links to required documents submitted by the student, like identification and certifications.
- **Actions:** This option allows the manager of the school to take action on the application in question, for example, approval, rejection, or a call for more information.

The screenshot shows a web interface for managing school requests. At the top, there is a search bar labeled 'Search by student name...' and a date selector 'mm/dd/yyyy'. Below this are three tabs: 'PENDING (4)', 'ACCEPTED (2)', and 'REJECTED (2)'. The 'PENDING (4)' tab is active, displaying a table with the following data:

Student	Email	License Type	Submission Date	Status	Documents	Actions
J John Doe	john.doe@example.com	Class B	12/28/2024	Pending		
J Jane Smith	jane.smith@example.com	Class A	12/29/2024	Pending		
M Michael Brown	michael.brown@example.com	Class B	12/30/2024	Pending		
L Lisa Anderson	lisa.anderson@example.com	Class A	12/31/2024	Pending		

At the bottom of the table, there are navigation controls: '< 1 >'.

Figure 80: School requests

The Accepted tab contain the request that been accepted and the student added to school

School Requests						
Search by student name...					mm/dd/yyyy	
PENDING (4)		ACCEPTED (2)		REJECTED (2)		
Student	Email	License Type	Submission Date	Status	Documents	
R Robert Wilson	robert.wilson@example.com	Class B	12/25/2024	Accepted	👁️ 👁️	
S Sarah Johnson	sarah.johnson@example.com	Class A	12/27/2024	Accepted	👁️ 👁️	

Figure 81: Accpeted Tab

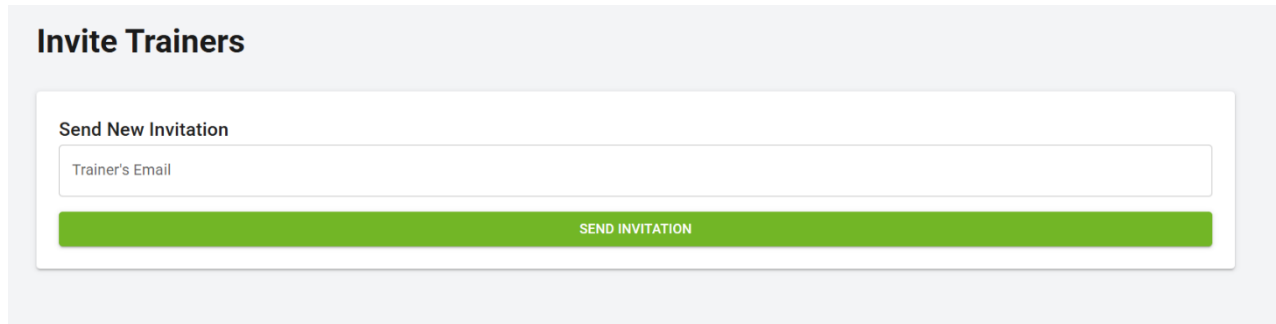
And the Rejected tab that contain rejected requests.

School Requests						
Search by student name...					mm/dd/yyyy	
PENDING (4)		ACCEPTED (2)		REJECTED (2)		
Student	Email	License Type	Submission Date	Status	Documents	
E Emily Davis	emily.davis@example.com	Class A	12/24/2024	Rejected	👁️ 👁️	
D David Lee	david.lee@example.com	Class B	12/23/2024	Rejected	👁️ 👁️	

Figure 82:Rejected Tab

5.5.4.3 Invite Trainers Page

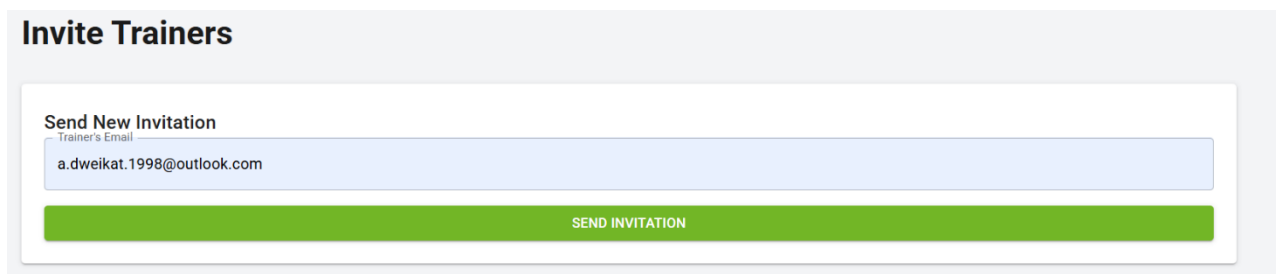
Invite Trainers is that page within the Drive Master system where a school manager may invite trainers into their school. Basically, this facility makes sending email invitations very easily and both fast and efficiently to potential trainers for training recruitment and onboarding.



The screenshot shows a web interface titled "Invite Trainers". Below the title is a section labeled "Send New Invitation". Inside this section is a text input field with the placeholder text "Trainer's Email". Below the input field is a prominent green button with the text "SEND INVITATION" in white capital letters.

Figure 83: Invite Trainer

Here we will enter an email to send to him the invite.



This screenshot shows the same "Invite Trainers" interface as Figure 83, but with the email address "a.dweikat.1998@outlook.com" entered into the "Trainer's Email" input field. The green "SEND INVITATION" button remains visible below the field.

Figure 84: Enter Email

5.5.4.4 School Trainers Page

The School Trainers Page allows the school manager in the Drive Master system to monitor all trainers associated with his or her school with detail and organized structure. Below is the overview of the main page, which includes information on the main table: names of the trainers, emails, phone, number of assigned students, status of the trainer, and an "Actions" button for going into further detail.

Trainer	Email	Phone	Students	Status	Actions
John Doe	john.doe@example.com	1234567890	5	available	
Jane Smith	jane.smith@example.com	9876543210	3	busy	

Figure 85: Students Page

When a manager clicks the "Actions" button for a certain trainer, it opens the Trainer Details Page, which serves as a comprehensive profile for the selected trainer. This page starts by showing the personal and professional details of the trainer, including full name, contact information, qualifications, certifications, and specialty areas such as car, motorcycle, or truck training. The status of the trainer, whether active, inactive, or on leave, is also displayed.

Trainer Details

John Doe
available

Email: john.doe@example.com Phone: 1234567890

Joined Date: 2023-01-15

Figure 86: Trainer Details

In addition, and besides personal data, this the Trainer Details Page contains two big fields for maintenance of activities conducted with the trainer. First comes a table with a list of all assigned to the trainer showing such students information as a name, license type, contact number, completed number of lessons and status, indicating whether he is training now, or finished a course. This table allows the managers to follow the workload of the trainer while students make progress.

Current Students

Search by student name... All License Types

Student	License Type	Contact Number	Lessons Taken	Blood Type
John Doe	Class A	555-123-4567	12 lessons	A+
Jane Smith	Class B	098-765-4321	8 lessons	O-
Emily Davis	Class B	555-123-4567	15 lessons	B+

Figure 87: Trainer Students

The second section on the Trainer Details Page concerns the availability of the trainer. This table represents the trainer's availability: it mentions a day on which the trainer will be available, the start and end time for each availability period, and whether the availability is recurring or for a specific date. This helps the manager align the trainer schedule with the student booking and ensures good utilization of each time slot.

Available Time Slots

Search by car... All Days mm/dd/yyyy All Times

Type	Days/Date	Time	Car
Weekly	Monday Wednesday Friday	9:00 AM	T Toyota Camry
One-time	Wednesday, January 15, 2025	2:00 PM	H Honda Civic
One-time	Monday, January 20, 2025	3:30 PM	H Honda Civic

Figure 88: Trainer Availability

The School Trainers Page boasts a search bar and filters for enabling managers to find just about any trainer by name, email, or status. Specifically, from the Trainer Details Page, managers have the ability to update the status of that trainer, change the number of currently assigned students, or edit that trainer's availability to take on more students. With this intuitive UI, school managers will have no problem managing their pool of trainers efficiently for the ease of running the operation of schools.

5.5.4.5 School Cars Page

The School Cars Page in the Drive Master system provides school managers with a clear and organized overview of all the cars associated with their driving school. The main page is structured as a table, displaying essential details about each vehicle. Each row in the table includes the following information:

- **Car:** The make and model of the vehicle, helping managers quickly identify the specific car.
- **Year:** The manufacturing year of the car, which indicates its age and potential suitability for training.
- **Transmission:** Information about whether the car is automatic or manual, enabling managers to track the vehicle type for training purposes.
- **Owner:** The name of the individual or organization owning the car, typically the driving school itself or a third party.
- **Status:** The current operational status of the vehicle, such as active, under maintenance, or retired from use.
- **Actions:** Two buttons, "Edit" and "Delete," provide managers with options to update the car's details or remove it from the system if it is no longer in use.

Car	Year	Transmission	Owner	Status	Actions
Toyota Corolla	2020	Automatic	school	Available	
Honda Civic	2021	Manual	school	In Use	

Figure 89: School Cars

Managers can click the "Edit" button to modify details about a car, such as updating its status, changing ownership, or correcting transmission information. The "Delete" button removes the car record from the system, but it might prompt a confirmation to avoid accidental deletions.

Edit Car

Car Model
Toyota Corolla

Year
2020

Transmission
Automatic

Owner Type
School

UPLOAD CAR IMAGE




Selected car

CANCEL SAVE CHANGES

Figure 90: Edit an Car details

The page includes search and filter functionalities, allowing managers to quickly locate cars based on their make, model, year, or status. This functionality ensures that managers can efficiently manage the school's fleet, keeping vehicles updated and ready for student training.

Here after delete a car from school cars.

Car	Year	Transmission	Owner	Status	Actions
 Honda Civic	2021	Manual	school	In Use	 

< 1 >

Figure 91: Delete an car

The car adding feature in the Drive Master system provides the ability for school managers to add new vehicles to their driving school with full and detailed information. This is a user-friendly page with a form to enter all the required details about the car. Firstly, the manager needs to fill in the model of the car, mentioning the make and model of the vehicle, such as "Toyota Corolla" or "Ford Focus," for proper identification. The next line, the manufacturing year of the car, gives important information on the age and suitability for training purposes.

The transmission type is filled by choosing from a dropdown or similar input field that enables the manager to indicate whether the car has an automatic or manual transmission, thus fitting the requirements of the license type of the students. It also includes ownership information; by default, this is the driving school itself. However, if the car belongs to a trainer who is registered with the school, the manager can choose the name of the trainer from the list of trainers registered

and thus correctly associate the vehicle to its owner.

The manager, after filling in all the information, submits the form, and input validation is done before the system saves it in the school's database. In this way, it simplifies fleet management by making the school maintain the record of vehicles in an organized way.

Add New Car

Car Model
Honda Civic

Year
2025

Transmission
Manual

Owner Type
Trainer

Select Trainer
John Doe

UPLOAD CAR IMAGE

CANCEL ADD CAR

Figure 92: Adding an car

Here the result of adding this car

Search by car model, plate number... All Status

Car	Year	Transmission	Owner	Status	Actions
Toyota Corolla	2020	Automatic	school	Available	
Honda Civic	2021	Manual	school	In Use	
Honda Civic	2025	Manual	John Doe	Available	

< 1 >

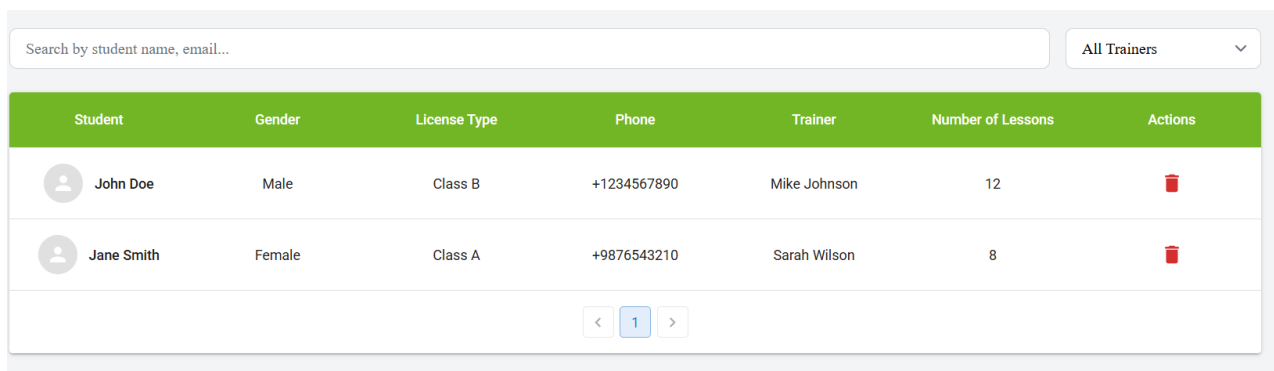
Figure 93: Result of Adding

5.5.4.6 School Students

The School Students page in the Drive Master system gives the school manager an overview of all enrolled students. Each student will be presented in a table format, showing key information for easier management and tracking of each student.

It provides the table with the name of the student, gender, and type of license he or she is training for, whether a car, motorcycle, or truck. This also includes contact information such as the phone number of the student for easy contact if needed. It shows the assigned trainer to the student, providing full visibility of the trainer-student relationship that helps managers track training progress.

This page also gives the total number of lessons taken by each student, showing progress and readiness for a driving exam. Managers can take actions like deletion of any student record if needed with an "Actions" option provided. With this design, the management of the student information becomes simple and easy, enhancing the efficiency of the entire operation of the school.







Student	Gender	License Type	Phone	Trainer	Number of Lessons	Actions
 John Doe	Male	Class B	+1234567890	Mike Johnson	12	
 Jane Smith	Female	Class A	+9876543210	Sarah Wilson	8	

Figure 94: School Students

5.5.4.7 Messages Page

The School Manager Messages page in the Drive Master system is designed to facilitate seamless communication between the school manager and both students and trainers within the same school. This feature ensures that all necessary interactions can take place efficiently within a centralized platform, eliminating the need for external communication tools.

The page provides a messaging interface where the school manager can initiate and manage conversations with students and trainers. Messages can be sent to individual recipients or groups, allowing for personalized or broad communication as needed. For instance, the school manager might use this page to send reminders about upcoming lessons, share important announcements, or address specific concerns raised by students or trainers.

The messaging system organizes conversations into distinct categories for trainers and students,

ensuring clarity and ease of navigation. Each message thread displays essential details, such as the recipient's name and the date of the last message, making it simple to track and manage ongoing discussions. This page fosters effective communication within the school, supporting better coordination, timely responses, and a more connected learning environment.

5.5.4.8 Profile Page

The School Manager Profile Page in the Drive Master system is a one-stop platform for the manager to observe and update his personal and professional information. This page has been designed to ensure that the manager's information is accurate, up-to-date, and easily accessible to enhance better management and communication within the school.

The profile page will contain the personal information of the manager: full name, email address, contact number, and profile picture. This section gives the manager an opportunity to edit their details at any time to make themselves reachable to trainers and students.

5.5.4.9 School details

In the school details section of the Drive Master system, one gets a snapshot view of the key metrics representing the overall status and performance of the driving school. It does aggregation for essential data such as the total number of students, total trainers, total cars, and success rates of students in both theoretical and practical exams.

Showing the Total Students gives an immediate feel for the size of the student body and helps school managers track the growth in enrollment or areas that may require recruitment. The total trainers section reflects the amount of instructors available to teach, which is crucial for balancing student-to-trainer ratios and ensuring efficient class scheduling.

This is important because the Total Cars metric ensures that there are cars available to carry out practical lessons. This would mean a larger number of cars can attend to more students, especially during peak hours.

The percentage of students who passed both the Theoretical Exam and the Practical Exam is indicative of the performance in their respective written and practical tests. These figures will give an idea of how well the students are being trained and whether they are being prepared adequately for exams. Generally speaking, a high pass rate reflects good teaching, while a low rate might suggest that either the curriculum or instruction should be reviewed and revised.

Lastly, the number of practical lessons conducted reflects the Practical Lessons count. It offers a measure of the activity and engagement of students in hands-on training. This will also help assess the overall completion rate of practical lessons, which directly influences student readiness for their practical exams.

In all, this section is supposed to avail the school managers with an at-a-glance view of performance through key driving school areas for data-informed decision-making on the conduct of the school for its improvement and growth.

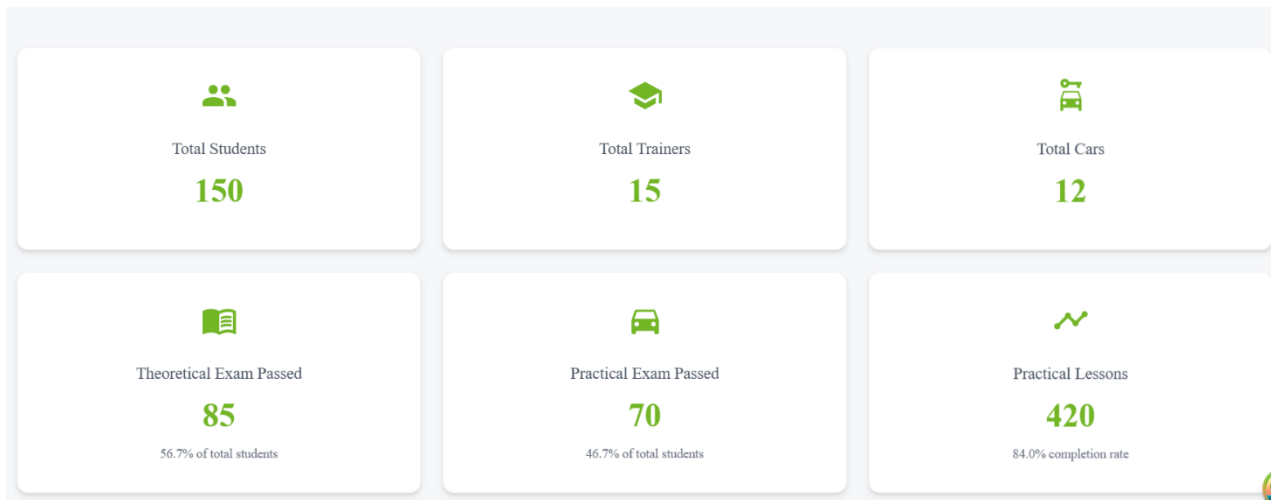


Figure 95: School Manager Dashboard

5.5.4 Administrator Screen and Features

5.5.4.1 Schools Page

The Schools page for an administrator in the Drive Master system represents an overview page that lets all schools registered within the system be managed and tracked. It contains a list of schools with some key details, such as school name, address, city, phone, e-mail, website. Such fields provide, on one hand, a good overview to an administrator about each school in such a way that he could track which school is located where and generally contact them.

In addition to the above information, the page offers several other actions for each school. For any of the schools, administrators can edit details, thereby updating their information in places that they see fit. They can also view the details of a particular school to retrieve more details about it. If need be, there is the delete option for administrators in removing a school from the system. This page also has a filter facility, important for administrators in narrowing down the list of schools based on certain criteria. It can be filtered to find particular schools, hence making it easier to manage and maintain a large number of institutions. In case of many schools, this would facilitate locating, editing, or reviewing of information related to any specific school in an orderly manner.

The Schools page is designed to provide administrators with an easy, centralized location to review and manage schools in the system for accuracy, and to easily make necessary changes. This makes managing a multi-school environment easier by allowing one to quickly access information and take actions.

School	Address	City	Phone	Email	Website	Actions
Elite Driving Academy	123 Main Street	New York	123-456-7890	info@elitedriving.com	www.elitedriving.com	
Safe Drive School	456 Oak Avenue	Los Angeles	234-567-8901	contact@safedrive.com	www.safedrive.com	
Pro Drivers Academy	789 Pine Road	Chicago	345-678-9012	info@prodrivers.com	www.prodrivers.com	
Master Driving School	321 Elm Street	Houston	456-789-0123	info@masterdrive.com	www.masterdrive.com	
City Drivers Institute	555 Urban Street	Boston	567-890-1234	info@citydrivers.com	www.citydrivers.com	

Figure 100:Admin School Requests

Now when click see details button, the delete and edit button handle schools’ details.

Elite Driving Academy

Address
123 Main Street

City
New York

Phone
123-456-7890

Email
info@elitedriving.com

Website
www.elitedriving.com

Description
Premier driving school with experienced instructors. Our comprehensive curriculum covers defensive driving, traffic laws, and hands-on practice with modern vehicles.

School Manager
John Smith

Manager Email
john.smith@elitedriving.com

CLOSE

Figure 101:School Details

5.5.4.2 Schools Request Page

The School Request Page is designed to show the list of school requests and review applications in the Drive Master system. This page works similarly to the Schools page but shows new requests from schools to be added into the system. There will be a table on this page showing the basic information of every school request, such as School Name, Address, City, Contact Info, Status, and Submission Date. This information will give the administrator a proper insight into the schools applying to join the system.

This page consists of three tabs, which include: Pending, Accepted, and Rejected. Pending tab contains a list of schools that have raised requests pending in approval or rejection. Accepted tab lists down schools already accepted into the system while rejected tab contains those not accepted.

With every school listed here, there is a set of actions available. The See Details button will allow the administrator to delve more deeply into information about the school and its application. Where the administrator intends to accept or reject a school, he selects to do so by clicking the buttons provided for those purposes. On acceptance, a school gets added to the Drive Master system and is able to start operations on the platform; if rejected, it is removed.

The School Request Page is paramount for administrators to handle the coming applications from schools efficiently. This page gives a structured way of managing, reviewing, and approving or rejecting schools, ensuring that only qualified schools are added to the system. It simplifies the decision-making process and enhances the overall efficiency of managing school requests.

School	Address	City	Contact Info	Status	Submission Date	Actions
Drive Master Academy	123 Drive St	New York	info@drivemaster.com 123-456-7890	Pending	Jan 15, 2024, 10:30 AM	
Elite Driving Academy	321 Elite Blvd	Miami	contact@elitedriving.com 444-555-6666	Pending	Jan 16, 2024, 08:20 AM	



Figure 103: School Request

School	Address	City	Contact Info	Status	Submission Date	Actions
Pro Drivers School	456 Pro Ave	Los Angeles	contact@prodrivers.com 098-765-4321	Accepted	Jan 14, 2024, 03:45 PM	
City Drivers School	555 Urban St	Boston	info@citydrivers.com 777-888-9999	Accepted	Jan 12, 2024, 02:30 PM	

Figure 102: Accepted Tab

Search by school name, email... mm/dd/yyyy

PENDING (2) ACCEPTED (2) **REJECTED (1)**

School	Address	City	Contact Info	Status	Submission Date	Actions
 Safe Drive Institute	789 Safe Rd	Chicago	info@safedrive.com 111-222-3333	Rejected	Jan 13, 2024, 09:15 AM	

< 1 >

Figure 108: Rejected Tab

5.5.4.3 Admin Messages Page

The Administrator Messages Page provides a direct channel of communication between the administrator and the school managers using the Drive Master system. This is where an administrator can both send and receive messages from school managers on this platform to ensure everything works well.

The Messages interface is a neat space where administrators can view conversations with school managers. Administrators can create new messages or respond to incoming messages. The system ensures that all communications are streamlined and kept in one location, making it easier for both parties to track discussions.

Messages between administrators and school managers range from policy updates, requests for information, to system-related announcements. Facilitation for direct and effective communication ensures that the relationship between administrators and school managers is collaborative to ensure smooth operations of schools and address any problems or questions that might arise on time.

The Administrator Messages Page will, in the long run, make for better communication and access to support on the part of the school's managers from the administration's side.

5.5.4.4 Admin Dashboard

The Admin Dashboard serves as the central management tool for overseeing the entire Drive Master system. This dashboard provides administrators with a comprehensive overview of critical metrics and data points that allow them to monitor the overall performance of the platform and ensure that everything is running smoothly.

At the core of the dashboard is a summary of key statistics, including the total number of schools, cars, trainers, and students. This gives administrator's immediate visibility into the scope of the operation, showing how many entities are currently active within the system. Additionally, the dashboard provides a snapshot of student progress, with metrics on the percentage of students who have passed their theoretical and practical exams, as well as the number of practical lessons completed.

The dashboard also offers a more detailed breakdown of performance, including insights into the schools' distribution by city, allowing administrators to identify which locations have higher concentrations of schools, trainers, and students. This can help inform decision-making when it comes to resource allocation or identifying areas that may need additional support. Finally, the Monthly Performance section offers administrators the ability to track the performance and progress of the platform over time, enabling them to assess trends, identify areas of improvement, and make adjustments as necessary to support the growth and success of Drive Master. The dashboard as a whole is an indispensable tool for ensuring that all aspects of the system are functioning optimally, and it empowers administrators to make data-driven decisions for continuous improvement.

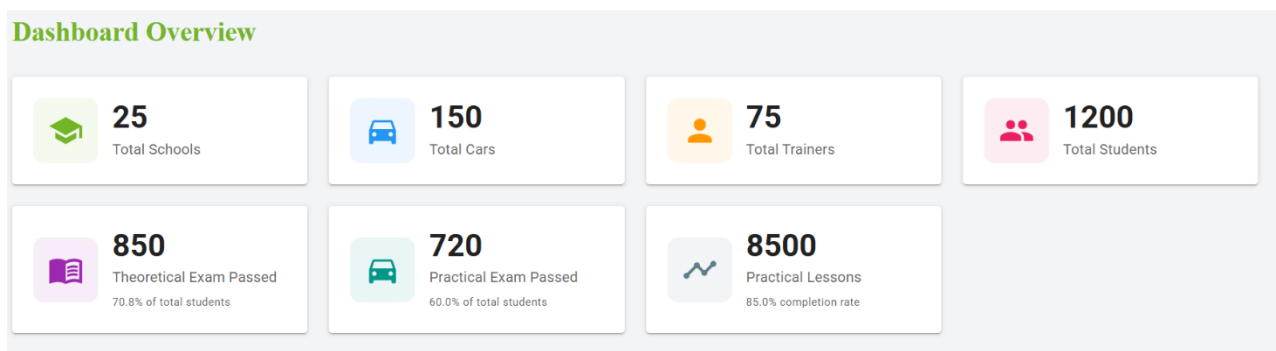


Figure 109: Data of Web

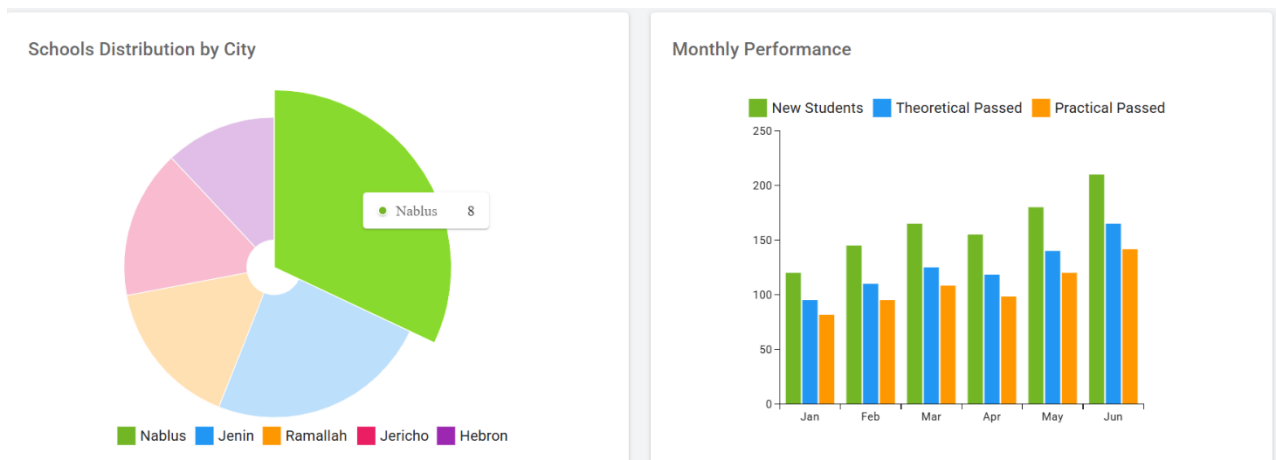


Figure 113: Charts

System Features and Implementation

6.1 Mobile Application

6.1.1 Login and Registration Feature

6.1.1.1 Login Page

It also means that in the Drive Master mobile application, there is no ability to create an account for new users, while an account can be created only within the web version of the very same application. That said, only registered users will have the possibility to log into the application. The sign-in page allows for easy and secure authentication, where it will enable or allow the tutors, students, and school managers to access an account. Great validation techniques apply to both fields of email address and password just for security with accuracy. There is verification to ensure that emails are in proper format, whereas password validation prohibits weak credentials as per the imposed security standards.

On the login page, there is a "Forgot Password" option for the users who have forgotten their password, which would initiate a password recovery process, guiding a user through a secure method of resetting their credentials via their registered e-mail.

The Drive Master mobile application thus leads to a friendly yet safe authentication system and gives users access without much hassle but keeping all stringent security protocols in place.

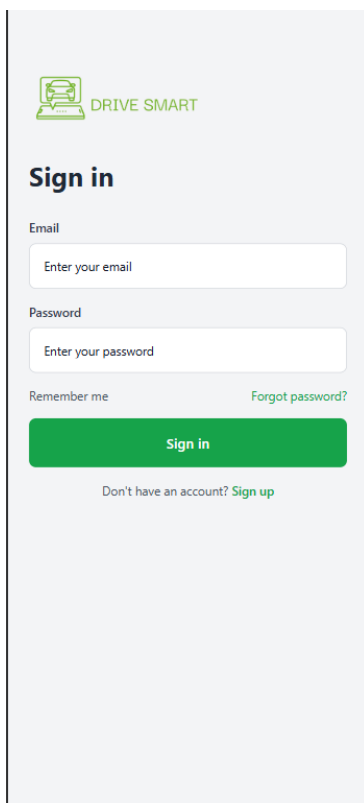


Figure 114:mobile login

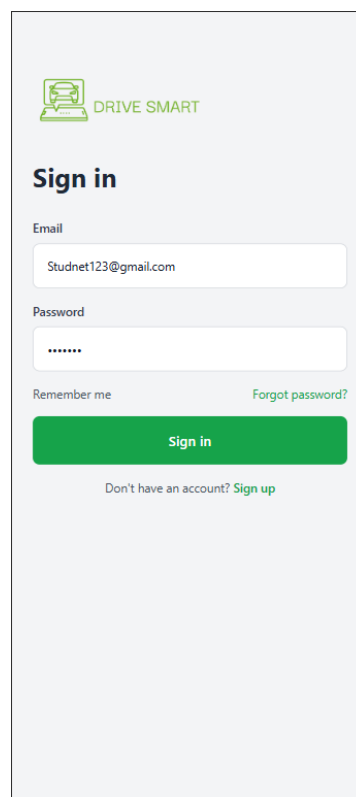


Figure 115:filled filleds

6.1.2 Student Screen and Features

6.1.2.1 Home Page

The main page of the student part in the design of the Drive Master mobile application should reflect, in some comprehensible format, the progress of the user in driving. It also has a neat and clear interface where users can find out instantly what to do and what actions to take.

A greeting welcoming the user is at the top of the page; this is followed by a summary of their next lesson, showing a date, time, and a name of the trainer. That keeps users up to date with their forthcoming commitments.

Key driving progress metrics, such as the number of lessons taken and the success rate, are prominently displayed. A progress bar that highlights how the user is faring toward their next milestone-in other words, motivating and a sense of achievement.

Below the progress section, there are quick action buttons to reach the most visited areas with ease. They include "Book a Lesson", "View Schedule", and "My Progress Details." Each has an assigned color for easy location and quick navigation to commonly visited areas.

It opens the menu navigation when clicked, allowing users to smoothly switch between different sections of the app: home page, lessons, booking, profile, chat, and a sign-out option. It is intuitive in layout for a smooth user experience.

In all, the home page is like a central hub where important information and actions are easily accessible, yet it manages to keep things slick and engaging.

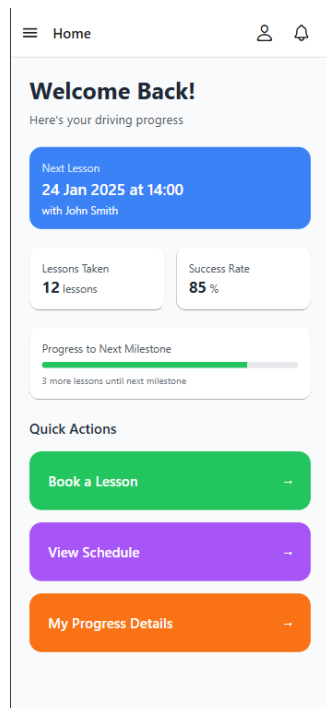


Figure 116: Student Home Page

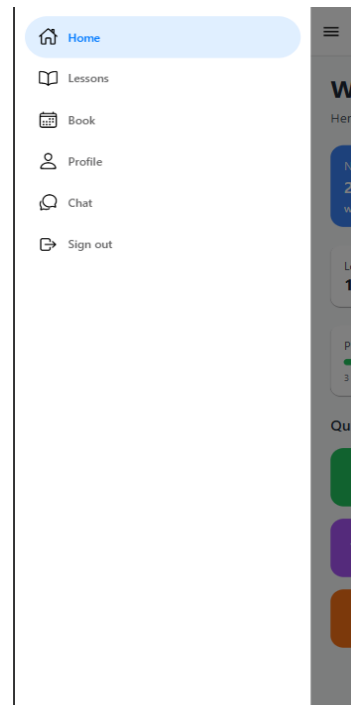


Figure 117:menu

6.1.2.2 My Lessons Page

The "My Lessons" page in the Drive Master mobile application gives users an organized, well-detailed overview of their driving lessons. This interface is thus designed to let users efficiently trace their lessons and be well up-to-date on their schedule.

The title on this page says "Upcoming Lessons" so that users understand the particular part they are currently looking at. Each lesson in the list comes in card format, displaying essential details in the most readable format:

Each card has the name of the driving lesson, which could be anything from "Techniques of Winter Driving" to "Master the Art of Parking." Date and Time: Clearly displays the scheduled date and time for a quick check of the schedule of lessons. Car Info: Model and brand of the car assigned to the lesson provide information so users know what they will be in.

Status Badge: Yellow color "Upcoming" badge highlights the status of each lesson, which depicts these lessons are yet to be taken. And the bottom navigation bar further categorized these lessons in different tabs like this:

- **Upcoming:** Depicts lessons which are scheduled at some point in the future.

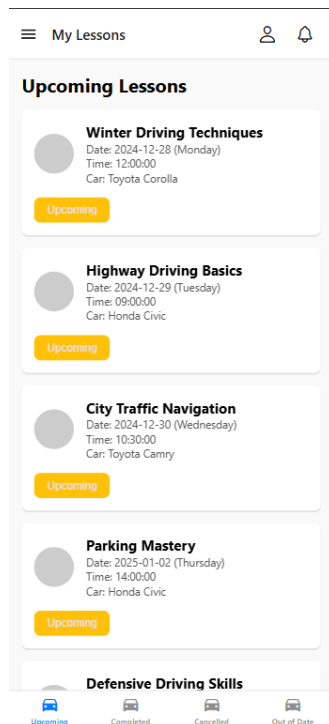


Figure 118: Upcoming lesson

- **Completed:** Those lessons which have been attended by the user will be shown.
 - Here student can write feedback about the lesson.

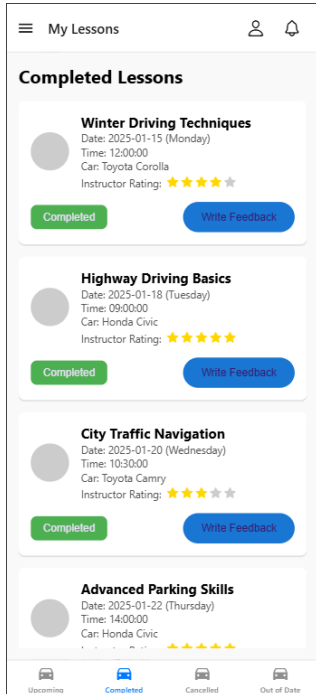


Figure 119: Completed Lessons

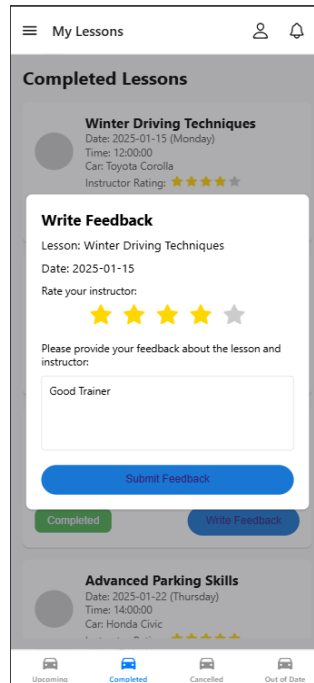


Figure 120: Write Feedback

- **Cancelled:** Lessons cancelled are listed.

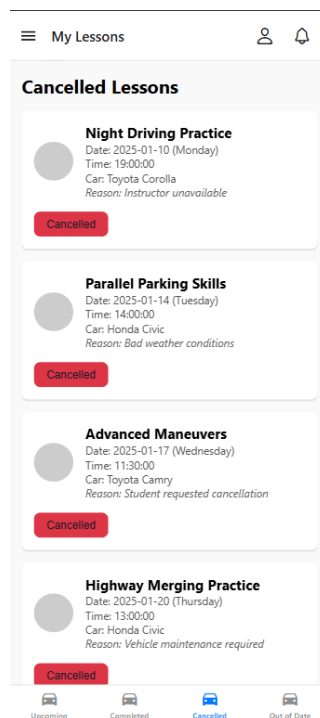


Figure 121: Cancelled Lessons

- **Out of Date:** This will include missed lessons or lessons no longer relevant.

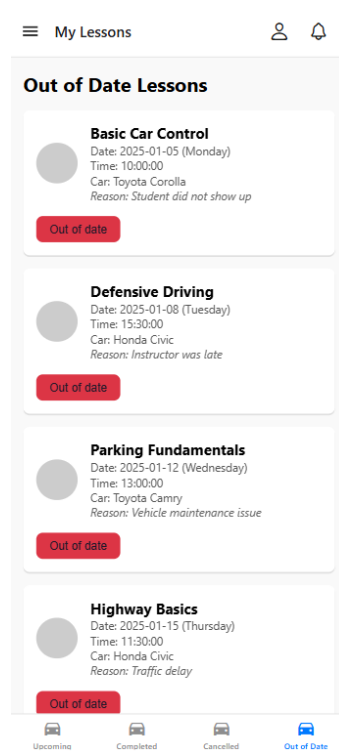


Figure 122:out of date

This will surely mean organized structure, ease of navigation, hence comfort in managing driving lessons, tracking progress, and staying on top of commitments. The design really did not forget about accessibility and functionality in order to enhance user experience.

6.1.2.3 Booking Page

Below is an attempt to make it easier with the "Book a Lesson" option in the Drive Master mobile application. It ensures that one's experience is smooth while booking through an intuitive visualization of all available trainers and their schedules.

This would include an "Apply Filters" button at the top, allowing the user to refine their chosen search. These filters include:

- **Trainer:** The user can select a preferred trainer, depending on availability or expertise of the trainer.
- **Car:** He can filter by the car model or type to be assured it will fit his learning preference.
- **Day:** Selects certain days for the classes, like the weekdays or weekend, whichever might fit best for the person teaching.
- **Time:** Lessons can be filtered according to desired times, which include morning, afternoon, or evening time slots.

Below the filter section is listed in a card format the trainers available. The cards contain information such as:

- **Trainer Name:** Fill in the name of the trainers, for example, John Doe or Jane Smith.
- **Availability Details:** Days and time the trainer is available for lessons; this will be clearly stated to the user for convenience.
- **Book Lesson Button:** A green "Book Lesson" button is placed on each card for quickly choosing and booking a lesson with a trainer.

Bottom Navigation Bar: It contains tabs to toggle between booking-related features:

- **New Booking:** The currently viewed page for browsing and booking lessons.
- **Booking Request Status:** Allows viewing of the status of the booking requests submitted by the user.

The structure of this page is neat and well-organized, so one can easily choose an appropriate option for lessons and book them without any inconvenience. Filters add more usability by allowing flexibility to serve individual needs and make the process of booking quick and easy.

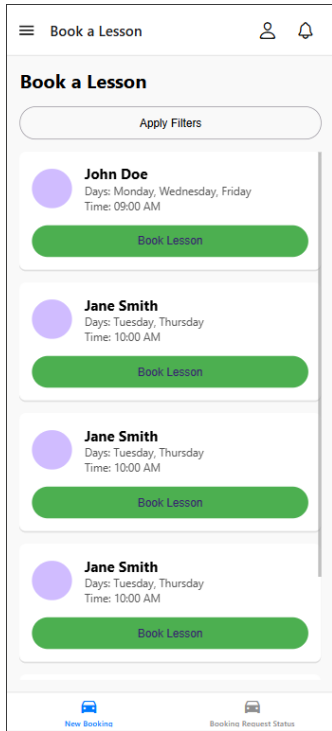


Figure 125: Booking Page

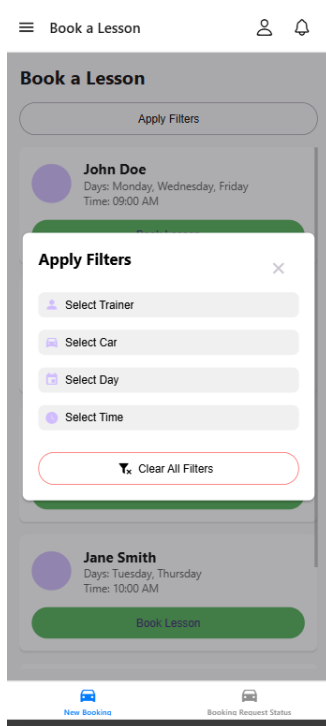


Figure 124: Filter

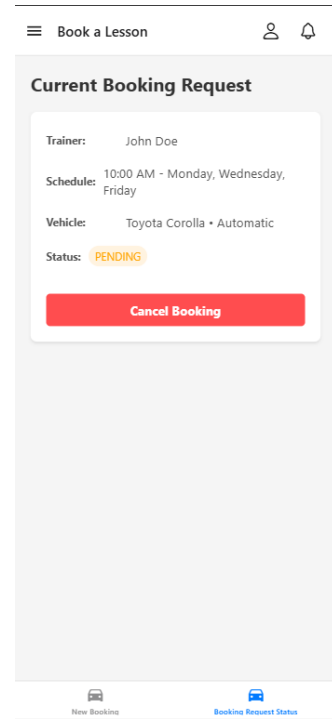


Figure 123: Booking Request

6.1.2.4 Profile Page

The student profile page is represented with the Drive Master mobile application wherein a student could view his personal and address details very neatly. The page has been designed in such a manner that the student will easily be able to access his information while maintaining a clean and intuitive layout. A profile picture or placeholder with a full name of the student can be placed at the top. Below that comes the personal information of email, phone number, gender, and date of birth in a neat format. The address details are quite clearly shown to guarantee neither errors nor any element of inaccessibility: the street, city, state or region, postal code. It can also include an "Edit Profile" option where, from time to time, the students may go in and update their information. This will assist in keeping validity of their information within the system. The general layout is supposed to be easy to use, hence it is easy for them to view their personal information at the Drive Master platform.

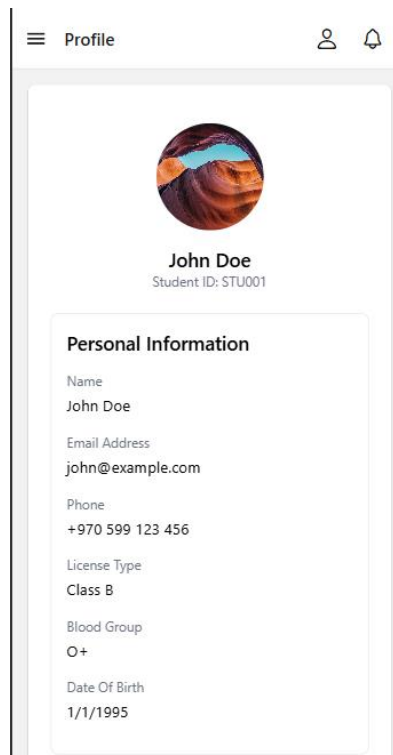


Figure 126: Profile Page

6.1.2.5 Messages Page

On the Messages page, the Drive Master application provides an easy platform where students can reach out to the trainers assigned for them and to the management of the school. It's supposed to be neat, straightforward, and hassle-free, ensuring that users can get a quick look at their conversations and manage them.

On top of the page is a list of currently open chats. Each entry contains the name of the contact, his profile picture, and the type of the last sent and/or received message. The chats go in chronological order with the latest one on top.

It opens a conversation interface when any user selects one, showing messages in a threaded format for clarity and smooth tracking of the communication flow. Students can send and receive text messages; attachments are also possible for relevant information in the form of documents or images.

In addition, the Messages Page can be complemented by features such as search functionality to quickly locate certain conversations and notifications that will notify users about new messages. This page enables good communication, allowing students to stay in touch with their trainers and the school, thus enriching their experience on the Drive Master platform.



Figure 128: Chatting

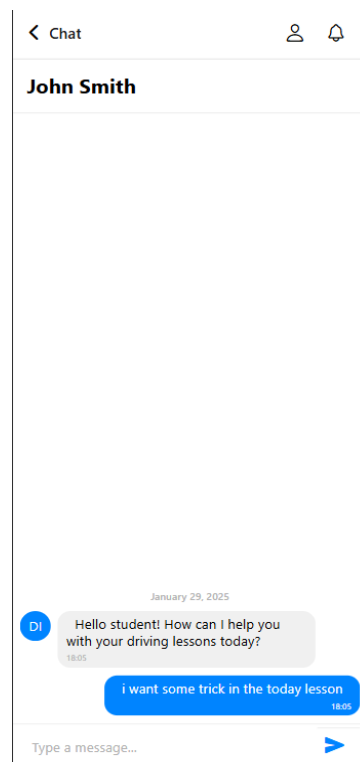


Figure 127: Chatting fields

6.1.2.6 Messages Page

Notifications are one of the most outstanding features about the Drive Master application, something very important that a user is to be informed about on the status of his lessons or other notifications. Using it, students, trainers, and school managers will be integrated in real time. The system will support notifications regarding lessons pending, lessons canceled, lessons time changed, or a reminder for a new booking of lessons. The notifications make life easier by letting them remember every important date that they would not want to miss. For example, this student will be sent a reminder in one day concerning the pending lesson or updates, if their respective trainer changes the lesson time.

On the other hand, the trainers are notified on booking by a student, cancelation, or changes in one's schedule. These notifications shall ensure that a trainer can easily organize his schedule and deliver effectively to the students.

Notifications also update the manager on administrative procedures, like registrations of new students, the status of lessons, and requests for feedback. It helps keep a record of important activities and thereby ensures smooth administration at all levels.

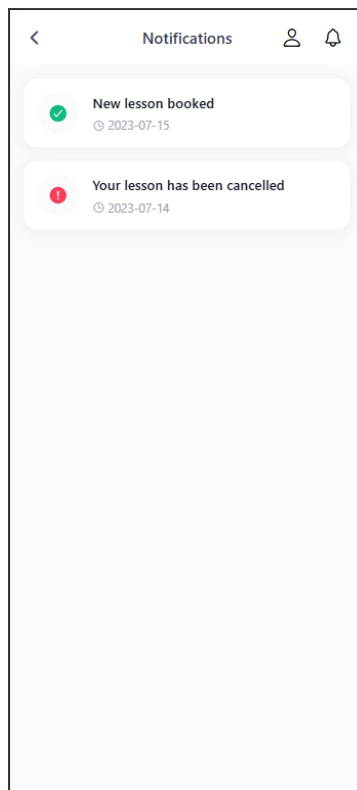


Figure 129: Notifications

6.1.3 Trainer Screen and Features

6.1.3.1 Home Page

The Drive Master trainer dashboard is neat and effective; it's a layout serving the needs of driving instructors. It gives them a personal welcome message on the home screen, a glimpse at their teaching schedule, and an overview of their progress. A big panel at the top shows the total lessons scheduled for the day alongside the tracker of how many were completed, helping the trainers stay organized and on track.

Performance presents critical information such as active students, success rate for the past month, total lessons completed, and total teaching hours. Such information will enable trainers to get a hint of the effectiveness of their teaching and where it needs attention.

Below the summary is the next scheduled lesson, highlighted further, detailing on student's name, course level, and lesson time to help trainers easily prepare for their session.

It contains a neat left side-bar-like navigating panel on the left where one can reach a lot of important features: student management, lesson management, booking of lessons, profile settings, and even chat. The thoughtfulness in design of the trainer's dashboard is intuitive and user-oriented, aimed at driving productivity by means of effective student engagement.

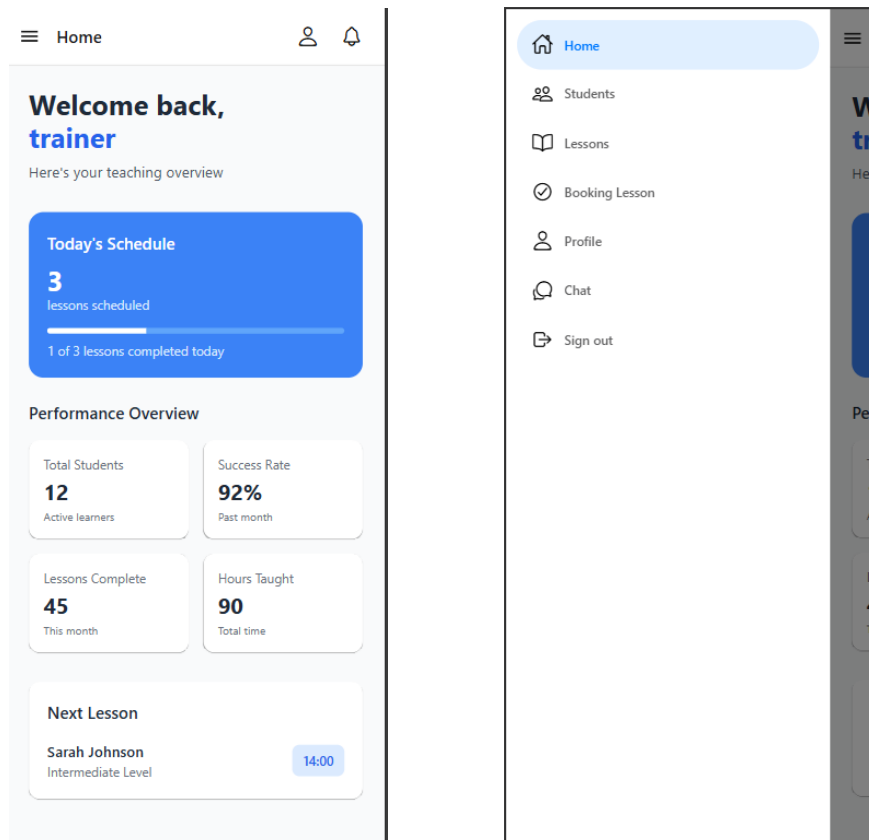


Figure 130:Trainer Home

6.1.3.2 Students Page

The Drive Master student page gives the trainer an overview of each student in a neat and tidy format. This layout offers key information that is easy to read and understand, thus maximizing efficiency in managing and tracking the progress of the student.

Each student profile includes important data such as the student's gender, license type, contact information, blood type, and the total number of lessons taken. This structured presentation allows trainers to quickly gather insights about their students and tailor their teaching approach accordingly.

A more functional dynamic filtering system on the page makes different filtering and categorization of student records easier for a trainer: by gender, blood type, license type, which enable the trainer to narrow down his search and focus on some groups of students.

The student page is designed to be highly intuitive, with filtering capabilities that enable trainers to manage their students effectively, make informed decisions, and create a learning experience that caters to the needs and preferences of each student individually.

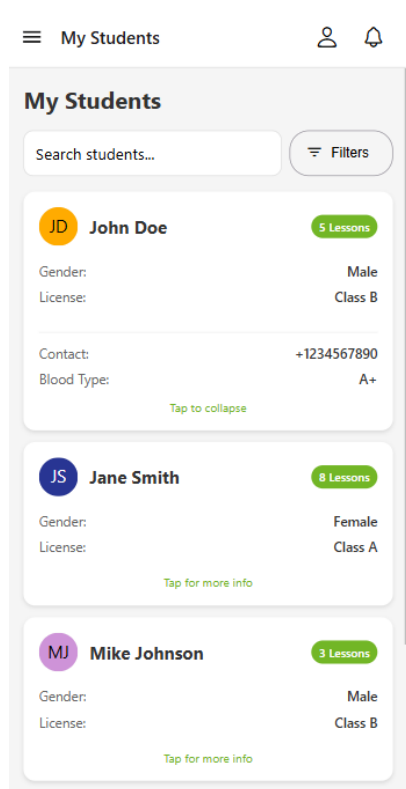


Figure 132:Trainer Students

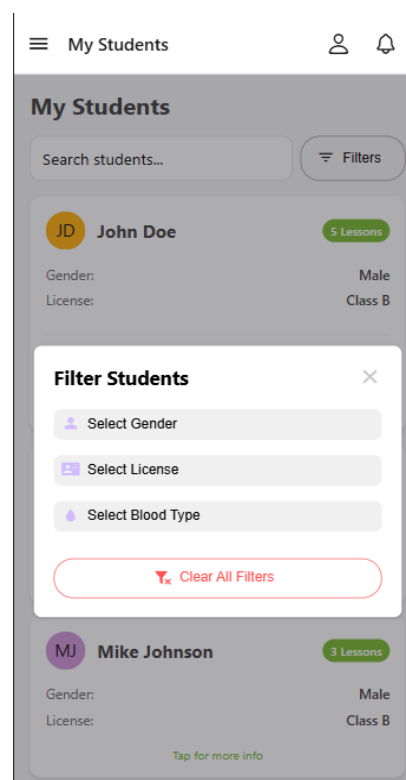


Figure 131:Applying Filter

6.1.3.3 Lessons Page

The Drive Master lesson page gives an orderly, intuitive interface in which lessons are grouped into four logical tabs: Upcoming, Completed, Canceled, and Out of Date. This makes sure that trainers can track and manage the status of their lessons efficiently without a hitch in the workflow.

The tab for **upcoming** will list all the upcoming lessons so the trainers can be prepared in advance, while each lesson entry will showcase a feature to cancel the lesson with an easier "Cancel Lesson" option. This will make rescheduling or cancellation easier.

In the **Completed** tab, there are two categories: lessons with rate and without rate.

- Lessons with rate provide trainers the ability to go back, edit, and update former ratings and comments, thus allowing for continuous improvement in their instructional approach. This filter also sorts lessons by performance ratings in star rating.
- Lessons without a rate prompt trainers to add ratings and feedback so that a full history of evaluation for every session is maintained.

Below, it shows the history of the **canceled** sessions for clear tracking on the administrative side.

The **Out of Date** tab presents the sessions planned but missed without cancellation, enabling the trainer to find and smoothen out any discrepancies in the schedule.

This well-organized and feature-rich lesson page supports the work of trainers in creating a structured, flexible, and responsive teaching environment on the Drive Master platform.

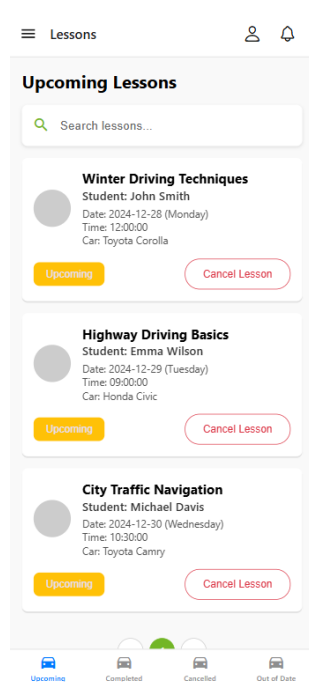


Figure 134:Trainer Lessons

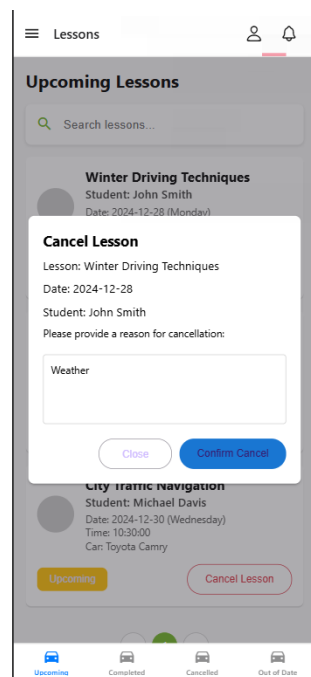


Figure 133:Cancel and lesson

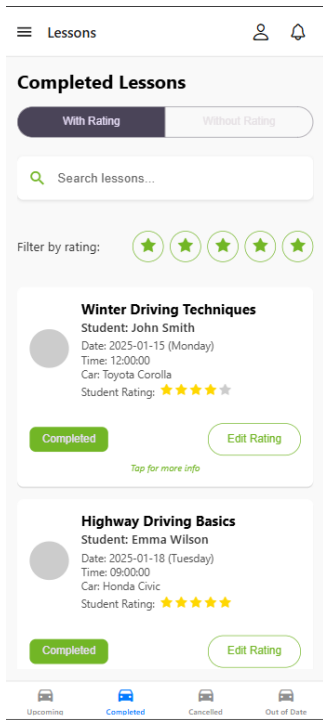


Figure 137: completed Lesson

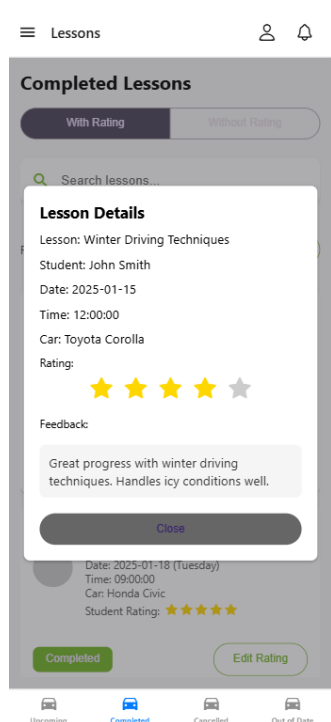
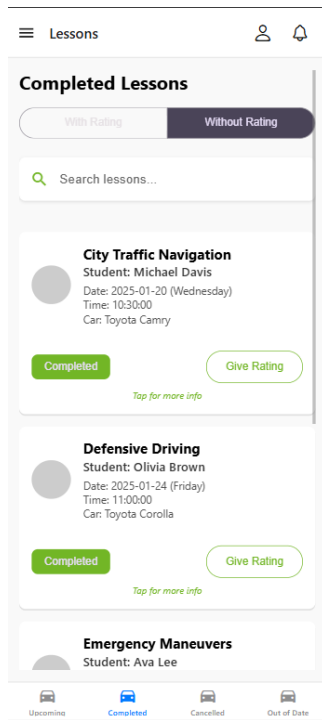


Figure 135: lesson Details

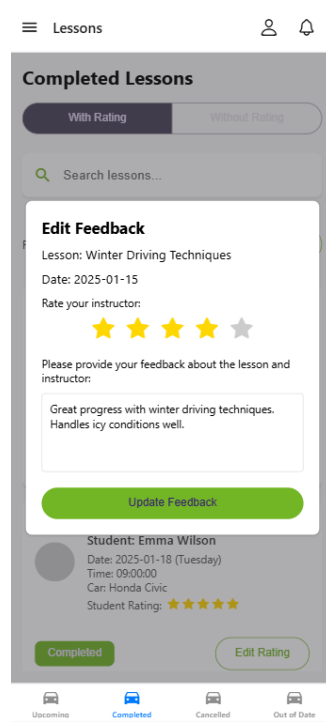


Figure 136: Edit Feedback

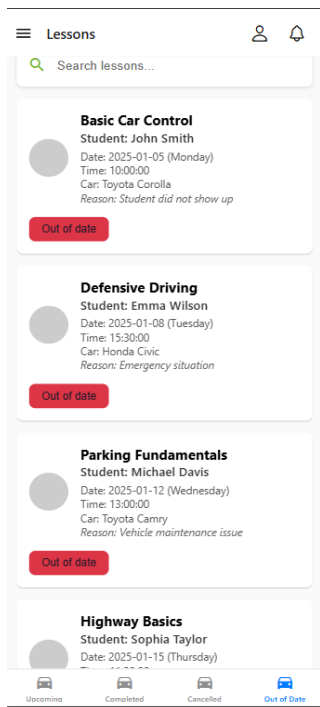


Figure 138: out of date

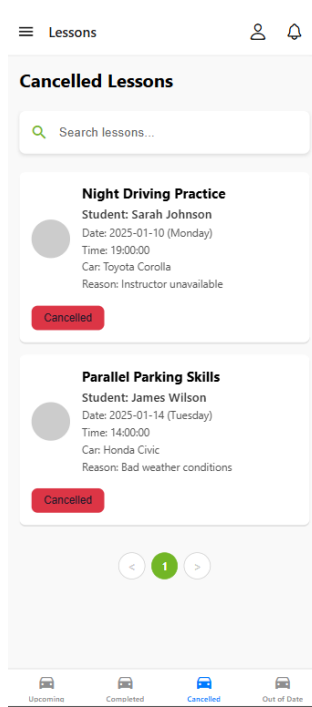


Figure 139: canceled Lessons

6.1.3.4 Booking Lesson Page

The Booking Lesson page is very neat and friendly, with the lessons organized intuitively in tabs of three types: Pending, Accepted, and Declined, so instructors can manage requests very easily. The Pending tab outlines all lesson requests that require the trainer's action. Every entry provides the student's name, date, time, and status. The trainer can quickly accept or reject a lesson through the "Accept" and "Reject" buttons that are clearly marked. This enables clarity in making decisions so that trainers can respond to pending requests with speed.

The tab entitled Accepted reveals all the confirmed lessons, hence, helping a trainer to stay in touch with a forthcoming schedule. Each lesson presents the essential information of a student: their name, lesson date and time, license type, and the car to be used. It presents a comprehensive view so the trainers can view the information needed to prepare well for the training sessions. Lessons will also bear the "Confirmed" badge to present clarity at a single glance.

The Declined tab keeps the record of lesson requests declined, for the trainers' view and decisions taken therein. Each record has the name of the student, the date joined, and the time, which supports the status for rejection for easy reference. This tab ascertains that transparency and accountability are well applied in managing the lesson requests.

Further to this is a filtering option to enable trainers to sort and refine the lessons based on:

License Type: To filter lessons based on license types, such as Class A and B.

Date: This will help in pinpointing certain days or date ranges to help in better scheduling.

Days: Identify lessons scheduled on certain weekdays with ease.

Therefore, this ingenuity will help the trainer maintain neat and organized work routines so that no lesson requests are missed out while at the same time adapting to schedules with ease.

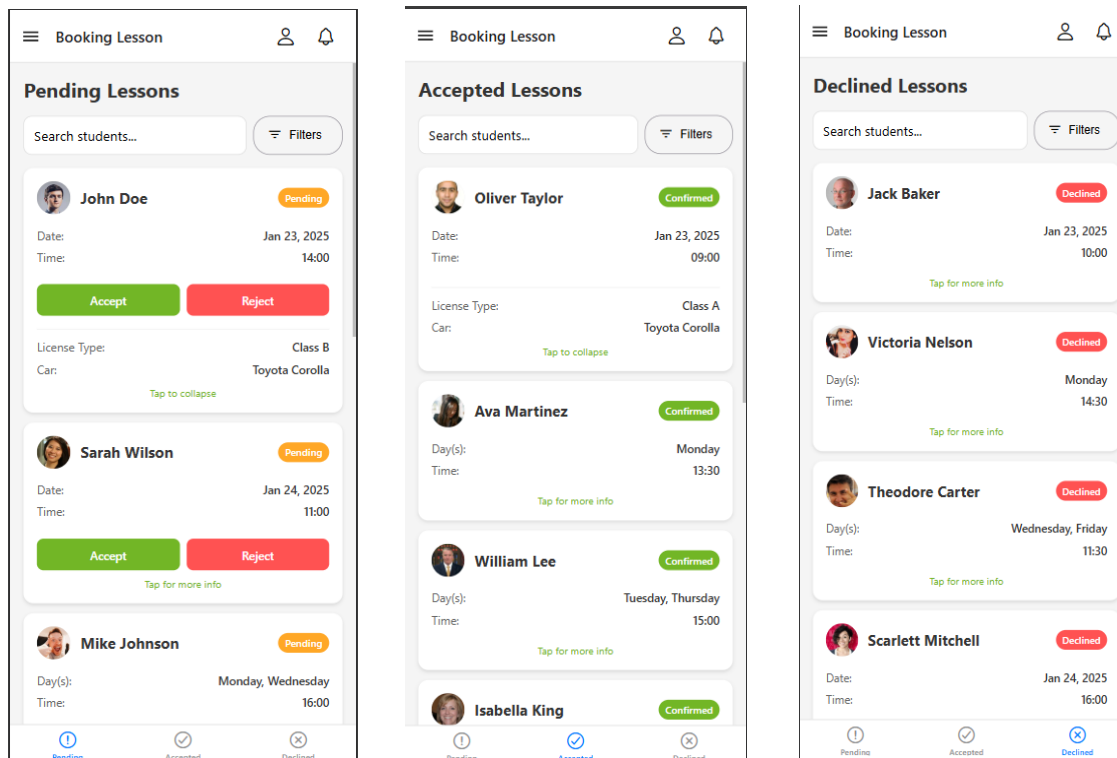


Figure 140: Booking Page Status

6.1.3.5 Profile Page

The profile of a trainer within the Drive Master mobile application represents both personal and professional information regarding that particular coach. This profile is designed for better navigation through every piece of a trainer's profile. This would include his personal and professional data. In its top position, there comes an image representing his profile, and by its side, he mentions his complete name. It also contains personal details, such as email, phone number, gender, and date of birth, shown below, which are also nicely presented in the profile for quick reference.

It also displays professional information of a trainer regarding certification, year of experience, and type-road vehicle of operation-for example, car, motorcycle, truck, or bus. Also, it displays address details like street, city, state or region, and postal code for accuracy and easy access.

6.1.3.6 Messages Page and Notifications

The Messages and Notifications page in the Drive Master application is an elementary communication tool for a trainer to maintain contact with students and school managers. This feature ensures seamless interaction, timely updates, and effective coordination of a trainer with others in the system.

The messages section allows trainers to send and receive messages with students and school managers. Trainers can add any update on upcoming events, changes in schedule, feedback from lessons, or just supplementary instructions. The chat interface is designed to be simple and intuitive; thus, it is easy for a trainer to handle conversational streams efficiently. Trainers can also receive messages with school managers on administrative updates, new student assignments, or changes in policy.

Notifications will keep the trainers updated about major events and changes. Notification to the trainer when there is a lesson coming, lesson cancellation from the student's end, update messages from the system, and notice from schools for any important information. Therefore, no information gets missed and they schedule the time accordingly.

The Drive Master platform includes both messaging and notifications, ensuring that trainers have all the communication tools to give students the best learning experience while maintaining good coordination with school management.

Results and Analysis

Results and Analysis: This section highlights the key performance indicators and outcomes arising from the operations of the Drive Master system. The data ranges from the student enrollments, through examination successes, lesson completions, to the overall performance of the trainers and schools. This analysis gives a clear picture of effectiveness and efficiency in the Drive Master platform for further improvements.

All data collected was subjected to statistical processing first in order to draw any useful trend or relationship. The results range from the pass rate of students in theoretical and practical exams to completion rates of the practical lessons. These results shall provide an indication of the trend that the students are able to progress on in their training and what possible areas might require supplementary attention.

Graphs, bar graphs, and line plots were used in the analysis of data. These will give a better understanding of the performance trend across the regions, schools, and types of training. For example, a bar graph showing students who passed the theoretical versus the practical exam will easily allow a comparison of success rates. Also, pie charts could show the distribution of schools or type of vehicle used for training and help find patterns in training resources. It was also processed with concern for accuracy regarding measurement errors that might have occurred when tracking lesson completion or actual feedback by trainers. Error margins and variations in the data collection process were also taken into consideration to enhance the reliability of the findings.

In a nutshell, the Results and Analysis section summarizes the general performance of the Drive Master system in key metrics, trends, and statistical analysis. It helps in bringing into view areas of strength and highlighting opportunities for further improvement to maintain the system's service for its purpose of effective driving education and training.

Discussion

The Drive Master system was meant to ensure that there was efficiency in management and operations within driving schools, especially in relation to trainers, students, and administrators. We sought to provide an operational platform that would ease scheduling, improve communication, and enhance general efficiency in driving schools. In this project, we have provided a solution that caters to the needs of the many users: students, trainers, and school managers.

We have solved the core problem by putting together an easy-to-use system that incorporates features such as lesson booking, trainer availability management, student progress tracking, and administrative oversight. The system makes communication between students and trainers easier, lessons are recorded accurately, and school managers can view the performance across the school. These features go a long way in making driving schools more efficient, organized, and accessible to all parties concerned.

Our main contribution is the design of a platform connecting the different roles within a driving school. This system is meant to optimize day-to-day activities and save time for both students and trainers so that they can spend more time on learning rather than focusing on administrative activities. Because we've included functions like the Trainer Availability Maker, Student Dashboard, and Quiz Maker, we have made this tool versatile for different schools and users. Our findings logically create the implications that, through automating and centralizing key processes, the Drive Master system improves both operational efficiency and the students' learning experience. In such a case, driving schools can now invest more time in their core mission because all administrative functions have been streamlined.

Even though the system is at a high level of success, there are still some limitations that have to be addressed in future versions. For example, though the platform is designed to handle a wide range of administrative and scheduling functions, feedback from users has shown that additional statistical analysis tools would be beneficial for schools to track student progress and performance. Some schools showed further interest in extending the quiz and lesson management capabilities to offer students more customized and interactive learning experiences. Further research and development on the Drive Master system could be directed to the integration of advanced technologies, such as machine learning algorithms, to provide personalized lesson plans or adaptive learning paths based on individual student progress. A further reach in mobility by means of offering seamless access across devices will go a long way in ensuring greater access, especially to students and on-the-move trainers.

Conclusion and Recommendations

Thus, in one way or the other, Drive Master has brought a much-required solution to the driver school management on the whole with its comprehensive, streamlined Web-based platform. The system provides each kind of stakeholder-students, trainers, driving school managers, and administrators-with means to ease up the scheduling of lessons, improvement in lesson management, and enhancement of communication within the driving school ecosystem. It allows students to track their progress easily, book lessons, and communicate with their trainers; it also allows trainers and school managers to manage their schedules, monitor the progress of students, and maintain administrative operations efficiently.

The integration of the trainer availability maker, lesson booking system, and quiz maker will enable smooth, organized, and effective learning. In addition, the powerful administrative functions, including school request management, performance metrics tracking, and reporting, will help the schools to manage their operations optimally and maintain a high standard of driving education.

Some recommendations concerning future development and improvements, considering the current performance and feedback, would be appropriate. First, expanding the statistical analysis features would allow for more profound insights into student performance, trainer effectiveness, and school operations, thus driving schools toward data-driven decisions for further optimization.

This might also be complemented by adding in some AI-driven features that will make the learning process more personalized. For example, AI may recommend certain lesson plans, based on how a student is performing, or estimate when a student might be ready for their practical exam to help students and trainers stay on track.

Thirdly, this interface can still be optimized in order to further improve the user experience. A more intuitive and more visually appealing design would offer users better engagement and a smoother interaction with students and trainers alike.

Lastly, adding more functionality to the mobile application and ensuring seamless cross-platform experiences would make this platform even more accessible, enabling both students and trainers to manage their schedules and communications on the go.

These improvements, when incorporated, will definitely change the way driving schools operate, enhance user satisfaction, and contribute to an efficient and effective learning environment for both students and trainers.

Although the Drive Master system has gone a long way in making driving school management efficient, there are quite a number of areas in which future versions can be improved to keep pace with the needs of the end-users and the dictates of the changing times.

Chief among these areas of improvement would be artificial intelligence and data analytics. With this approach, machine learning would analyze performance and recommend where students need either lesson plans or area of focus. It would make a data-driven trainer for more one-on-one time with students to learn better, and hopefully be able to pass on better to their exams.

Predictive analytics could forecast who may need more support, which then gives trainers timely opportunities for intervention.

Mobile accessibility is another area for expansion. While the Drive Master system works well on desktop, a mobile app could provide greater flexibility for users on-the-go. Both trainers and students would benefit from being able to access key features, such as lesson scheduling, student progress tracking, and communication tools, directly from their smartphones or tablets.

Besides, if some interactive tools were included in the learning process, it would definitely make students much more involved. Features like virtual driving simulators, game-like lessons, or progress-based rewards might turn learning into a source of fun and prepare students for both theoretical and practical exams. Such features would also make trainers assess students' readiness much more effectively.

Other future developments could be the expansion of accessibility by allowing multi-language support within the system. Driving schools continue to grow within diverse communities, and having the option for different language settings would ensure that non-native speakers can use the system with ease.

This would ultimately allow the integration of Drive Master with external systems, such as government databases for license verification, exam scheduling platforms, or payment processors that will make the processes much easier and less cumbersome for both school managers and students.

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