

Project Documentation

For

Car-Let - A Car Renting Website

Group -12

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Chapter One - Introduction

1.1 Background

Recent technology developments, shifting customer tastes, and the growing demand for flexible automobile rental services have all had a substantial impact on the car rental business. Since traditional automobile rental companies have had difficulty keeping up with these changes, there is opportunity for creative digital solutions to close the gap between car owners and those looking for rental possibilities. Shift towards sharing economy, consumer demand for convenience, variety of rental durations, online payment security, user-friendly and responsive platforms accessible on various devices, transparency, authority, and efficient communication are desired in car rental transactions by both owners and renters, which served as the inspiration for Car-Let, a website for car rental.

1.2 Statement of the problem

Despite its widespread use, the car rental business is beset with a number of problems and inefficiencies that affect both car owners and those seeking to hire cars. These difficulties consist of limiting accessibility and choice for potential renters of traditional car rental agencies as they often have physical locations, lack of transparency between renters and renting agencies, security concerns about financial transactions and privacy, limiting car rental options, complex paperwork and documentation of traditional renting process. The combination of these problems leaves a need in the market, which is filled by a digital solution that simplifies and updates the car rental procedure. By offering a user-friendly, transparent, and safe platform where both consumers and sellers may engage in quick and reliable vehicle rental transactions, the car rental website project seeks to address these issues. With the use of technology, this project aims to transform the car rental sector by filling in the gaps and satisfying the changing demands of both customers and car owners.

1.3 Objectives

The basic purpose of Car-Let the car rental website is to create an online platform that facilitates the seamless rental and leasing of vehicles between individuals, referred to as "Owners" and "Renters." The website aims to offer a user-friendly interface that empowers Owners to list their vehicles for rent and Renters to easily search for and rent vehicles according to their preferences. The website will serve as a convenient and efficient solution for connecting vehicle owners with individuals seeking short- and medium-term vehicle rental options.

1.4 Proposed System

The "Car -Let Website," the suggested system, is a cutting-edge online marketplace that links private car owners with those looking to rent cars, revolutionizing the rental car experience. This platform seeks to improve user convenience, transparency, and trust while addressing the problems and inefficiencies now facing the automobile rental sector.

Key features of the proposed system:

1. User Registration and Profiles:

Owners and renters can create user accounts and profiles, providing essential information and contact details.

2. Vehicle Listings:

Owners can list their vehicles for rent, including detailed specifications, pricing, rental durations (daily, weekly, monthly), and availability dates.

3. Wishlist:

Owners can add vehicles to their wishlist for future reference and comparison.

4. Rental Requests:

Renters can send rental requests to vehicle owners, specifying their desired rental duration and dates.

5. User Dashboard:

Users have access to a personalized dashboard displaying their account information, rental history, and transaction history.

6. Responsive Design:

The website is designed to be responsive, ensuring users can access and use the platform seamlessly from various devices, including desktops, tablets, and mobile phones.

7. Secure Payment Processing:

Users can use a variety of payment methods, such as credit cards and digital wallets, to make safe online payments through the system. We also accept payments in cash.

1.5 Benefits or Significance of the Project

The project pertaining to the automobile rental website has various noteworthy advantages and important ramifications for users and the car rental sector overall.

Enhanced User Experience: Users can expect a user-friendly interface that simplifies the process of searching for, selecting, and renting vehicles, making the entire process efficient and convenient.

Convenience and Flexibility: The project introduces a high level of convenience and flexibility in vehicle rentals by offering a wide range of rental durations, from daily and weekly rentals to long-term monthly options.

Transparency and Trust: The proposed system prioritizes transparency, ensuring that vehicle listings, rental terms, and pricing are easily accessible and understandable.

Improved Accessibility: The platform's responsive design makes it accessible across a variety of devices, ensuring that users can access and utilize the service from desktops, laptops, tablets, and mobile phones, catering to a broad user base.

Wider Selection: The project offers a diverse selection of vehicles available for rent, accommodating various user preferences.

Security and reliability: The availability of cash payments in addition to safe online payment options encourages trustworthiness in financial transactions by protecting owners' and renters' personal and financial information.

Marketplace Efficiency: The project efficiently connects individual vehicle owners with potential renters, creating a dynamic digital marketplace for vehicle rentals.

Economic Impact: By enabling car owners to profit from their assets, the idea helps the sharing economy flourish. The local community and individual car owners benefit economically from this extra revenue stream.

1.6 Scope of the project

The car-let website provides effortless vehicle rental by offering an intuitive interface where Renters can browse through a diverse range of available vehicles and initiate rental requests effortlessly. Owners can manage their listings and respond to rental inquiries with ease. It gives users convenience with flexible rental durations such as monthly, weekly, and daily options giving flexibility to choose as per their needs. The platform creates a digital marketplace that benefits both Renters and Owners. The website maintains transparency by allowing Renters to view detailed information about vehicles and Owners approving rental requests, ensuring compatibility with their terms and conditions. It ensures secured transactions and has both the options of online and cash payment systems. The website is designed to be responsive and accessible across various devices, ensuring that users can access and use the platform seamlessly from desktops, tablets, and mobile devices.

1.7 Feasibility Assessment

The feasibility assessment is a critical step in evaluating the viability and practicality of the Car-Let website project. It encompasses four key aspects that need to be carefully analyzed before proceeding with the project.

- **Economic Feasibility**

Revenue Generation: The project aims to generate revenue through listing fees, transaction fees, and potentially advertising.

Cost Analysis: A thorough analysis of development, maintenance, and marketing costs has been conducted.

Return on Investment (ROI): The expected ROI is calculated based on revenue projections and costs.

Market Demand and Competition: Market analysis helps assess the project's potential to capture a significant share and generate revenue.

- **Technical Feasibility**

Technology Stack: The project's technical requirements, including programming languages, tools, and databases, are assessed for suitability.

Scalability: The technical infrastructure is designed for growth and increased traffic.

Security Measures: Robust security protocols are in place to protect user data and transactions.

Data Management: Data storage, backup, and recovery mechanisms are considered.

- **Operational Feasibility**

User Training: The website's user-friendly design minimizes the need for extensive training.

Administrative Procedures: The administrative panel streamlines user account and listing management.

Integration with Existing Systems: Compatibility with existing car rental systems is evaluated.

- **Schedule Feasibility**

Project Timeline: A comprehensive timeline considers development, testing, and deployment phases.

Resource Allocation: Adequate resources and a skilled team are allocated to meet project deadlines.

Risk Assessment: Potential risks and mitigation strategies are identified to minimize schedule disruptions.

Chapter Two - Literature Review

2.1 Detail description

The car rental industry has witnessed significant changes driven by evolving technology, consumer preferences, and the rise of the sharing economy. In response to these transformations, various digital solutions have emerged to bridge the gap between car owners and renters. This literature review delves into the key aspects of car rental websites, highlighting their significance and exploring some notable platforms in the field.

Traditionally, car rental agencies operated through physical locations, limiting accessibility and choice for potential renters. However, the advent of the sharing economy has revolutionized the industry, making it possible for individuals to rent their own vehicles. This shift towards shared mobility has paved the way for digital platforms like Turo, Getaround, and Zipcar.

- Turo

Turo, often referred to as the "Airbnb for cars," is a prominent car rental website that allows individuals to list their vehicles for rent. It offers a user-friendly platform with a diverse selection of vehicles and a strong focus on transparency and trust.

- Getaround

Getaround is another significant player in the car sharing industry, connecting car owners with renters. Getaround prioritizes safety and provides an easy-to-use platform for users to find and rent vehicles.

- Zipcar

Zipcar is a well-established car-sharing service that operates in urban areas. It offers a streamlined user experience, emphasizing efficiency and ease of use.

Certainly! Here's an updated conclusion for the literature review, including some key points about your Car-Let project:

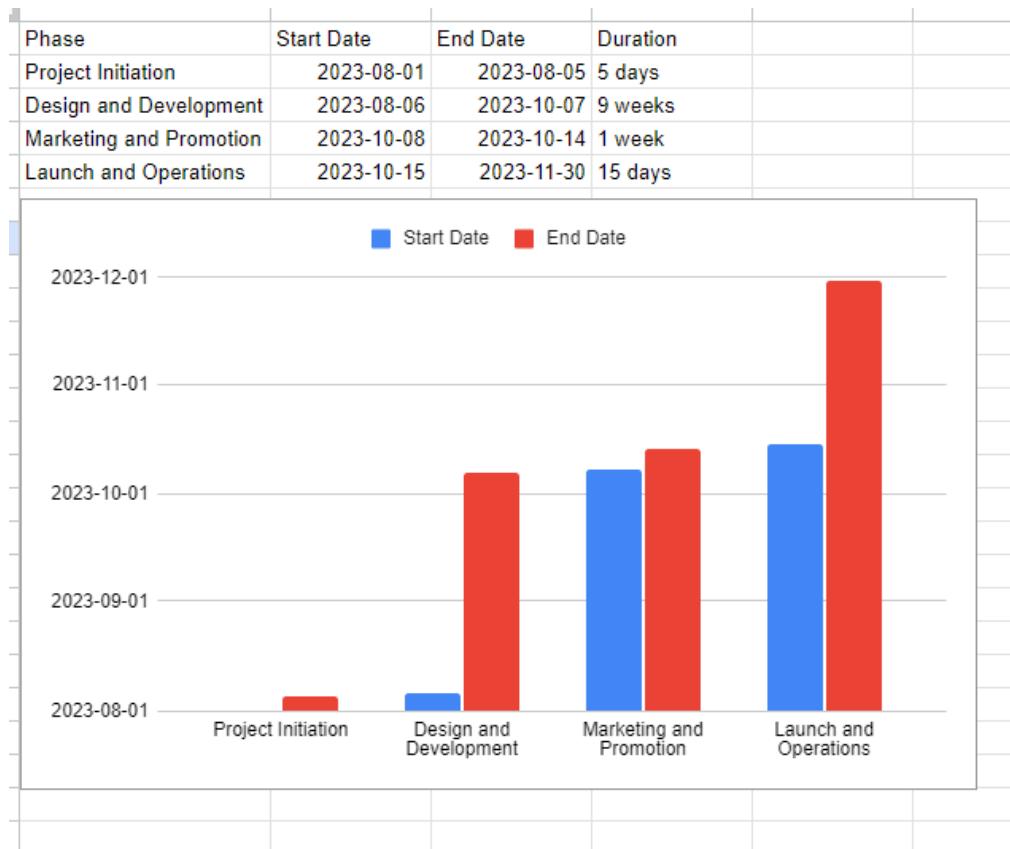
The car rental industry has been transformed by the emergence of digital platforms that cater to the changing demands of consumers. Car rental websites like Turo, Getaround, and Zipcar have set the benchmark for convenience, transparency, and user-friendliness. These platforms not only benefit car owners but also contribute to the growth of the sharing economy, offering economic opportunities to individuals.

In this evolving landscape, the Car-Let project emerges as a promising addition to the car rental ecosystem. Car-Let aspires to address the same critical factors that have contributed to the success of existing platforms. Its commitment to user-friendly interfaces, transparent vehicle listings, and secure payment processing aligns with the industry's best practices. Furthermore, Car-Let extends the benefits of the sharing economy to both car owners and renters, enabling them to benefit economically from their participation.

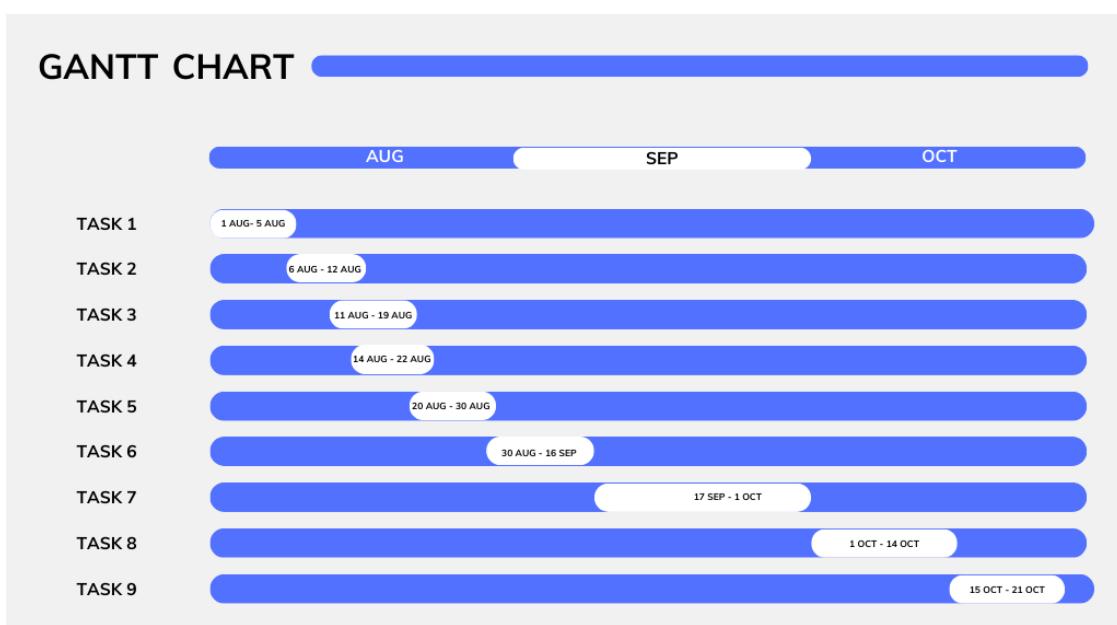
The Car-Let car rental website project enters the arena at an opportune time, capitalizing on the changing dynamics of the car rental industry and the growing demand for flexible automobile rental services. By offering a solution that aligns with the expectations of both owners and renters, Car-Let seeks to establish itself as a key player in the digital car rental landscape, contributing to the evolution of the sharing economy and fostering economic opportunities for individuals in the local community.

Chapter Three - Methodology

3.1 Project plan



3.2 Work plan or time table (Gantt chart)



Task 1- Identify Target Audience And Their Needs
Task 2- Define The Features And Functionality Of The Website
Task 3- Create User Stories And Use Cases
Task 4- Design the database schema
Task 5-Set up Next.js and Supabase project

Task 6- Create wireframes and mockups of the website
Task 7- Develop the front-end of the website using Next.js
Task 8- Develop the back-end of the website using Node.js and Supabase
Task 9- Test the website for functionality and usability

Chapter Four - Proposed System

4.1 Proposed System

Already discussed in section 1.4

4.2 Functional Requirements

The car rental website acts as a comprehensive platform that makes a variety of functions for Renters and Owners easier to complete, speeding the process of renting a car and improving user experience. The primary product features consist of:

Renters:

- o Can create an account, edit information and delete.
- o View available vehicles for rent.
- o Search for vehicles based on preferences.
- o Initiate rental requests for selected vehicles.
- o Choose rental duration (monthly, weekly, daily).
- o View rental history and status.

Owners:

- o Can create an account, edit information and delete.
- o List vehicles available for rent.
- o Edit or remove vehicle listings.
- o Receive rental requests from Renters.
- o Review and approve rental requests. . Communicate with potential Renters.
Monitor rental history and status.

General Functions:

- User authentication and account management.
- Secure payment processing for rentals.
- Communication between Renters and Owners.
- Responsive user interface for various devices.
- Provide an intuitive and user-friendly experience.S

- Store and manage user data securely.

4.3 Non-Functional Requirements

- **Accessibility**

- Ensure that the Car-Let website is accessible to users with disabilities, complying with WCAG (Web Content Accessibility Guidelines) standards.
- Provide options for screen readers and keyboard navigation for visually impaired users.
- Test the platform's compatibility with various assistive technologies.

- **Usability**

- Create a user-friendly interface with intuitive navigation.
- Conduct usability testing to gather user feedback and refine the platform.
- Ensure that both car owners and renters can easily understand and use the website.

- **Documentation**

- Provide comprehensive and user-friendly documentation for both owners and renters.
- Include guides on registration, listing vehicles, making payments, and resolving common issues.
- Offer a frequently asked questions (FAQ) section for quick reference.

- **Hardware and Software Considerations**

- Ensure that the website is compatible with a wide range of web browsers and operating systems.
- Optimize the platform for mobile devices, tablets, and desktop computers.
- Specify any minimum hardware or software requirements for users.

- **Quality Issues**

- Implement rigorous quality control and testing processes to identify and resolve any issues.
- Regularly monitor the website's performance and user feedback to address quality concerns promptly.
- Prioritize the platform's reliability, stability, and overall quality.

- **Security Issues**

- Employ robust security measures to protect user data and financial transactions.
- Implement encryption for sensitive data and secure payment processing.
- Regularly update security protocols to mitigate potential vulnerabilities.

- **User Interface and Human Factors**

- Design an appealing and user-friendly interface with a focus on user experience.
- Consider human factors such as color schemes, fonts, and layout for optimal readability and navigation.
- Gather user feedback and conduct usability studies to continually refine the user interface.

- **Performance Characteristics**

- Ensure the website can handle high traffic loads during peak usage periods.
- Optimize page loading times and minimize latency for a responsive user experience.
- Regularly monitor and fine-tune performance characteristics based on user data.

- **Error Handling and Extreme Conditions**

- Implement comprehensive error handling to provide informative error messages to users.
- Prepare for extreme conditions, such as server outages, with contingency plans and system redundancy.
- Minimize data loss in case of unexpected failures.

- **System Modification**

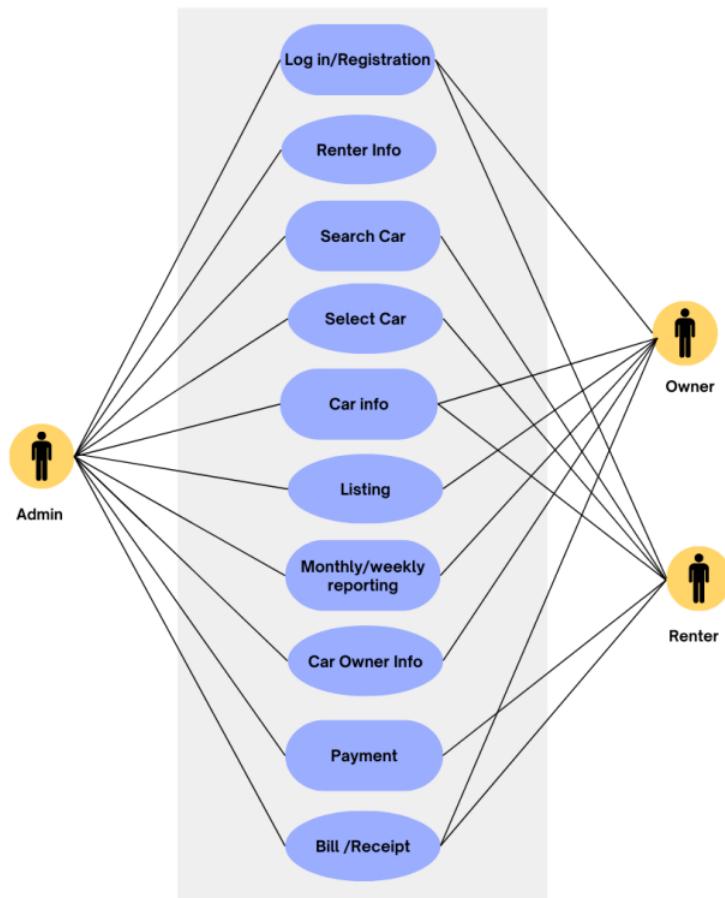
- Make provisions for future system updates and modifications.
- Ensure that new features and enhancements can be seamlessly integrated into the existing platform.
- Prioritize backward compatibility to avoid disruption for existing users.

- **Feasibility Study**

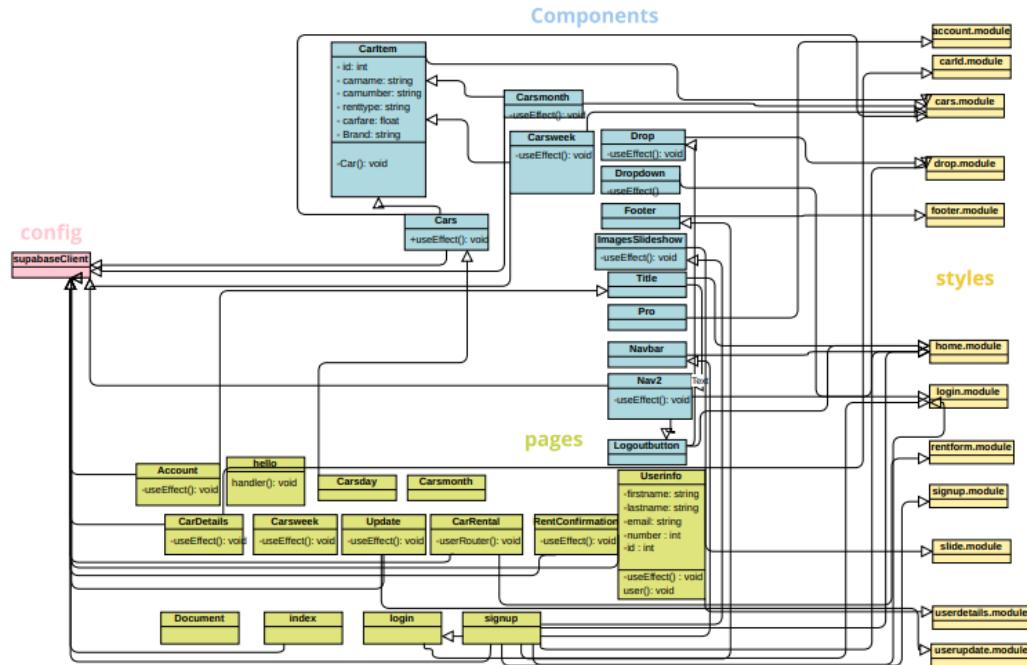
- Conduct ongoing feasibility assessments to ensure that the project remains economically, technically, and operationally viable.
- Regularly review the project's financial, technical, and operational feasibility, making adjustments as needed.

4.4 System Models

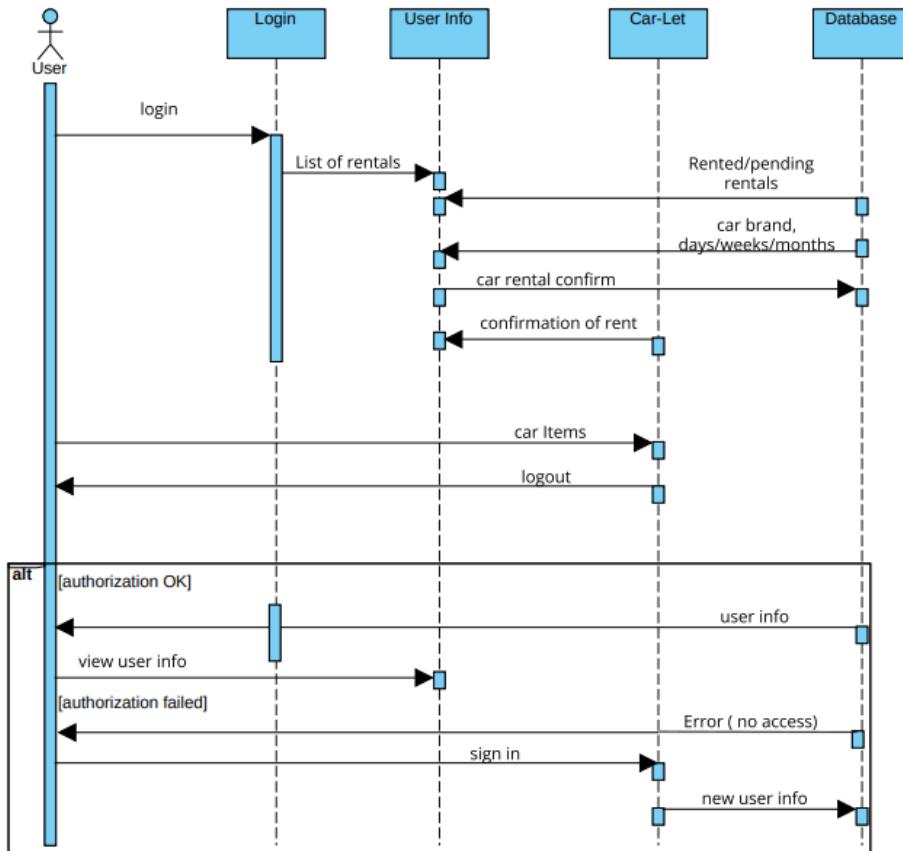
- **Use Case Diagram:**



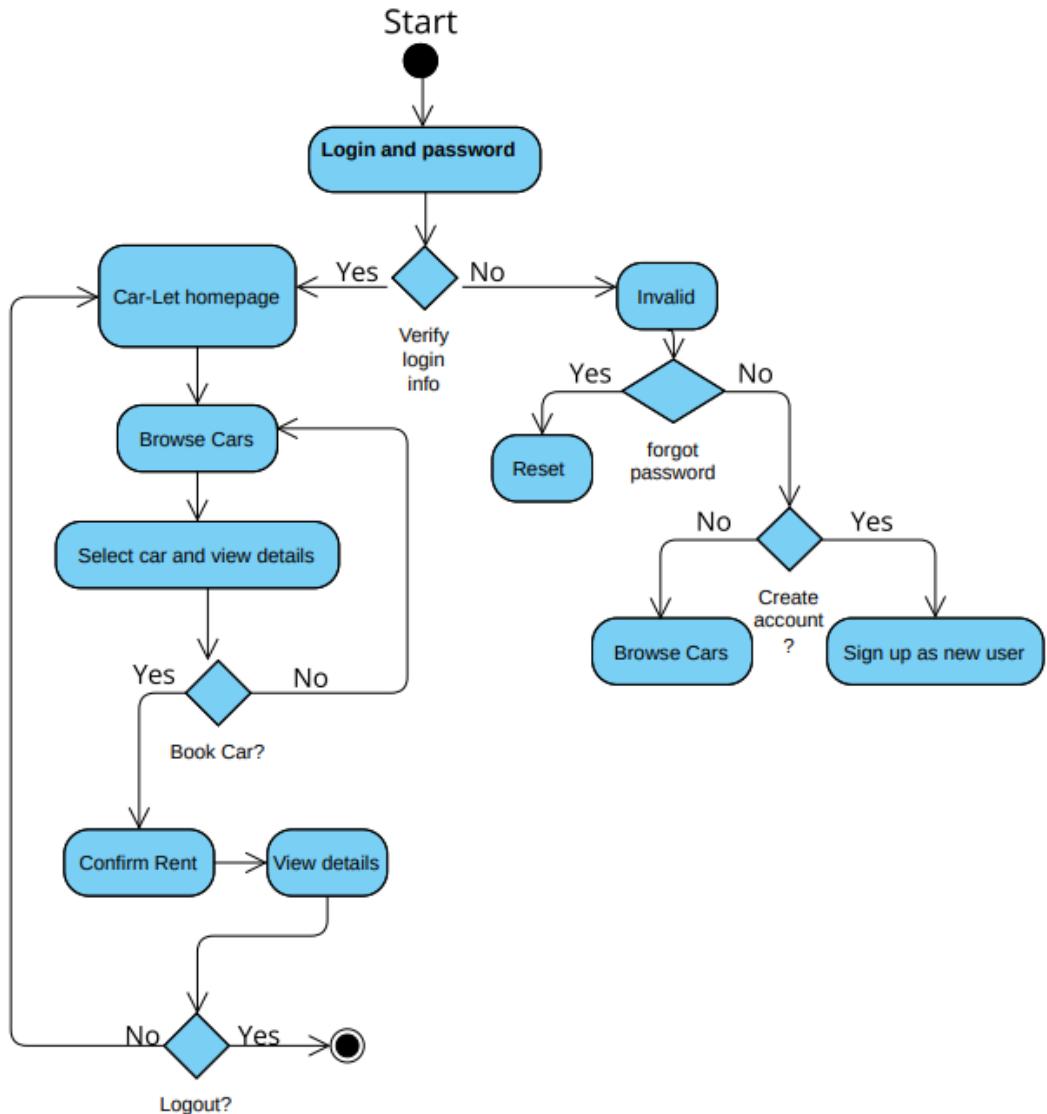
- Class Diagram:



- Sequence diagram:



- Activity diagram:

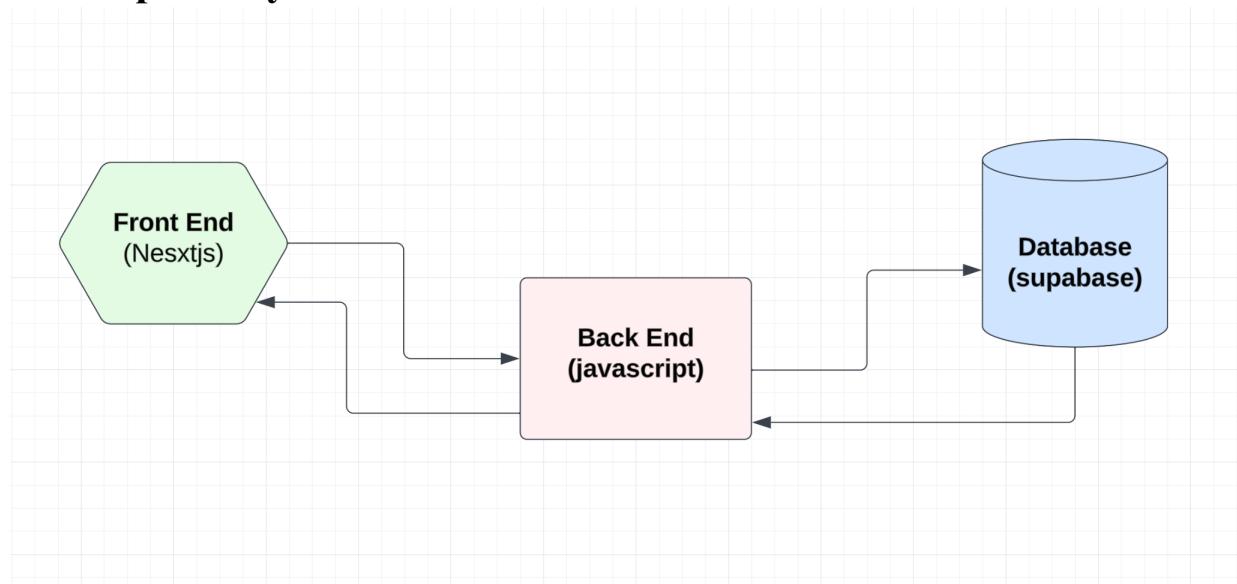


Chapter Five – Design contents

5.1 Introduction

In this section, we delve into the design aspects of the Car-Let car rental website. Design is a pivotal element of the user experience, influencing user interaction, visual appeal, and overall usability. This chapter outlines the key design components and considerations that have been incorporated to create an attractive and user-friendly platform for car owners and renters. From the user interface to visual aesthetics, we explore the design elements that enhance the appeal and functionality of the website.

5.2 Proposed system architecture



5.3 Subsystem Decomposition

Here is a list of key modules within the Car-Let system:

- **User Management Module**

- Handles user registration, login, and profile management.
- Manages user roles (Owners, Renters, Admins).
- Ensures authentication and security measures.

- **Vehicle Listing Module**

- Allows car owners to list their vehicles for rent.
- Manages vehicle specifications, pricing, availability, and rental durations.
- Supports editing and deleting listings.

- **Rental Request Module**

- Enables renters to send rental requests to vehicle owners.
- Manages rental durations and dates.
- Facilitates communication between renters and owners.

- **User Dashboard Module**

- Provides a personalized dashboard for users.
- Displays user account information, rental history, and transaction history.
- Allows users to track their activity and transactions.

- **Payment Processing Module**

- Handles secure online payments, including credit cards and digital wallets.
- Provides options for cash payments.
- Ensures the integrity and security of financial transactions.

- **Responsive Design Module**

- Ensures that the website is accessible and functions seamlessly on various devices.

- Adapts to desktops, tablets, and mobile phones.
- Prioritizes a consistent user experience across platforms.

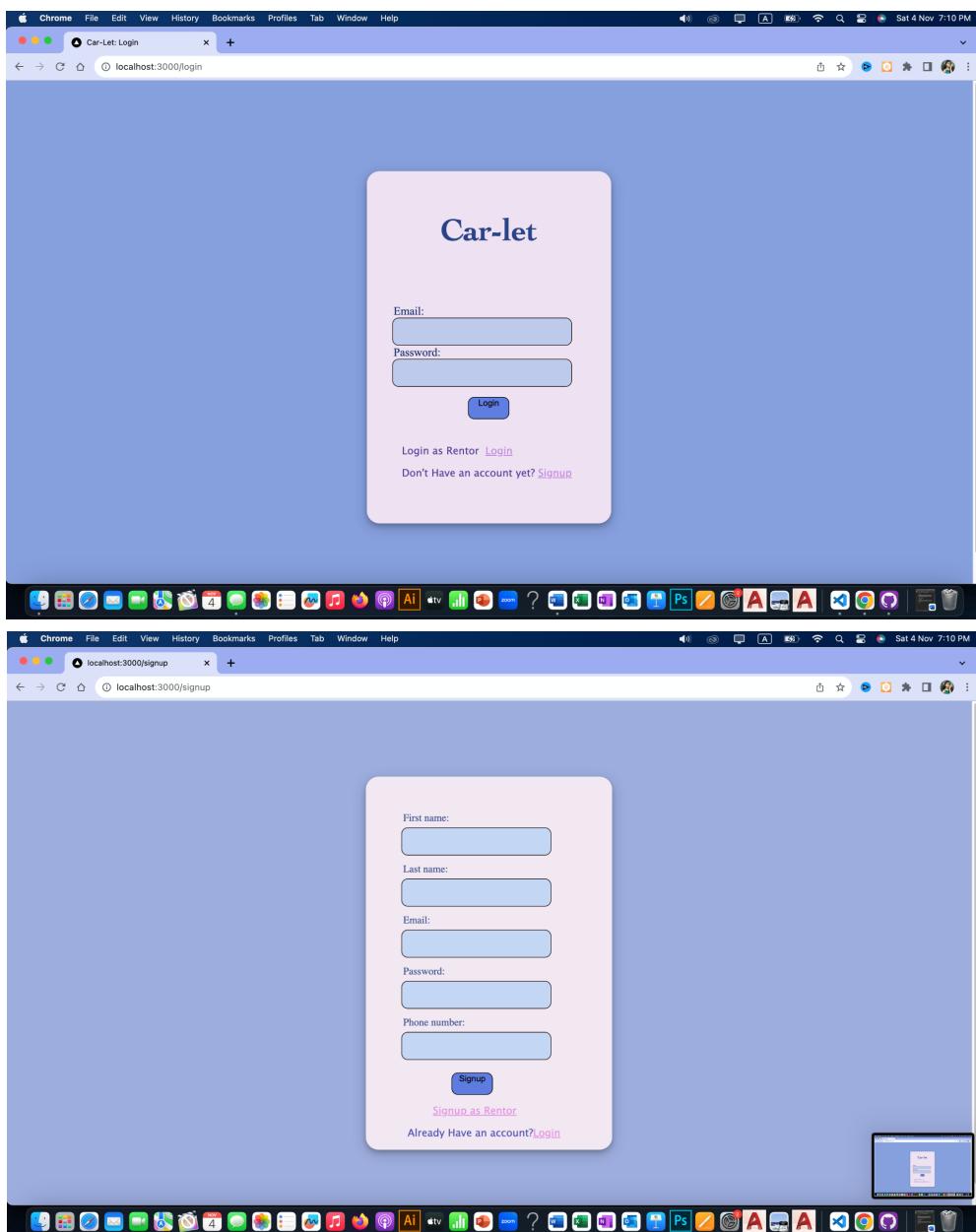
- **Security Module**

- Implements robust security measures to protect user data and financial information.
- Utilizes encryption, secure sockets layer (SSL), and firewalls.
- Guards against cyber threats and vulnerabilities.

- **Search and Filter Module**

- Enhances user experience with search and filter options.
- Enables users to quickly find and narrow down vehicle choices.
- Improves platform usability and user

5.4 User interface design



Screenshot of a user profile page from a web browser. The URL is `localhost:3000/userinfo/26`. The page features a placeholder user icon at the top, followed by a grey box containing the title "User Profile". Below the title, there is a summary of the user's information:

Name: Anika Khan
Email: anika2@gmail.com
Number: 13448534

At the bottom of the box are two buttons: "update" and "Delete". The browser's toolbar and menu bar are visible at the top, and the Mac OS X dock is visible at the bottom.

Screenshot of a car rental service landing page from a web browser. The URL is `localhost:3000`. The page has a header "Car-Let" and "Car Renting Services Across The Country". It features a large image of a silver sedan parked in a desert landscape at sunset. Below the image, a list of services includes:

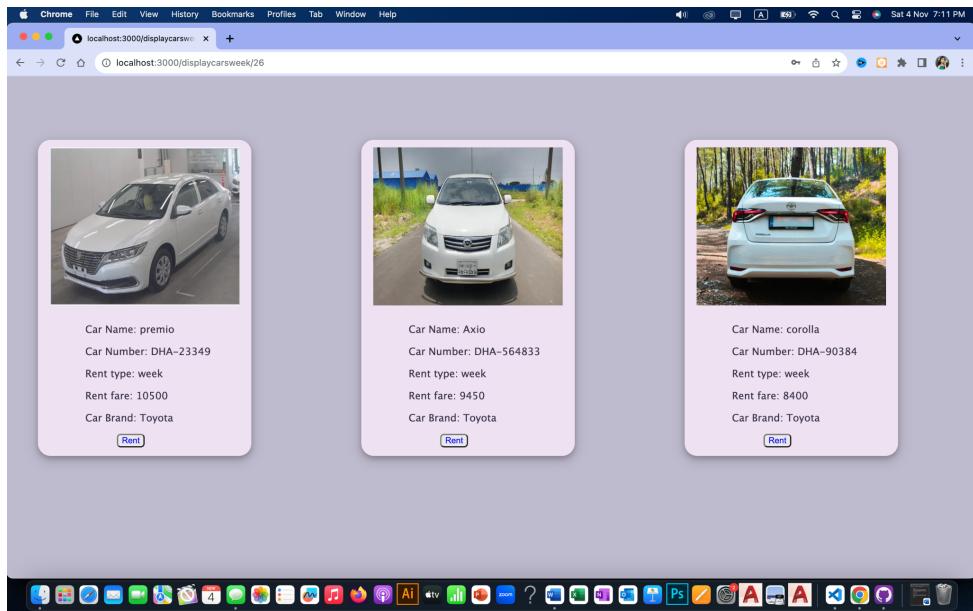
- Fast & Easy Booking
- Best Pricing & Quality Service
- Wide Range of Cars Options

The page also includes sections for "Flexible Options" (with a blurred image of a car interior), "Schedule Booking", and "Rent Options". The "Schedule Booking" section says "Book car in advance" and the "Rent Options" section says "Rent as per your need; for day, week or month". The browser's toolbar and menu bar are visible at the top, and the Mac OS X dock is visible at the bottom.

Screenshot of a car rental service account profile page from a web browser. The URL is `localhost:3000/account/26`. The page has a header "Car-Let" and "Car-Let: Profile". It features three cards for different rental durations:

- Rent for a day: Shows a white Kia car with its driver-side door open.
- Rent for a week: Shows a white Rolls-Royce Phantom.
- Rent for a month: Shows a white Kia SUV.

The browser's toolbar and menu bar are visible at the top, and the Mac OS X dock is visible at the bottom.



Chapter Six - Implementation

6.1 Introduction

The implementation phase is a critical stage in the development of the Car-Let car rental website. Here we translated the design and specifications into a functional and user-ready platform. During this phase, our developer worked on coding, configuring, and integrating various components to create a cohesive and operational system. Here we have provided an overview of the key activities, tools, and technologies used to bring the website to life.

6.2 Algorithm Development

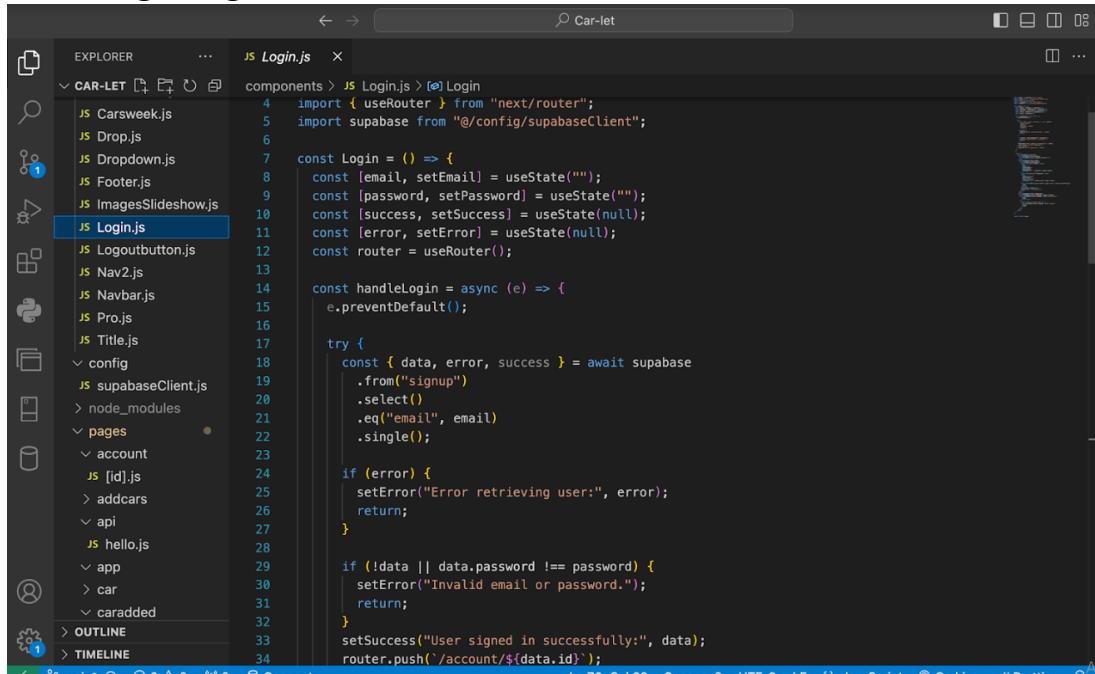
Algorithm Part about how the developer connected and built the system:

- Index.js uses component <Navbar/> from component folder which contains link to login and signup page. It also uses components <Footer/>.
- login.js uses component <Login/> which contains link to pages/account/[id].js and this uses component <Pro/> that keeps the link to the pages- displaycars/[id].js, displaycarsweek/[id].js and displaycarsmonth/[id].js. These files points to components <Cars/>, <Carsweek/>, <Carsmonth/> and all of them utilizes the <Caritem/> component. <Caritem/> redirects to pages/car/[carId].js and it redirects to pages/rent/[carId].js and it points to pages/rent_confirmation/[carId].js.
- The component <Pro/> that keeps the link to the page pages/userinfo/[Id].js and it redirects to pages/updateuserinfo/[carId].js and then it points back to pages/userinfo/[Id].js
- Login also contain link to rentorlogin.js which redirects to pages/rentoraccount/[rentorId].js and it redirects to pages/addcars/[rentorId].js and it points to pages/caradded/[rentorId].js

-The folder config/supabaseClient has the create client component for database connection and it is imported in all the above files where data fetching is required.

6.3 Coding

- Login/Register:



```
import { useRouter } from "next/router";
import supabase from "@/config/supabaseClient";

const Login = () => {
  const [email, setEmail] = useState("");
  const [password, setPassword] = useState("");
  const [success, setSuccess] = useState(null);
  const [error, setError] = useState(null);
  const router = useRouter();

  const handleLogin = async (e) => {
    e.preventDefault();

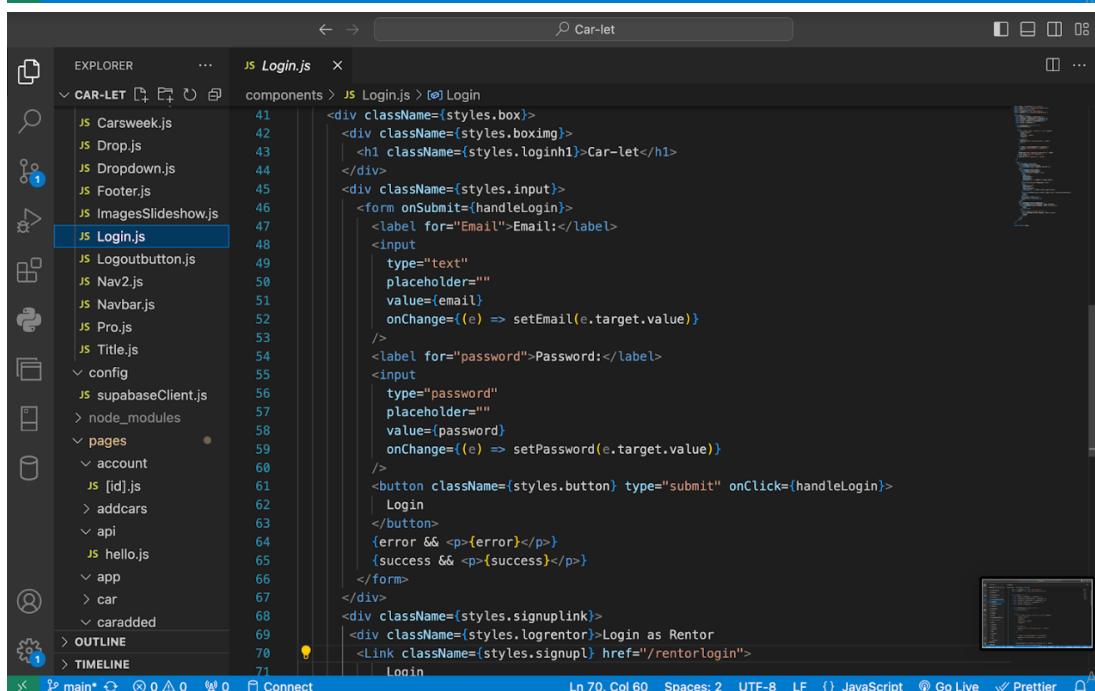
    try {
      const { data, error, success } = await supabase
        .from("signup")
        .select()
        .eq("email", email)
        .single();

      if (error) {
        setError("Error retrieving user:", error);
        return;
      }

      if (!data || data.password !== password) {
        setError("Invalid email or password.");
        return;
      }

      setSuccess("User signed in successfully:", data);
      router.push(`/account/${data.id}`);
    } catch (err) {
      setError("An error occurred during login.", err);
    }
  };
}

export default Login;
```



```
<div className={styles.box}>
  <div className={styles.boximg}>
    <h1 className={styles.login1}>Car-let</h1>
  </div>
  <div className={styles.input}>
    <form onSubmit={handleLogin}>
      <label htmlFor="Email">Email:</label>
      <input
        type="text"
        placeholder=""
        value={email}
        onChange={(e) => setEmail(e.target.value)}
      />
      <label htmlFor="password">Password:</label>
      <input
        type="password"
        placeholder=""
        value={password}
        onChange={(e) => setPassword(e.target.value)}
      />
      <button className={styles.button} type="submit" onClick={handleLogin}>
        | Login
      </button>
    </form>
    {error && <p>{error}</p>}
    {success && <p>{success}</p>}
  </div>
  <div className={styles.signuplink}>
    <div className={styles.logrentor}>Login as Renter
      <Link className={styles.signup} href="/renterlogin">
        | Login
      </Link>
    </div>
  </div>
</div>
```

Car-let

```

EXPLORER ... JS signup.js x
CAR-LET pages > JS signup.js > signup
  > rent_confirmation
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    > rentracount
      JS [rentid].js
    > updatenteror
      JS [id].js
    > updateuserinfo
      JS [id].js
    > userinfo
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    JS _document.js M
    JS index.js
    JS login.js
    JS rentrologin.js
    JS rentorsignup.js
    JS signup.js
  > public
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      # addcars.module.css
      # card.module.css
      # cars.module.css
      # drop.module.css
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```

Car-let

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EXPLORER ... JS signup.js x
CAR-LET pages > JS signup.js > signup
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    > rentracount
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    > _app.js
    JS _document.js M
    JS index.js
    JS login.js
    JS rentrologin.js
    JS rentorsignup.js
    JS signup.js
  > public
    > styles
      # account.module.css
      # addcars.module.css
      # card.module.css
      # cars.module.css
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    > updatenteror
      JS [id].js
    > updateuserinfo
      JS [id].js
    > userinfo
      JS [id].js
    > _app.js
    JS _document.js M
    JS index.js
    JS login.js
    JS rentrologin.js
    JS rentorsignup.js
    JS signup.js
  > public
    > styles
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      # addcars.module.css
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Car-let

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    > userinfo
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    JS index.js
    JS login.js
    JS rentrologin.js
    JS rentorsignup.js
    JS signup.js
  > public
    > styles
      # account.module.css
      # addcars.module.css
      # card.module.css
      # cars.module.css
      # drop.module.css
  > OUTLINE
  > TIMELINE
  X main* ⌂ 0 ⌂ 0 ⌂ 0 ⌂ Connect
  L 65, Col 26 Spaces: 2 UTF-8 LF ⓘ JavaScript ⌂ Go Live ⌂ Prettier ⌂

```

● Car:

Car

```

EXPLORER ... JS Cars.js x
CAR-LET components > JS Cars.js > Cars
  > .next
    > components
      JS CarItem.js
      JS Cars.js
      JS Carsmonth.js
      JS Carsweek.js
      JS Drop.js
      JS Dropdown.js
      JS Footer.js
      JS ImagesSlideshow.js
      JS Login.js
      JS Logoutbutton.js
      JS Nav2.js
      JS Navbar.js
      JS Pro.js
      JS Title.js
    > config
      JS supabaseClient.js
    > node_modules
    > pages
      > account
        JS [id].js
      > addcars
    > OUTLINE
    > TIMELINE
  X main* ⌂ 0 ⌂ 0 ⌂ 0 ⌂ Connect
  L 42, Col 11 Spaces: 2 UTF-8 LF ⓘ JavaScript ⌂ Go Live ⌂ Prettier ⌂

```

```

    23 if (data) {
    24   setCars(data);
    25   setFetchError(null);
    26 }
    27 );
    28 fetchCars();
    29 }, []);
    30 return (
    31   <div>
    32     {fetchError && <p>{fetchError}</p>}
    33     {cars && (
    34       <div className={styles.pg}>
    35         {cars.map((car) => (
    36           <Caritem key={car.id} car={car} />
    37         ))
    38       )</div>
    39     )}
    40   </div>
    41 );
    42 );
    43 );
    44 }
    45
    46 export default Cars;
    47
  
```

● Database:

	<code>id</code>	<code>carname</code>	<code>renttype</code>	<code>carnumber</code>	<code>carimg</code>	<code>carfare</code>
	55	Axio	day	DHA-36432	/axio.jpg	1200
	7	Premio	week	DHA-23349	/premio.jpg	10500
	3	Corolla	day	DHA-274647	/corolla.jpg	1200
	5	Axio	day	DHA-34473	/axio.jpg	1350
	6	Premio	day	DHA-45637	/premio.jpg	1500
	8	Axio	week	DHA-564853	/axio.jpg	9450
	9	Corolla	week	DHA-90384	/corolla.jpg	8400
	10	Premio	month	DHA-234553	/premio.jpg	45000
	11	Axio	month	DHA-122333	/axio.jpg	40500
	12	Corolla	month	DHA-23344	/corolla.jpg	36000
	56	Corolla	day	DHA-35421	/corolla.jpg	1350

● Car Item:

```

    3 import Link from "next/link";
    4 import { useRouter } from "next/router";
    5 const Caritem = ({ car }) => {
    6   const router = useRouter();
    7   const { id } = router.query;
    8   return (
    9     <div>
    10       <div className={styles.box}>
    11         <div className={styles.img}>
    12           <Image src={car.carimg} width={300} height={250} />
    13         </div>
    14         <div className={styles.info}>
    15           <p>Car Name: {car.carname}</p>
    16           <p>Car Number: {car.carnumber}</p>
    17           <p>Rent type: {car.renttype}</p>
    18           <p>Rent fare: {car.carfare}</p>
    19           <p>Car Brand: {car.Brand}</p>
    20           <button className={styles.rent}>
    21             <Link
    22               className={styles.link}
    23               href={`/car/${car.id}`}
    24               as={`/car/${car.id}?${id}`}
    25             >
    26               Rent
    27             </Link>
    28           </button>
    29         </div>
    30       </div>
    31     </div>
    32   );
    33 }
  
```

6.4 Hardware and software Acquisition

There weren't any hardwares involved. We built this website using these following tools-

- NodeJs
- NextJs
- Supabase
- CSS

6.5 Installation

As it is a website , no need for any installations. You just need to search our website url on your browser.

6.6 Testing (Unit testing, Integration and system Testing)

Unit Testing: Unit testing involved evaluating individual components, modules, and functions within the Car-Let system. During unit testing, our developer scrutinized each module in isolation to ensure that it performed its designated functions accurately. As part of the testing process, potential errors, issues, or discrepancies were identified and promptly resolved. In a notable instance, errors in the confirmation page, specifically related to the booking process, were detected and successfully addressed to guarantee a seamless and error-free user experience.

Integration Testing: Integration testing focused on assessing the interactions and compatibility between different modules and components of the Car-Let website. This phase ensured that data flow, communication, and collaboration between various system parts occurred without errors. As with unit testing, any problems arising from integration were identified and resolved to maintain system cohesion and functionality.

System Testing: System testing evaluated the website as a whole, emulating real-world scenarios and conditions. It assessed whether the Car-Let platform met its non-functional requirements, such as performance, security, and usability. While performing system testing, issues related to the confirmation page, particularly in the context of the booking process, were identified and resolved, ensuring that the process functioned smoothly and met user expectations.

6.7 Maintenance

The maintenance phase is an ongoing commitment to the continued improvement and upkeep of the Car-Let car rental website.

Bug Fixes: Addressing and resolving any reported issues, bugs, or errors to maintain the platform's reliability.

Updates and Enhancements: Introducing new features, functionality improvements, and enhancements based on user feedback and market trends.

Security Updates: Continuously monitoring and updating security measures to protect user data and financial transactions.

Performance Optimization: Fine-tuning the website's performance, including load times and scalability.

User Support: Providing ongoing user support to address inquiries, issues, and concerns.

Compliance and Regulations: Staying up-to-date with relevant industry regulations and ensuring compliance.

Chapter Seven - Conclusions and Recommendations

7.1 Conclusions

The development and launch of the Car-Let car rental website mark a significant milestone in the pursuit of our project—an endeavor aimed at creating a user-friendly, efficient, and secure platform for both car owners and renters. Throughout the project's lifecycle, several critical objectives were achieved, contributing to the realization of our successful car rental ecosystem.

Conclusively, the Car-Let website has been designed and implemented to fulfill the following key objectives:

User-Friendly Platform: Our project, Car-Let, offers a user-friendly interface that simplifies the vehicle rental process. Both car owners and renters can easily navigate the website, ensuring an efficient and enjoyable user experience.

Transparent and Trustworthy Transactions: Transparency is prioritized in our project, with detailed vehicle listings, rental terms, and pricing readily accessible. This fosters trust and confidence among users, making the rental process straightforward and reliable.

Diverse Vehicle Selection: Car-Let, our project, provides a diverse selection of vehicles for rent, accommodating a wide range of user preferences, from daily and weekly rentals to long-term monthly options.

Security and Reliability: Our project features secure payment processing, allowing users to make payments confidently. Both online and cash payment options are available, prioritizing the safety of personal and financial information.

Marketplace Efficiency: The Car-Let website, a part of our project, efficiently connects individual vehicle owners with potential renters, creating a dynamic digital marketplace for vehicle rentals. This benefits both car owners and renters and contributes to the sharing economy's growth.

7.2 Recommendations

While the Car-Let car rental website has been successfully developed and launched as part of our project, there are opportunities for improvement and expansion in the future:

Continuous User Feedback: Continually solicit and collect user feedback to identify areas for improvement and enhancement in our project. Engage with the user community to gather insights into their evolving needs and preferences.

Enhanced Mobile Experience: Given the increasing use of mobile devices, further optimize and enhance the mobile user experience in our project. Ensure that the platform remains accessible and efficient across various smartphones and tablets.

Advanced Security Measures: Stay ahead of emerging security threats and continuously update and improve security measures to protect user data and financial transactions within our project.

Advanced Analytics: Invest in advanced analytics to gain deeper insights into user behavior, preferences, and market trends within our project. Use this data to drive strategic decision-making and enhance the platform's efficiency.

In conclusion, the Car-Let car rental website is positioned to provide a valuable service to car owners and renters as part of our project, contributing to the sharing economy's growth and creating economic opportunities for individuals. By embracing these recommendations and remaining dedicated to improvement, our project can continue to evolve, meet the dynamic needs of users, and establish itself as a leading player in the car rental industry.

References

- https://www.academia.edu/16644874/115442368_49930505_Car_Rental_System_Project_Report
- <https://www.grandviewresearch.com/industry-analysis/car-rental-market>
- <https://www.studocu.com/row/document/arid-agriculture-university-rawalpindi/computer-networks/car-rental-management-systemproject-finalr/20854833>
- <https://www.lovelycoding.org/car-rental-system/>
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Our Project Video Demo

-https://drive.google.com/file/d/14FIHMIxGJzKEOxuaeWIrLQuxV7uCAfGL/view?fbclid=IwAR1ef1ppwz8qtvHx17vSzwtIGy_60yHdkyZhh-8M_CUs3zJNfXojTmcs04