

**“AI BASED PERSONALISED ELECTRONIC GADGETS
RECOMMENDATION SYSTEM”**

A

Project Report

submitted

in partial fulfillment

for the award of the Degree of

Bachelor of Technology

in Department of Information Technology



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Session 2022-2023**

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CERTIFICATE

This is to certify that **Ms. Sneha Khandelwal**, a student of B.Tech(Information Technology) VIII semester has submitted her Project Report entitled "**AI Based Personalized Electronic Gadgets Recommendation System**" under my guidance.

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This is to certify that **Mr. Mishu Jain**, a student of B.Tech(Information Technology) VIII semester has submitted his Project Report entitled "**AI Based Personalized Electronic Gadgets Recommendation System**" under my guidance.

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DECLARATION

We hereby declare that the report of the project entitled "AI based personalised electronic gadgets recommendation system" is a record of an original work done by us at Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur under the mentorship of Mr. Praveen Kumar Yadav (Dept. of Information Technology) and coordination of Ms. Sanju Choudhary (Dept.of Information Technology). This project report has been submitted as the proof of original work for the partial fulfillment of the requirement for the award of the degree of Bachelor of Technology (B.Tech) in the Department of Information Technology. It has not been submitted anywhere else, under any other program to the best of our knowledge and belief.

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Chapter 1

Introduction

1.1 Overview

Today, gadgets have become an individual's essential requirement as a communication and entertainment device all over the world. The technological world has grown more competitive than ever, with many manufacturers striving to offer the greatest products for their clients. The never-ending expansion of the choices space has placed clients in a quandary. Customers were left perplexed by the seemingly limitless number of available alternatives when it came to selecting the best device for them. Customers are influenced by the following aspects when choosing an electronic device to use: brand, RAM, battery life, price, year of release, novel features, personal recommendation, and so on. Even though most electronic devices contain all of the fundamental functionality, manufacturers aim to differentiate their goods by adding some new features to the current features to set them apart from the competition. Manufacturers embraced the challenge and competitiveness of creating the ideal device for their target clients by including creative ideas and features to improve the user experience. The increasing number of brands and models has increased market competitiveness. As a result, consumers have a plethora of alternatives to choose from. Our Internet is flooded with a vast amount of information about electronic gadgets. Hence it is hard for users to get a personalized recommendation about gadgets which can fulfil all the requirement for the user.

By analysing the mentioned issue an AI based recommendation system will be the feasible solution for this problem. Recommendation system information filtering technique which will provide users the desired information about the electronic gadgets according to their search interest. Recommender Systems create suggestions; the user can accept or reject them based on their preferences, and they can also

give implicit or explicit feedback, either immediately or later. Users' activities and input can be saved in the recommender database and utilized to generate new suggestions in subsequent usersystem interactions. Because of the economic potential of these recommender systems, several of the largest e-commerce companies (such as Amazon.com and Snapdeal.com) and the online movie rental firm Netflix have made these algorithms a prominent element of their websites. High-quality tailored recommendations enrich the user experience. Web personalized recommendation systems have lately been used to give various forms of individualized information to their respective users.

1.2 Purpose

The purpose is to implement this recommendation system to suggest the desired electronic gadget to the user according to their requirement. It will give sufficient assistance to the user to buy the best electronic gadget. Also it will help the business of electronic gadgets to grow their sphere of influence.

1.3 Literature Review

1.3.1 Existing Problem

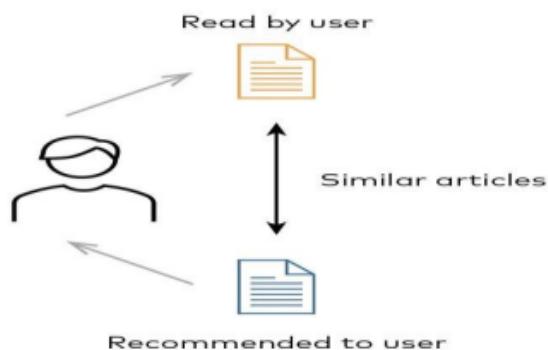
In the era of digitization, gadgets have become an individual's fundamental necessity as a communication and entertainment instrument. The technology world has become more competitive than ever, with numerous firms vying to provide the best products to their customers. Clients are perplexed by the never-ending increase of the options space. When it came to choosing the right gadget for them, customers were bewildered by the seemingly infinite amount of accessible options. When selecting an electronic gadget to use, customers are affected by the following factors: brand, RAM, battery life, price, year of release, unique features, personal recommendation, and so on. Despite the fact that most electronic gadgets have all of the basic capabilities, manufacturers strive to differentiate their products by adding some new features to the existing features to set them apart from the competitors. Manu-

facturers accepted the challenge and competitiveness of developing the best gadget for their target consumers by including innovative ideas and features to enhance the user experience. The growing number of brands and models has heightened market competition. As a result, customers have a wealth of options from which to pick. Our Internet is filled with a wealth of information regarding electrical devices. As a result, it is difficult for users to receive individualised recommendations on products that can meet their needs.

1.3.2 Proposed Solution

The model will take product name as an argument and give the top recommendations using content based filtering approach. Content-based filtering uses item features to recommend other items similar to what the user likes, based on similarity score. The model will interact with user interface made by html and css and connected with flask

CONTENT-BASED FILTERING



1.4 Problem Statement and Objective

The current market for electronic gadgets, such as smartphones, tablets, laptops, and smartwatches, is vast and diverse, with numerous options available to consumers. However, choosing the most suitable gadget from this wide range of choices can be overwhelming for many individuals. People often struggle to identify the gadgets

that best align with their specific needs, preferences, and budget. As a result, they may end up purchasing devices that do not fully meet their requirements or offer sub-optimal user experiences.

The objective is to develop an AI-based personalized electronic gadgets recommendation system that assists individuals in selecting the most suitable electronic gadgets based on their unique preferences, requirements, and budget. The system will leverage machine learning algorithms and user data to provide personalized recommendations, ensuring that consumers make informed decisions and obtain devices that align with their specific needs.

1.5 Scope of the Project

The purpose of the system is to provide personalized recommendations for electronic gadgets, such as smartphones, laptops, tablets, etc., to individual users based on their preferences using content-based filtering techniques. The system will focus on providing recommendations for a wide range of electronic gadgets and utilize content-based filtering techniques to generate recommendations based on the content features of the gadgets, such as brand, operating system, processor, RAM, storage, camera quality, display size, and other relevant factors. The system will have a user-friendly interface that displays detailed product information, comparison features, and other relevant information to help users make informed decisions.

Chapter 2

Software Requirement Specification

2.1 Overall Description

The AI-Based Personalized Electronic Gadgets Recommendation System utilizes a content-based approach to assist users in selecting the most suitable electronic gadgets. By analyzing the characteristics and specifications of gadgets, the system generates personalized recommendations based on the user's preferences, requirements, and budget. It employs machine learning algorithms to understand user preferences and match them with the relevant features of electronic gadgets. The system considers factors like device specifications, user feedback, and expert reviews to provide accurate recommendations. With its content-based approach, the system ensures that users receive personalized gadget recommendations that align with their specific needs, resulting in improved user satisfaction and informed decision-making.

2.1.1 Product Perspective

The tech world has become more competitive than ever with a lot of manufacturers trying to produce the best for their customers. The endless increase in the options space left the customers in a dilemma of choosing the right gadget for them. The major factors that influence customers in selecting an electronic gadget to use include: Brand, RAM, battery life, price, year of release, innovative features, personal recommendation and so on.

Gadget recommendation system is a software tool designed to give recommendations to things or substances a particular user would like to purchase or engage with. We propose an AI based recommendation system specially designed for electronic gadgets. It has a simple UI with many functions. It is a user-friendly app with profile free interaction. It provides a superior customer experience that can deliver the level of personalization which will impress consumers with individualized

options. The user searches for gadgets according to his preference by entering certain specifications in the filter option. If the user is satisfied with the recommended gadget he submits a response. Else he repeats the step.

Item details:

The UI consists of the set of details about the gadgets which needs to be entered by the user to get the basic idea of the user's interest. It includes the name, brand, internal specifications, camera, etc. The system responds with the results containing the specific recommendations

2.1.2 Product Functions

- The Recommendation System enables the admin of a particular company to enter the details of users and sort the data according to their interests and then the data is automatically used by the AI and updated regularly. And using this function, users can easily find the gadgets according to their interests and each time the AI makes better decisions due the regular updation of the data by the user.
- Also, if the recommended item is not up to the expected quality of the user, then the user can make a complaint in order to get better suggestions from the AI about the gadgets. Further, response is to be given by the AI authority to his complaint.
- Users can assist in the better functioning of the product.
- Users can give their feedback for the services provided to them.

2.1.3 User Classes and Characteristics

Users of the system should be able to get the recommendations of the various devices according to their interest. The recommendations should not be improper data processed by the fault of the engine. The system will support two types of user privileges, users and Admin (AI Authority). Users will have access to user functions, and the admin will have access to both user and item management functions.

2.1.4 Assumptions and Dependencies

These assumptions are present in the following application:

- A data sheet containing details of the electronic gadgets
- Another input from the user using the service.

2.1.5 Design and Implementation Constraints

- Data required in CSV format
- Implement AI and Machine Learning algorithms

2.2 User Interfaces

The Recommendation System user interface has been specifically designed with their customers in mind, giving them convenience to get the item recommended to them.

The home screen offers a menu with a list of functions that the device performs. The user can select one of the options on the menu, and is taken to the respective screen. Every screen displays the menu on the bottom. The user can click on any one of the options and is taken to the screen of their choice. In addition, clicking on the power button displays the home screen with the menu options.

The device offers easy scroll options to navigate the screens efficiently. To scroll down any screen, simply touch the scroll bar on the screen, and roll down. If the user does not know how to use any functionality or has any queries, the help option can be used. The help screen contains a text field to enter search terms. A list of search results pertaining to the query is displayed.

2.3 Hardware Interfaces / Software Interfaces

2.3.1 Front-end :

For the front-end we are using react.js framework. React is an open source, JavaScript library for developing user interface (UI) in web applications. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

2.3.2 Back-end:

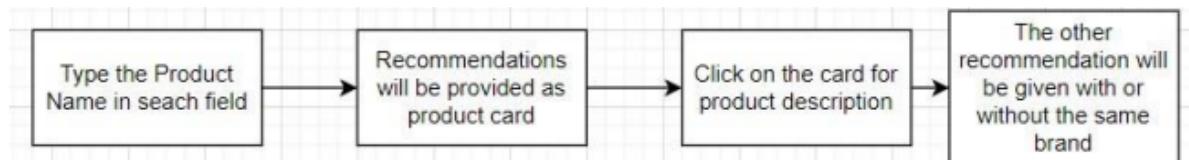
For the back-end we are using python. Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. It is also the high demand language for machine learning and data science based projects. The libraries like flask can be used to connect web pages with python based machine learning models. Flask is an API of Python that allows us to build up web-applications. It was developed by Armin Ronacher. Flask's framework is more explicit than Django's framework and is also easier to learn because it has less base code to implement a simple webApplication. Flask is based on the WSGI (Web Server Gateway Interface) toolkit and Jinja2 template engine. Also to run the model we are using a jupyter notebook. The Jupyter Notebook is the original web application for creating and sharing computational documents. It offers a simple, streamlined, document-centric experience. program used to mix code, comments, and visualizations in an interactive document called notebook that can be shared, reused, and reworked in a web browser. Jupyter Notebook (formerly

IPython Notebooks) is a web-based interactive computational environment for creating notebook documents. A Jupyter Notebook document is a browser-based REPL containing an ordered list of input/output cells which can contain code, text (using Markdown), mathematics, plots.

Following are the software used for online application.

Software used	Description
Operating system	We have chosen the Windows operating system.
Database	To save the item records, we have chosen a CSV File.
Tools/IDE	To implement the project, we have chosen Visual Studio Code for its more interactive support.
Platform	Web Based Application
Technologies Used	HTML, CSS, JS, FLASK, Python

2.4 Block Diagram



2.5 Communication Interfaces

The communication interface for the AI-based Personalized Electronic Gadgets Recommendation System involves the interaction between various components and modules of the system. These components may include the frontend user interface, backend server, recommendation engine, and any external APIs or services used for data retrieval or processing.

The communication interface can be categorized into two types:

User-System Interface: This interface involves the interaction between the system and the end user. It includes the input and output mechanisms through which the user interacts with the system. The user provides inputs such as preferences, feedback, or gadget selection through the frontend user interface, which may include web pages, mobile apps, or other interactive interfaces. The system processes the user inputs and generates personalized gadget recommendations, which are displayed to the user as output through the same user interface.

System-System Interface: This interface involves the communication between different components and modules of the system. For example, the frontend user interface communicates with the backend server to send user inputs and receive recommendation results. The backend server communicates with the recommendation engine, which may include algorithms, databases, or external APIs, to generate personalized recommendations based on user inputs and other factors. The recommendation engine may also communicate with external data sources or services for data retrieval or processing purposes.

The communication interface may utilize various protocols, APIs, or standards for data exchange, such as HTTP, RESTful APIs, JSON, XML, or other formats depending on the system architecture and technologies used. It is essential to ensure that the communication interface is efficient, secure, and reliable to facilitate seamless interaction between the different components of the system and deliver accurate and personalized gadget recommendations to the end user.

2.6 Functional Requirements

2.6.1 UI/UX requirement

Attractive design, easy to navigate and speedy page loading are three features ecommerce site must have. Apart from that, use of color, fonts and images also plays a vital role to engage the user. These issues must be resolved. Mobile devices are the great source of users nowadays. So, this system must be mobile friendly and scalable to different screen sizes. This system must have features of search and filter products based upon categories and subcategories. Customers always want to hear

from other customers how the shopping suits their needs and expectations. To solve this problem review and ratings must be used. This system must have features of shopping cart and checkout to both logged in user and anonymous user.

- **User-friendly interface:** The system should have a simple and intuitive interface that is easy for users to navigate.
- **Responsive design:** The system should have a responsive design that works well on a variety of devices and screen sizes.
- **Visual aids:** The system should use visual aids such as images, videos, and interactive graphics to help users better understand recommended gadgets.

2.6.2 Personalized recommendation system:

Most popular systems are dynamic and personalized to the user. It is one of the key factors to engage the user with the system. The products are recommended to users based upon their preferences, user history and ratings. The already rated product must not be recommended to the user.

- **Search Functionality:** The home page should allow users to search for gadgets based on keywords, filters, and sorting options, and display accurate and relevant search results.
- **Product catalog:** The system should have a comprehensive catalog of gadgets that includes information such as product features, specifications, and prices.
- **Recommendation engine:** The system should use machine learning algorithms to analyze user data and recommend products that are likely to be of interest to the user.
- **Personalization:** The system should be able to customize recommendations based on user preferences and behavior.
- **Multi-platform accessibility:** The system should be accessible across multiple platforms, such as mobile devices and desktop computers.

- **Product Details:** The recommendation page should display detailed information about each recommended gadget, including product name, image, and other specifications.

2.7 Other Non-Functional Requirements

2.7.1 Non-functional requirement

Nonfunctional requirements specify whether a particular task will be performed or not. Some of the no non – functional requirements are listed below:

- **Speed:** Speed is actually much more complicated than it seems. Speed is one of the nonfunctional requirements that must be considered. The speed may lag because of many reasons. Some of the common reasons for slow load is due to high resolution unoptimized images, complex order entry process, use of many API calls to render, unclean code etc. All of these issues must be solved.
- **Security and privacy:** Since this web app uses the most sensitive data of the user. The system must be protected from vulnerabilities. The authentication must be secured from data breach. To protect the system from code manipulation, the software must be coded with much complexity. Privacy must be protected. Policies, terms and conditions must be able to update from the admin side.

2.7.2 Usability requirement

- **Ease of use:** The system must be easy to use and understand the system or the casual user. The navigation and function must be simple.
- **Satisfaction and memorability:** The design of the system must be pleasant to view and the user must be able to recall the site when the user returns after a certain period of time.
- **Graphics:** Graphics is considered as one of the components that helps users to better connect to the system. It mostly deals with data rendering and displaying

high quality data. The code must be optimized and should be able to show similar quality in any hardware device.

2.7.3 Software Quality Attributes

- **Availability**-the item should be available to the user.
- **Correctness**-the list of the items to be recommended should be correct according to the details provided by the user.
- **Usability**-the recommended items should satisfy a maximum number of user needs.
- **Maintainability**-admin should maintain the database and store in updated form.
- **Portability**- the application should be portable to android,iOS and Windows.
- **Reliability**- the system should give 98 percent correct search results out of 1000 searches during testing.
- **Extendibility**-the application should be easy to extend, code should be written in such a way that it favors implementation of new functions.

Chapter 3

System Design Specification

3.1 System Design

Now we have to design our system before implementing it in such a way that it can execute all the work we want without any loss of data. For this purpose, we have different kinds of diagrams to represent the system interaction flow of the data storage.

3.2 System Analysis

The system analysis phase is considered to be one of the most important phases in the system development life cycle. It is immensely important that the software developer makes thorough study of the existing system. Thorough study of the system is made and needs i.e. features that are critical to system success and users wants (i.e. features that would be good but not essential) are brought out. The study will enable the developer to know the intricacies of the existing system.

Requirement analysis is done in order to understand the problem which the S/W system is to solve e.g., the problem could be automating the existing manual system or developing a completely new automated system or a combination of the two. For large systems having a large number of features and the need to perform many different tasks, understanding the requirements of the system is a major task. The emphasis in requirement analysis is on identifying what is needed from the system, and not how the system achieves its goal.

3.3 Use Case Diagram

A use case diagram at its simplest is a representation of a user's interaction with the framework that demonstrates the relationship between the user and the different

use cases in which the user is involved. A use case diagram can recognize the different types of users of a system and the different use cases and will frequently be accompanied by other types of diagrams as well.

The following figure is a use case diagram which illustrates the interactions between the user and various functionalities that are present in the application and how the user accesses the information.

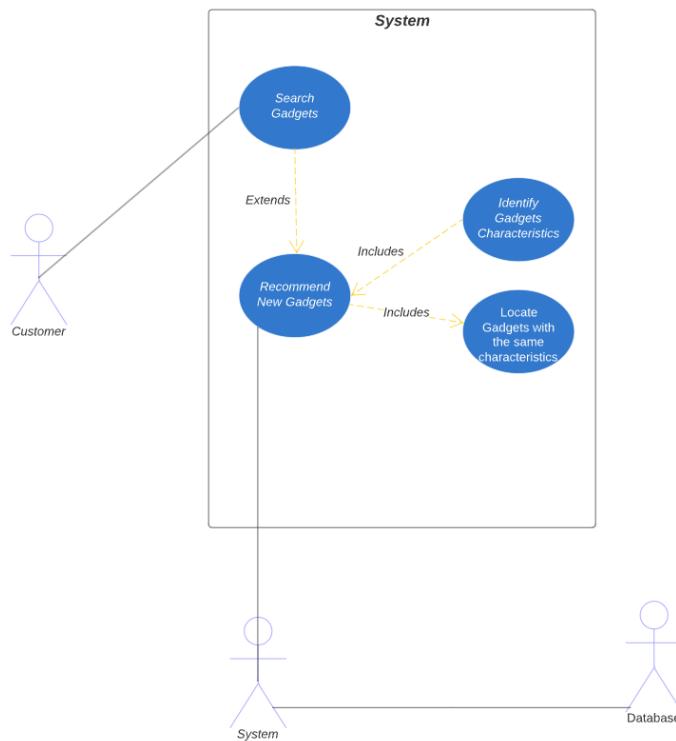


Figure 3.1: Use Case Diagram

3.4 Class Diagram

A class diagram is an outline of the relationships and source code dependencies among classes in the Unified Modeling Language (UML). In this context, a class characterizes the methods and variables in an object, which is a particular entity in a program or the unit of code representing that entity.

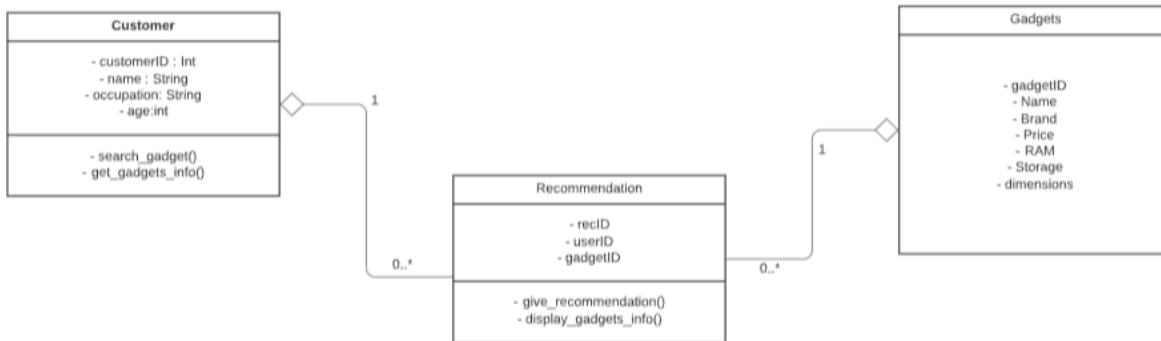


Figure 3.2: Class Diagram

3.5 Sequence Diagram

A Sequence diagram is a connection chart that shows how procedures work with each other and in what request. It is a build of a Message Sequence Chart. A sequence diagram shows object collaborations orchestrated in time arrangement. It portrays the articles and classes included in the situation and the succession of messages traded between the items expected to do the situation's usefulness. Arrangement graphs are normally connected with use cases acknowledged in the Logical View of the framework, a work in progress. Succession outlines are now and then called occasion charts or occasion situations.

The following figure shows the sequence diagram showing the data sequence of the application.

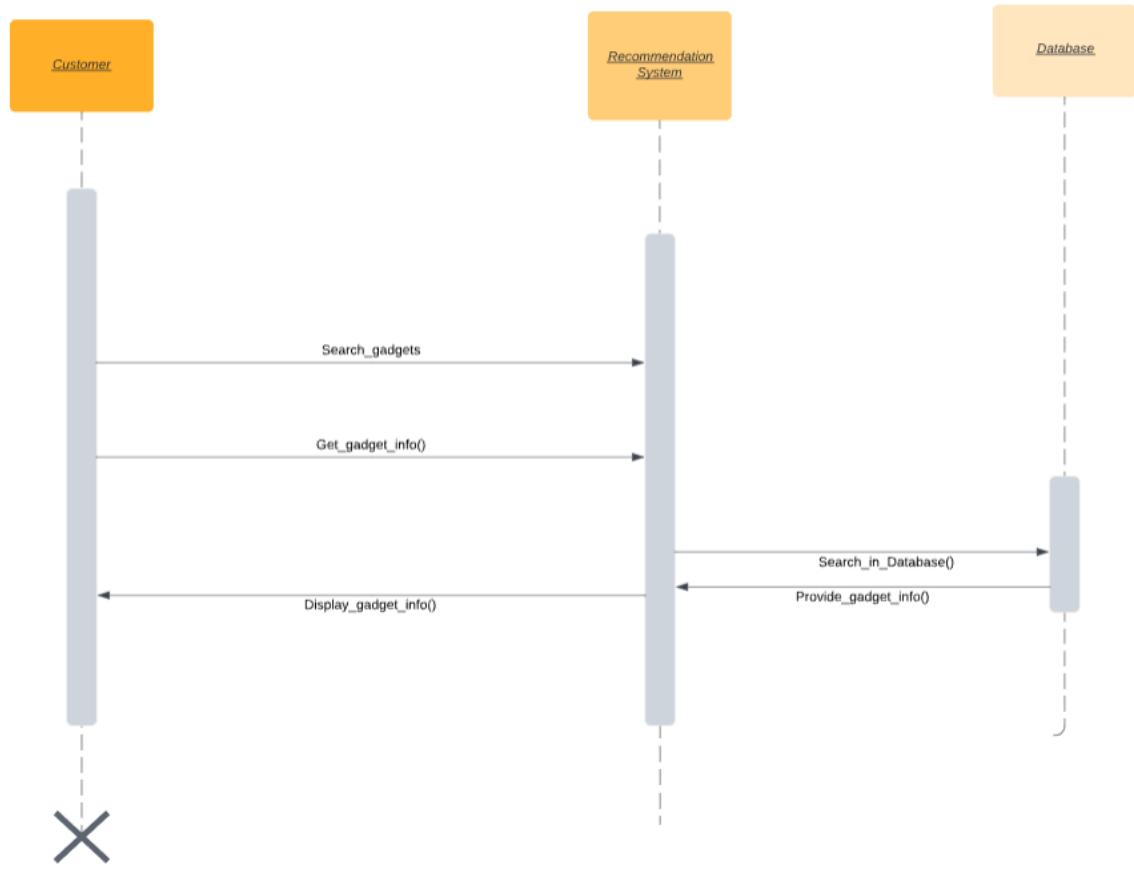


Figure 3.3: Sequence Diagram

3.6 Activity Diagram

Activities diagrams are graphical representations of work processes of stepwise exercises and actions with backing for decision, emphasis and simultaneousness. In the Unified Modeling Language, movement outlines are planned to display both computational and authoritative procedures (i.e., workflows). Activity charts demonstrate the general stream of control. The following figure shows how the data is sent and collected in the central server using an activity diagram.

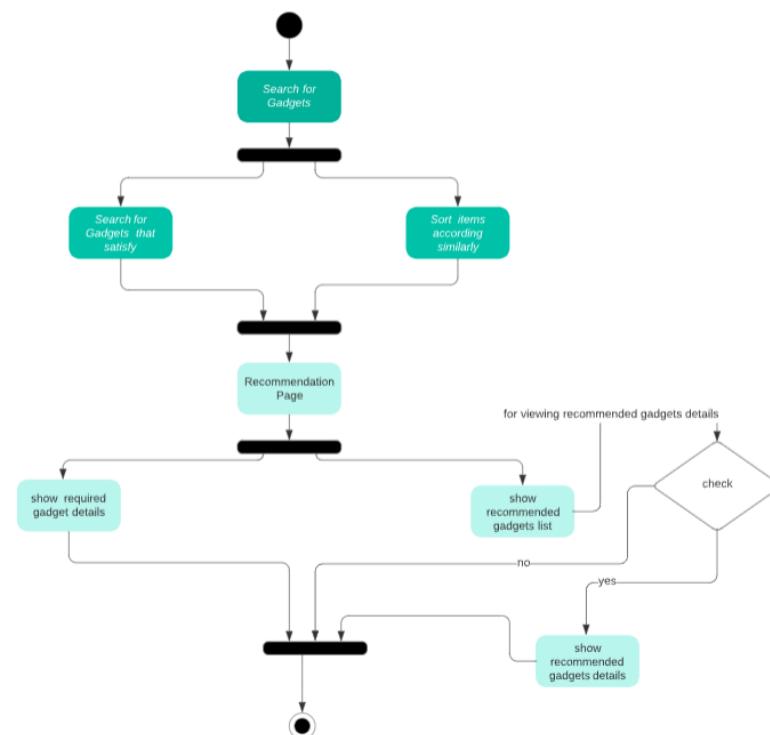


Figure 3.4: Activity Diagram

3.7 State Transition Diagram

The state transition diagram provides an overview of the different states and transitions in the system, showcasing the flow of interactions between the user and the recommendation system, and highlighting the dynamic nature of the system as it adapts to user inputs and updates its recommendations.

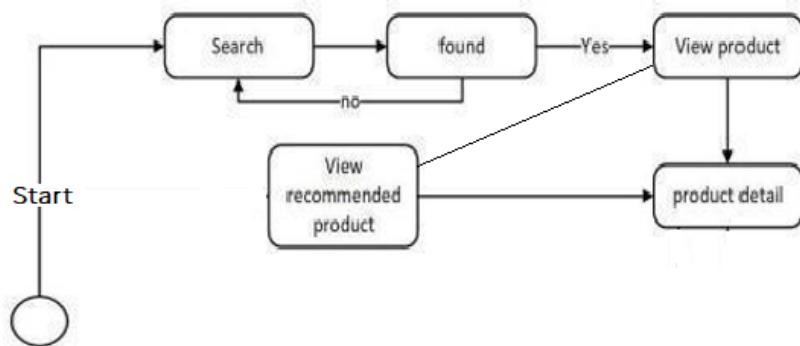


Figure 3.5: State Transition Diagram

Chapter 4

Characteristics of The Project

4.1 Advantages:

- It can recommend the gadgets with any key word related to product which user is wishing for.
- It can give extra information about the product by clicking on recommended card.

4.2 Limitations:

- It can't recommend the gadgets according to user's ratings given to the product.
- As the react app is just a showcase of recommendation engine working user can't buy the product.

4.3 Applications:

- Can be applied in e-commerce website which are concentrate on electronic products to enhance its business.
- Can recommend electronic gadgets like Laptops.

Chapter 5

Project Screen Shots

5.1 Front-end

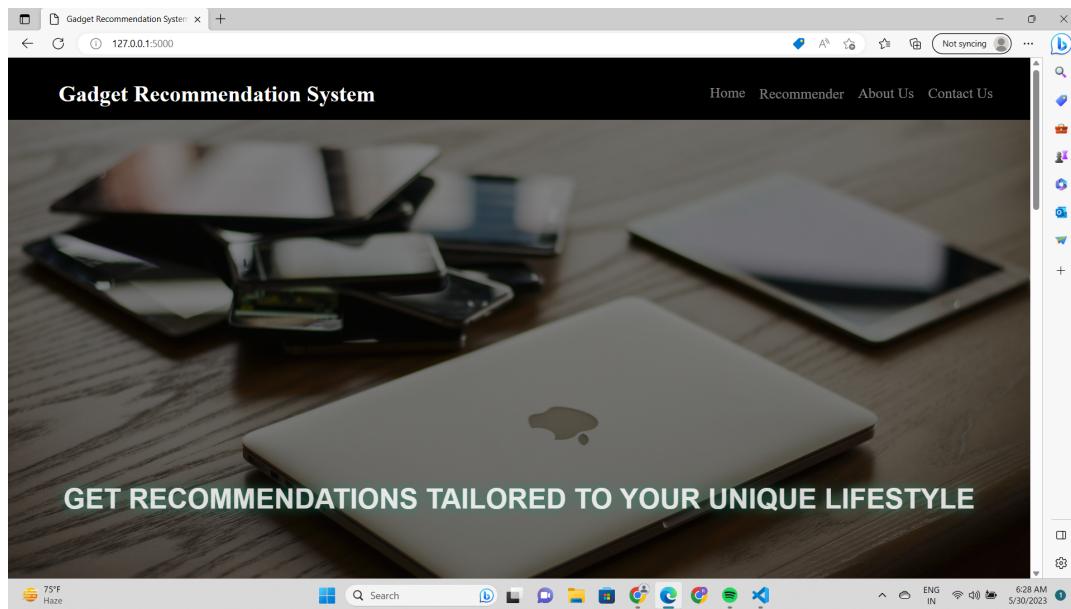


Figure 5.1: Home Page

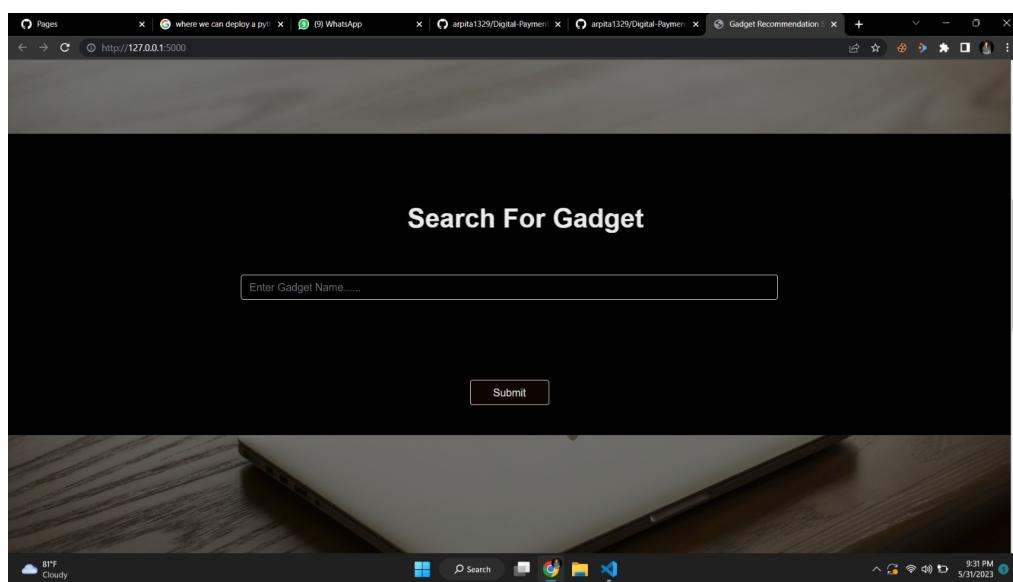


Figure 5.2: Recommender Page

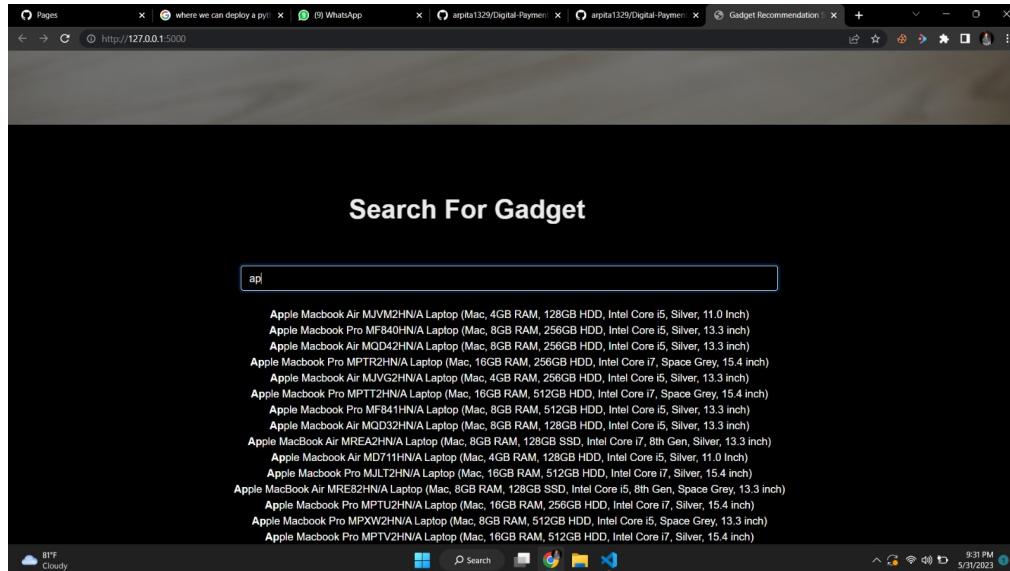


Figure 5.3: Search Bar(i)

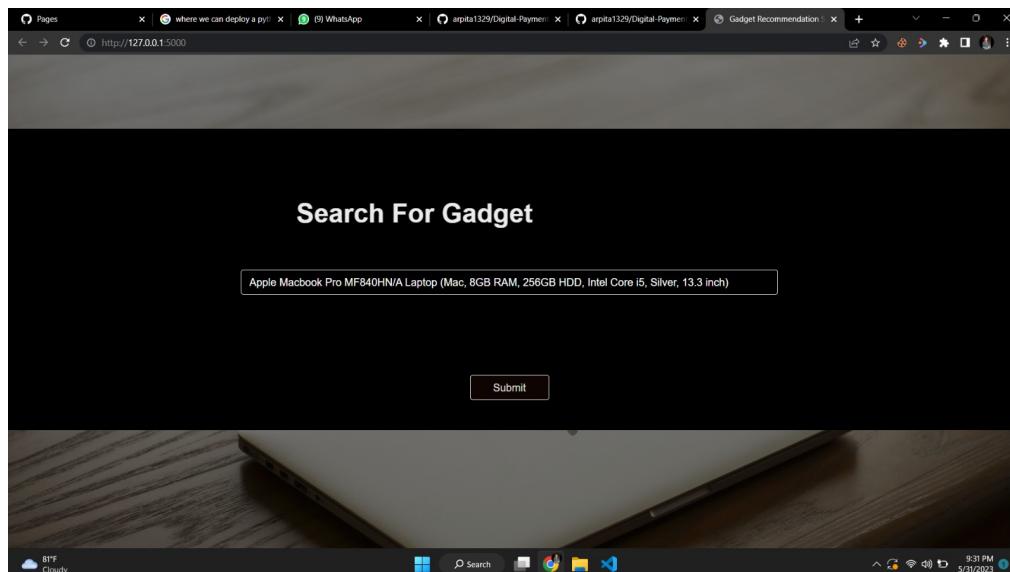


Figure 5.4: Search Bar(ii)

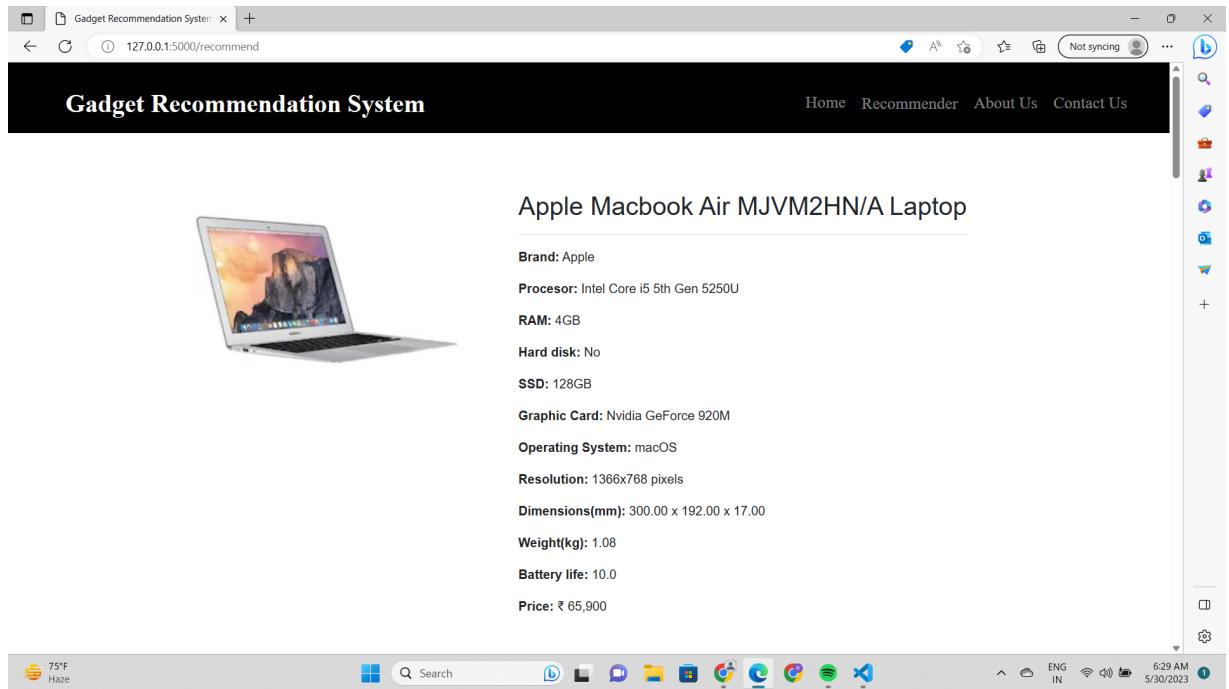


Figure 5.5: Searched Gadget

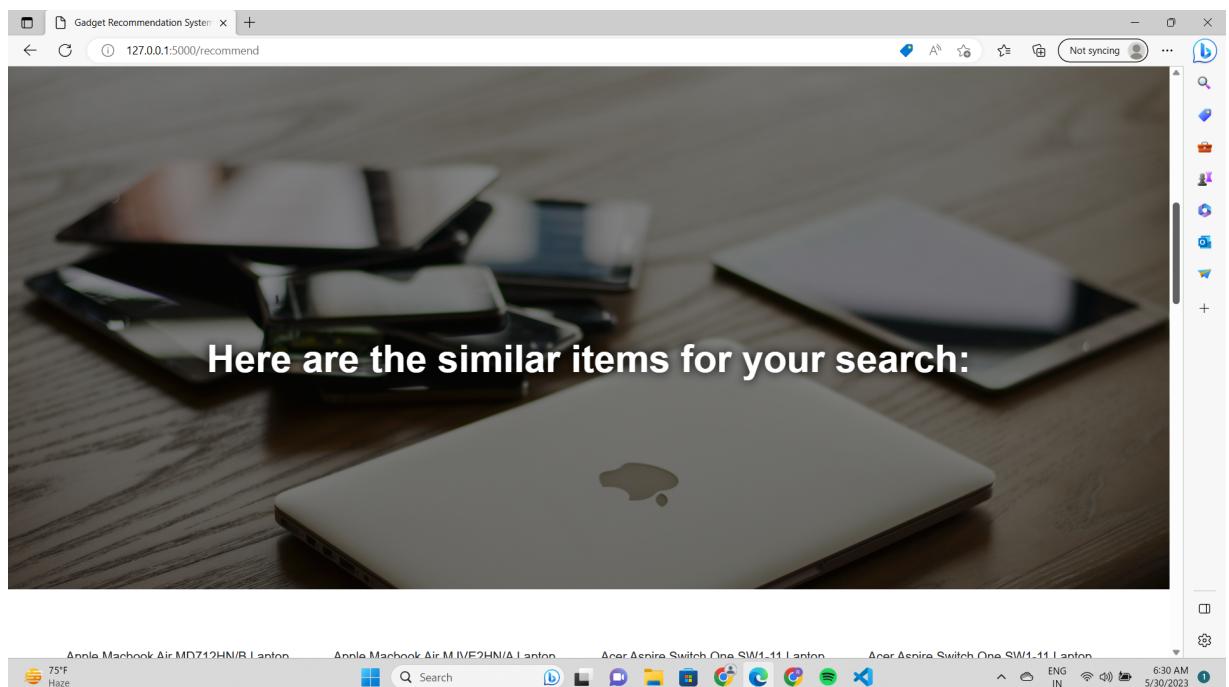


Figure 5.6: Recommended Gadgets(i)

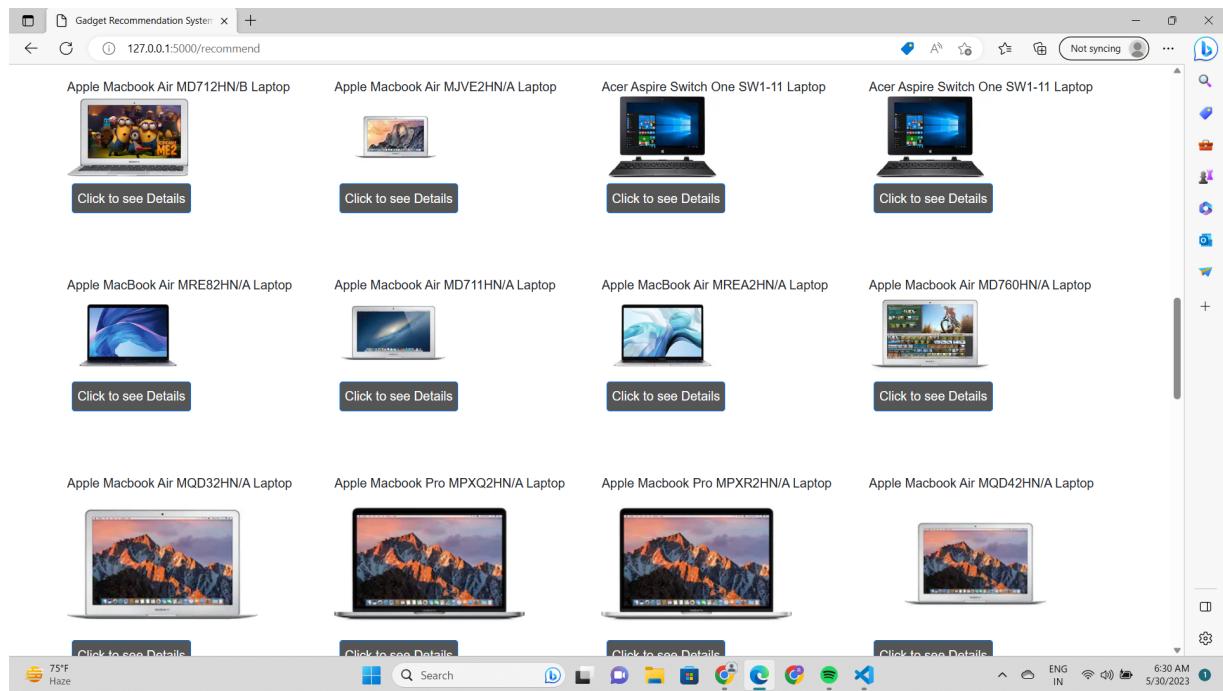


Figure 5.7: Recommended Gadgets(ii)

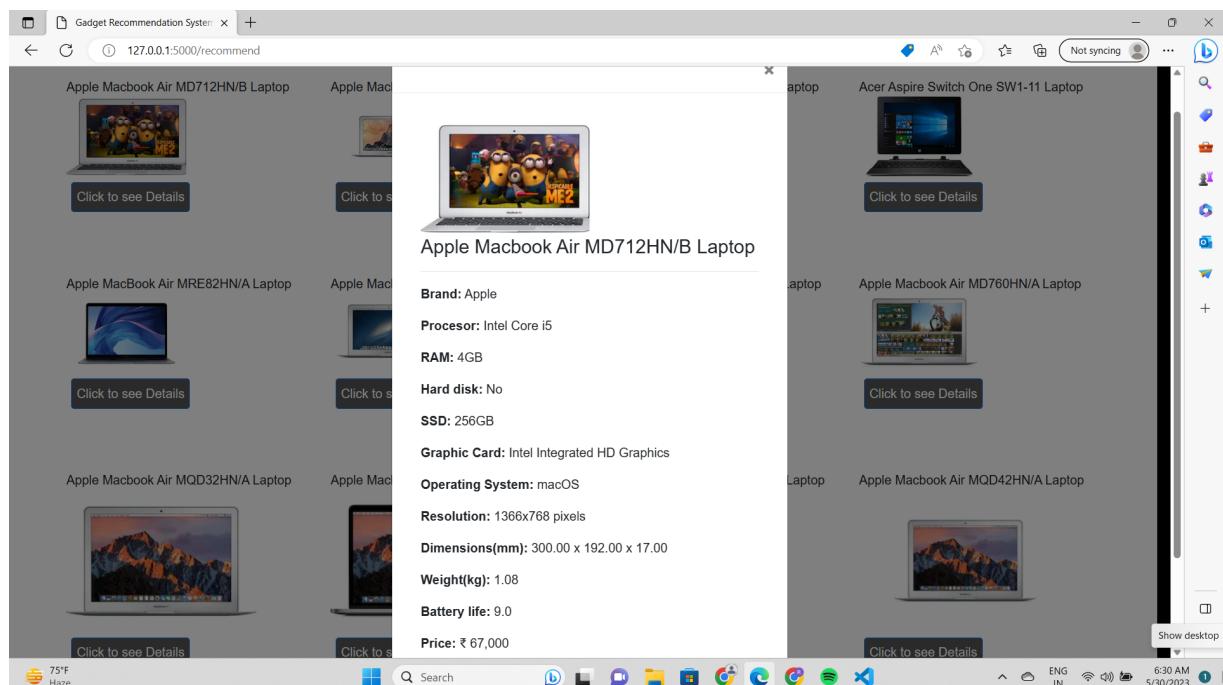


Figure 5.8: Gadget Details

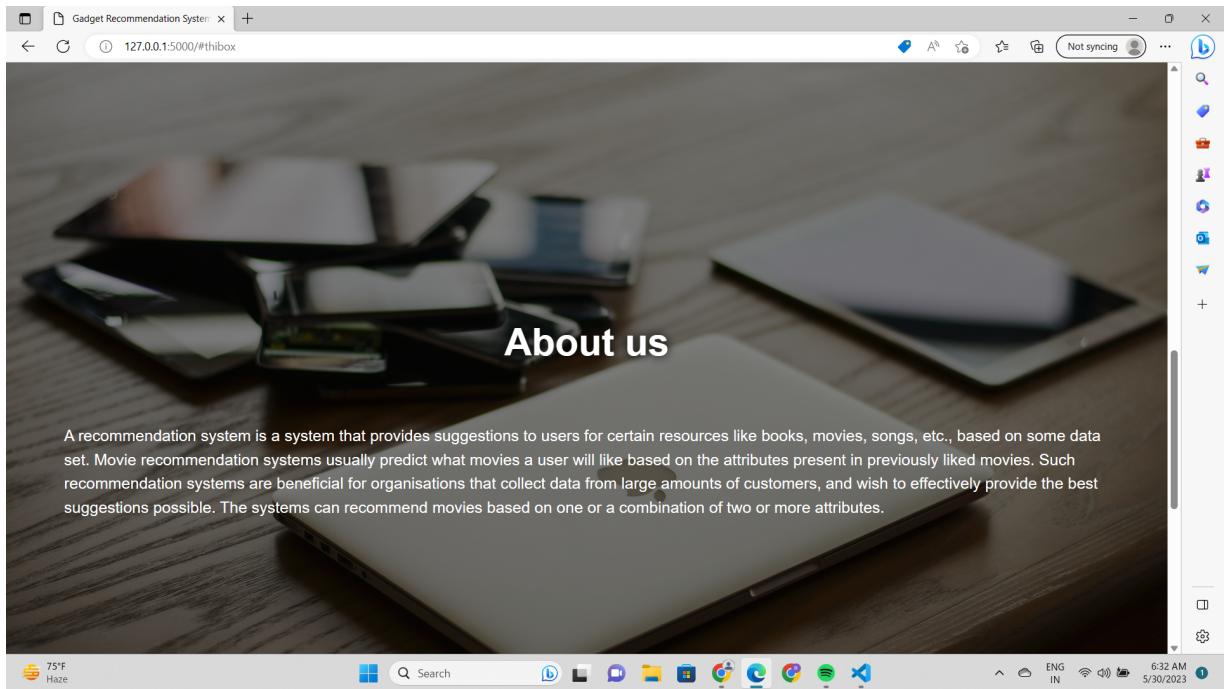


Figure 5.9: About Us

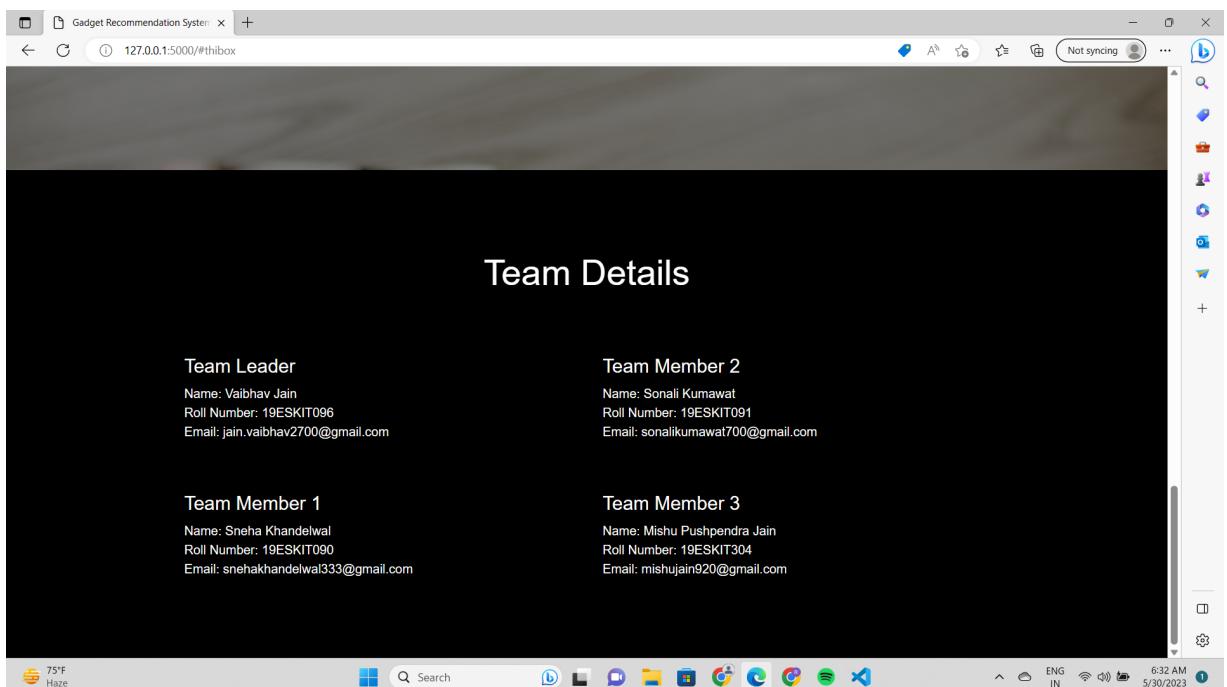


Figure 5.10: Contact Us

5.2 Back-end

The screenshot displays a Windows desktop environment. In the center, a browser window is open, showing a CSV file titled 'C.LAPTOPS.csv'. The CSV data is as follows:

Product	Image	Brand	Processor	RAM	Hard disk	SSD	Graphic card	Operating system	Resolution	Dimensions(mm)	Weight(kg)	Battery life	Price
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i5 5th	4GB	1TB	No	AMD Radeon R5	Windows 10 Hon	1920x1080 pixels	384.50 x 261.10 x	2.9	4	₹ 49,790
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i5 7th	16GB	2TB	No	Nvidia GeForce 9	Windows 10	1366x768 pixels	383.00 x 243.00 x	2.04	5	₹ 69,980
Asus R558UQ-DN	https://i.gadgets	Asus	Intel Core i5 7th	4GB	1TB	No	Nvidia GeForce 9	DOS	1920x1080 pixels	382.00 x 256.00 x	2.3	4.5	₹ 35,490
HP 240 G4 Laptop	https://i.gadgets	HP	Intel Core i3 5th	4GB	500GB	No	AMD Radeon R5	DOS	1366x768 pixels	345.40 x 241.50 x	1.9	3	₹ 27,500
Acer Aspire E E1-	https://i.gadgets	Acer	Intel Core i7 4th	4GB	1TB	No	AMD Radeon 87	Linux	1366x768 pixels	381.60 x 256.00 x	2.4	4	₹ 59,500
Dell Inspiron 300	https://i.gadgets	Dell	Intel Core i5 5th	4GB	1TB	No	Nvidia GeForce 8	Windows 10 Hon	1366x768 pixels	384.00 x 267.00 x	2.5	4	₹ 28,099
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i7 6th	4GB	1TB	No	Nvidia GeForce 9	Windows 10	1920x1080 pixels	383.00 x 243.00 x	2	3	₹ 72,500
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i5 7th	8GB	1TB	No	Nvidia GeForce	Windows 10 Hon	1366x768 pixels	383.00 x 243.00 x	2.04	9	₹ 56,950
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i7 7th	8GB	1TB	No	Nvidia GeForce 9	Windows 10 Hon	1920x1080 pixels	383.00 x 243.00 x	2.04	9	₹ 80,250
HP 15-AY00GTX L	https://i.gadgets	HP	Intel Core i3 5th	4GB	500GB	No	AMD Radeon R5	DOS	1366x768 pixels	384.30 x 254.60 x	2.19	6	₹ 35,799
Lenovo G50 45 L	https://i.gadgets	Lenovo	AMD APU Quad	8GB	1TB	No	AMD R5 M230	Windows 8.1	1366x768 pixels	384.00 x 265.00 x	2.5	4	₹ 17,990
HP 15-BA021AX	https://i.gadgets	HP	AMD APU Quad	4GB	1TB	No	Intel Integrated C	DOS	1366x768 pixels	384.30 x 254.60 x	2.19	4	₹ 32,490
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i7 6th	8GB	1TB	No	Nvidia GeForce	Windows 10 Hon	1920x1080 pixels	383.00 x 243.00 x	2	9	₹ 72,249
Acer Travel Mate	https://i.gadgets	Acer	Intel Core i5 7th	8GB	1TB	No	Nvidia GeForce 9	Windows 10 Prof	1366x768 pixels	381.60 x 259.00 x	2.2	8	₹ 42,900
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i5 6th	8GB	1TB	No	Nvidia GeForce 9	Windows 10 Hon	1366x768 pixels	384.50 x 261.00 x	2.09	4.5	₹ 59,190
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i5 6th	4GB	1TB	No	Nvidia GeForce 8	DOS	1366x768 pixels	384.30 x 254.60 x	2.19	5	₹ 43,690
Asus R558UQ-DN	https://i.gadgets	Asus	Intel Core i5 7th	4GB	1TB	No	Nvidia GeForce 9	DOS	1080x1920 pixels	256.00 x 382.00 x	2.1	4.5	₹ 40,999
Asus R558UQ-DN	https://i.gadgets	Asus	Intel Core i7 7th	8GB	1TB	No	Intel Integrated F	DOS	1920x1080 pixels	382.00 x 256.00 x	2.3	4.5	₹ 51,990
Asus R558UF-DN	https://i.gadgets	Asus	Intel Core i5 6th	4GB	2TB	No	Nvidia GeForce 9	Windows 10 Hon	1920x1080 pixels	382.00 x 258.00 x	2.3	4.5	₹ 44,390
HP 14-AC153TX L	https://i.gadgets	HP	Intel Core i3 5th	4GB	1TB	No	AMD Radeon R5	Windows 10	1366x768 pixels	345.40 x 241.50 x	1.94	4	₹ 35,999
HP Star Wars 15-	https://i.gadgets	HP	Intel Core i5 6th	8GB	1TB	No	Nvidia GeForce 9	Windows 10 Hon	1920x1080 pixels	384.50 x 261.10 x	2.09	4.5	₹ 63,899
HP 15-AY507TX L	https://i.gadgets	HP	Intel Core i5 6th	8GB	1TB	No	AMD Radeon R5	Windows 10 Hon	1366x768 pixels	384.30 x 254.60 x	2.19	9	₹ 47,500
Asus R558UF-DN	https://i.gadgets	Asus	Intel Core i5 6th	4GB	1TB	No	Nvidia GeForce 9	Windows 10 Hon	1920x1080 pixels	382.00 x 258.00 x	2.3	6	₹ 40,900
Acer Aspire E E5-	https://i.gadgets	Acer	Intel Core i5 7th	4GB	1TB	No	Intel HD Graphic	Windows 10 Hon	1366x768 pixels	381.60 x 259.00 x	2.2	5	₹ 26,980
HP Pavilion 15-A	https://i.gadgets	HP	Intel Core i3 5th	4GB	1TB	No	AMD Radeon R5	Windows 10 Hon	1366x768 pixels	384.30 x 254.60 x	2.19	4	₹ 38,900
Asus V540CA	https://i.gadgets	Asus	Intel Core i5 7th	4GB	500GB	Yes	Intel Integrated C	DOS	1366x768 pixels	291.00 x 357.00 x	2	4.5	₹ 30,000

Figure 5.11: CSV Data

Chapter 6

Conclusions

6.1 Conclusion

Machine learning techniques are used to gather and retain data about each device and user in order to establish a link between those users and the gadgets. A user preference technique was used in this work to pick gadgets. Thus, in the realm of personalized recommendation systems, the critical issue of determining what device users require to enhance and satisfy their specific needs from in-depth personalization services has been resolved. The findings indicate that a gadget suggestion system may significantly improve service quality. Electronic devices have become indispensable in meeting people's fundamental needs. Because of technological advancements, it is now important to meet various functional demands of end-users. As a result, it is critical to recommend devices to clients based on their unique preferences. With the fast advancement of technology, smart gadgets and communication networks have sprung up to cover every part of customer behaviour. These data may also be taught and modelled for future usage in order to deal with potential technological advances.

Chapter 7

Future Scope

- The model can also integrate the collaborative filtering approach.
- Furthermore the website can convert to mobile application and can use camera settings for image based recommendation.
- The audio processing can also be used to fetch the key words from audio and match the recommendations in the model.

References

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- [2] <https://indatalabs.com/blog/ai-based-recommender-system>
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