Project Report
On
C@RS

In partial fulfillment of requirements for the degree
Of
BACHELOR OF TECHNOLOGY
IN
COMPUTER SCIENCE AND ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
JANUARY-JUNE 2021

SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE
SHRI VAISHNAV INSTITUTE OF INFORMATION AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEEERING

DECLARATION

We hereby declare that the work which is being presented in the project entitled **"C@RS"**in partial fulfillment of degree of **Bachelor of Technology in Computer Science and Engineering** is an authentic record of our word carried out under the supervision and guidance of **Mr. Shubham Kothari,** Asst. Professor of Computer Science and Engineering. The matter embodied in this project has not been submitted for the award of any degree.

Team:
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_____

SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE

SHRI VAISHNAV INSTITUTE OF INFORMATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROJECT APPROVAL SHEET

Following team has done the appropriate work related to the **"C@RS"** in the partial fulfillment for the award of **Bachelor of Technology in Computer Science and Engineering** of "SHRI VAISHNAV INSTITUTE OF INFORMATION TECHNOLOGY" and is being submitted to "SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE."

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CERTIFICATE

This is to certify that **Mr. Aakash, Mr. Aman Rao Sanas** and **Mr. Chinmay Jain** working in a team have satisfactorily completed the project entitled **"C@RS"** under the guidance of **Prof. Shubham Kothari** in the partial fulfillment for the award of **Bachelor of Technology in Computer Science and Engineering** of "SHRI VAISHNAV INSTITUTE OF INFORMATION TECHNOLOGY" and is being submitted to "SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE" during the academic year January 2021 – June 2021.

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ACKNOWLEDGEMENT

We are grateful to several people for their advice and support during the time of completion of our project. First and foremost, we would like to thank **Dr. Anand Rajavat,** Head of the Department of Computer Science & Engineering and **Mr. Shubham Kothari** the mentor of our project for providing us valuable support and necessary help whenever required and helping us in exploring the new technologies by the help of their technical expertise. Their direction, supervision and constructive criticism were indeed the source inspiration forus.

We would also like to express our sincere gratitude towards our Director **Dr. Anand Rajavat** for providing us valuable support.

We are really indebted to **Prof. Shubham Kothari,** project coordinator for helping us in each and every aspect of our academic activities. We also owe our sincere thanks to all the **faculty members** of Computer Science & Engineering Department who have always been helpful.

We forward our sincere thanks to all **teaching and non-teaching staff** of Computer Science & Engineering department, SVVV Indore for providing necessary information and their kind co-operation.

We would also like to thank our parents and family members, our classmates and our friends for their motivation and their valuable suggestion during the project. Last, but not the least, we thank all those people, who have helped us directly or indirectly in accomplishing this work. It has been a privilege to study at SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE.

ABSTRACT

This report introduces the process of creating a car purchase helping system which is a data-driven website used by those customers who are not much aware of the available option in the market and information about other cars. This website has four major components: finding the right car, helping in understanding car types.

Our project mainly focuses on this aspect of a now a day's problem of choosing a better car. Here, we propose them a platform which ensures the availability of knowledge regarding cars. This project allows both user and admin to ensure best facilities, which guarantees the availability of them to others.

Our system is designed for such users/buyers who are interested in purchasing a new car but doesn't have much information about it.

Our system will help users to purchase car with the help of very basic requirement such as fuel type, budget, body type & seating capacity.

LIST OF FIGURES

TABLE OF CONTENT

CHAPTER-1
INTRODUCTION

1.1 INTRODUCTION

Buying a new car is a matter of headache for those people who do not have any personal knowledge about automobile sector. And when they going to buy a new car they faced many problem regarding car information in this situations they feel the necessity of a automobile knowledge to sort out the problems. So if it is possible to design or develop a web based application for availing knowledge regarding car and automobile sector whenever and wherever possible, then it will be beneficial for both customer as well as sellers.

Now a days, by some clicks only, we can get whatever you want at home. We already know about the online shopping, e-banking etc. Similarly, The Cars is the online car review website in which within few clicks only we get access or get full knowledge about car including images and featured. Some people cannot have a car, for those people this system becomes very helpful. This system includes various cars information, as per the customer review and comfort.

1.2 PROBLEM STATEMENT

- Many peoples in India don't know that what are the all available options in market which will be best suitable for them.
- Since many websites are develop their own websites regarding car information but there is somewhat in accuracy of data which will create user somewhat tension in difference of car prices between their website and on showroom prices.

1.3 NEED FOR THE PROPER SYSTEM

There is need of the proper system to ensure following features

- Minimize manual data entry.
- Minimum time needed for the processing.
- Greater efficiency.
- Better service.
- User friendliness and interactive.
- Minimum time required.

1.4 OBJECTIVE

This C@RS is designed for such owners and users who are interested in cars. This system keeps track of all the Indian cars along with their detail.

- The main objective is to Provide whole information regarding Indian cars by being our project c@rs, so that user can easily get best car out of group of cars
- To provide the customers/users about the information regarding cars whether it is suitable for them or not.
- The money which Indians are investing for buying car can be nullified by buying car without its proper knowledge so, we are providing whole knowledge about different Indian cars.

1.5 MODULES OF THE SYSTEM

Following are the modules in the system:

Django Framework

- Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.
- A Web framework is a set of components that provide a standard way to develop websites fast and easily. Django's primary goal is to ease the creation of complex database-driven websites. Some well-known sites that use Django include PBS, Instagram, Disqus, Washington Times, Bit bucket and Mozilla.
- The Django project's stability, performance and community have grown tremendously over the past decade since the framework's creation. The framework continues to add significant new functionality such as database migrations with each release.

HTML

- **HTML** stands for Hyper Text Markup Language. It is used to design web pages using a markup language. HTML is the combination of Hypertext and Markup language. Hypertext defines the link between the web pages. A markup language is used to define the text document within tag which defines the structure of web pages. This language is used to annotate (make notes for the computer) text so that a machine can understand it and manipulate text accordingly. Most markup languages (e.g. HTML) are human-readable. The language uses tags to define what manipulation must be done on the text.
- In the late 1980's, a physicist, Tim Berners-Lee who was a contractor at CERN, proposed a system for CERN researchers. In 1989, he wrote a memo proposing an internet-based hypertext system.
- **Tim Berners-Lee** is known as the father of HTML. The first available description of HTML was a document called "HTML Tags" proposed by Tim in late 1991. The latest version of HTML is HTML5.

Features of HTML

- It is a very **easy and simple language**. It can be easily understood and modified.
- It is very easy to make an **effective presentation** with HTML because it has a lot of formatting tags.
- It is a **markup language**, so it provides a flexible way to design web pages along with the text.
- It facilitates programmers to add a **link** on the web pages (by html anchor tag), so it enhances the interest of browsing of the user.
- It is **platform independent** because it can be displayed on any platform like Windows, Linux, and Macintosh, etc.
- It facilitates the programmer to add **Graphics, Videos, and Sound** to the web pages which makes it more attractive and interactive.

- HTML is a case-insensitive language, which means we can use tags either in lower-case or upper-case.

Bootstrap

- Bootstrap is a free front-end framework for faster and easier web development.
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins. Bootstrap also gives you the ability to easily create responsive designs.
- Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.
- Bootstrap was developed by Mark Otto and Jacob Thornton at Twitter, and released as an open source product in August 2011 on GitHub.

Features of Bootstrap

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap 3, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Edge, Safari, and Opera)

SMTP

- SMTP stands for Simple Mail Transfer Protocol.
- SMTP is a set of communication guidelines that allow software to transmit an electronic mail over the internet is called **Simple Mail Transfer Protocol**.
- It is a program used for sending messages to other computer users based on e-mail addresses.
- It provides a mail exchange between users on the same or different computers, and it also supports:
- It can send a single message to one or more recipients.
- Sending message can include text, voice, video or graphics.
- It can also send the messages on networks outside the internet.
- The main purpose of SMTP is used to set up communication rules between servers. The servers have a way of identifying themselves and announcing what kind of communication they are trying to perform. They also have a way of handling the errors such as incorrect email address. For example, if the recipient address is wrong, then receiving server reply with an error message of some kind.

Working of SMTP

- **Composition of Mail:** A user sends an e-mail by composing an electronic mail message using a Mail User Agent (MUA). Mail User Agent is a program which is used to send and receive mail. The message contains two parts: body and header. The body is the main part of the message while the header includes information such as the sender and recipient address. The header also includes descriptive information such as the subject of the message. In this case, the message body is like a letter and header is like an envelope that contains the recipient's address.
- **Submission of Mail:** After composing an email, the mail client then submits the completed e-mail to the SMTP server by using SMTP on TCP port 25.
- **Delivery of Mail:** E-mail addresses contain two parts: username of the recipient and domain name. For example, vivek@gmail.com, where "vivek" is the username of the recipient and "gmail.com" is the domain name.
  If the domain name of the recipient's email address is different from the sender's domain name, then MSA will send the mail to the Mail Transfer Agent (MTA). To relay the email, the MTA will find the target domain. It checks the MX record from Domain Name System to obtain the target domain. The MX record contains the domain name and IP address of the recipient's domain. Once the record is located, MTA connects to the exchange server to relay the message.
- **Receipt and Processing of Mail:** Once the incoming message is received, the exchange server delivers it to the incoming server (Mail Delivery Agent) which stores the e-mail where it waits for the user to retrieve it.
- **Access and Retrieval of Mail:** The stored email in MDA can be retrieved by using MUA (Mail User Agent). MUA can be accessed by using login and password.

SQLite

- SQLite is a C library that provides a lightweight disk-based database that doesn't require a separate server process and allows accessing the database using a nonstandard variant of the SQL query language. Some applications can use SQLite for internal data storage. It's also possible to prototype an application using SQLite and then port the code to a larger database such as PostgreSQL or Oracle.
- The sqlite3 module was written by Gerhard Haring. It provides a SQL interface compliant with the DB-API 2.0 specification described by **PEP 249**.
- SQLite engine is not a standalone process like other databases, you can link it statically or dynamically as per your requirement with your application. SQLite accesses its storage files directly.

Features of SQLite

- Server less
- Self-Contained
- Zero-Configuration
- Transactional
- Single-Database

1.6 SCOPE

This document describes the scope of the requirements for the C@RS for car detail.The document details all the high level requirements with intent to provide different car details. This document should be used by the Architect and the developers to design the Solution Architecture for the C@RS project. In addition to this, the document also describes the broad scope of the project. The scope of the project involves the integration of all different car details. The C@RS System should interface with the car detail with there images and there official websites.

C@RS system describes the complete detail regarding different Indian cars so that we provide user a complete information regarding different cars with their images and there official links. Since it contain every single information regarding cars. So, this system will gives maximum accuracy and least errors and this will contain all over latest and accurate details to lower the tension of user whoever buying new car. .

CHAPTER-2
LITERATURE SURVEY

LITERATURE SURVEY

2.1 EXISTING SYSTEM

In the existing scenario, if someone has to buy a car or even interested in buying any car, then the person has to go to the showroom. Not only once, but every time, whenever he/she is looking for some fact, the only option left is to go to the showroom. This is very time consuming and very hectic as well. Sometimes, the buyer even lost interest because of this practice.m

Now a day some websites are developed which provide user who interested in buying any car, then he/she can check all the information related to the car in the given portal. These system also helps the buyer to check which cars and companies are good for them, by showing them the past reviews about the car/companies but there is somewhat inaccurate data. . This is very time consuming and very hectic as well. Sometimes, the buyer even lost interest.

2.2 COMPARATIVE CHART

WEBSITE NAME / FEATURES	AUTO CAR INDIA	DROOM	QUIK-CONSULT	CAR-GURUS	CAR-WALE	EDMUNDS	autoX	CAR TRADE
DESCRI-PTION	It is car review as well as car buying / Selling websit e	It is car review as well as car buying/ Selling website	It is car review Websit e across all over the world	It is car review Website in india In which we ca buy car ot only new and also used.	It is car review Websit e in india In which we ca buy car ot only new and also used.	It is car review as well as car buying/selli ng website all over the world	It is car review as well as car buying/ Selling website All over the world	It is car review Website in india In which we can buy car ot only new and also used.
CONTENT QUALITY	Good	Average	Good	Bad (Not a good car images)	Averag e	Good	Good	Bad
Optimized for Mobile	Yes	Yes	Yes	Yes	Not much expecte d	Yes	Yes	Somewhat good
LOAD TIME	Fast	Fast	Fast	Fast	Mediu m	Fast	Fast	Slow

Effective Navigation.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not good Placed
Interaction WITH USER	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Web Friendly	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes (somewhat errors)
Information Accessibility.	Good	Good	Good	Average	Good	Good	Good	Average
INTERFACE PROVIDED BY SOFTWARE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
COST (free or paid)	Free	Free	Free	Free	Paid (only free for some car)	Free	Free	Paid (subscription required
MARKET ANALYSIS	Yes	Yes	Yes	Yes (some-What)	Yes	Yes	Yes	No (somewhat analysis))
AVAILABILITY WITH INDIA CARS	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
DESIGN	Good	Good (new)	Old	Good	Old	Newly and friendly	Good	Old
AUTENTI-CATION REQUIRED	No	No	No	No	No	Yes	Yes	No but sign in required as user want
ACCURACY	Excellent	Excellent	Out-Standing	Good	Good	Excellent	Excellent	Bad (inaccurate data)
CONTACT PROVIDED	Yes	Yes	Yes	No	Yes	Yes	Yes	No (some What)
USER FRIENDL	Yes	Yes	Yes	No	No	Yes	Yes	No

Y								

2.3 PROPOSED SYSTEM

The proposed Car showroom management system is very effective. If someone is interested in buying any car, then he/she can check all the information related to the car in the given portal. The proposed system also helps the buyer to check which cars and companies are good for them, by showing them the past reviews about the car/companies. The proposed system is so helpful and effective.

Objectives:

- The main objective is to provide user a best solution to find a best and budget friendly cars within Indian cars.
- Providing the customers\users with the information of the product whether it is in his demand or not. And in case, it is not in his demand, so, substitutes of that product will be provided to the user.
- The money we are giving to other countries by buying their cars can be nullified by buying Indian cars. And this will help in faster growth of Indian economy also.

2.4 PROPOSED SOLUTION:

- The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper details and reduces the manual work.
- The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

    - Minimize manual data entry.
    - Minimum time needed for the various processing.
    - Greater efficiency.
    - Better service.
    - User friendliness and interactive.
    - Minimum time required.

CHAPTER-3
REQUIREMENTANALYSIS

REQUIREMENT ANALYSIS

3.1 METHOD USED FOR REQUIREMENT ANALYSIS

Requirements analysis is critical to the success or failure of a systems or software project. The requirements should be documented, actionable, measurable, testable, traceable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design. Conceptually, requirements analysis includes four types of activity:

- **Eliciting requirements**: the task of communicating with customers and users to determine what their requirements are. This is sometimes also called requirements gathering.
- **Analysing requirements**: determining whether the stated requirements are unclear, incomplete, ambiguous, or contradictory, and then resolving these issues.
- **Requirements modelling**: Requirements might be documented in various forms, such as natural-language documents, use cases, user stories, or process specifications.
- **Review and retrospective**: Team members reflect on what happened in the iteration and identifies actions for improvement going forward.

3.2 FUNCTIONAL REQUIREMENTS

- Search car as per the given description :
  - Login is not necessary but according to the description of the car (cars can only be found if present in database. Database is the latest from kaggle which have most of the cars available in India)
  - Budget
  - Fuel type (petrol, diesel, CNG etc.)
  - Body type (sedan, hatchback, SUV etc.)
  - Transmission type (manual, AMT, CVT, DCT)
- User login :
  - User can login for choices the select car.

3.3 NON-FUNCTIONAL REQUIREMENTS

- The system should be adaptable for different situations.
- The system should be compatible with the latest version of chrome.
- The system should be able to provide quick response.
- The system should be compatible with the chrome extension.
- The system should be under normal conditions, perform the required functions successfully.
- The system should be user friendly and independent of any operating system.

3.4 SYSTEM SPECIFICATION

3.4.1 Hardware Specification

- Processor: 1.9 gigahertz (GHz) x86- or x64-bit dual core processor with SSE2 instruction set.
- Memory: 2-GB RAM.
- Display: Super VGA with a resolution of 1024 x 768.
- A Monitor, a Keyboard, a Pointing Device.

3.4.2 Software Specification

The minimum Software specification for this web application is:

- Required Internet Browser:
- Google Chrome version 31 or higher.
- Mozilla Firefox version 26 or higher.
- The server must support database software.
- The server must support web application hosting

3.4.3 Performance Requirements

- This system should remain accessible 24x7.
- At least 50 users should be able to access the system altogether at any given time.

3.4.4 Security Requirements

- The Security of Data is concerned as important factor and application security is also important factor for the web application. Authentication of user is necessary, and Data should not be handover to third party and can be shareable in safe mode. Security is the major factor for the User.

3.4.5 Scalability

- The application can be accessed by the user demand and number of users can interact according to your requirement. Number of users is scalable. The application is also scalable for data modelling which uses data for modelling which is another addable service in application. Scalability is big requirement as we know data and usage is increasing very fast.

CHAPTER - 4
DESIGN

DESIGN

Software design is a process to transform user requirements into some suitable form, which helps the programmer in software coding and implementation. Software design is the first step in SDLC (Software Design Life Cycle), which moves the concentration from problem domain to solution domain. It tries to specify how to fulfil the requirements mentioned in SRS.

DESIGN CONCEPT

The main aim of design engineering is to generate a model which shows firmness,delight and commodity. Software design is an iterative process through which requirements are translated into the blueprint for building the software.
The attributes of design name as 'FURPS' are as follows:

- **Functionality**: It evaluates the feature set and capabilities of the program.
- **Usability**: It is accessed by considering the factors such as human factor, overall aesthetics, consistency and documentation.
- **Reliability**: It is evaluated by measuring parameters like frequency and security of failure, output result accuracy, the mean-time-to-failure (MTTF), recovery fromfailure and the the program predictability.
- **Performance**: It is measured by considering processing speed, response time, resource consumption, throughput and efficiency.
- **Supportability**: It combines the ability to extend the program, adaptability, serviceability. These three terms define the maintainability.
- Testability, compatibility and configurability are the terms using which a system can be easily installed and found the problem easily.
- Supportability also consists of more attributes such as compatibility, extensibility, fault tolerance, modularity, reusability, robustness, security, portability, scalability.

4.1 SOFTWARE REQUIREMENT SPECIFICATION

Software requirement specification (SRS) is a technical specification of requirements for the software product. SRS represents an overview of products, features and summaries the processing environments for development operation and maintenance of the product. The goal of the requirement specification phase isto produce the software specification document also called requirement document.

REQUIREMENT SPECIFICATION

This requirement specification must have the system properties. Conceptually every SRS should have the components:

- Functionality
- Performance
- Design constraints imposed on an implementation
- External interfaces

4.1.1 Supplementary Specification

The purpose of this Specifications is to define requirements of the system. This Supplementary Specification lists the requirements that are not readily captured in the use cases of the use-case model. The Supplementary Specifications and the use-case model together capture a complete set of requirements on the system. This specificationdefines the non-functional requirements of the system; such as reliability, usability, performance, and supportability as well as functional requirements that are common across a number of use cases. The non-functional requirements of the software are:

I. ACCESS SECURITY: It is evaluated by measuring parameters like frequency and security of failure, output result accuracy, the mean-time-to-failure (MTTF), recovery from failure and the the program predictability.

II. AVAILABILITY: It is accessed by considering the factors such as human factor, overall aesthetics, consistency and documentation. Unless the system is non- operational, the system shall present a user with notification informing them that the system is unavailable.

III. EFFICIENCY: The system restart cycle must execute completely in less than 60 seconds. Routine maintenance that is executed while users are active shall not cause a perceptible increase in response time for any function of more than 5% over the response time when no maintenance process is executing.

IV. USABILITY: The new product shall be easy to use by any age group. The productshall be self-explanatory and intuitive.

4.2 Flow Chart

A flowchart is simply a graphical representation of steps. It shows steps in sequential order and is widely used in presenting the flow of algorithms, workflow or processes. Typically, a flowchart shows the steps as boxes of various kinds, and their order by connecting them with arrows.

A flowchart is a graphical representations of steps. It was originated from computer science as a tool for representing algorithms and programming logic but had extended to use in all other kinds of processes. Nowadays, flowcharts play an extremely important role in displaying information and assisting reasoning. They help us visualize complex processes, or make explicit the structure of problems and tasks. A flowchart can also be used to define a process or project to be implemented.

Flowchart Symbols

Different flowchart shapes have different conventional meanings. The meanings of some of the more common shapes are as follows:

Terminator

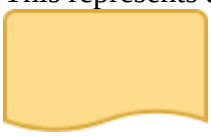
The terminator symbol represents the starting or ending point of the system.

Process

A box indicates some particular operation.

Document

This represents a printout, such as a document or a report.



Decision

A diamond represents a decision or branching point. Lines coming out from the diamond indicates different possible situations, leading to different sub-processes.

Data

It represents information entering or leaving the system. An input might be an order from a customer. Output can be a product to be delivered.

On-Page Reference

This symbol would contain a letter inside. It indicates that the flow continues on a matching symbol containing the same letter somewhere else on the same page.

Off-Page Reference

This symbol would contain a letter inside. It indicates that the flow continues on a matching symbol containing the same letter somewhere else on a different page.

Delay or Bottleneck

Identifies a delay or a bottleneck.

Flow

Lines represent the flow of the sequence and direction of a process.

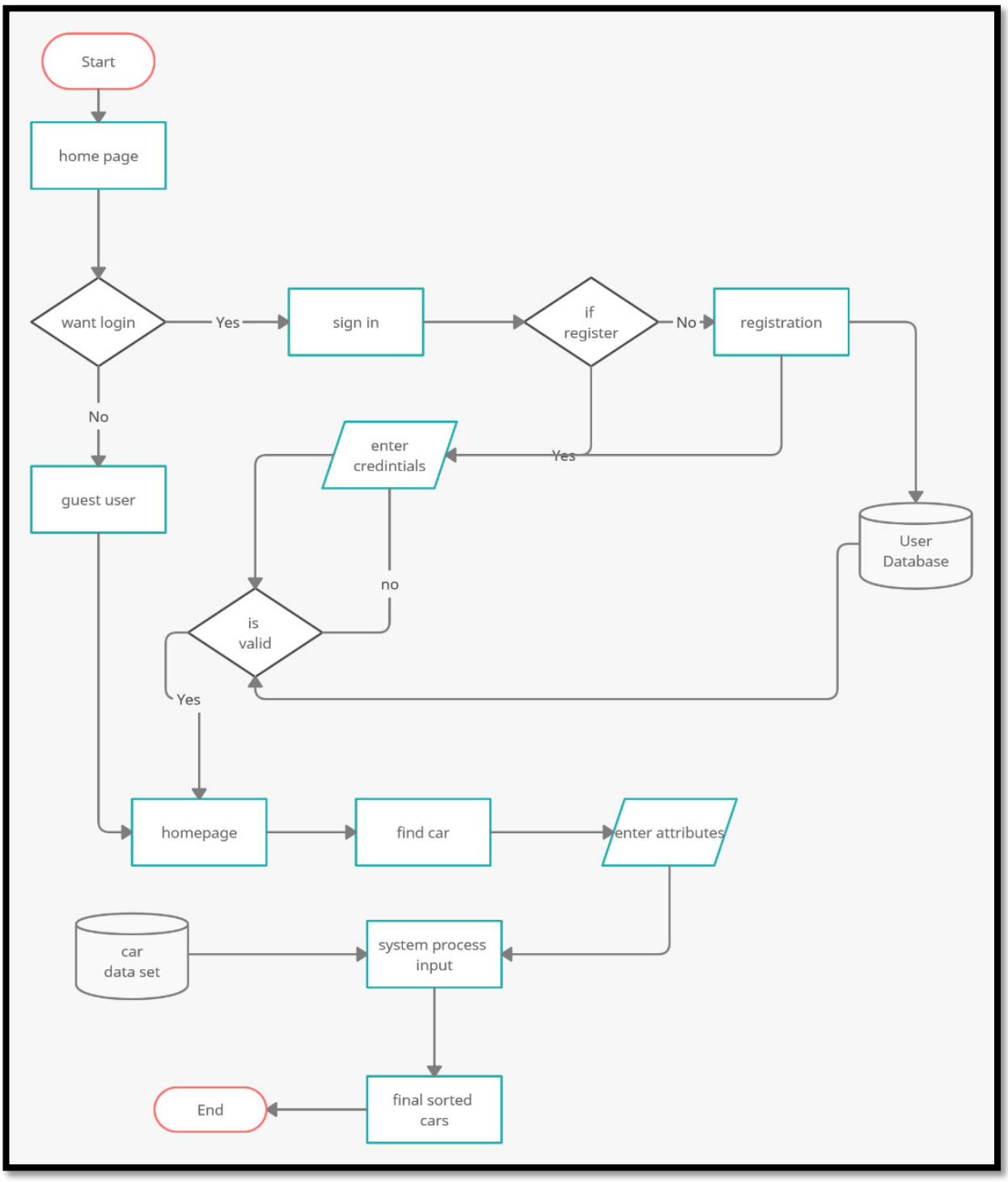


Fig 4.2,1

4.3 Use Case Model

A use-case model is a model of how different types of users interact with the system tosolve a problem. As such, it describes the goals of the users, the interactions between the users and the system, and the required behavior of the system in satisfying these goals.

In software and system engineering, a use case is a list of actions or event steps, typically defining the interactions between a role (known in the Unified Modelling Language as an actor) and a system, to achieve a goal. The actor can be a human or other external system.

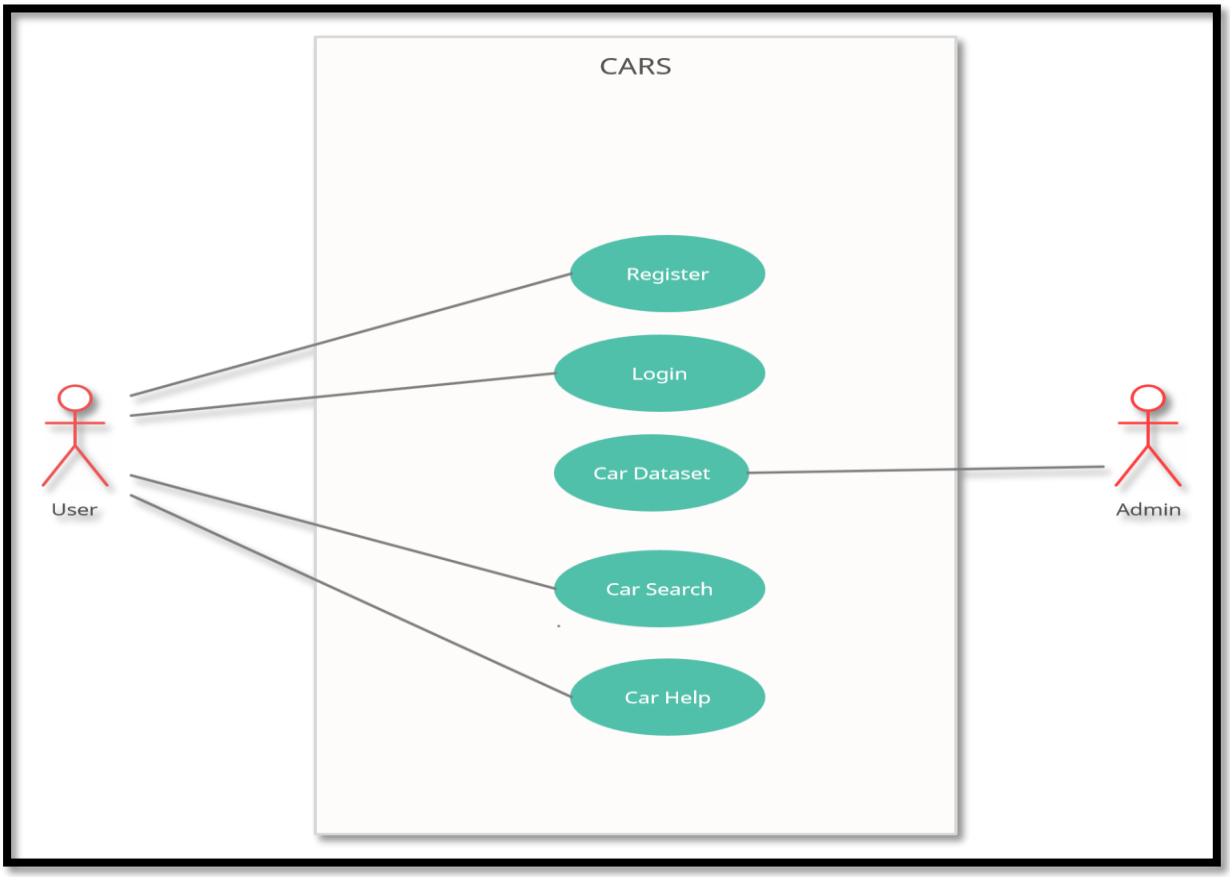


FIGURE 4.3.1: USE CASE DIAGRAM

So, in brief, the purposes of use case diagrams can be as follows:

- Used to gather requirements of a system.
- Used to get an outside view of a system.
- Identify external and internal factors influencing the system.
- Show the interacting among the requirements are actors.

4.4 DATA FLOW DIAGRAM

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. It shows how data enters and leaves the system, what changes the information, and where data is stored.

DFD may be used to perform a system or software at any level of abstraction. In fact, DFDs may be partitioned into levels that represent increasing information flow and functional detail. Levels in DFD are numbered 0, 1, 2 or beyond. There are primarily three levels in the data flow diagram, which are: 0-level DFD, 1-level DFD, and 2-levelDFD.

Data Flow Diagrams Symbols

Process Notations. A process transforms incoming data flow into outgoing data flow.

Dataflow Notations. Dataflows are pipelines through which packets of information flow. Label the arrows with the name of the data that moves through it.

External Entity Notations. External entities are objects outside the system, with whichthe system communicates. External entities are sources and destinations of the system'sinputs and outputs.

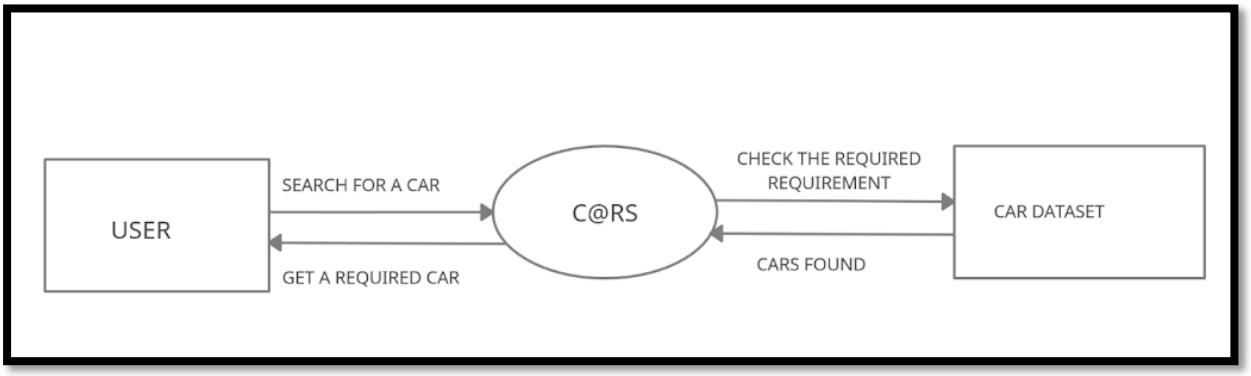


FIGURE 4.4.1: DATA FLOW DIAGRAM (LEVEL 0)

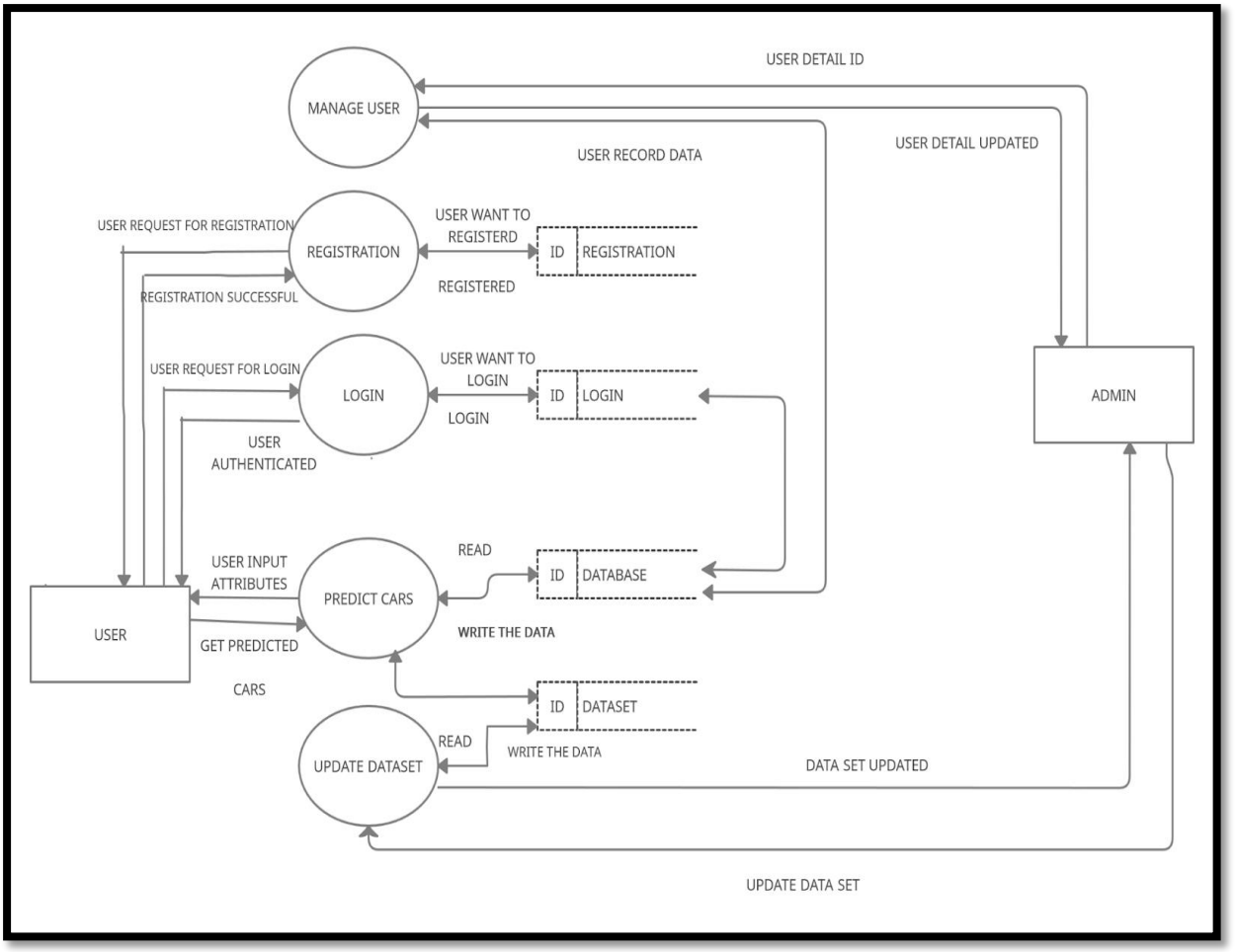


FIGURE 4.4.2: DATA FLOW DIAGRAM (LEVEL 1)

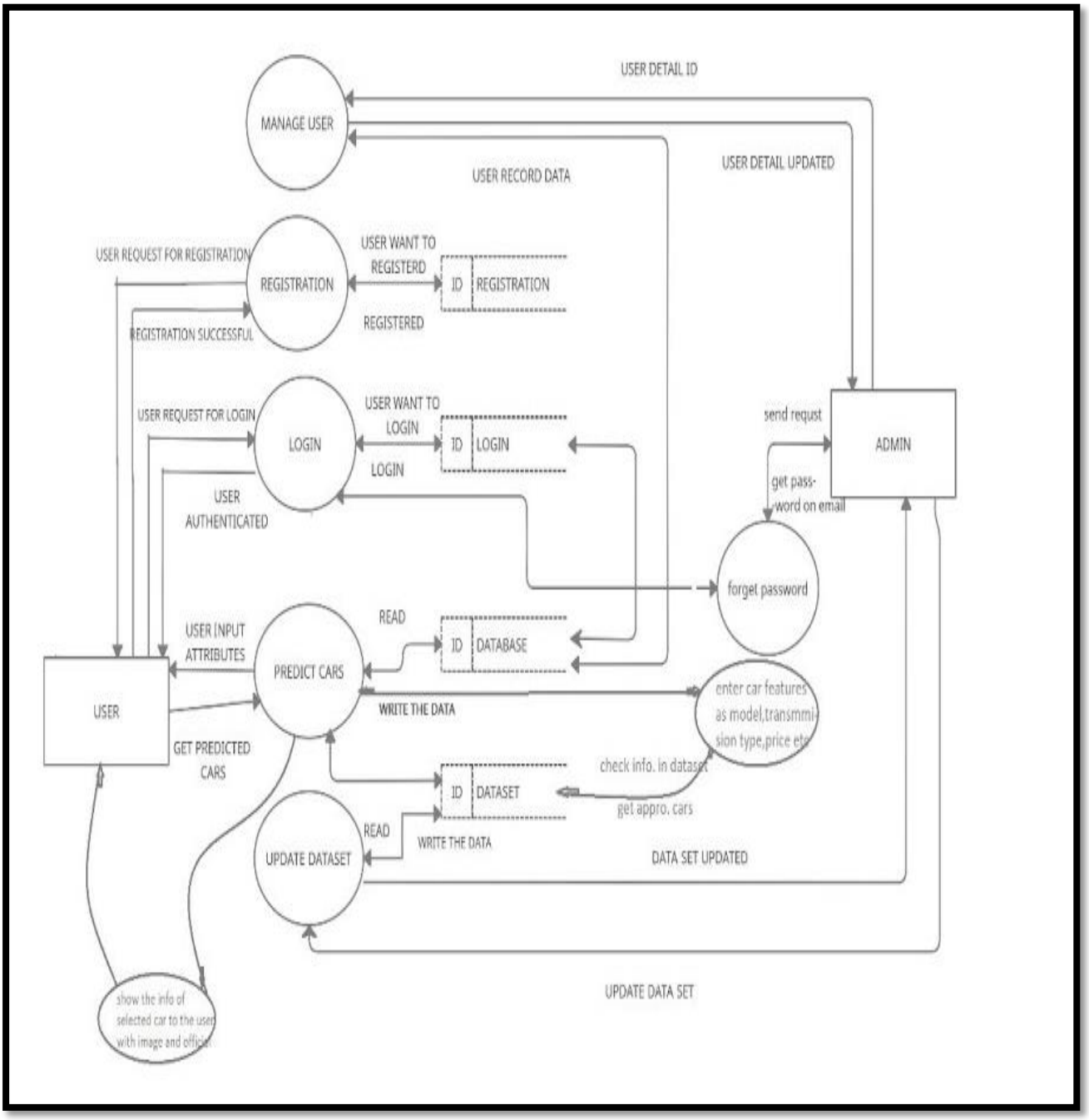


FIGURE 4.4.3: DATA FLOW DIAGRAM (LEVEL 2)

CHAPTER - 5
SYSTEM MODELLING

SYSTEM MODELLING

System modelling is the process of developing abstract models of a system, with each model presenting a different view or perspective of that system. It is about representinga system using some kind of graphical notation, which is usually based on notations inthe Unified Modeling Language (UML). Models help the analyst to understand the functionality of the system; they are used to communicate with customers.

5.1 CLASS DIAGRAM

Class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing, and documenting different aspectsof a system but also for constructing executable code of the software application.

Class diagram describes the attributes and operations of a class and also the constraintsimposed on the system.

Class diagram shows a collection of classes, interfaces, associations, operations, and constraints. It is also known as a structural diagram.

The purpose of class diagram is to model the static view of an application. Class diagrams are the only diagrams which can be directly mapped with object-oriented languages and thus widely used at the time of construction.

UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application, however class diagram is a bit different. It is the most popularUML diagram in the coder community.

The purpose of the class diagram can be summarized as −

- Analysis and design of the static view of an application.
- Describe responsibilities of a system.
- Base for component and deployment diagrams.
- Forward and reverse engineering.

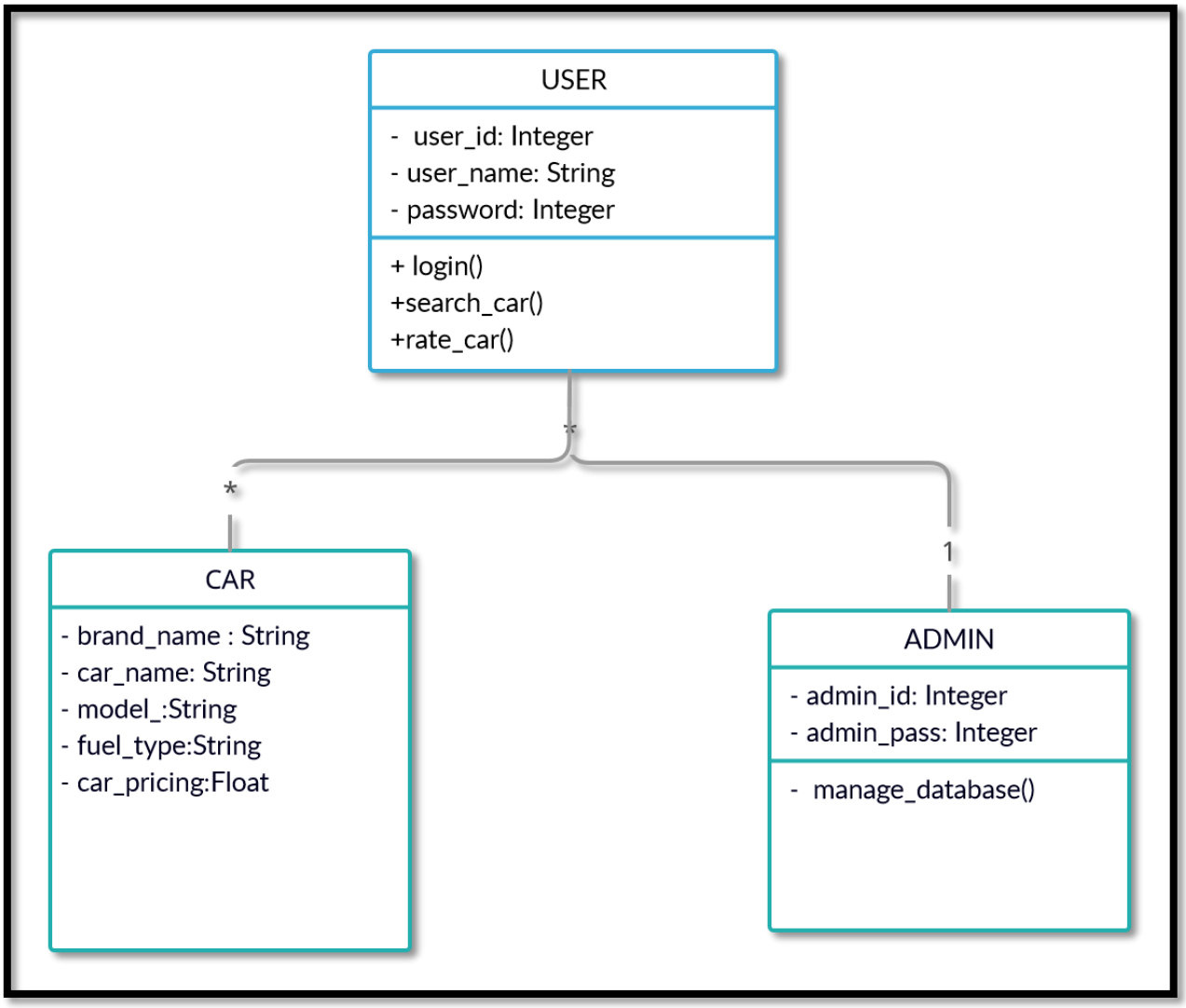


FIGURE 5.1: DETAILED CLASS DIAGRAM

5.2 INTERACTION DIAGRAM

This interactive behavior is represented in UML by two diagrams known as Sequencediagram and Collaboration diagram. Interaction diagrams focus on the dynamicbehavior of a system. The basic purpose of both the diagrams are similar.

Interaction diagram are used in UML to establish communication between objects. It does not manipulate the data associated with the particular communication path. Interaction diagrams mostly focus on message passing and how these messages makeup one functionality of a system. Interaction diagrams are designed to display how theobjects will realize the particular requirements

of a system. The critical component inan interaction diagram is lifeline and messages.

Sequence diagram emphasizes on time sequence of messages and collaboration diagram emphasizes on the structural organization of the objects that send and receivemessages.

The purpose of interaction diagrams is to visualize the interactive behavior of the system. Visualizing the interaction is a difficult task. Hence, the solution is to use different types of models to capture the different aspects of the interaction.

Sequence and collaboration diagrams are used to capture the dynamic nature but froma different angle.

The purpose of interaction diagram is −

- To capture the dynamic behaviour of a system.
- To describe the message flow in the system.
- To describe the structural organization of the objects.
- To describe the interaction among objects.

5.2.1 SEQUENCE DIAGRAM

A Sequence diagram is an interaction diagram that show processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects andclasses involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system underdevelopment. Sequence diagram are sometimes called event diagrams or event scenarios.

The purpose of a sequence diagram in UML is to visualize the sequence of a message flow in the system. The sequence diagram shows the interaction between two lifelinesas a time-ordered sequence of events.

A sequence diagram shows, as parallel vertical lines (lifelines), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simpleruntime scenarios in a graphical manner.

The various levels of sequence diagram of drowsy driver detection project are:

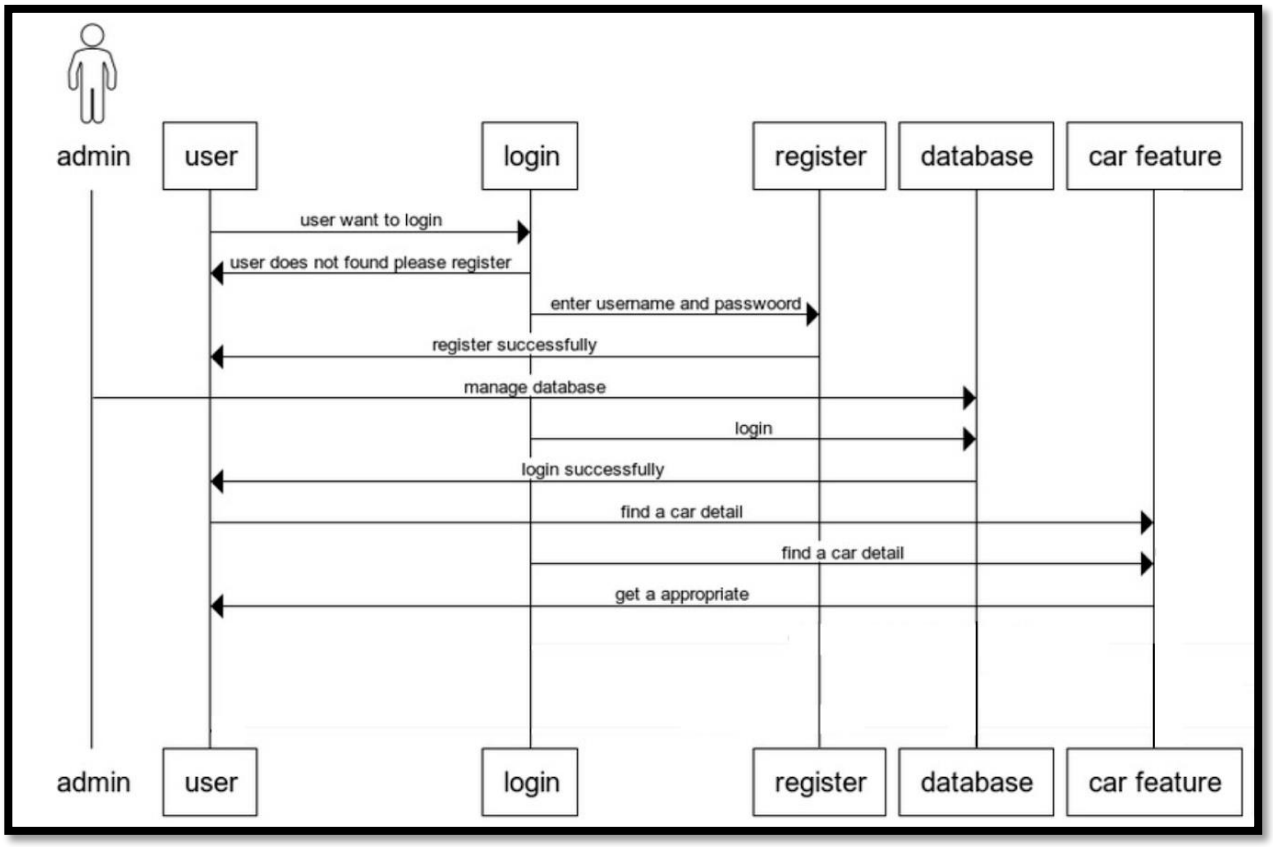


FIGURE 5.2: SEQUENCE DIAGRAM

5.2.2 **ACTIVITY DIAGRAM**

Activity diagram is another important diagram in UML to describe the dynamic aspectsof the system. Activity diagram is basically a flowchart to represent the flow from oneactivity to another activity. The activity can be described as an operation of the system.The control flow is drawn from one operation to another. The basic purposes of activitydiagrams is similar to other four diagrams. It captures the dynamic behavior of the system. Other four diagrams are used to show the message flow from one object to another but activity diagram is used to show message flow from one activity to another.

An activity diagram is a behavioral diagram i.e. it depicts the behavior of a system. An activity diagram portrays the control flow from a start point to a finish point showing the various decision paths that exist while the activity is being executed.

It does not show any message flow from one activity to another. Activity diagram is sometimes considered as the flowchart. Although the diagrams look like a flowchart, theyare not. It shows different flows such as parallel, branched, concurrent, and single.

The purpose of an activity diagram can be described as −

- Draw the activity flow of a system.
- Describe the sequence from one activity to another.
- Describe the parallel, branched and concurrent flow of the system.

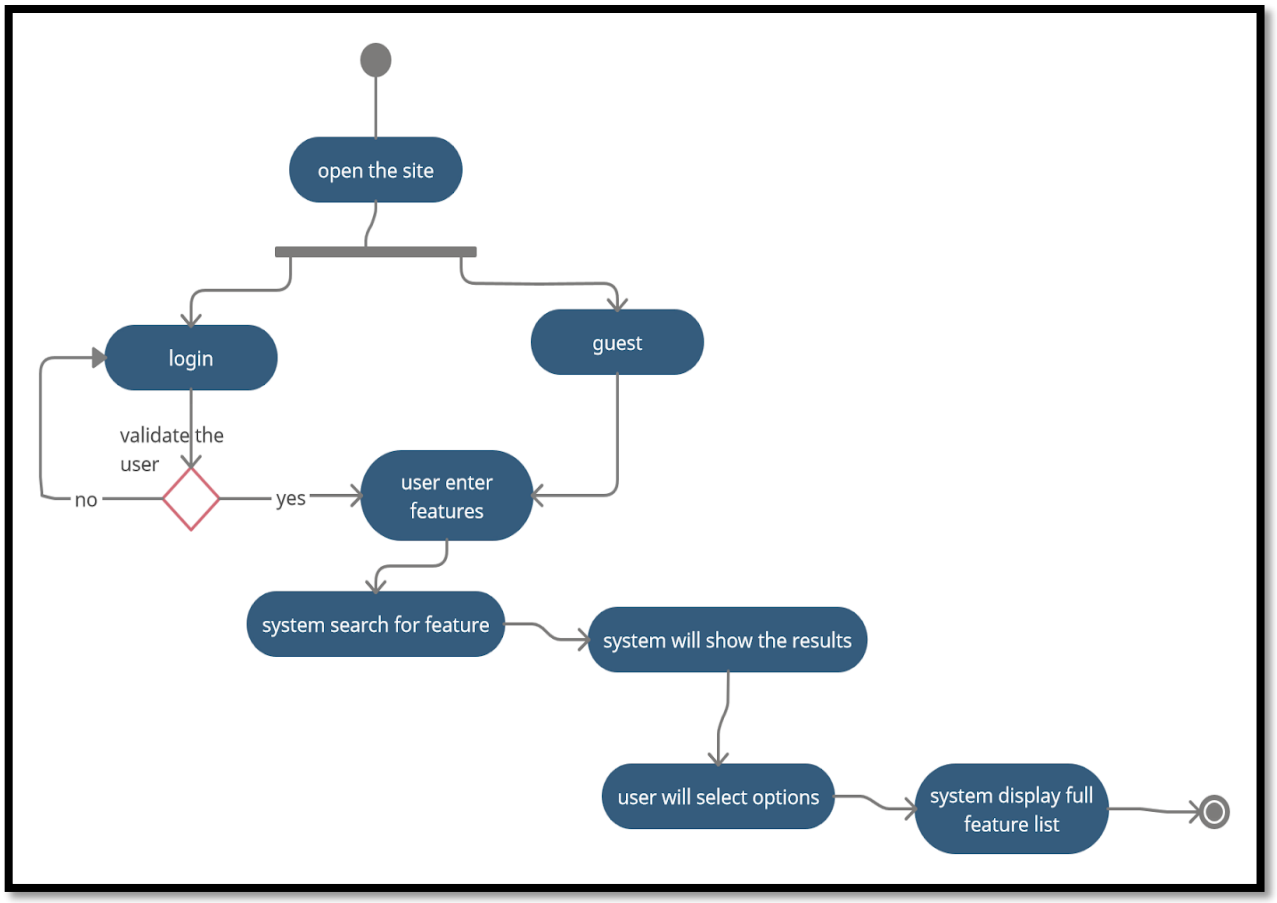


FIGURE 5.3: ACTIVITY DIAGRAM

5.3 ER Diagram

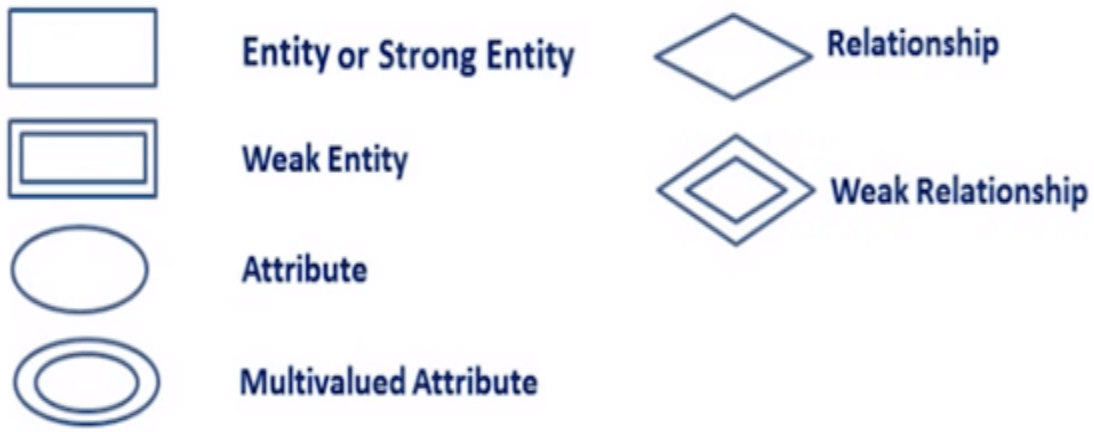
ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.

ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.

At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.

Following are the main components and its symbols in ER Diagrams:

- **Rectangles:** This Entity Relationship Diagram symbol represents entity types
- **Ellipses :** Symbol represent attributes
- **Diamonds:** This symbol represents relationship types
- **Lines:** It links attributes to entity types and entity types with other relationship types
- **Primary key:** attributes are underlined
- **Double Ellipses:** Represent multi-valued attributes



ER Diagram Symbols

Components of the ER Diagram

This model is based on three basic concepts:

- Entities

  An entity can be place, person, object, event or a concept, which stores data in the database. The characteristics of entities are must have an attribute, and a unique key. Every entity is made up of some 'attributes' which represent that entity.

- Attributes

  It is a single-valued property of either an entity-type or a relationship-type.

- Relationships

  Relationship is nothing but an association among two or more entities. E.g., Tom works in the Chemistry department.

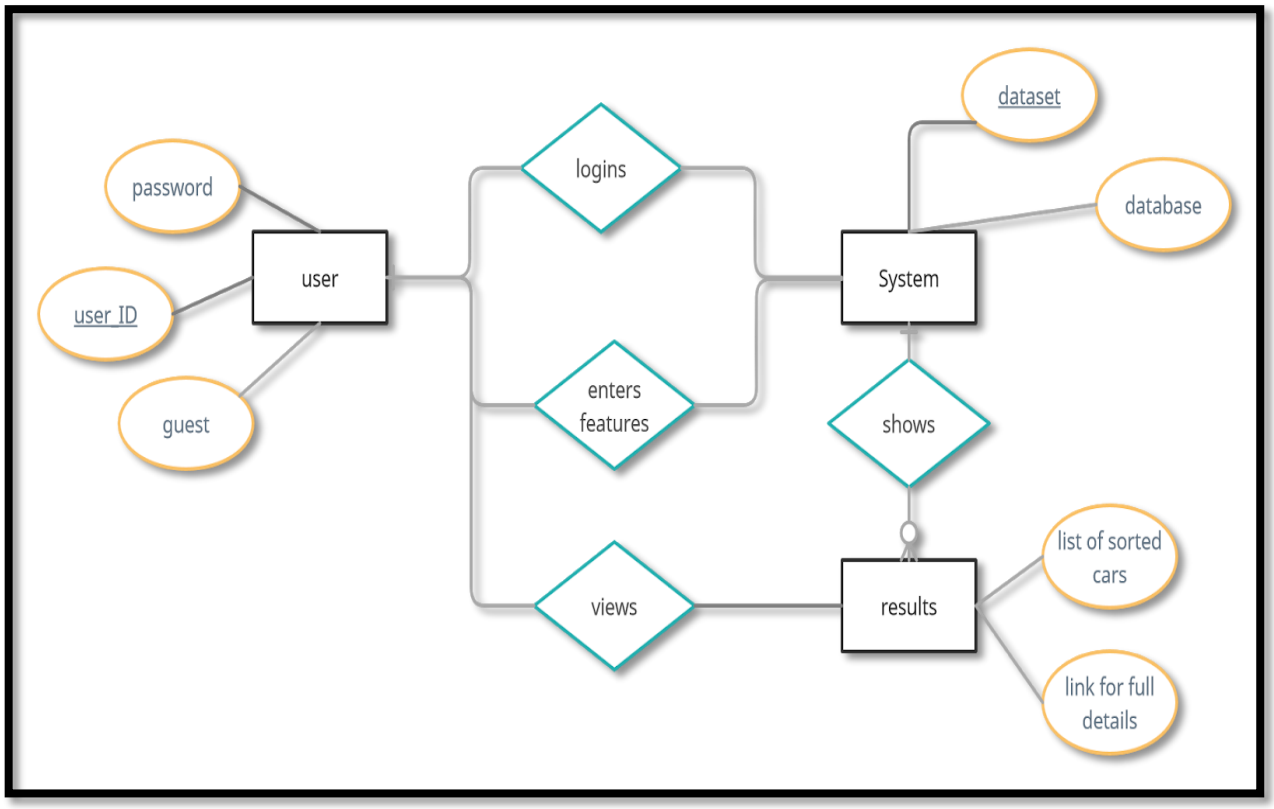


FIG 5.4

5.4 SYSTEM MODEL

In this project to develop a system we are using Incremental Process Model. Incremental Model is a process of software development where requirements are broken down into multiple standalone modules of software development cycle. Each iteration passes through the requirements, design, coding and testing phases. And each subsequent release of the system adds function to the previous release until all designed functionality has been implemented.

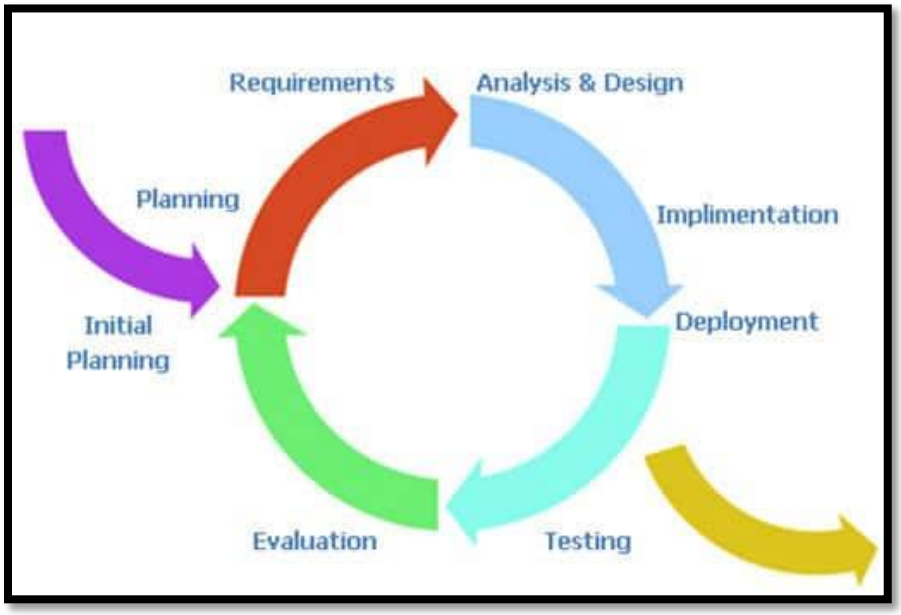


Fig: Basic steps of Software Development

The incremental build model is a method of software development where the model is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance. The product is defined as finished when it satisfies all of its requirements. This model combines the elements of the waterfall model with the iterative philosophy of prototyping.

The product is decomposed into a number of components, each of which are designed and built separately (termed as builds). Each component is delivered to the client when it is complete. This allows partial utilisation of product and avoids a long development time. It also creates a large initial capital outlay with the subsequent long wait avoided. This model of development also helps ease the traumatic effect of introducing completely new system all at once.

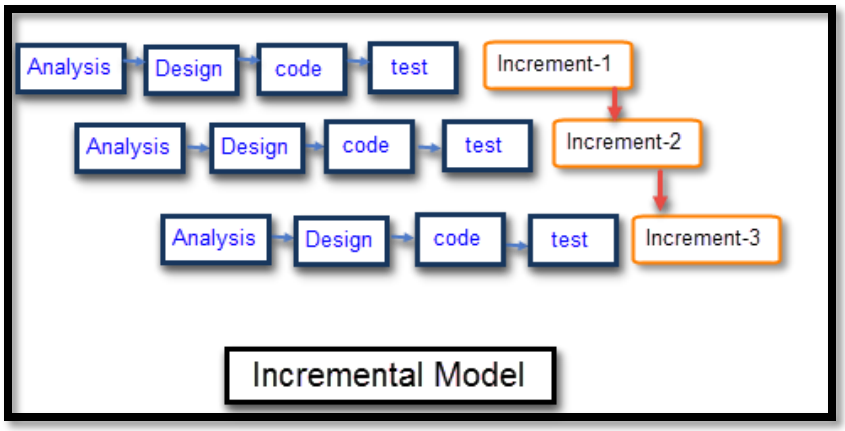


Fig: Incremental model

5.4.1 Advantage & Disadvantage

Advantages

- Generates working software quickly and early during the software life cycle.
- This model is more flexible – less costly to change scope and requirements.
- It is easier to test and debug during a smaller iteration.
- In this model customer can respond to each built.
- Lowers initial delivery cost.
- Easier to manage risk because risky pieces are identified and handled during it'd iteration.

Disadvantages

- Needs good planning and design.
- Needs a clear and complete definition of the whole system before it can be broken down and built incrementally.
- Total cost is higher than waterfall.

5.4.2 Reasons for use

- Incremental model is used because we are dividing the task into modules.
- We can test our system in each iteration when the module get completed.
- Error detection is easy in this model.

- This model can be used when the requirements of the complete system are clearly defined and understood.
- Major requirements must be defined; however, some details can evolve with time.
- There is a need to get a product to the market early.
- A new technology is being used
- Resources with needed skill set are not available
- There are some high risk features and goals.

CHAPTER – 6
CONCLUSION ANDFUTURE WORK

CONCLUSION & FUTURE WORK

6.1 CONCLUSION

The website was designed and developed in such a way that future modifications can be done easily.The following conclusions can be deduced from the development of the project.

- Responsiveness of the entire system improves the accessiblity
- It provides a friendly graphical user interface which proves to be better when compared to the existing system.
- It gives appropriate access to the right information by providing official website links of car brands.
- It effectively find out car in your requirement.
- The GUI is simple and minimal but complete in itself that which makes easy to navigate on website.

The System has adequate scope for modification in future if it is necessary.

6.2 LIMITATION OF PROJECT

a. Currently system will show results of only non-premium brands.
b. Our System reduce the features of feedback for a while.

6.3 FUTURE ENHANCEMENT

C@RS is very useful in order to make Indian car buyers aware about the all available option in market. But it has somelimitations like currently it works on non-premium brands only and best for Indian maximum family who afford medium range cars

CHAPTER - 7
BIBLIOGRAPHY AND REFERENCES

BIBLIOGRAPHY & REFERENCES

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- https://docs.djangoproject.com/en/3.2/ref/templates/language/
- https://docs.djangoproject.com/en/3.2/ref/databases/
- https://docs.djangoproject.com/en/3.2/intro/tutorial02/
- https://www.youtube.com/watch?v=0Ov1Yd1uCuA/
- https://www.w3schools.com/bootstrap/bootstrap_images.asp

SNAPSHOT

Opening website

- Firstly, we need to open the website.

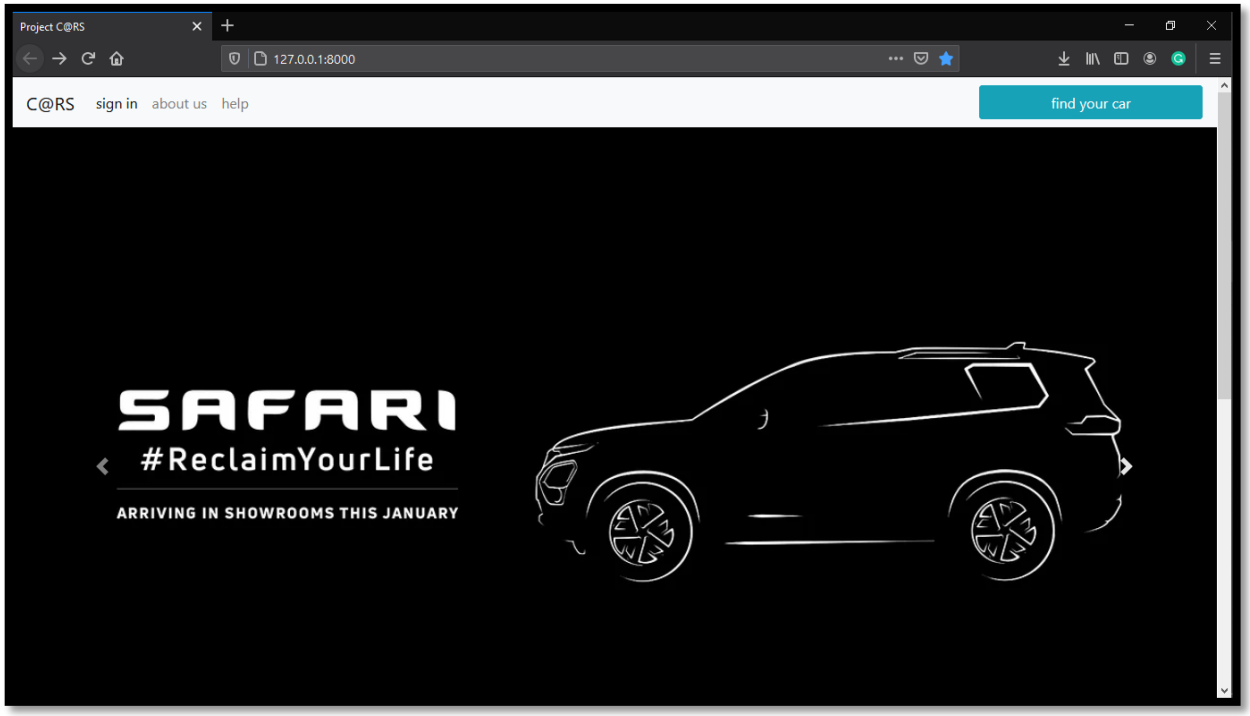


FIGURE 7.1: home page

Optional registration

- Our website is a open to all website so for using website it's completely optional to register
- So if one wants to register he/she just need to open and fill register form

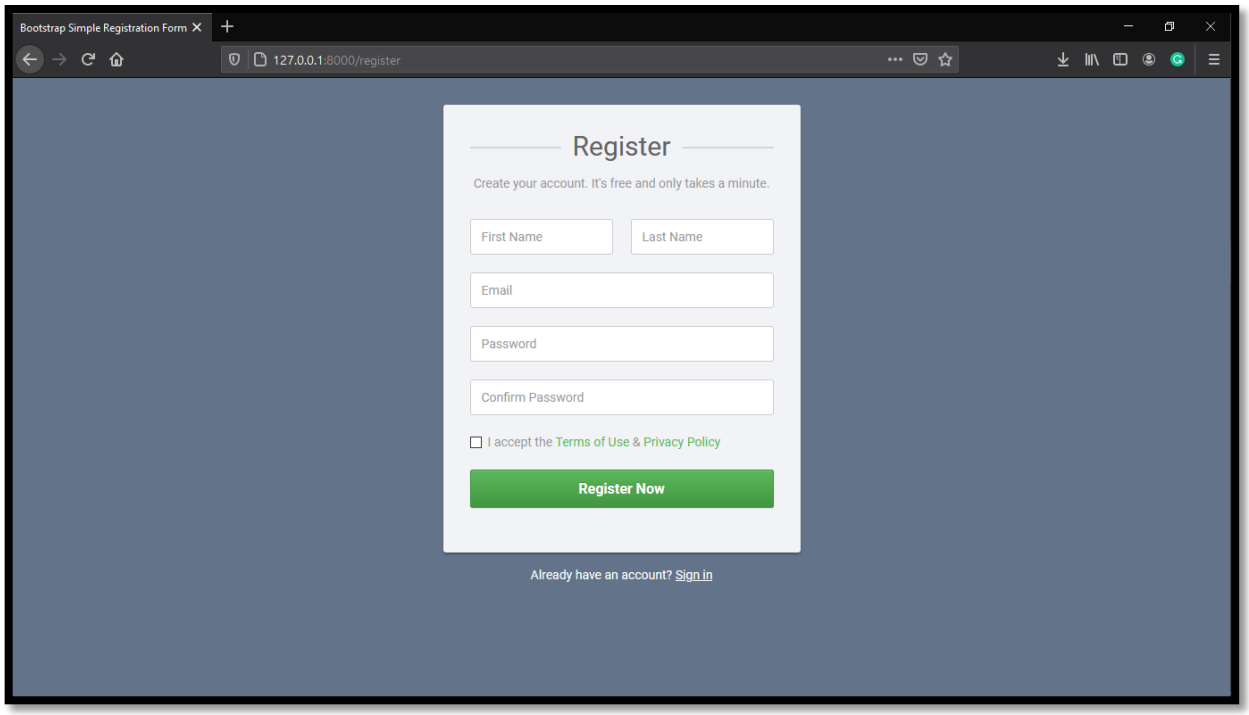
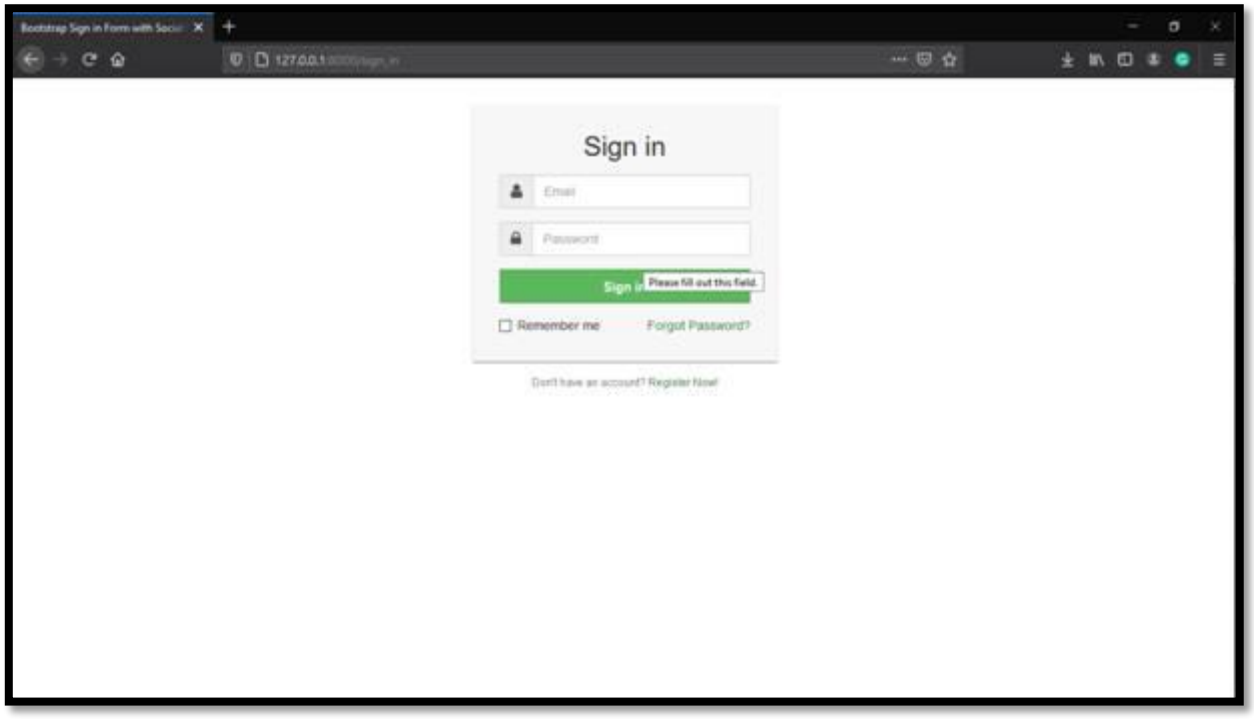


FIGURE 7.2: Page Action

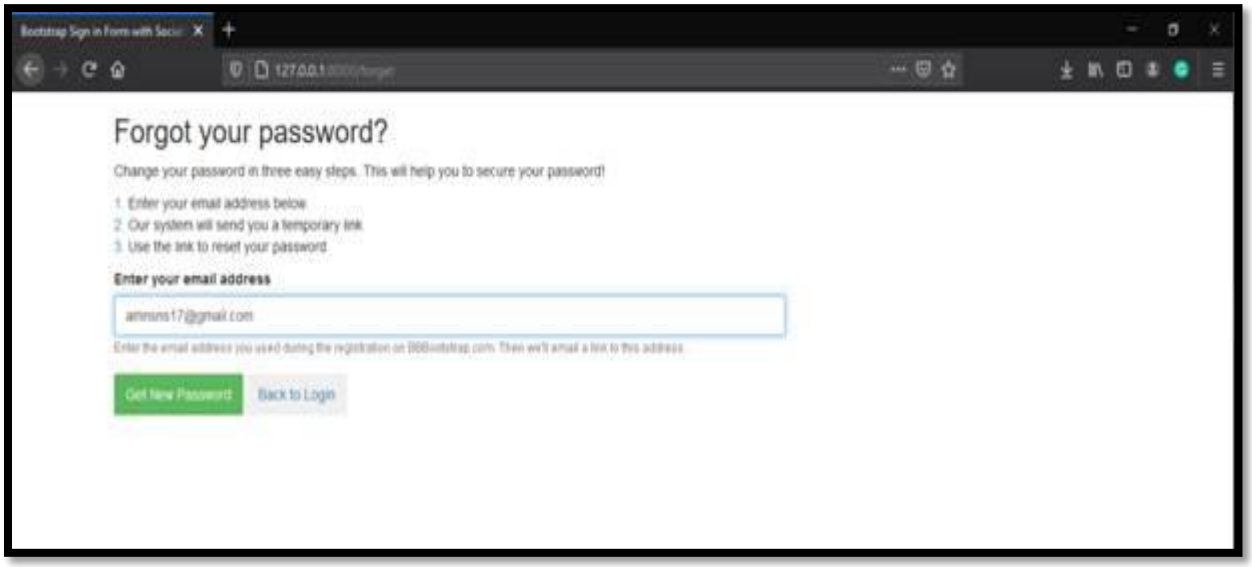
Optional Login

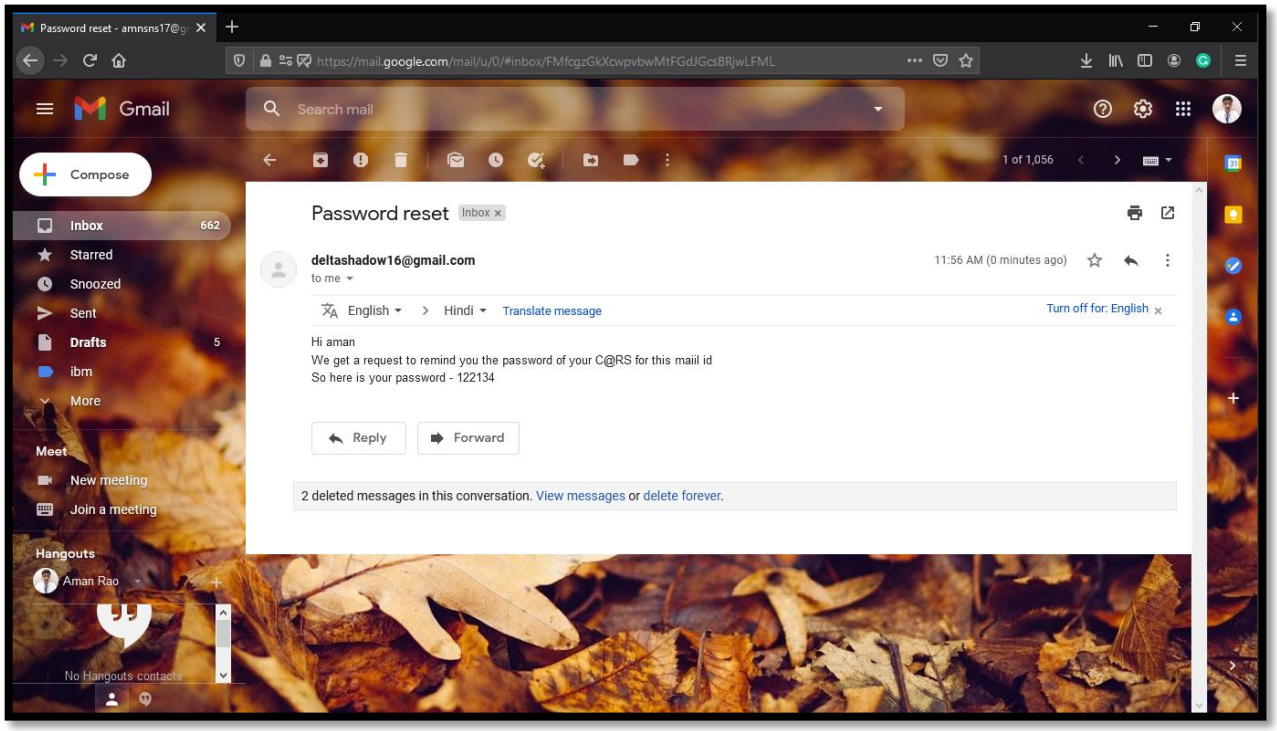
- Once a user is registered he/she will be redirect to sign in page



Forget password

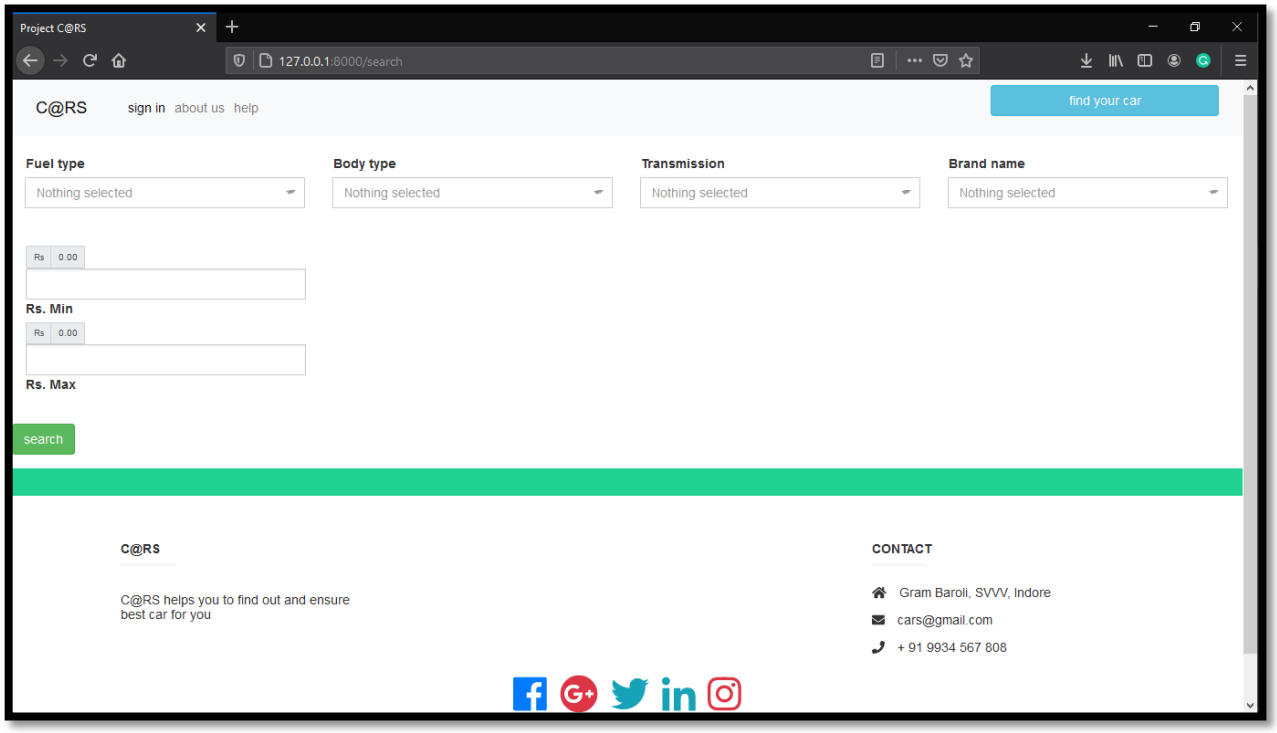
- If any user having problem in signing in then they can their password on their register mail.





Find Car

- To get your required car put fill your requirements in find car page



- If any user have any confusion in body type then for that we have our help section

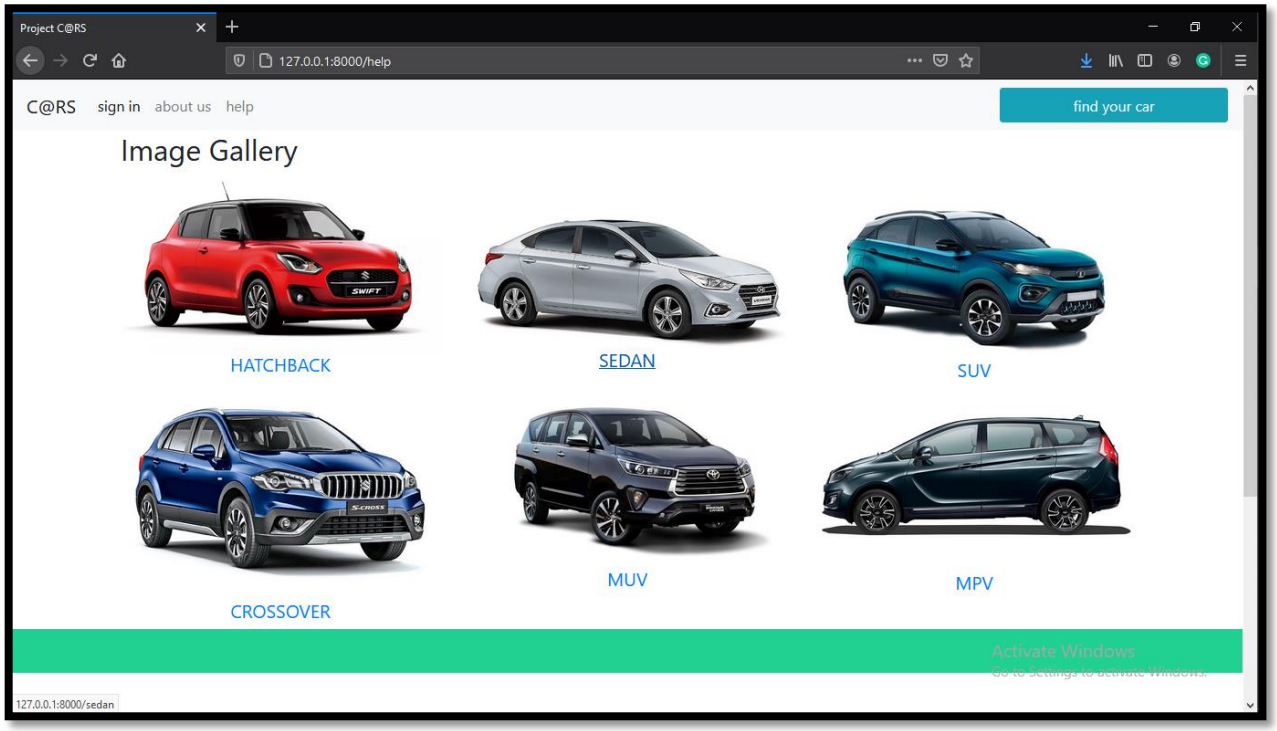
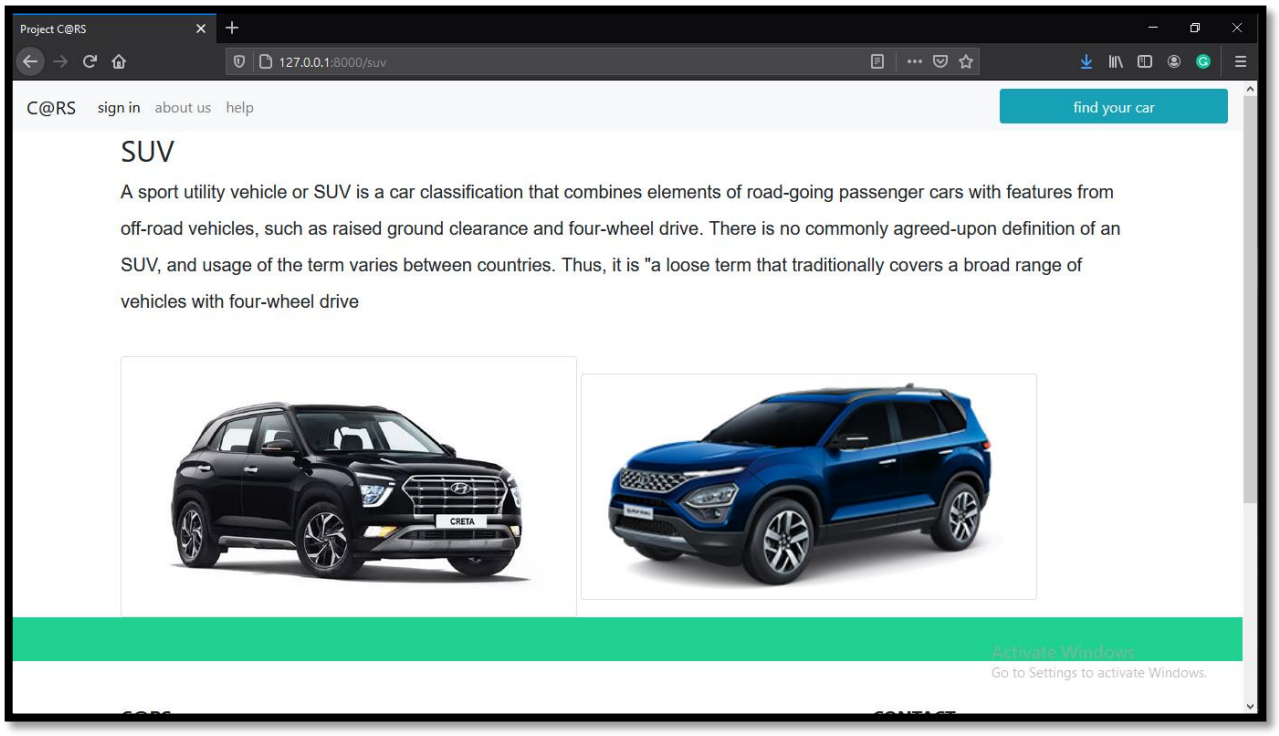


FIGURE 7.3: HELP PAGE

- For more details double click the image.



- Now just fill parameters on find car page

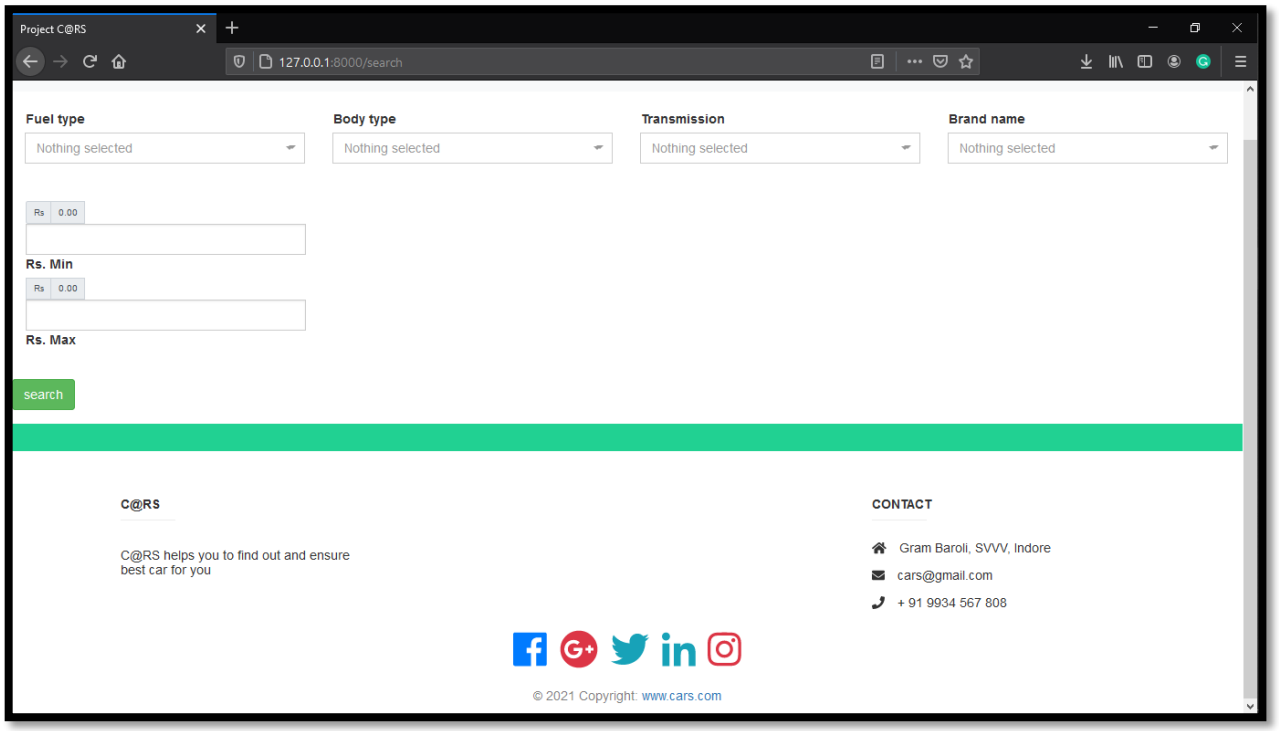


FIGURE 7.4: SEARCH PAGE

- Results will look like this.

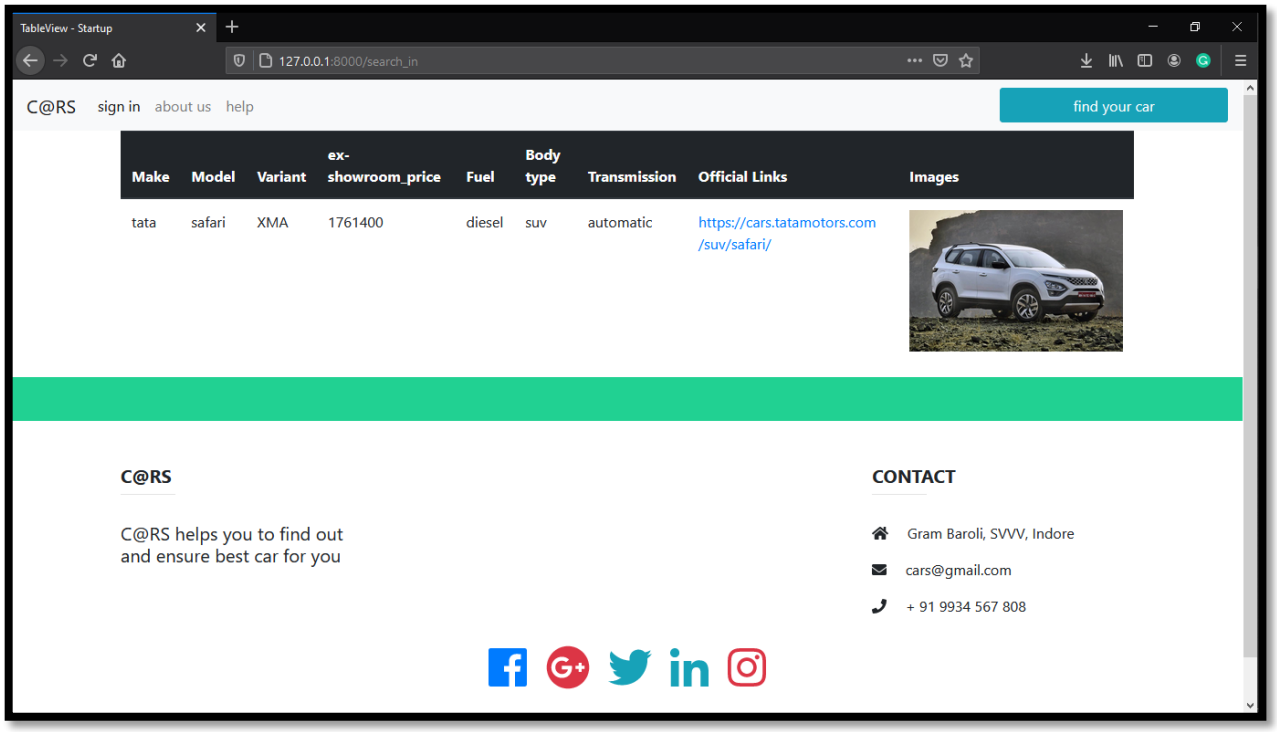


FIGURE 7.5: FINAL PAGE

Glossary

Term	Definition
SRS	Software Requirements Specifications
Admin	Person who manage the system
User	Person who uses the system
Dataset	CSV file having data about Indian cars