

KIGALI INDEPENDENT UNIVERSITY ULK

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**RENTAL CAR MANAGEMENT
SYSTEM**

CASE STUDY: Tobacco Company Ltd

By

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**A Dissertation Submitted to the School of Science and Technology in Partial
Fulfillment of the Requirements Award of Bachelor of Science Degree in
Computer Science.**

Kigali, August 2024

DECLARATION

I declare that dissertation titled **Rental Car Management System, a case study of (TC) Tobacco Company Ltd** is my original work; it has never been submitted for any previous degree award to other University.

Name: BAHATI WAMUNGU Ismael

Signature: Date:

APPROVAL

This project is called “**Rental Car Management System** (Tobbaco Company LTD).” I worked on it together my supervisor, and now it is ready for review. I am so grateful for the support I have been given!

Supervisor’s name: Mr. BYIRINGIRO Eric

Signature:

Date:

DEDICATION

Before everything, I express my gratitude to Almighty God. He always gives me strength, knowledge, & wisdom in all that I do.

I would like to dedicate this piece of work to my sponsor **JEROME Lombard** who have been my constant source of love, support, and inspiration throughout my academic journey.

I appreciate your encouragement so much!

I would also like to dedicate this research project to my loving parents, brothers, sisters, classmates and everyone who contributed to the success of my work project.

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I would like to acknowledge and thank TO the ULK founder and President **Prof. Dr. RWIGAMBA BALINDA** for allowing me to conduct my research project and providing any assistance requested.

I am grateful to my sponsor Jerome Lombard and to my parents for their love, prayers, bearing and sacrifices for educating and preparing me for my future life.

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BAHATI WAMUNGU ISMAEL.

ABSTRACT

The purpose of this project is to develop and implement an online rental car management to address the inefficiencies and challenges associated with manual permit issuance processes in the rental agencies. The basic purpose of this system is to ease all the processes involved in processing renting car process by eradicating use of papers, and wastage of funds with the use of technology the system will ensure good services to customers, keep data.

This platform was developed using different technologies and tools and among others we have: UML for the analysis, SQLite for creating databases, HTML and JavaScript as a programming language for the system Front-end, and PHP for the backend.

The implementation of the online rental car management resulted in several significant findings, including: A considerable reduction in renting processing time, waste of money to go to the company office.

The project concludes that the adoption of an online rental car management system brings substantial benefits to the renting industry. It streamlines the renting application process. The system improves efficiency, transparency, and communication among stakeholders, leading to timely serving customer.

The paper recommends the automation of reservation processes, real-time vehicle tracking, Adding a mobile application for this system. These innovations are expected to enhance customer satisfaction, reduce costs, and ensure scalability in a competitive market.

TABLE OF CONTENTS

DECLARATION	i
APPROVAL	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF ILLUSTRATION	xi
ABBREVIATIONS AND ACRONYMS	xiii
CHAPTER ONE: GENERAL INTRODUCTION	1
1.1. Introduction	1
1.2. Background of the study.....	1
1.3. Problem statement	3
1.4. Research Objectives	5
1.4.1. General Objectives	5
1.4.2. Specific objectives.....	5
1.4.3. Research Question.....	5
1.5. Scope of the project.....	6

1.5.1. Scope of the project (Study)	6
1.5.2. Geographical scope	6
1.5.3. Time Scope	6
1.5.4. Content Scope	7
1.6. Significance of the project.....	7
1.6.1. Personal interests.....	7
1.6.2. Institutional interests	7
1.6.3. Public Interests.....	7
1.7. Project Methodology	8
1.7.1. Data collection Technique:	8
1.8. Limitation of the project.....	8
CHAPTER TWO: LITERATURE REVIEW	10
2.0. Introduction.....	10
2.1. Theoretical review.....	10
2.1.1 Development in Car Rental Industry.....	10
2.2. Review of related literature	11
2.3. Conceptual frame work	14
2.3.1. Hardware	15
2.3.2. Software.....	15
2.3.3. Tools and language used.....	16

2.3.4.Database concepts	18
CHAPTER THREE: SYSTEM ANALYSIS AND DESIGN	22
3.1. Introduction.....	22
3.2.Analysis of the existing system	22
3.2.1.Introduction.....	22
3.2.2.Problem with the existing System.....	23
3.3.Analysis of the proposed system.....	23
3.3.1.Introduction.....	23
3.3.2.System requirement	24
3.3.2.1.Function requirement.....	24
3.3.2.1.1.Hardware requirement	24
3.3.2.1.2.Software requirement	25
3.3.2.2.Non-function requirement.....	25
3.3.3.Functional Diagram.....	26
3.3.4. Methodological approach	26
3.3.4.1.Data collection techniques	26
3.3.4.2.Software Development Methodology.....	27
3.3.4.3.System Design Methodology	30
3.3.4.3.1. Function Diagram.....	30
3.3.4.3.2.Data flow Diagram	31

CHAPTER FOUR: SYSTEM IMPLEMENTATION	41
4.1.Implementation and Coding	41
4.1.1.Introduction.....	41
4.1.2.Description of Implementation tools and technology	41
4.1.3.Screen shorts and source codes.....	43
4.2.Testing	53
4.2.1.Introduction.....	53
4.2.2.Unit testing outputs	54
4.2.3.Validation testing outputs.....	54
4.2.4.Integration testing outputs	55
4.2.5.Functional and System Testing	56
4.2.6.Acceptance testing report	56
CONCLUSION AND RECOMMENDATIONS	57
CONCLUSION.....	57
RECOMMENDATION	58
SUMMARY	59
REFERENCES	60
APPENDICES	63
Time Frame	63
Source Codes	63

LIST OF TABLES

Table 1: Data flow diagram symbols	31
Table 2: users (Data dictionary)	38
Table 3: drivers(Data dictionary).....	38
Table 4: cars_list(Data dictionary)	38
Table 5: Reservation (Data dictionary)	39
Table 6: transaction(Data dictionary)	39
Table 7: notification(Data dictionary).....	39
Table 8: Report(Data dictionary).....	40
Table 9: approved(Data dictionary)	40
Table 10: peeked_drop(data dictionary)	40
Table 11: time frame	63

LIST OF ILLISTRATION

Figure 1: Time scope.....	6
Figure 2: conceptual frame work.....	14
Figure 3: Function Diagram	26
Figure 4: agile model	28
Figure 5: data flow diagram Level 0.....	32
Figure 6: data flow diagram Level 1.....	33
Figure 7: data flow diagram Level 2.....	35
Figure 8: Entity Relationship Diagram	37
Figure 9: Welcome page	43
Figure 10: Cars list.....	43
Figure 11: Registration interface	44
Figure 12: log in interface	45
Figure 13: profile & update interface.....	45
Figure 14: booking interface	46
Figure 15: customer reservation interface.....	46
Figure 16: Customer reservation Approved.....	47
Figure 17: Payment interface.....	48
Figure 18: payment appending	48
Figure 19: Payment Approved.....	49
Figure 20: contact us.....	49
Figure 21: admin login	50
Figure 22: Admin dashboard	50

Figure 23: car list	51
Figure 24: Reservation	51
Figure 25: Transaction	52
Figure 26 : Approved & peeked	52
Figure 27: Report.....	53

ABBREVIATIONS AND ACRONYMS

API:	Application-Programming Interface
CPU:	Central Processing Unit
CSS:	Cascading Style Sheets
DFD:	Data Flow Diagram
ERD:	Entity Relational
HDD:	Hard disk drive
HTML:	Hypertext Markup Language
ICT:	Information and Communication Technology
MIR:	Made in Rwanda
OS:	Operating System
PHP:	Hypertext Preprocessor
RAM:	Random Access Memory
RDBMS:	Relational Database Management System
ROM:	Read-only memory
SQL:	Structured Query Language
SSADM:	Structured Systems Analysis and Design Method
SSD:	Solid-state drives
USB:	Universal Serial Bus
TC LTD:	Tobacco Company limited Company

CHAPTER ONE: GENERAL INTRODUCTION

1.1. Introduction

A rental car management system is a software tool that helps car rental companies keep things running smoothly. Does a lot of things, like help manage the vehicle, handle reservations, and keep track customers? This system makes it easier for rental agencies to manage their cars, see what's available, process bookings, and take care of returns too.

Nowadays, technology is super important! With the rise of Information & Communication Technology (ICT), rental agencies need to step up. They're offering online services to customers. You can reserve a car online and stay in touch with the company manager. Plus, your information gets recorded safely. The goal here is to create a system that always has the right information ready and keeps everything secure.

1.2. Background of the study

In the past, car rental companies operated primarily through physical offices, requiring customers to visit these locations in person to rent vehicles. This process was often time-consuming for both the company and the customer. Clients had to dedicate significant time just to make the trip to the rental office, wait in line, and then go through the formalities of renting a car. This manual procedure involved an extensive amount of paperwork, further complicating and delaying the transaction. From vehicle selection to signing the necessary forms, the entire process could become cumbersome, leading to frustration for customers who were often in need of quick and efficient service. (Anand, 2021).

Moreover, the choices for vehicles at any given rental location were limited to the fleet available on-site. If a particular car was unavailable, customers either had to settle for a different vehicle or wait for their preferred model to be returned, resulting in potential dissatisfaction. The absence of a centralized system meant that vehicle availability information was often inaccurate or outdated, further aggravating the situation. Companies that relied on such manual methods struggled to provide the level of service and convenience that customers were beginning to expect in a fast-paced world.

As the industry grew and competition intensified, it became increasingly clear that traditional, paper-based systems were insufficient for the modern demands of business. To remain competitive and grow, car rental companies realized the need to shift to computerized systems. These systems offered numerous advantages, the most significant being the ability to save time and money. For any business, improving operational efficiency is essential, and technology provides the means to achieve this. The use of computers and the internet enables companies to process transactions faster, track vehicle availability in real time, and streamline customer service. It has become virtually impossible for businesses that do not adopt technology to keep up with their competitors. (arrivia, 2024).

In today's market, companies that fail to embrace technological advancements risk being left behind. Relying on paper-based systems is no longer a viable option. The idea of tracking vehicle information, customer details, and rental histories on paper is

outdated and inefficient. Such systems are prone to errors, delays, and mismanagement, which can hurt a company's reputation and bottom line. The integration of technology, on the other hand, offers a smarter and more reliable way to handle information.

One of the most effective solutions for modern car rental companies is to establish an online database system. Creating a centralized, digital platform allows businesses to store, manage, and access information quickly and efficiently. This not only improves internal operations but also enhances the customer experience by providing faster service and more accurate information about vehicle availability and pricing. Just like businesses in other sectors, car rental companies are discovering that adopting computer systems for everyday tasks is not only practical but also enjoyable due to the efficiency and ease they provide.

An interactive and fast computerized system simplifies operations for rental companies, allowing them to process customer requests more swiftly and with greater accuracy. With the right technology in place, tasks such as booking, vehicle tracking, and payment processing can be automated, reducing the workload for employees and eliminating the need for extensive paperwork. In turn, this leads to better customer satisfaction and higher operational efficiency, ultimately positioning companies for greater success in a competitive market. (Bayu Waspodo, 2024)

1.3. Problem statement

With our local rent companies, customers are using money for paying transport to go to the company office to complete renting form and checking available car. Customers are

moving their office or works to go to the rent company office for checking whether car looking for is available, and that is consuming more time and it costly. (SEBUUFU, 2024).

Manual system currently used takes more effort and physical space to keep track of paper documents, to find information and to keep details securely are challenge. For correction, when mistakes are made or in case there is some changes, it required the complete manual transaction to be redone instead of updating. It's impacting this field and can cause some problems with customers in case his requirements are not well respond as information are stored in different places. In the area we are living now, it is very difficult for an enterprise that does not use technology means to compete with other enterprises. Not using computerized system will let you behind others and will slow down your enterprise that's why we have to adopt the new system, which is computerized.

This manual system tends whole process to be slow, it reducing customers and company owner to share information, consuming more time and the cost is higher in reports producing, and there is a lack of security. There is some problem detected, to name a few: :

- (i) Manipulation of paper where by it can be somehow difficult to find a document easily when you need it, where you signed an Agreement with customers and other document relating to the customer as everything are kept on papers.
- (ii) Loss of document, if it happens that the company owner lost the document or it has damaged it will bring some complication with customers and can cause the loss of the car rented or to be stolen.
- (iii) To not making recovery, the security is not assuring because once a document is lost data are almost unrecoverable.
- (iv) Lack of communication, as it will consume more time and the cost can be higher of producing reports.

In summary, this system will come with the solution of all those problems that the manual system is facing by implementing interface for easy manipulation, use online database and enhance security to keep the data inaccessible from unauthorized people and develop the interface to make easy communication of company managers with the customers.

1.4. Research Objectives

1.4.1. General Objectives

The main objective of this report is to automate vehicle rental and reservation so that customers do not need to walk-in or call in order to reserve a vehicle

1.4.2. Specific objectives

- i. To reduce the time consumed in applying to rent or book a car
- ii. To implement an interface for manager for report managing.
- iii. Implement an interface for communication between stakeholders.
- iv. Provide a mobile-friendly version or app to allow customers and staff to access the system from smartphones and tablets

1.4.3. Research Question

- i. How to reduce time in applying to rent a car?
- ii. How to enable the company manager for easily managing report?
- iii. How to authorize client to contact the manager through the system?
- iv. How to enable mobile-friendly version or app to allow customers and staff to access the system from smartphones and tablets?

1.5.Scope of the project

1.5.1. Scope of the project (Study)

The scope of this project entails the development and implementation of an online rental car management system in Congo. The objective is to create a digital platform that streamlines the process of renting car, enhances transparency, improves data management and promotes collaboration among stakeholder.

1.5.2.Geographical scope

Geographically this research was carried out in Goma city, which is located in the DRC (Democratic Republic of Congo), North-Kivu Province.

1.5.3.Time Scope

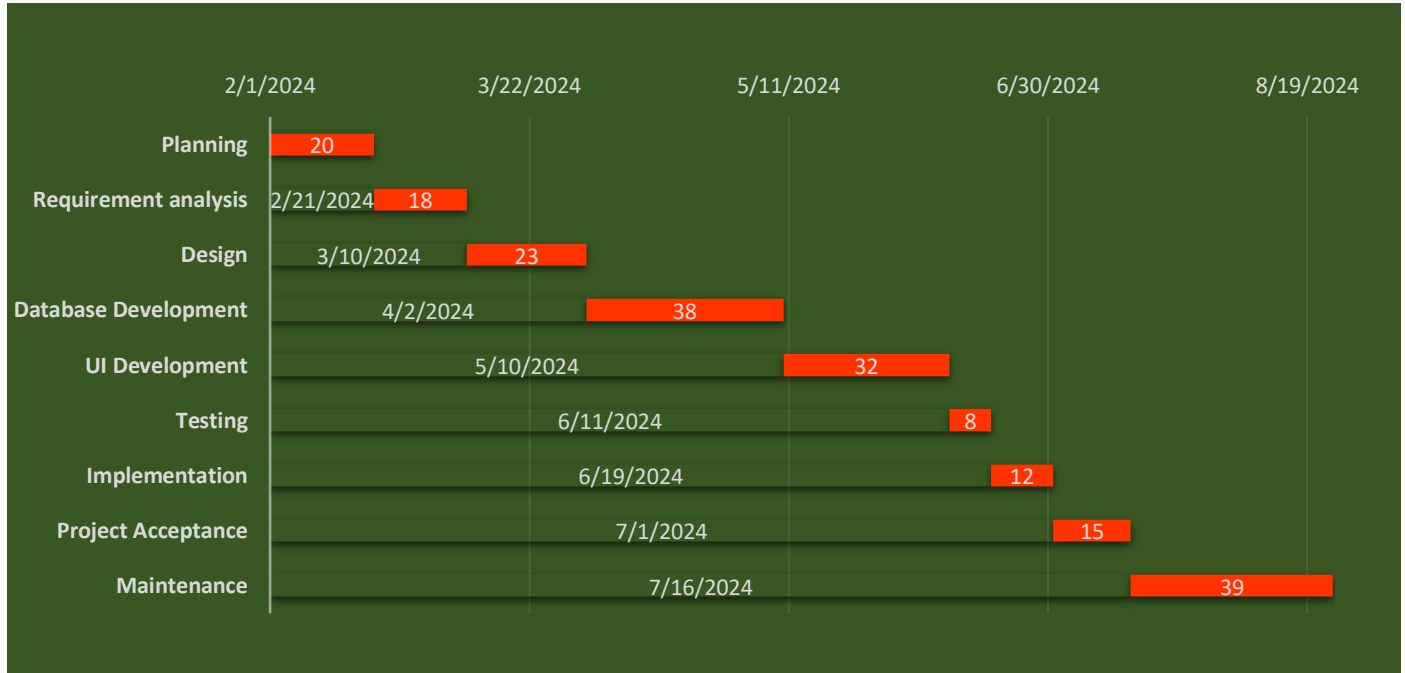


Figure 1: Time scope

1.5.4.Content Scope

The online car rental management system will permit customers to register and booking car. It maintained client's data or information such as national ID card, contact and, customer reservation and let the client being informed about the reservation car. The main users of this work are the system administrator who is adding new car, updating and deleting. It is enabling the checking of status by a client to know if his booking car has been approved or not. The system provide information about the car brand and price and agreement between company and customers.

1.6.Significance of the project

1.6.1.Personal interests

This project will allow me to practice and to enrich the knowledge acquired along our academic studies at the “Kigali Independent University (ULK)” to solve practical problems. The realization of this project is positively improving our knowledge in the field of software development.

1.6.2. Institutional interests

For institutional, this project will help the institution to Streamline operations to reduce complexity and improve workflow, Protect sensitive information and adhere to regulations, and Enhance satisfaction and loyalty through a seamless rental process.

1.6.3.Public Interests

For the public, this project will help the car renting companies and customers to exchange to automatized fluent exchange of information.

1.7. Project Methodology

A research methodology outlines the methods and procedures employed to gather and analyze information about a particular research topic. Researchers design their study so that they can achieve their objectives using the selected research instruments by a process. It encompasses all critical elements of research, such as research design, data collection methods, data analysis techniques, and the overall framework guiding the research process. In this project, Observation, and Documentation were used as data collection tools, Agile Model were used as a software development model and Structured System Analysis and Design Methodology. (Sreekumar, 2023).

1.7.1. Data collection Technique:

Documentation

This technique permitted the research to consult books, reviews, class notes and web page related to online rental car management system.

1.8. Limitation of the project

This project is divided into 5 chapters, and down here am providing the arrangement for decisions on how I realize this project.

Chapter one contain **introduction of the system**, the project objective, scope of the project, project methodologies and project statement, With **Literature Review** make an overview, a summary, and evaluation of previously published theories works related to this topic, **System analysis and design** discuss clearly about System analysis and Design **System implementation** talk about development of the project from small

program (units) up to its integration to a system then Finally, **Conclusion and recommendations** conclude by summarizing the key supporting ideas that we found out from this project and giving some future improvements.

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

A literature review offers a thorough overview and critical evaluation of existing research on a specific topic. It synthesizes current knowledge, highlights research gaps, and offers context for the new study. By evaluating prior research, it helps in forming the theoretical framework and methodology for the current research (University of Arizona, 2023). The main goal of a literature review is to demonstrate the researcher's grasp of the existing knowledge and to identify the most relevant and significant studies in their research area. Through the examination of a wide range of published materials, including journal articles, books, conference papers, and other academic sources, the literature review aims to synthesize and critically analyze the findings, methodologies, and theoretical frameworks from previous research. (Arijit Singh Yadav*1 A. S., 2023).

2.1. Theoretical review

According to the theme of this my present study, which is “Car Rental Management System” We are going to get a look about the evolution of this sector up to a level where systems are needed for to manage Car Rental companies.

2.1.1 Development in Car Rental Industry.

Car rental refers to a business that provides automobiles for short-term use by the public. Customers can rent vehicles for varying durations, ranging from a few hours to several weeks or more. Car rental agencies primarily cater to individuals who need a temporary vehicle, such as those without their own car or travelers who are away from home. The

earliest known instance of cars being available for rent dates back to 1906. The German company Sixt was founded in 1912 as Sixt Autofahrten and Selbstfahrer (Sixt Car Cruises and Self Drivers). In 1916, Joe Saunders from Omaha, Nebraska, began his car rental business with a single borrowed Model T Ford, and by 1917, his Ford Livery Company was renting out 18 Model Ts at a rate of 10 cents per mile (hassan, 2022).

In Congo, until now the car rental industry is not developed like in other countries, but there is a local Car rental Company named SARL (Société a Responsabilité Limitée) based in KINSHASA, operating in DR Congo and extending its services to other parts of Africa. It has been operating in DRC since 2004 and provides services like consultancy, logistics, airport transfers, and safaris. SARL Company specializes in Land cruiser 4x4 vehicles and offers long-term car rental with experienced drivers

The car rental industry in the Democratic Republic of Congo (DRC) faced challenges due to infrastructure limitations, political instability, and security concerns.

However, it is essential to note that the development of the car rental industry in the DRC could still be hindered by challenges such as political instability, security concerns, and economic volatility. Additionally, the COVID-19 pandemic might have had an impact on travel and tourism, affecting the demand for car rental services.

2.2.Review of related literature

In India four student in department of computing and software engineering, talked on nearby theme, which is “ONLINE CAR RENTAL SYSTEM” in their book they talked about user registration process, order process and booking(Arijit Singh Yadav, Akash

Shukla, Anand Srivastava, Amit Pandey , 2023) . During registration process, they talked about some requirement, which are:

- Maintain a database of available vehicles with relevant details such as make, model, year, features, and availability status.
- Allow users to search and filter vehicles based on their preferences, including vehicle type, transmission, fuel type, and seating capacity.

During the ordering process, they need various records for reference, such as customer details and order information. This problem occurs when the car rental company needs to manually recorded the information in the order form. If the volume of customer orders rises, the number of booking forms required to record order information also increases. Besides, the company manager needs to record customer information whenever they make an order. Due to irregular collection of customer information, this may cause the company manger to have difficulty searching for customer information and their order.

In 2023 Guan-Jye Liao a , Kuo-Kuang Chu b & Chi-Hua Li according to the researchers they try to analyze factors affecting car rental management systems, the paper presented about renting a car is easier than buying one. If consumers buy cars with cash or through a mortgage loan, the expense will be greater than the cost of renting a car. As tourism has grown in popularity, consumers are more inclined to rent cars instead. Additionally, with the continual rise in international oil prices, many consumers are opting for a more economical lifestyle by renting cars rather than purchasing them. The car rental industry is inherently service-oriented; therefore, this research aims to investigate how the car rental sector in Taiwan promotes its corporate image from the consumer's perspective, which

eventually influences Consumers' purchase intention. The analysis of the structural equation model reveals that reliability, responsiveness, empathy, and tangibility have positive effects on corporate image. In addition, the corporate image is significantly related with consumers' purchase intention.

Four student of St. Mary University in Ethiopia-Addis abeba, Etsegenet Mekonnen, hAHililna Assefa, AEndale Daba and GammachiisTemesgen talked on nearby them which is "Design and development of car rental controllingmechanism", in their scope of the project they mentioned that the GPS should be installed in each car in other know the location of each rented car. (Etsegenet, 2024).

Two student of RTU university (Department of Computer Science Engineering) in Riga, Latvia talked also the near by theme which is "Online Vehicle Rental System" they talked about the module of the project, in module of the project process they mentioned on the point which is very important which is the implementation of the Post Testimonials interface and View Testimonials of the users. (Ansh Agrawal, 2020).

An other student from Sri Shakthi Institute of Engineering and Technology in india talked on similar them with mine which is "Car Rental Management System" , in their book they talked about software requirement (vellingiri, 2024).

In Software requirement they explained the technology used which are: **SQL, PHP, HTML, CSS, JAVASCRIPT AND APACHEWEBSERVER**

Usually every customer who want to make booking will select a desired vehicle, specify pick-up and drop-off locations, and choose rental dates and times. - Determine rental rates

according to the chosen vehicle and rental period, taking into account any extra charges or fees. (Arijit Singh Yadav*1 A. S., 2024)

2.3. Conceptual frame work

Computer Science focuses on the study of computers and computational systems. In this field, the core component is the computer, an electronic device designed to execute processes, calculations, and operations according to instructions provided by software or hardware programs

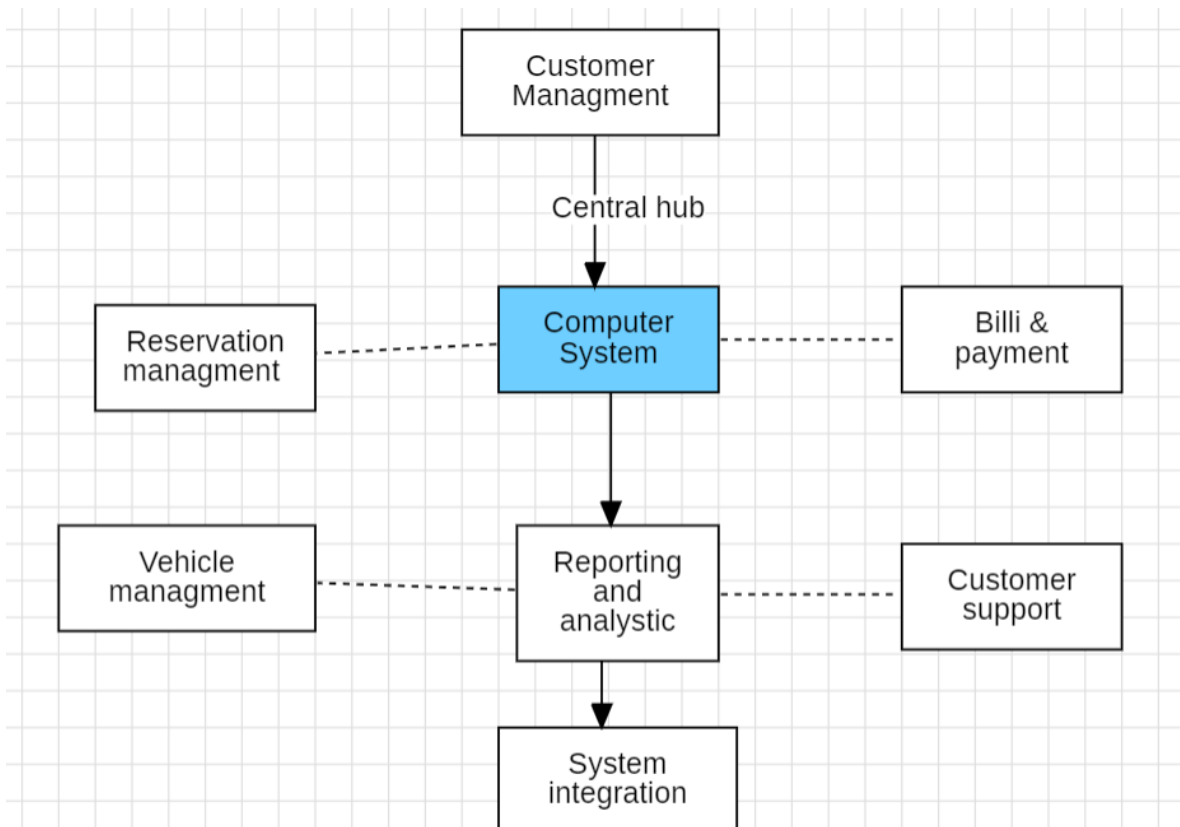


Figure 2: conceptual frame work

2.3.1. Hardware

Hardware is the physical and visible part of the computer such as monitor, CPU, keyboard, mouse, etc. Some devices are used to take in the computer information and other are used to carry out information of the computer (Awati, 2022).

Monitor: It is a hardware device which is used to display output. It is an important part in this project because it will be used for web browsing, mean when the customer or manger want to use the system. (jhimli, 2023).

CPU: CPU stand for the central Processing Unit is the brain of the computer. It manages all components of the computer and handles various data processing tasks. (Academy, 2023).

RAM: Random Access Memory is the hardware component used to store data that is actively being used by a processor. (Paul, 2020).

ROM: RAM is a type of volatile memory, which means that any data temporarily held in it is erased when you restart or turn off your computer. (Micron, 2024)

Secondary Storage: Is an un-volatile device used to store data for a long-time, there are many kinds of secondary storage, as for example the hard disk drive (HDD), solid-state drives (SSD), etc. (Bill Mann, 2020).

2.3.2. Software

The word software is composed by two words “**Soft**” and “**Ware**”. According to the Oxford languages dictionary, the word “**Soft**” means something that is untouchable, and “**Ware**” is a manufactured article. From that, we can define the software as a set of

instructions, data or programs, designed to perform a specific task. They are necessary on a computer because hardware is useless without programs used to manage input/output, storage and to control activities of information systems. (Oxford, 2019).

System: According to Wikipedia, a system is a group of interacting or interrelated elements that act according to a set of rules to form a unified whole(Merriam W & Springfield, MA,.2019).

2.3.3.Tools and language used

XAMPP stands for Cross-Platform, Apache, MySQL, PHP, and Perl. It allows you to develop and test WordPress sites offline on a local web server on your computer. XAMPP enables software developers to test their websites on computers and laptops before deploying them to a live server. A platform that creates a suitable environment for testing and validating projects that use Apache, Perl, MySQL, and PHP directly on the host system. (EDUCBA, 2023)

API: An Application Programming Interface (API) is a method that enables interaction and communication between two or more computer programs. It acts as a software interface, it offers services to other applications.. An API specification is a document or standard that outlines how to create or use such connections or interfaces.. (Goodwin, 2024).

HTML: HTML stands for "Hypertext Markup Language." It is the standard markup language used to create web pages and it's d esigned to be displayed in a web browser. HTML describes the structure of a web page and can be used in conjunction with other

technologies, such as Cascading Style Sheets (CSS) and scripting languages like JavaScript, to build and enhance web pages.. (Garn, 2024).

CSS: Cascading Style Sheets is a style sheet language used to describe the presentation and layout of a document written in a markup language like HTML. (Garn, 2024).

CSS and Bootstrap are different because CSS is a less widely used framework that only uses cascading style sheets, while Bootstrap is a more widely used framework that uses CSS and JavaScript. (geeksforgeeks, 2024).

JavaScript: commonly called “**JS**” by programmers. It is a lightweight, interpreted programming language. It is designed for creating network-centric applications. It complements and integrates with Java. (geeksforgeeks, 2024).

PHP: PHP is a recursive acronym of Hypertext Preprocessor. It is a server-side scripting language and a powerful tool for creating dynamic and interactive web pages. PHP is an open-source, interpreted, and object-oriented scripting language executed on the server side, making it well-suited for web development. (geeksforgeeks, 2024).

SQL: SQL stands for “Structured Query Language”. A Standardized programming language that manage relational databases and perform various operations on the data in them. SQL is used to communicate with a database and its statement are used to perform tasks such as update data on a database, or retrieve data from a database. (geeksforgeeks, 2024).

MySQL: MySQL is a fast, easy-to-use and one of the best “**Relational SQL database management system**” (RDBMS) being used for developing web-based software applications. (geeksforgeeks, 2024).

2.3.4.Database concepts

A **database** is a systematically arranged collection of data or information, usually stored electronically within a computer system A database is a separate application that stores a collection of data and it has one more distinct APIs for creating, accessing, managing, searching and replicating the data it holds. (Monelliah & Arepalli G ,.2017).

Database Management Systems (DBMS) are software applications designed for storing, retrieving, and querying data. A DBMS acts as a mediator between the end-user and a database, enabling users to create, read, update, and delete data within the database. Database administrators is used for storing facts in the database and to present information in such form that carry information for the users. The tables of databases contains columns and rows, that are called fields or attributes as they mostly facilitating the management of entry data. There are two things that require optimization, storage of data and retrieval of data as quickly as possible finally a database management system (DBMS) is the system that designed to make easier the management of the databases, the collection interrelated data and set programs to access to those data by creating, maintaining and control access to the database. (Nicole,.2018)

Typically, provides the following facilities language programs database, such as

Data Definition Language: is a language using a database system by a set of statements to specify the data types; structures and access method the constraints of data stored in the database usually are hidden from the users. (Jack,2020)

Data Manipulation Language: is a language that enables or manipulate data organized(Retrieval; Addition; Deletion; Modification; Update) (Arnaud,2021)

Queries Language: focus on central repository of all data descriptions and design views; datasheet and SQL views, has a fixed set of queries programs to give some answers or reporting from the database system by different users at the same time. (Mark,2020)

In computing, data is information that has been transformed into a format optimized for transfer or processing. Compared to modern computers and transmission methods, data refers to information that has been converted into a binary digital format (David, 2020).

Data Modeling: Data modeling is the process of creating a data model for the data to be stored in a database by using text and symbols to represent the data and how it flows. Data models provide a draft for designing a new database or a conceptual representation of Data objects. (Carter, 2024)

Relationship: A relationship between two database tables is established when one table includes a foreign key that references the primary key of another table.

A table is a set of related data organized in a tabular format within a database It is using a model of columns and rows (Davidson R, 2017).

Column: A column is a set of data values, all of a single type, in a table. One column (data element) contains data of the same kind, for example the column measurement. . (Rouse, 2018).

Row: A row is a data record within a table. Each row, representing a full record of a specific item, contains varied data but follows the same structure. A row is a group of related data, for example the data of one customer. (Rouse, 2018).

Primary Key: In a relational database, a primary key is a unique identifier assigned to each record in a table. This ensures that no two rows can have the same primary key value, allowing each record to be uniquely identified. (W. Pink, 2017).

A foreign key is a column or set of columns in a relational database table that establishes a connection between data in two different tables. It acts as a cross-reference between tables because it references the primary key of another table, thereby establishing a link between them (Lerman & Rowan M, 2017).

A flowchart is a visual representation that outlines the individual steps of a process in a sequential manner. A generic tool can be adapted for a wide variety of purposes, and can be used to describe various processes. (Gallagher.,2017)

a) Fast and reliable interface

User-friendly interface is simply a program that the user considers a friend instead of an enemy. (Dickson, 1998).

The following elements characterize a successful user interface:

Clear: Clarity is the most important element of user interface design because it is enabling users to interact with the system. Be clear and concise; if you can describe a feature in one sentence instead of three, do so.

Familiar: The design should be intuitive, meaning users can easily and naturally understand it because it is based on familiar concepts and elements.

Responsive: The design must be fast, ensuring that things load quickly and efficiently.

Consistent: The design should be uniform, allowing users to learn how different elements work and apply that knowledge to new features more quickly based on previous experiences.

Attractive: The UI design should be simple and engaging, providing an enjoyable experience for the end user.

An effective interface should enable you to complete tasks more quickly and with less effort.

Forgiving: A forgiving interface is designed to protect users from making costly errors. For example, if a user accidentally deletes important information, is there an easy way to retrieve it or undo the action?

CHAPTER THREE: SYSTEM ANALYSIS AND DESIGN

3.1. Introduction

System analysis and design are the activities needed to specify how the software will actually operate in car Rental Company. By proven methodology replied to this sector, we found out that some process are delaying in renting activities, To improve the security of user's information, facilitate the company manager to cover every customer's requirement and make easy the interaction between company and customers, we develop a system for to come up on those situations. For to complete that system, a software engineering methodology was used to emphasize the Input or data collection, Process (steps the system will perform) and the Output mean the result after doing all the steps.

3.2. Analysis of the existing system

3.2.1. Introduction

Until now, most car rental companies use manual systems, where managers keep customer information in paper-based books. They record client data manually, which is inefficient and outdated. This manual method is time-consuming and lacks interactivity. Physical books are not durable and can be lost, and moving them frequently is cumbersome. Locating customer information in these books is time-consuming and inefficient, requiring the manual flipping through pages. Only a few car rental companies in DR Congo have adopted online systems.. (AGARWAL, 2022).

3.2.2.Problem with the existing System

Knowing that the old system is manually, it count many problems. The common problems encountered in manual filling and computations are error, and file handling.

These problems led to others, like:

Slow processing of the customer's data, difficult to locate information in the renting book, Data that are saved on hard copies are risked to be lost, The customer has to come to the company office whenever needs to fill renting form and consumes transport money, The customer cannot know whether the looking car is ready or not , The data of the customer may lost and There is a threat about the security.

3.3.Analysis of the proposed system

3.3.1.Introduction

The proposed system will eliminate all these manual interventions and increase the speed of the whole process. The system will enable customers to register online and submit their measurements successfully. The system includes an integrated validation feature to verify the entered data. The customer can log in to the system to check the status of their clothes for collection. The system will display the completed garments available for clients to collect. This data will be saved in the database for future reference or auditing.

This computerized system of car rental companies has the following importance:

- **Efficiency:** Due to the increasing of customer, it is becoming progressively harder to copy with the paper worked involved in the manual system of processing.

- **Accessibility:** The system will be accessible in every computer, which access the Internet and web browser installed in, or mobile phone.
- **Safety and Security:** Information stored on the computer is protected from animals, insects, and unauthorized access. In addition, a password is used to make a system accessible to only authorized persons.

3.3.2.System requirement

3.3.2.1.Function requirement

Functional requirements shows how the system is expected to behave. This behavior may be expressed as services, tasks or functions the system is required to perform (Thomas & Raphael., 2008).

3.3.2.1.1.Hardware requirement

Servers: High-performance servers to host the car rental management software, databases, and backup systems.

Desktop Computers/Laptops: For staff to manage bookings, customer information, and vehicle inventory.

Tablets/Portable Devices: For staff to use on the go, especially useful for checking in/out vehicles in the lot.

Walkie-Talkies: For quick communication between staff members, especially in large lots

Vehicle Tracking Devices: GPS trackers installed in rental vehicles for monitoring location and usage.

3.3.2.1.2. Software requirement

Therefore, the proposed system is able to:

- Collect customer information, store it, and make it accessible when needed.
- Allow users to view the available cars by location, date, and time.
- Display car details such as make, model, year, and features.
- Enable users to book a car, select pick-up and drop-off locations, and make secure payments.
- Search and display customer information details.
- Store customer information; include contact details, and rental history.

3.3.2.2. Non-function requirement

Non-functional requirements define the criteria used to assess the performance of a system, rather than detailing specific behaviors. This differs from functional requirements, which outline specific behaviors or functions. Systems must exhibit software quality attributes, such as accuracy, performance, cost, security and modifiability plus usability that is easy to use for the intended users. It also help to achieve the functional requirement of a system. (Thomas & Raphael., 2008).

Thus, the proposed system does the following:

- The system should be highly available and scalable to manage peak loads during weekends and holidays.

- The system should be user-friendly, responsive, and accessible across various devices and platforms.
- The system prevents unauthorized access through user authentication via a login system.

3.3.3. Functional Diagram

A functional diagram is a visual representation that shows the relationships between different components or elements in a system or process. It offers a visual understanding of how various parts interact to achieve a specific goal or outcome.

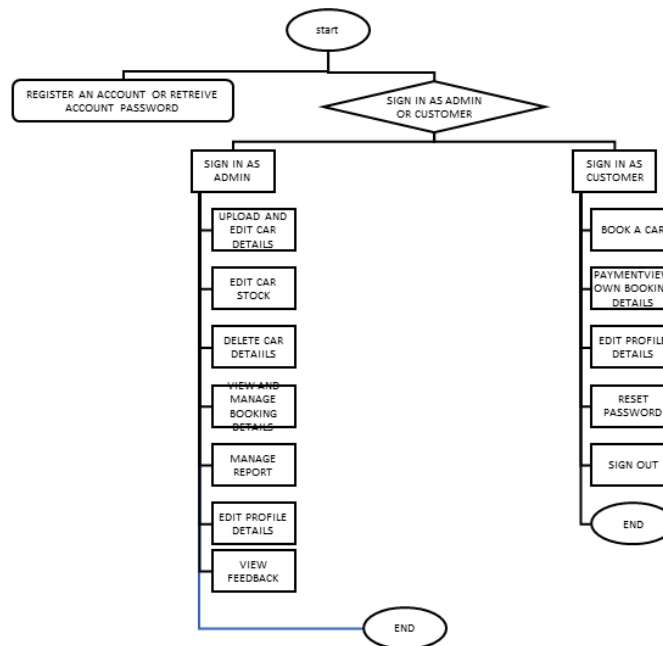


Figure 3: Function Diagram

3.3.4. Methodological approach

3.3.4.1. Data collection techniques

Data collection is the process of gathering and analyzing information from multiple sources to address research problems, answer questions, assess outcomes, and predict trends and probabilities. (Simplilearn, 2023)

1. Observation

The observation is an action of attentive follow up, without the willing to modify them, using investigation and appropriate study. The observation as a tool helped me in this researcher to know and muster the real situation of existing system. In addition, that helped me to notice with own eyes what is going on practically in the present field of car rental companies.

2. Documentation

This technique as it allow the consultation of books, reviews, memoire, class notes and web pages related to the subject of this work.

It has been used in this project to add on our shelf more information for to build a system that able to answer on market requirements.

3.3.4.2. Software Development Methodology

A software development methodology is a framework for structuring, planning, and managing the software development process. Its goal is to deliver software according to project specifications, within the time and budget constraints, while minimizing project risks (Nikitin, 2024) Many models for software development have been putout but not all they have to be used, with our project we use “**Agile model**”.

Agile model offed me several advantages when developing this project, which are, iterative development, meaning that it allowed me to build this system in small. Through iterative testing and feedback loos, agile helped me in identifying and fixing defects early in the development process.

By breaking down this project into smaller iteration, agile helped me in managing risk effectively. It helped me also in team collaboration, where I was working with the environment such as my colleagues. that collaboration helped in integrating various features like booking, report and customer service into a cohesive system.

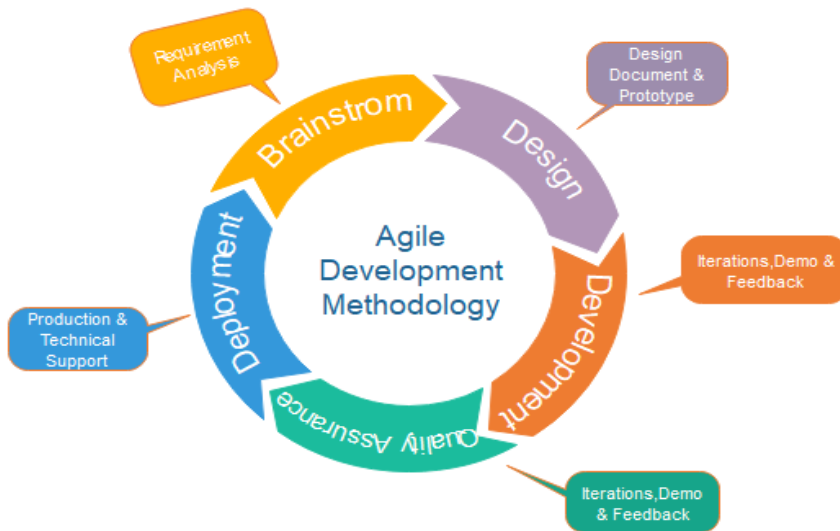


Figure 4: agile model

The sequences phases in agile model method are the following:

- **Requirements gathering:** You should identify business opportunities and estimate the time and effort needed for the project. This information will allow you to evaluate its technical and economic feasibility.
- **Design the Requirements:** After identifying the project, work closely with stakeholders to define and document the requirements. You can use the user flow diagram and show how it will apply to your existing system.

- **Construction/ iteration:** Designers and developers begin working on the project with the goal of delivering a functional product. The product will go through various stages of enhancement, starting with simple, minimal functionality.
- **Testing:** During this phase, the Quality Assurance team evaluates the product's performance and searches for bugs.
- **Deployment:** In this phase, the team releases the product for use in the user's work environment.
- **Feedback:** After the product is released, the final step is to gather feedback. The team then reviews and addresses this feedback.

Advantages:

- To stay competitive, any changes to functional requirements are incorporated into the development process.
- The design is efficient and meets the business requirements.
- Anytime changes are acceptable.
- It reduces total development time.

Disadvantages:

- Conflicts may arise between new requirements and the existing architecture.
- The project may take longer than expected due to necessary repairs and revisions.
- The lack of formal documentation can lead to confusion, and crucial decisions made during various phases may be misinterpreted by different team members.

- Due to insufficient documentation, maintaining the completed project can become challenging once developers are assigned to another project.

3.3.4.3. System Design Methodology

3.3.4.3.1. Function Diagram

For the system analysis design, we will use the “**Structure System Analysis and Design Method**” for it based on the waterfall model and it adopts a formal systematic approach to The System Development Life Cycle phases and activities require that the activities of one phase be completed before progressing to the next phase.

Structured Systems Analysis and Design Method (SSADM) is the method that is used at projecting and analysis of information systems. At the early stages of a project, during the description of models (functional, informational, and event-trigger), the top-down method is used.

- **Logical Data Modeling** includes identifying, modeling, and documenting the data requirements of the system being designed. The data is divided into entities (things about which a business needs to record information) and relationships (the associations between these entities).
- **Data Flow Modeling (DFM)** visualizes how data moves and is processed within a system. It utilizes diagrams to illustrate data sources, destinations, processes, and storage, aiding in the identification and resolution of potential issues in the system's data handling. Data Flow Modeling examines processes (activities that transform data from one form to another), data

stores (the areas where data is held), and external entities (sources that send data into a system).

- **Entity Behavior Modeling** is the process of identifying, modeling and documenting the events that affects each entity and the sequence in which these events occur.


Each of these three system models offers a different perspective on the same system, and all three viewpoints are necessary to create a complete model of the system being designed. The three techniques are cross-referenced to ensure the completeness and accuracy of the entire application. The structured techniques of SSADM fit within a framework of steps, stages, and tasks, each with defined inputs and outputs.. Additionally, various forms and documents are specified to supplement the information contained within the diagrams.

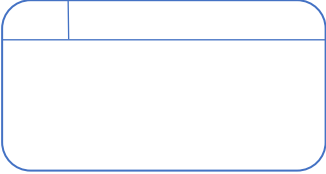


3.3.4.3.2.Data flow Diagram

Data Flow Diagram (DFD) is a graphic diagramming tool that uses a few simple symbols to illustrate the flow of data among external entities, processing activities, and data storage elements. DFDs illustrate the relationship between different components of a program or system. Are composed by four elements, which are entities, processes, data stores, and data flow.

1. Symbol

Table 1: Data flow diagram symbols

	<p>External Entity: An Entity is a source or destination of data flow, which is outside the area of study.</p>
---	---

	<p>Process: A process represents the transformation or manipulation of data flows within the system.</p>
	<p>Data store: For data entry and storing.</p>
	<p>Data flow: A data flow shows the movement of information from its source to its destination.</p>

2. Identification

- a. **External Entity:** System Admin , Customer.
- b. **Process:** Searching customer's information, Book the car, Contact, Display transactions, Add or upload files and information for the Admin.
- c. **Data Store:** Customers, Customer reservation, customer's information.

1. Data flow diagram level 0

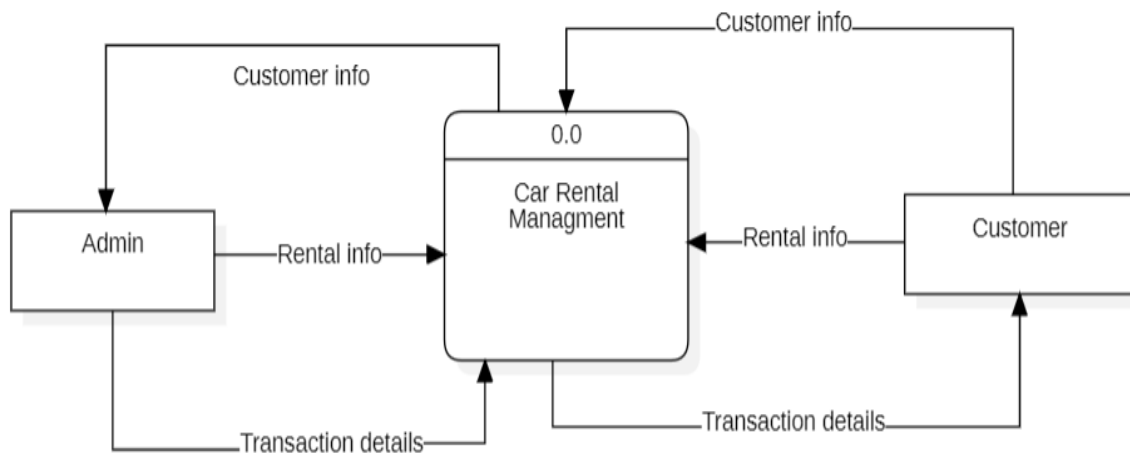


Figure 5: data flow diagram Level 0

Admin: Manages the system and interacts with the Rental Info component. The admin handles transaction details, which likely include booking, returns, and payments.

Customer Info: Appears twice, indicating that customer information is both input into and output from the system. This could involve customer registration, updating details, and retrieving customer data.

Car Rental System: The central component that connects all other parts. It processes and manages the flow of information between admins, customers, and rental details.

Rental Info: Contains details about the rentals, such as car availability, rental periods, and transaction records. This information is exchanged with both the admin and the central system.

2. Data flow diagram level 1

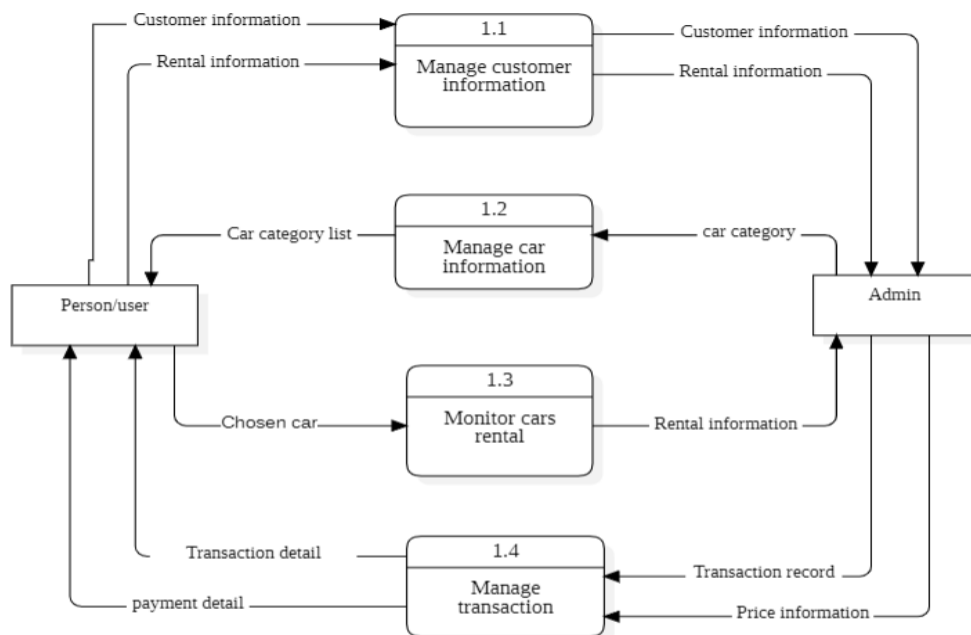


Figure 6: data flow diagram Level 1

How it works.

1. Manage Customer Information (1.1)

Input: the user or admin. Enters Customer information into the system.

Process: The system manages customer data, including registration, updates, and retrieval of customer details.

Output: Updated customer information is stored and can be accessed when needed.

2. Manage Car Information (1.2)

Input: Car details, including categories and specific car information, are entered into the system.

Process: The system organizes and maintains information about available cars, such as their categories, availability, and specifications.

Output: Updated car information is available for customers to view and select from.

3. Monitor Car (1.3)

Input: Information regarding the selected car and rental details.

Process: The system monitors the status and availability of cars, ensuring that rental information is current and accurate.

Output: Real-time updates on car availability and rental status.

4. Manage Transactions (1.4)

Input: Payment details provided by the customer.

Process: The system processes financial transactions, including payments for car rentals.

Output: Transaction records are updated, and payment confirmations are generated.

Additional Components are **Person/User** which Provides personal information and selects cars for rental. Interacts with the system to complete the rental process , **Admin** Oversees the system, manages customer and car information, and handles transactions. Ensures the

Process: The system manages customer data, including registration, updates, and retrieval of customer details.

Output: Updated customer information is stored in the Customer Database and can be accessed when needed.

2. Manage Car Information (1.2)

Input: Car details, including categories and specific car information, are entered into the system.

Process: The system organizes and maintains information about available cars, such as their categories, availability, and specifications.

Output: Updated car information is stored in the Car Database and is available for customers to view and select from.

3. Monitor Car (1.3)

Input: Information about the chosen car and rental details.

Process: The system monitors the status and availability of cars, ensuring that rental information is current and accurate.

Output: Real-time updates on car availability and rental status are stored in the Rental Database.

4. Manage Transactions (1.4)

Input: Payment details provided by the customer.

Process: The system processes financial transactions, including payments for car rentals.

Output: Transaction records are updated in the Transaction Database, and payment confirmations are generated.

I. Flow of Information

Customer Information: Entered by the user/admin and managed by the system.

Car Information: Entered and maintained by the system, available for customer selection.

Rental Information: Shared between customer and car management sections, ensuring accurate rental details.

Transaction Details: Processed by the system, ensuring payments are recorded and confirmed.

II. Data Stores

Customer Database: Stores all customer-related information.

Car Database: Stores all car-related information.

Rental Database: Stores all rental-related information.

Transaction Database: Stores all transaction-related information.

3. Entity Relationship Diagram

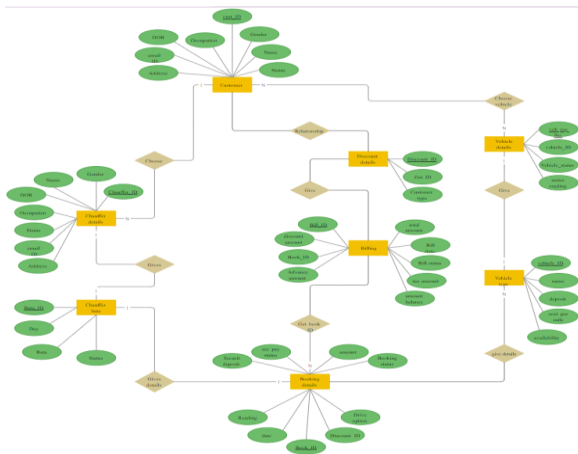


Figure 8: Entity Relationship Diagram

Here down it is how it works:

Users register and their details are stored in the Users entity, Cars available for rent are listed in the Cars List entity, When a user makes a booking, a new record is created in the Bookings entity, linking the user and the car, A driver is assigned to each booking,

linking the Drivers entity to the Bookings entity, Any issues or feedback related to a booking are recorded in the Reports entity. Finally, notification entity is used for storing the customer's feedback and admin answer.

4. Data Dictionary

Table 2: users (Data dictionary)

TABLE	Colum	Data Type	EXTRA
Users	User_id	Int	Primary key
	names	Varchar(30	Not null
	Phone_number	Varchar(30	Not null
	password	Varchar(30	Not null
	date	datetime	Not null

Table 3: drivers(Data dictionary)

TABLE	Colum	Data Type	EXTRA
Drivers	Driver_id	Varchar(30	Primary key
	Full_name	Varchar(30	Not null
	Age	int	Not null
	Gender	Varchar(30	Not null
	Maritial_status	Varchar(30	Not null
	Driving_licence_no	Varchar(30	Not null
	licence_img	Varchar(30	Not null
	address	Varchar(30	Not null
	phone_number	Varchar(30	Not null
	email	Varchar(30	Not null
	Date_created	datetime	Not null

Table 4: cars_list(Data dictionary)

TABLE	Colum	Data Type	EXTRA
Cars_list	car_id	Varchar(30	Primary key
	car_name	Varchar(30	Not null
	car_type	Varchar(20)	Not null
	car_image	Varchar(30	Not null
	price_day	Varchar(30	Not null
	transmission	Varchar(30	Not null
	Date_ins	Datetime	Not null

Table 5: Reservation (Data dictionary)

TABLE	Colum	Data Type	EXTRA
Réservation	booking_id	int(11)	Primary key
	fullname	varchar(20)	Not null
	email	varchar(20)	Not null
	selected	varchar(20)	Not null
	peekdate	date	Not null
	dropdate	date	Not null
	driver	varchar(20)	Not null
	days	varchar(20)	Not null
	to_be_paid	varchar(20)	Not null
	addresss	varchar(20)	Not null
	user_id	int(20)	Not null
	Driver_id	varchar(20)	Not null
	status	varchar(20)	Not null

Table 6: transaction(Data dictionary)

TABLE	Colum	Data Type	EXTRA
Transaction	trans_id	int(20)	Primary key
	name_on_card	varchar(30)	Not null
	Date	Datetime	Not null
	credit_card	varchar(40)	Not null
	Paid	varchar(5)	Not null
	booking_id	int(20)	Not null
	user_id	int(20)	Not null
	car_id	int(20)	Not null
	status	varchar(20)	Not null

Table 7: notification(Data dictionary)

TABLE	Colum	Data Type	EXTRA
notification	msg_id	int(20)	Primary key
	name	varchar(30)	Not null
	email	varchar(50)	Not null
	message	varchar(300)	Not null
	user_id	int(20)	Not null
	date	datetime	Not null

Table 8: Report(Data dictionary)

TABLE	Colum	Data Type	EXTRA
Report	report_i	int(11)	Primary key
	trans_id	int(11)	Not null
	booking_id	int(11)	Not null
	report_date	datetime	Not null

Table 9: approved(Data dictionary)

TABLE	Colum	Data Type	EXTRA
approved	approved_id	int(11)	Primary key
	booking_id	int(11)	Not null
	Trans_id	int(11)	Not null
	Cust_name	datetime	Not null
	selected	Varchar(30)	
	Car_id	Int(30)	
	status	Varchar(30)	

Table 10: peeked_drop(data dictionary)

TABLE	Colum	Data Type	EXTRA
Peeked_drop	id	int(11)	Primary key
	selected	Varchar(30)	Not null
	Pee_status	Varchar(30)	Not null
	Drop_status	Varchar(30)	
	Booking_id	int(30)	
	status	Varchar(30)	
	Car_id	datetime	Not null

CHAPTER FOUR: SYSTEM IMPLEMENTATION

4.1.Implementation and Coding

4.1.1.Introduction

This Chapter is about one of important phase in the system development cycle that conduct the project to be successful after the implementation of new system design in explained steps which describe different functionalities of the system through some screenshots. That push to say that implementation mean the conversion of a new system design into an operating system. System's screenshot are provided here below to explain more about how the application has been conceived and technologies applied to build this Application.

4.1.2.Description of Implementation tools and technology

To implement this application I have used the Web Development technologies such as:

- **PHP (Hypertext Pre-processor):** which is a widely used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML. We used it for making dynamic the application content accordingly to the need of the user and send queries to the database. (Jackson, Joab, 2014).
- **MySQL:** is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL) we use for it because of his high performance in the security of data, it support of large database and also it quick performance in design and access of database.) (Urlocker, M. Zack, 13 December 2005)

- **Bootstrap:** is the HTML, CSS, and JavaScript framework for developing responsive, web applications, we used for it because it is a potent front-end framework used to create modern websites and web apps.
- **Xampp :** It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes, we used it to run our “php” application serve “APACHE” and our database management system (Thomas., 2017)
- **JavaScript:** This programming language is super important for the World Web! Along with HTML & CSS, it helps make websites work. Can you believe that by 2022, about 98% of all websites use JavaScript to make them interactive? Many sites even use extra libraries to make things run smoothly.
- **HTML.** That for Hypertext Markup Language. Then there’s CSS, which means Cascading Style Sheets. Both of these are key to building web pages! HTML gives the page its basic structure, while CSS handles how things look—like colors and layouts—for different devices. Together with graphics & scripting, HTML and CSS form the backbone of creating web pages and applications! (Jack 2018).

4.1.3. Screen shorts and source codes

Welcome page

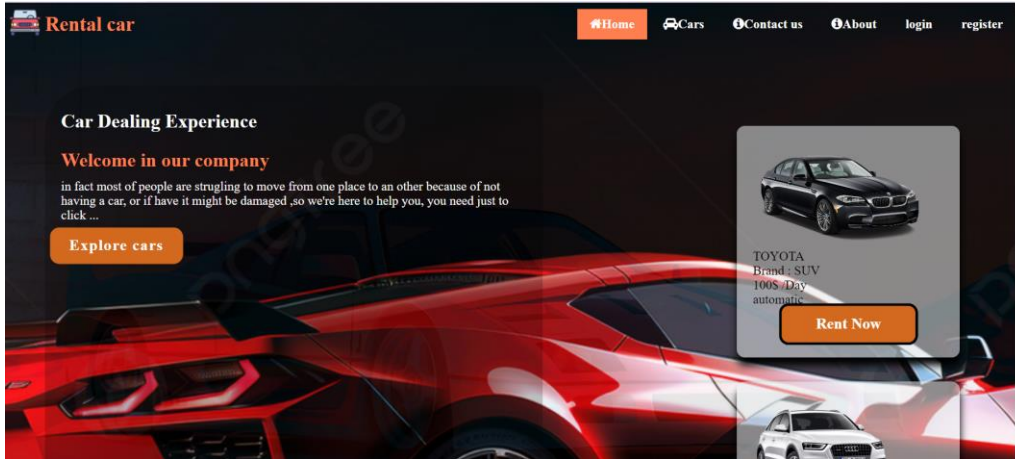


Figure 9: Welcome page

The main function of this homepage is to direct users around the sites, so it is important that guests are able to do so easily.

Cars list:

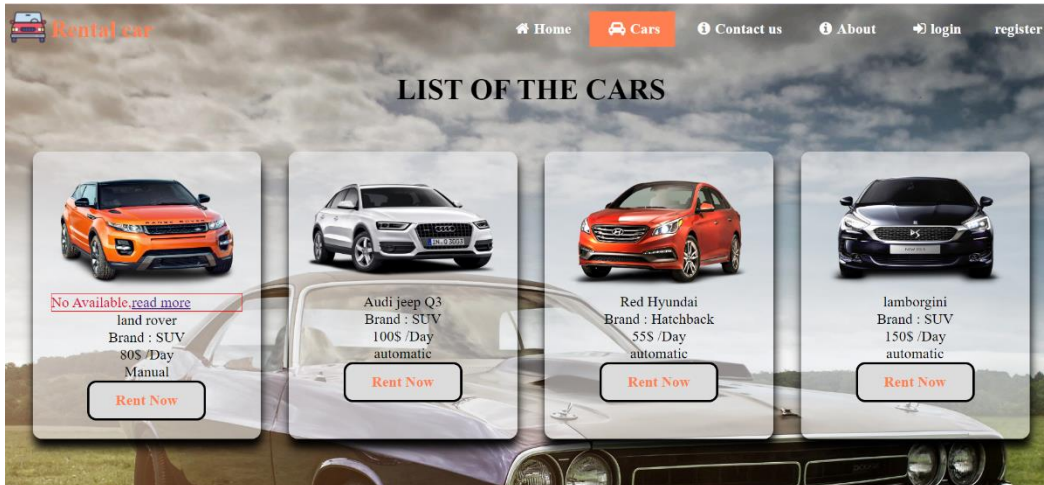
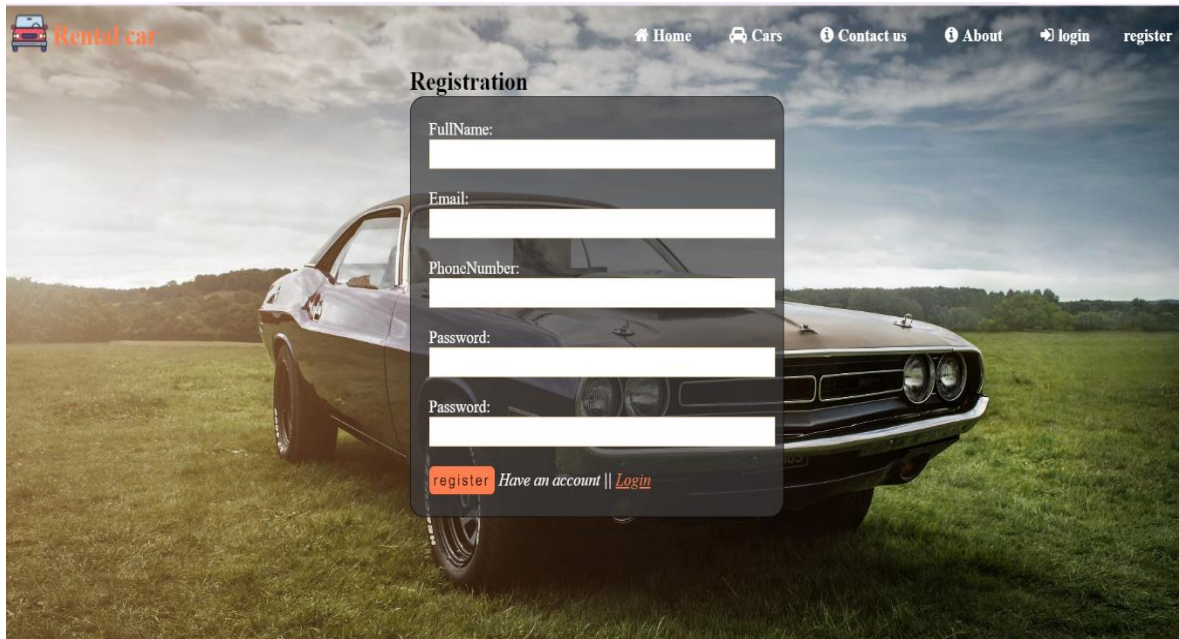


Figure 10: Cars list

Cars list pages in this system show the available cars which are available and it is where the customer can make the reservation of any wanted car.

Registration of new user



The image shows a web application registration interface. The background is a photograph of a classic car in a field. The registration form is a dark overlay with the following fields: Full Name, Email, Phone Number, Password, and a second Password field. At the bottom of the form are buttons for 'register', 'Have an account', and 'Login'. The top navigation bar includes 'Home', 'Cars', 'Contact us', 'About', 'login', and 'register'.

Figure 11: Registration interface

The sign-up interface that is mainly used for the user or customers in order to accede to the system. During the registration, the user must fill all information required that is the full name, email phone number, photo and the password. In the completion of the email, the user must insert a real one and must respect the standard form of an email-address, out of that the system will notice the user that his email is not valid. When all information are correctly filled, the user can press the sign-up button to be registered successfully.

Login

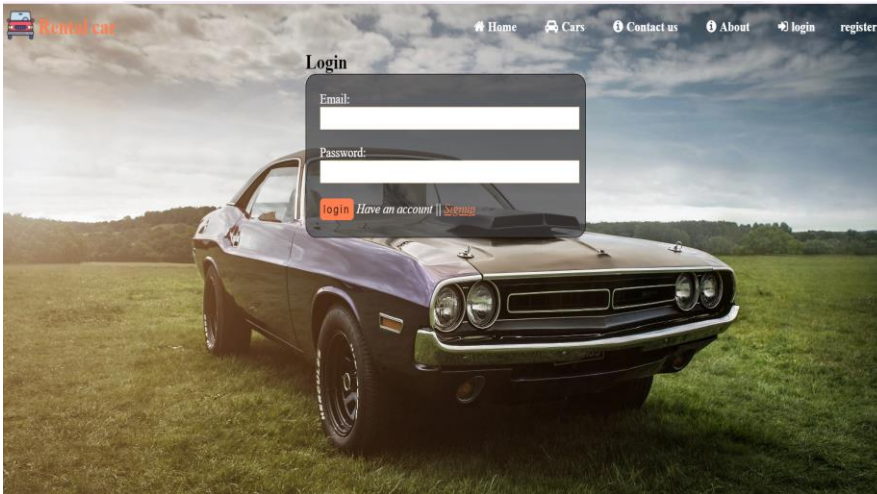


Figure 12: log in interface

Without log in the user cannot make any reservation, when a user is already registered, he can now log in the system. The user have to fill his email and password, If the user try to log in the system with wrong email or password, the process will be denied.

Iteration of user configuration

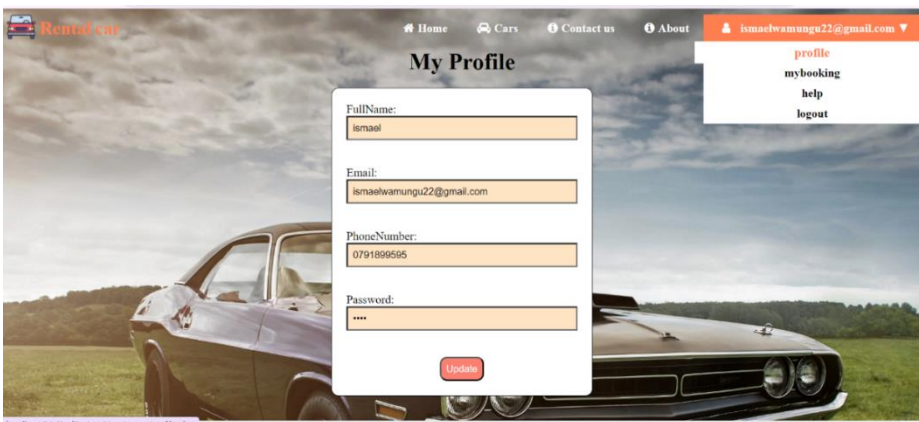


Figure 13: profile & update interface

To access the profile and be able to update the information the user has to click on his email on right top, the system will drop a small window that contains profile, my booking, help

and logout. Then the user will click on profile that can enable him the possibility of editing his information such as his full name, email, phone number and his password.

Booking.

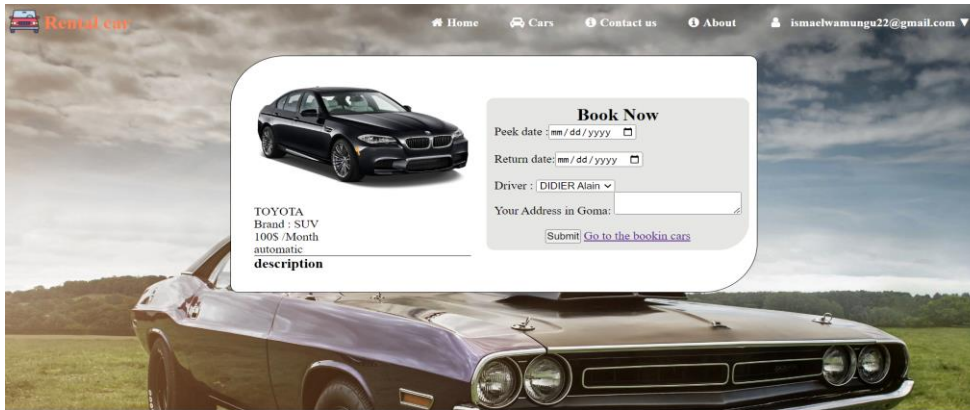


Figure 14: booking interface

After log in, then the user can be able to make the any reservation of any wanted car available, and to do that the user has to click to the button **rent now** of a wanted car in the cars list page, then an interface will appear that ask him to provide some information which are: peek date, return date, driver and his address in Goma.

My Reservation



Figure 15: customer reservation interface

The interface my reservation helps the customer to view his reservation and check if it has been approved in order to make the payment. If the reservation still in appending the

payment button will still disabled and the customer will not be able to apply the payment until the admin approve it.

So when the admin approve his reservation, then the message Appending will change to Approved with green color, and immediately the customer will receive an email tells him that his reservation has been approved and it's time to make the payment.

My reservation Approved:

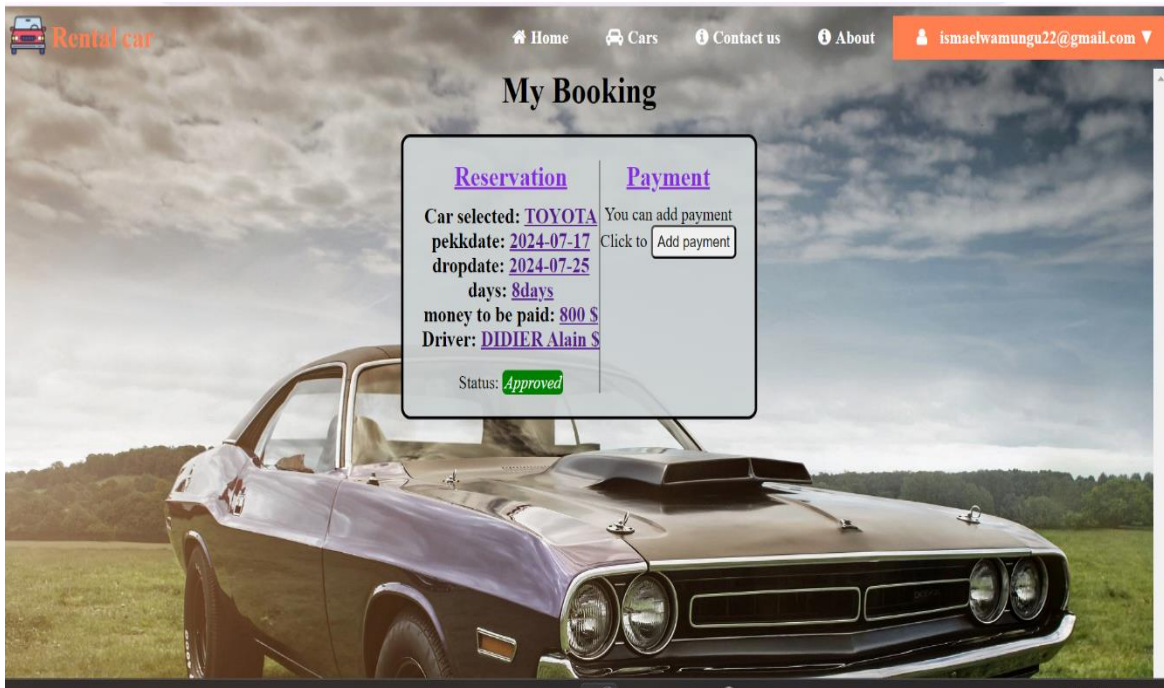


Figure 16: Customer reservation Approved

After the approval of reservation, then payment button will be enabled in order the customer may start making online transaction. as shown in the figure above the button "Add payment" is already enabled.

Payment:

PAYMENT

Cards Accepted :

PayPal MasterCard American Express VISA

Name On Card :

mr. ismael wamungu

Credit Card Number :

1111-2222-3333-4444

Price :

100\$

Proceed To Checkout

Figure 17: Payment interface

This is the payment interface, which helps the user to apply transaction, but this interface can be accessible only when the reservation is approved as I explained in the previous graph.

Payment in Appending

My Booking

Reservation	Payment
Car selected: TOYOTA	Click to <input type="button" value="Add payment"/>
pekkdate: 2024-07-17	Status: Appending
dropdate: 2024-07-25	
days: 8days	
money to be paid: 800 \$	
Driver: DIDIER Alain S	
Status: Approved	

Figure 18: payment appending

After making payment, the user will wait until his payment to be approved, and above you can see that there is a message which is saying that the payment it is in appending.

Payment Approved

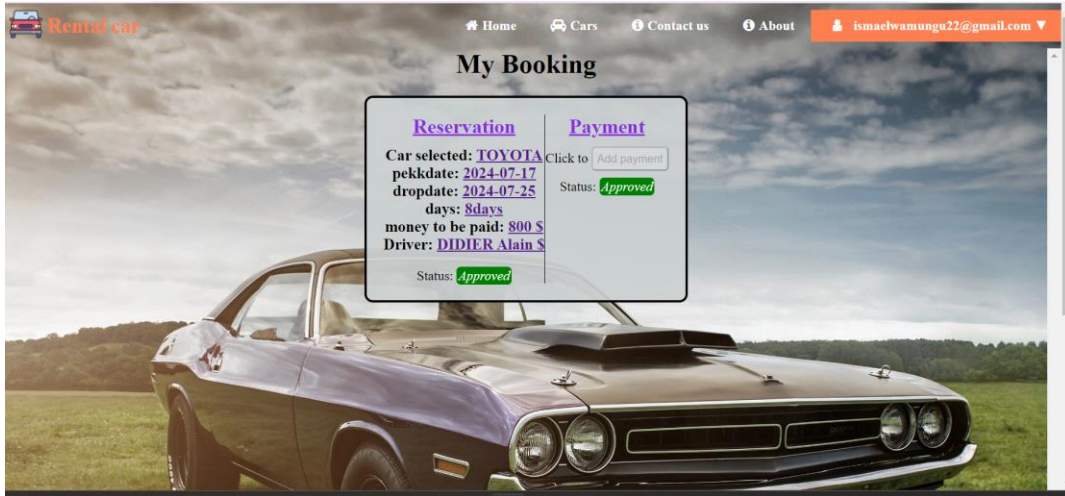


Figure 19: Payment Approved

Now in this interface the payment has been already approved as you can see in the graph above, but when this payment is approved there is a mail which will be sent to the user saying that his payment has been approved and he is allowed to peek the car which he has booked.

Contact us

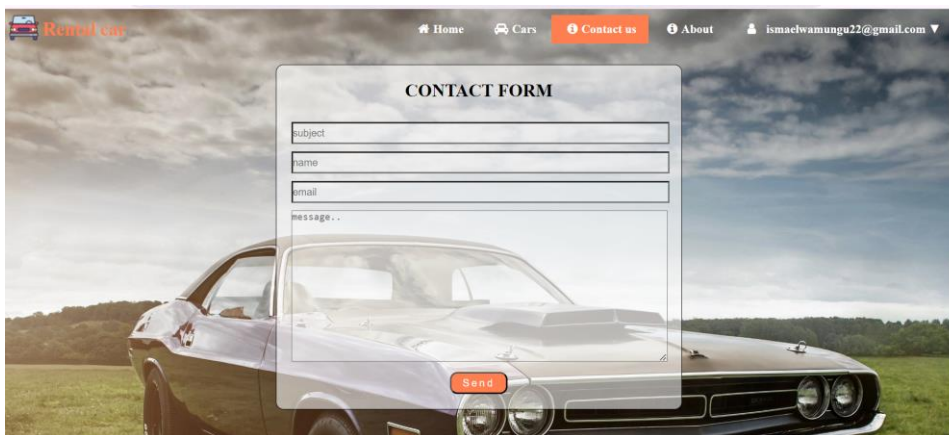


Figure 20: contact us

This Contact us interface helps the user to be in contact with the company, if the user has any issue about his reservation he can use this interface to contact the manager and can be assisted as soon as possible.

Admin login

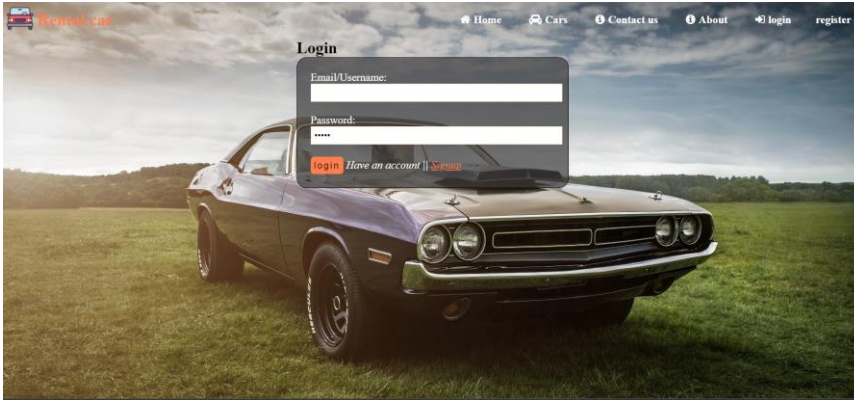


Figure 21: admin login

The administrator should log in the system for to manage the users information's and for that he should insert his username and password for to open his management dashboard. In case the username or the password is incorrect, the access will be denied.

Admin dashboard

Car Rental Management System

Dashboard

- Total Cars: 4 [View](#)
- Users: 5 [View](#)
- Drivers: 2 [View](#)
- Total orders: 2 [View](#)
- Appending: 0 [View](#)
- Transaction: 2 [View](#)
- Messages: 0 [View](#)
- peeked: 0 [View](#)
- droped: 0 [View](#)
- Report: 0 [View](#)

Daily Reservation

booking_id	names	Email	Car_selected	peekup_Date	Drop date	Driver	Duration	Price	Ac
11	ismael wamungu	ismaelwamungu22@gmail.com	Audi jeep Q3	2024-07-31	2024-08-07	chol	7 days	700 \$	lm

Ismael

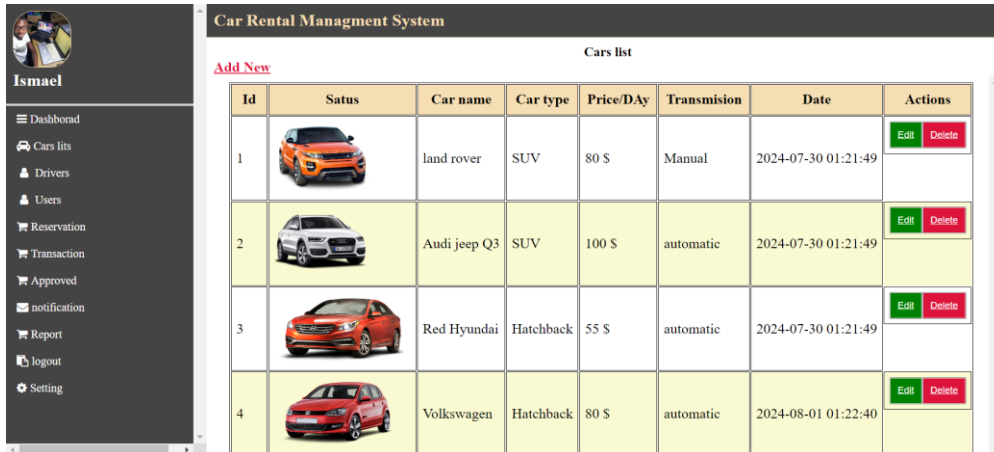
- Dashboard
- Cars lits
- Drivers
- Users
- Reservation
- Transaction
- Approved
- notification
- Report
- logout
- Setting

Figure 22: Admin dashboard

Once done with the login process a dashboard will be display where the admin will be able to view his customer's request, reservation, transaction and feedback. And on the top is

displayed the name of the company which is “Car rental management System” with the name of the admin on top of the sidebar.

CAR LIST







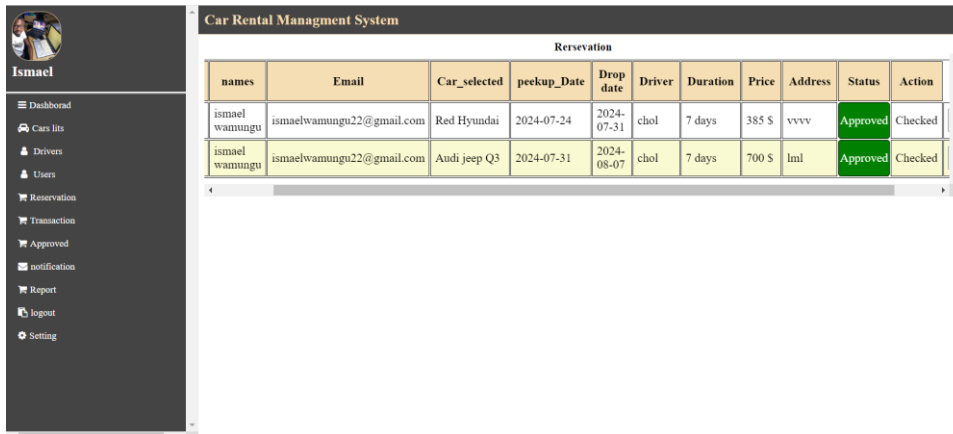
Car Rental Managment System							
Cars list							
Add New							
Id	Satus	Car name	Car type	Price/DAY	Transmission	Date	Actions
1		land rover	SUV	80 \$	Manual	2024-07-30 01:21:49	Edit Delete
2		Audi jeep Q3	SUV	100 \$	automatic	2024-07-30 01:21:49	Edit Delete
3		Red Hyundai	Hatchback	55 \$	automatic	2024-07-30 01:21:49	Edit Delete
4		Volkswagen	Hatchback	80 \$	automatic	2024-08-01 01:22:40	Edit Delete

Figure 23: car list

This is the interface which shows car list, it is where the administrator can add new car, edit and delete any wanted car as shown above.

RESERVATION



Car Rental Management System										
Resevation										
names	Email	Car_selected	peekup_Date	Drop date	Driver	Duration	Price	Address	Status	Action
ismael wamungu	ismaelwamungu22@gmail.com	Red Hyundai	2024-07-24	2024-07-31	chol	7 days	385 \$	vvvv	Approved	Checked
ismael wamungu	ismaelwamungu22@gmail.com	Audi jeep Q3	2024-07-31	2024-08-07	chol	7 days	700 \$	lml	Approved	Checked

Figure 24: Reservation

In this page is where all booking are fetched to allow admin to approve or deny. After the approval of the reservation an email will be sent to the customer saying that his reservation has been approved and it is time for him to make the payment of a car booked.

Transaction :

trans_id	cust_name	credit_card	paid	date	Reservation_id	Car id	Status	Action
7	wamungu	111122228888444	5 \$	2024-07-31 01:27:01	11	2	Approved	checked
8	wamungu	87897980	346 \$	2024-08-01 01:29:50	12	1	Appending	Approve Deny

Figure 25: Transaction

In transaction page is where it is where the admin can view the transaction applied by the customers and can check it, after checking he can decide to approve it or to deny.

Approved:

Approved id	booking_id	trans_id	Cust_name	selected	car id	Peek status	Action
1	16	10	ismael wamungu	land rover	1	peeked	Checked
2	16	11	ismael wamungu	land rover	1	peeked	Checked

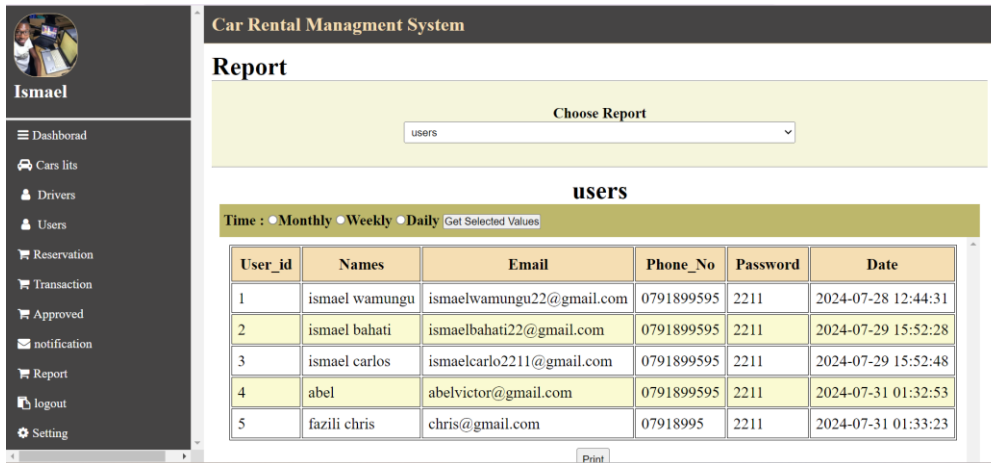
id	Booking id	car id	car name	Peeked status	Dropped status	Location track	Action
1	16	1	land rover	✓	Appedning		Discard
2	16	1	land rover	✓	✓	No Tracking available	Discard

Figure 26 : Approved & peeked

In this page, there are two type of fetched information; first table contains only the reservation and transaction that has been approved, once the customer peeks the booked

car, the admin can click on button “peek” means that he has took the car. Then the second table contains the cars that has been peeked and once the customer returns the car, the admin can now click on Drop button.

Report



The screenshot displays the 'Report' section of the Car Rental Management System. A sidebar on the left lists navigation options including Dashboard, Cars lits, Drivers, Users, Reservation, Transaction, Approved, notification, Report, logout, and Setting. The main content area is titled 'Car Rental Management System' and 'Report'. It features a 'Choose Report' dropdown menu currently set to 'users'. Below this is a table titled 'users' with columns for User_id, Names, Email, Phone_No, Password, and Date. The table contains 5 rows of user data. A 'Print' button is visible at the bottom right of the table area.

User_id	Names	Email	Phone_No	Password	Date
1	ismael wamungu	ismaelwamungu22@gmail.com	0791899595	2211	2024-07-28 12:44:31
2	ismael bahati	ismaelbahati22@gmail.com	0791899595	2211	2024-07-29 15:52:28
3	ismael carlos	ismaelcarlo2211@gmail.com	0791899595	2211	2024-07-29 15:52:48
4	abel	abelvictor@gmail.com	0791899595	2211	2024-07-31 01:32:53
5	fazili chris	chris@gmail.com	07918995	2211	2024-07-31 01:33:23

Figure 27: Report

Finally this page contains the report of all the operation, on top of the table the table the admin can choose which report he wants to view, the below the title of the report type the admin can select the period he want to view the report, it can be Monthly, weekly or Daily as shown below

4.2. Testing

4.2.1. Introduction

Once we finish testing the software and everything looks good, we move on to deployment this step involves getting machine learning models ready for real use in production environments. But wait! There’s one more important part—feedback!

After the product is launched, collecting feedback becomes essential. During this phase, the team gathers insights and comments about the product, then focuses on making improvements based on that feedback. The goal is to continually enhance the product!

4.2.2. Unit testing outputs

Unit Testing is all about testing small parts of an app by themselves. It's like making sure every piece works on its own, without needing anything else. Developers do this while they're building the software.

In this system "car rental management system" unit tests cover functionalities such as booking a car, tracking car location, managing customer data like messages, and processing payments.

4.2.3. Validation testing outputs

This is a part of Quality Assurance (QA). It checks if a software app really meets what it needs to do for the people using it. The big goal here? To make sure the software fits the requirements and can be accepted by everyone involved.

So in this system validation has been more used for security, for example in the log in page the email should be checked if exists in the database and if yes the system will check also if the password matches with the email provided, so if all those two condition met then the log in process will be successful.

4.2.4.Integration testing outputs

This means checking if different modules are working fine when combined as a group.

In this system of renting car most of webpages are connected together, means one action depend on another, for example once you are in the system you may be allowed to view available cars, about the system and also contact us page, but you cannot make a reservation of any wanted car before you logged in.

so once you're on the home page and you did not logged in or you don't have an account, two button of login and register will appear in the navbar, then you can log in if you have an account if you try to log in without having an account the access will be denied and display message that you don't have an account that you should register first.

After registration, the user can be able to log in then after log in he will be allowed to make a reservation of any wanted car available. Then after making the reservation he will wait until the approval of the administrator or manager of the company in other to make payment, that means if his reservation is in appending or denied he will not be allowed to make the payment because the payment button will be disabled. But if his reservation is approved he will get an email says that his reservation is approved and automatically the payment button will be active so that he may start payment process.

Finally, he will make the payment and wait another approval of admin for that payment, then after approval he will receive the last message says that he can go to peek the car reserved.

4.2.5.Functional and System Testing

System Testing ensures that the software or product aligns with the requirements set by users. This task is handled by testers and developers and involves various types of testing, including System Testing and Integration Testing. They perform this using a range of positive and negative test cases.

Now, this particular system did not include users for testing. Why? Well, it's being built locally. So, it isn't online for everyone to see just yet. A few interns from the company were trying to test it on laptop where it's being developed. They found some good things & some not-so-good ones.

For instance, one negative aspect was that the notification system for approving requests from users was missing! That is a bummer. But hey, there were good points too! People liked the nice design, easy navigation, clear goals, & how consistent it looked across different browsers! Overall, things seem to be going in a good direction!

4.2.6.Acceptance testing report

Once system testing is complete, we move on to acceptance testing. This step allows us to determine whether the software meets customer expectations. Testers, stakeholders, and clients are involved in this phase. Therefore, after presenting my final project, I will continue working on this system for testing. It's thrilling to see everything come together!

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

The main objective of this report is provide the solution to the problem that are involved in renting car in the manual system (traditional method);

I highlighted the transformative impact of digital technologies on Car Rental Management Systems. Online booking platforms, GPS tracking, and automated reporting tools significantly enhance operational efficiency and customer experience.

Implementing these solutions, helps address key challenges such as client booking without physical interaction, preventing vehicle theft, facilitating customer feedback, and generating detailed reports. By adopting these technologies, car rental companies can streamline their processes, improve security, and make data-driven decisions to enhance their service offerings.

By streamlining processes such as reservation management, fleet tracking, and customer service, these systems enhance efficiency and accuracy. They allow businesses to effortlessly manage bookings, oversee vehicle availability, and monitor maintenance schedules.

The implementation of a robust rental car management system ultimately improves customer satisfaction through seamless booking experiences and reliable vehicle management. It also drives profitability by reducing operational costs and minimizing errors. As the rental car industry continues to evolve, leveraging advanced technology,

data-driven solutions will be essential for staying competitive, and meeting the growing demands of modern consumers.

RECOMMENDATION

For researcher

This work have its weakness, in order to improve this system, am encouraging researches to come up with a new version with other important features such as:

1. Adding a mobile application for this system,
2. Integrate with reliable payment processing systems to handle transactions securely.

For Company

1. **Strategic Partnerships:** Form alliances with travel agencies and tech providers.
3. **Technology Adoption:** Invest in AI, IoT. For example, Adding tracking device for alcohol detection and Adding tracking device for speed detection in the car.

For School

1. Encourage collaboration between departments (e.g., computer science, business, and engineering) to create comprehensive projects that cover technical, operational, and strategic aspects
2. Collaborate with the best companies to offer internships and co-op programs where students can gain hands-on experience.

SUMMARY

This research paper examines the development and implementation of a car rental management system designed to enhance operational efficiency and customer satisfaction. The study focuses on the technological framework, key functionalities, and the benefits of adopting such a system in car rental companies.

The study adopts a mixed-methods approach, involving both the development of a prototype system and customers. The prototype system was built using modern web technologies, incorporating features such as real-time vehicle tracking, online booking, dynamic pricing, and automated billing.

The research concludes that implementing an efficient car rental management system can greatly benefit car rental companies by enhancing operational efficiency and customer satisfaction. The study suggests that car rental companies should invest in these technologies to remain competitive and meet changing customer expectations. Future research could investigate the incorporation of advanced technologies like artificial intelligence and machine learning.

REFERENCES

(n.d.).

Academy, K. (2023). Retrieved from <https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:computers/xcae6f4a7ff015e7d:computer-components/a/central-processing-unit-cpu#:~:text=The%20CPU%20is%20the%20brain,and%20how%20to%20process%20it.>

AGARWAL, P. (2022). Retrieved from https://arkajainuniversity.ac.in/naac/Criteria%201/1.3.4/1_3_4_DOCUMENTS/CSIT/AJU191074.pdf

Alexendre. (2022). Retrieved from <https://www.techtarget.com/searchsoftwarequality/definition/integrated-development-environment>

Ansh Agrawal, R. M. (2020). Retrieved from Online Vehicle Rental System: https://ijsret.com/wp-content/uploads/2020/05/IJSRET_V6_issue3_362.pdf

Arijit Singh Yadav*1, A. S. (2023). Retrieved from ONLINE CAR RENTAL SYSTEM: https://www.irjmets.com/uploadedfiles/paper//issue_5_may_2023/39393/final/fin_irjmets1684331600.pdf

Arijit Singh Yadav*1, A. S. (2024, main 05). Retrieved from ONLINE CAR RENTAL SYSTEM:

https://www.irjmets.com/uploadedfiles/paper//issue_5_may_2023/39393/final/fin_irjmets1684331600.pdf

Awati, R. (2022). Retrieved from

<https://www.techtarget.com/searchnetworking/definition/hardware>

Bayu Waspodo, Q. A. (2024, april 05). *Development Of Car Rental Management Information System*. Retrieved from <https://core.ac.uk/download/pdf/11734590.pdf>

Carter, D. (2024). *What is Data Modelling? Types (Conceptual, Logical, Physical)*.

EDUCBA. (2023). Retrieved from <https://www.educba.com/what-is-xampp/>

Etsegenet. (2024). Retrieved from <https://www.scribd.com/document/416180728/Reserach-proposal-car-rental-Final-docx>

Garn, D. (2024). Retrieved from <https://www.comptia.org/blog/what-are-html-and-css>

geeksforgeeks. (2024). Retrieved from <https://www.geeksforgeeks.org/web-development/>

Goodwin, M. (2024). Retrieved from <https://www.ibm.com/topics/api>

hassan, a. y. (2022). london.

jhimli. (2023). Retrieved from <https://www.geeksforgeeks.org/what-is-a-monitor/>

Micron. (2024). Retrieved from <https://www.crucial.com/articles/about-memory/what-is-the-difference-between-ram-and-rom>

Nikitin, V. (2024, Apr 16). Retrieved from 8Software Development Methodologies :types, selection criteria & stats: <https://www.itransition.com/software-development/methodologies>

- Oxford. (2019). Retrieved from https://www.oed.com/dictionary/software_n?tab=factsheet#21971520
- Paul, I. (2020). Retrieved from <https://www.howtogeek.com/697659/what-is-ram-everything-you-need-to-know/>
- Qurrotu. (2024). Retrieved from <https://core.ac.uk/download/pdf/11734590.pdf>
- Rouse, M. (2018). Retrieved from <https://www.techopedia.com/definition/4425/database-row>
- SEBUUFU, A. (2024). Retrieved from <https://www.scribd.com/document/672017356/Proposal-for-Car-Rental-Management-System>
- Simplilearn. (2023, Sep 1). *What Is Data Collection: Methods, Types, Tools*. Retrieved from <https://www.simplilearn.com/what-is-data-collection-article>
- Sreekumar, D. (2023). Retrieved from <https://paperpal.com/blog/academic-writing-guides/what-is-research-methodology>
- Thakur, S. (2023). Retrieved from <https://unstop.com/blog/data-redundancy-in-dbms>
- UNIVERSITY-ARIZONA. (2023). Retrieved from <https://writingcenter.uagc.edu/writing-literature-review>
- vellingiri, d. (2024). Retrieved from *Cara Rental managment System*: <https://www.ijnrd.org/papers/IJNRD2403623.pdf>

APPENDICES

Time Frame

Table 11: time frame

Task	Start date	End Date	Day complete
Data collection	10-Apr	25-Apr	15
Analysis	25-Apr	5-May	10
Design	5-May	15-May	10
Coding	15-May	20-Jul	66
Testing	5-Jul	15-Aug	41
Maintenance	1-Aug	20-Aug	19

Source Codes

User Home page

```
<?php
session_start();
?>
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="User/css/header.scss">
  <link rel="stylesheet" href="User/css/home.scss">
  <link rel="stylesheet" href="User/css/footer.css">
  <link rel="stylesheet" href="User/css/animation.css">
  <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-
awesome.min.css">
  <title>home_user </title>
</head>
<body>
  <div class="container">
    <!------- header content----->
    <!-- Animationi is setted into animation files, css and javascript ->
->
```

```

<div class="" id="header">
  <!-- logo -->
  <div class="logo">
    <div>
      
    </div>
    <div>
      <h3>Rental car</h3>
    </div>
    <div class="toggle">
      
    </div>
  </div>

  <!-- navigation -->
  <nav>
    <ul>
      <li><a class="active" href=""><i class="fa fa-home"
aria-hidden="true"></i>Home</a></li>
      <li><a href="User/pages/carlist.php"><i class="fa fa-
car"></i>Cars</a></li>
      <li><a href="User/pages/contact_us.php"><i class="fa fa-
info-circle" aria-hidden="true"></i>Contact
us</a></li>
      <li><a href="User/pages/about_us.php"><i class="fa fa-
info-circle" aria-hidden="true"></i>About</a>
</li>
      <?php
if (isset($_SESSION['email']) == null) {
  ?>
      <li><a href="User/pages/login.php">login</a> </li>
      <li><a href="User/pages/signup.php">register</a> </li>
      <?php
} else {
  ?>
      <li class="btndrop"><a href="#"><i class="fa fa-fw fa-
user"></i><?php echo $_SESSION['email']; ?>
      ▼</a>
      <ul class="dropdown">
        <li><a
href="User/pages/profile.php">profile</a></li>
        <li><a
href="User/pages/mybooking.php">mybooking</a></li>
        <li><a href="#">help</a></li>

```

```

        <li><a
href="User/controler/logout.php">logout</a></li>

    </ul>
</li>
<?php
}
?>
</ul>
</nav>
</div>
<!------- body content ----->
----->
<section class="body">
    <div id="body-content">
        <h1 class="hidden">Car Dealing Experience</h1>
        <h2 class="hidden">Welcome in our company</h2>
        <p class="hidden">in fact most of
            people are struggling to move from one place to an other
            because of not having a car, or if have it might be
damaged
            ,so we're here to help you, you need just to click ...
        </p>
        <a href="User/pages/carlist.php" class="hidden"
id='btn'>Explore cars</a>
    </div>
    <div class="" id="body-image">
        <!-- <div class="hidden" id="image1"></div> -->
        <div class="listcard">
            <?php
            include "User/controler/config.php";
            $select = "SELECT *FROM cars_list order by car_id limit
2";

            $query = mysqli_query($conn, $select);
            $check = mysqli_num_rows($query);
            if($check>0){
                while ($row = mysqli_fetch_assoc($query)) {
                    ?>
                    <div class="hidden" id="card">
                        <div class="carimage">
                            
                        </div>
                        <div class="cardtext">

```

```

        <div class="carname">
            <?php echo $row['car_name']; ?>
        </div>
        <div class="cartype">
            Brand :
            <?php echo $row['car_type']; ?>
        </div>
        <div class="carprice">
            <?php echo $row['price_day']; ?>$ /Day
        </div>
        <div class="cartransmission">
            <?php echo $row['transmission']; ?>
        </div>
    </div>
    <div class="rentlink"><a
        href="User/pages/booking.php?carselected=<?p
hp echo $row['car_id']; ?>">Rent
        Now</a>
    </div>
</div>
</div>
<?php
    }
}
?>
</div>
</section>
<!-- ----- footer content -----
----->
<?php
include "User/pages/footer.php";
?>
<script src="User/js/header.js"></script>
<script src="User/js/animation.js"></script>
</body>
</html>

```

Admin dashboard

```

<!DOCTYPE html>
<html lang="en">
<?php
include "controler/config.php";
?>
<head>

```



```

<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-
awesome.min.css">
<link rel="stylesheet" href="css/sidebar.css">
<link rel="stylesheet" href="css/dashboard.css">
<link rel="stylesheet" href="css/table.css">
<title>home_admin</title>
</head>
<body>
<div class="container">
  <!-- side bar -->
  <div class="sidebar">
    <div class="logo">
      
      <h2>Ismael</h2>
    </div>
    <!-- <hr> -->
    <div class="list">
      <a href="" class="active"><i class="fa fa-
navicon"></i>Dashborad</a>
      <a href="asset/cars.php"><i class="fa fa-car"></i>Cars
lits</a>
      <a href="asset/drivers.php"><i class="fa fa-fw fa-
user"></i>Drivers</a>
      <a href="asset/users.php"><i class="fa fa-fw fa-
user"></i>Users</a>
      <a href="asset/orders.php"><i class="fa fa-shopping-
cart"></i>Reservation</a>
      <a href="asset/transaction.php"><i class="fa fa-shopping-
cart"></i>Transaction</a>
      <a href="asset/approved.php"><i class="fa fa-shopping-
cart"></i>Approved</a>
      <a href="asset/notification.php"><i class="fa fa-
envelope"></i>notification</a>
      <a href="asset/report.php"><i class="fa fa-shopping-
cart"></i>Report</a>
      <a href="asset/logout.php"><i class="fa fa-sign-out" aria-
hidden="true"></i>logout</a>
      <a href="asset/setting.php"><i class="fa fa-
gear"></i>Setting</a>

```

```

        </div>

</div>
<!-- nav bar -->

<!-- content -->
<div class="home">
    <div class="header">
        <div>
            <h2>Car Rental Managment System</h2>
        </div>

    </div>
    <div class="content">
        <H3>Dashborad</H3>
        <div class="listcards">

            <!-- -->
            <div class="card" id="cars">
                <?php
                $car = "SELECT count(*) as totalcar FROM cars_list";
                $car = mysqli_query($conn, $car);
                $rowcar = mysqli_fetch_assoc($car);
                ?>
                <i class="fa fa-car"></i>
                <div class="title">Total Cars</div>
                <div class="count"><?php echo $rowcar['totalcar'];
?></div>

                <div class="link"><a
href="asset/cars.php">View</a></div>
            </div>
            <!-- -->
            <div class="card" id="users">
                <?php
                $users = "SELECT count(*) as totalusers FROM users";
                $users = mysqli_query($conn, $users);
                $rowuser = mysqli_fetch_assoc($users);
                ?>
                <i class="fa fa-user"></i>
                <div class="title">Users</div>
                <div class="count"><?php echo
$rowuser['totalusers']; ?></div>
                <div class="link"><a
href="asset/users.php">View</a></div>
            </div>

```

```

<!-- -->
<div class="card" id="drivers">
  <?php
    $drivers = "SELECT count(*) as totaldrivers FROM
drivers";

    $drivers = mysqli_query($conn, $drivers);
    $rowdrivers = mysqli_fetch_assoc($drivers);
    ?>
    <i class=" fa fa-drivers-license"></i>
    <div class="title">Drivers</div>
    <div class="count"><?php echo
$rowdrivers['totaldrivers']; ?></div>
    <div class="link"><a
href="asset/drivers.php">View</a></div>
  </div>
<!-- -->
<div class="card" id="orders">
  <?php
    $reservation = "SELECT count(*) as reservation FROM
reservation";

    $reservation = mysqli_query($conn, $reservation);
    $rowreservation = mysqli_fetch_assoc($reservation);
    ?>
    <i class="fa fa-shopping-cart"></i>
    <div class="title">Total orders</div>
    <div class="count"><?php echo
$rowreservation['reservation']; ?></div>
    <div class="link"><a
href="asset/orders.php">View</a></div>
  </div>
<!-- -->
<div class="card" id="appending">
  <?php
    $appending = "SELECT count(*) as appending FROM
reservation where status='Appending'";
    $appending = mysqli_query($conn, $appending);
    $rowappending = mysqli_fetch_assoc($appending);
    ?>
    <i class="fa fa-car"></i>
    <div class="title">Appending</div>
    <div class="count"><?php echo
$rowappending['appending']; ?></div>
    <div class="link"><a
href="asset/orders.php">View</a></div>
  </div>

```

```

<!-- -->
<div class="card" id="approved">
<?php
    $appending = "SELECT count(*) as appending FROM
transaction";
    $appending = mysqli_query($conn, $appending);
    $rowappending = mysqli_fetch_assoc($appending);
    ?>
    <i class=" fa fa-shopping-basket"></i>
    <div class="title">Transaction</div>
    <div class="count"><?php echo
$rowappending['appending']; ?></div>
    <div class="link"><a
href="asset/transaction.php">View</a></div>
    </div>
<!-- -->
<div class="card" id="messages">
<?php
    $appending = "SELECT count(*) as appending FROM
notification ";
    $appending = mysqli_query($conn, $appending);
    $rowappending = mysqli_fetch_assoc($appending);
    ?>
    <i class="fa fa-envelope"></i>
    <div class="title">Messages</div>
    <div class="count"><?php echo
$rowappending['appending']; ?></div>
    <div class="link"><a
href="asset/messages.php">View</a></div>
    </div>
<!-- -->
<div class="card" id="">
    <i class=""></i>
    <div class="title">peeked</div>
    <div class="count">---</div>
    <div class="link"><a href="">View</a></div>
</div>
<!-- -->
<div class="card" id="">
    <i class=""></i>
    <div class="title">dropped</div>
    <div class="count">---</div>
    <div class="link"><a href="">View</a></div>
</div>
<!-- -->

```

```

<div class="card" id="denied">
    <i class="fa fa-archive"></i>
    <div class="title">Report</div>
    <div class="count">---</div>
    <div class="link"><a
href="asset/report.php">View</a></div>
    </div>

</div>
<h3> Daily Reservation</h3>
<div class="table">

    <table>
        <tr>
            <th id='id'>booking_id</th>
            <th id='name'>names</th>
            <th>Email</th>
            <th>Car_selected</th>
            <th>peekup_Date</th>
            <th>Drop date</th>
            <th>Driver</th>
            <th>Duration</th>
            <th>Price</th>
            <th>Address</th>
            <th>Status</th>
            <th>Action</th>
        </tr>
        <?php
include ("controler/config.php");
$sql = "SELECT *FROM reservation where
Date(date)=Date(now())";
$query = mysqli_query($conn, $sql);
if (mysqli_num_rows($query) > 0) {
    while ($row = mysqli_fetch_assoc($query)) {
        ?>
        <tr>
            <td><?php echo $row['booking_id'] ?></td>
            <td><?php echo $row['fullname'] ?></td>
            <td><?php echo $row['email'] ?></td>
            <td><?php echo $row['selected'] ?></td>
            <td><?php echo $row['peekdate'] ?></td>
            <td><?php echo $row['dropdate'] ?></td>
            <td><?php echo $row['driver'] ?></td>
            <td><?php echo $row['days'] ?> days</td>
            <td><?php echo $row['to_be_paid'] ?> $</td>
        </tr>
    }
}
}

```

```

        <td><?php echo $row['addresss'] ?></td>
        <td class="<?php echo $row['status']; ?>"><?php
echo $row['status'] ?></td>
        <td>
            <!-- this condition help to hide Approve and
denie button once is pressed -->
            <?php if ($row['status'] == "Appending") {
                ?>
                <a class="approve"
                    href="controler/approve_control.php?appr
oveid=<?php echo $row['booking_id']; ?>">Approve</a><a
                    class="deny"
                    href="controler/cancel_control.php?denyi
d=<?php echo $row['booking_id']; ?>">Deny</a>
                <?php
                    } else {
                        echo "Checked";
                    }
                ?>
            }
        </td>
    </tr>
    <?php
    }
} else {
    ?>
    <td colspan="8">no data found</td>
    <?php
    }
    ?>
</table>
</div>
</div>
<!-- ----- -->
</div>
</div>
</body>
</html>

```