A PROJECT REPORT

on

"RECIEPE GENERATOR"

Submitted to
KIIT Deemed to be University

In Partial Fulfilment of the Requirement for the Award of

BACHELOR'S DEGREE IN
INFORMATION TECHNOLOGY

BY

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Anushka Baruah	2005438
Avin Pathak	2005795
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UNDER THE GUIDANCE OF
Prof (Dr.) Adyasha Dash

SCHOOL OF COMPUTER ENGINEERING
KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
BHUBANESWAR, ODISHA - 751024
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CERTIFICATE

This is certify that the project entitled

"RECIEPE GENERATOR"

submitted by

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is a record of bonafide work carried out by them, in the partial fulfilment of the requirement for the award of Degree of Bachelor of Engineering (Computer Science & Engineering OR Information Technology) at KIIT Deemed to be university, Bhubaneswar. This work is done during year 2022-2023, under our guidance.

Date: 06/ 05/ 2023

(Prof (Dr.) Adyasha Dash)
Project Guide

Acknowledgments

We are profoundly grateful to **Prof (Dr.) Adyasha Dash,**
of **Affiliation** for his expert guidance and continuous encouragement throughout
to see that this project rights its target since its commencement to its completion.

AADITYA RAJ
ANUSHKA BARUAH
AVIN PATHAK
PRATEEK SINGH

ABSTRACT

The goal of this Data Analytics-Minor project is to create a recipe generator that generates personalized recipe recommendations based on user input using HTML, CSS, and JavaScript. Data collection, preparation of a sizable dataset of recipes, feature selection, engineering for improved data performance and use of data analysis methods like exploratory data analysis are all part of the project.

Additionally, new recipe ideas will be generated by machine learning models based on the user's taste preferences, dietary needs and main recipe ingredient.
The project calls for designing and putting into use a user interface with a responsive front-end that can adjust to various screen sizes and devices. The project's goal is to show that you understand data analysis methodologies.

Keywords: HTML, CSS, JavaScript,Data,Machine Learning.

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Chapter 1

Introduction

The goal of this data analytics side project is to create a recipe generator that uses machine learning algorithms and data analytics to generate personalised recipe suggestions based on user preferences and ingredient availability. In order to provide customers with recipe suggestions, the project will require developing an interface utilising HTML, CSS, and JavaScript that will enable them to enter their dietary restrictions, taste preferences, and available items. A vast collection of recipes will be analysed by the back-end system using data analysis techniques in order to produce personalised suggestions using machine learning models. The study will also investigate the precision and efficacy of using computer vision and natural language processing techniques to recognise items and recipe instructions. By the end of the project, we aim to demonstrate proficiency in data analytics techniques, machine learning algorithms, and web development skills while addressing a practical problem.
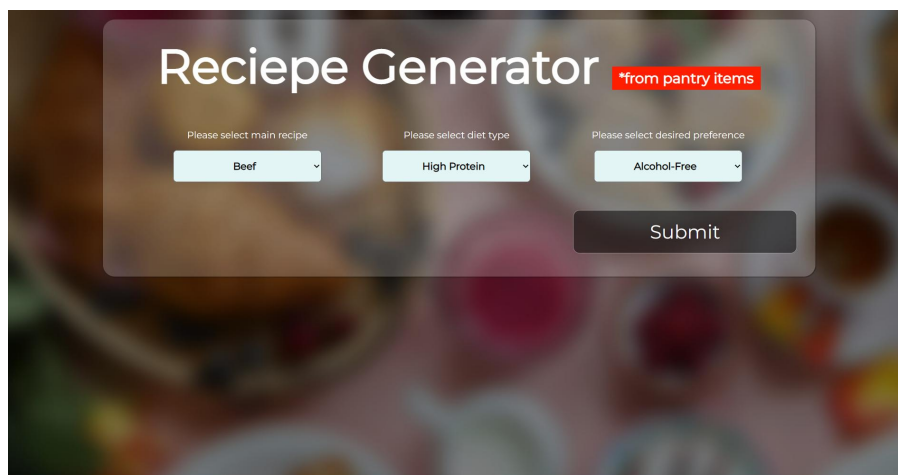

Figure 1.1: LANDING PAGE

Chapter 2

Literature Review

As there has been a rise in the demand for quick and simple meal solutions, recipe generators have become more and more common. Online and through mobile apps, there are a lot of recipe generator programmes available. Based on user input, these applications generate personalized meal suggestions using data analysis and machine learning algorithms.

When it comes to the development of recipe generators, HTML, CSS, and JavaScript are frequently used to make the front-end user interfaces for these programmes. Large data-sets containing recipe information and other important elements, such user preferences and dietary constraints, are analysed using data analytic techniques.

2.1 Recipe Generator-Concept

A web-based application that users can visit to search for recipes based on their tastes and available ingredients is the basic development concept of a recipe generator. A responsive user interface would be created using HTML, CSS, and JavaScript on the front-end side. Users would be able to input their preferences, dietary restrictions, and available ingredients through the interface.

The back-end system would process these inputs and depending on the findings of the data analysis, it would then recommend recipe possibilities to users. Overall, the development concept of a recipe generator involves gathering data, creating effective data analysis algorithms, and designing a responsive front-end that provides users with practical and accurate recipe recommendations.

Chapter 3

Problem Statement & Requirement Specifications

3.1 PROBLEM STATEMENT

Developing and implementing a recipe generator that provides personalized and diverse recipe recommendations based on user preferences and dietary requirements. The system should be easy to use and provide clear instructions for creating high-quality meals.

3.2 REQUIREMENT SPECIFICATIONS

3.2.1 User Interface:

The user interface should be intuitive and easy to use, allowing users to search for recipes based on ingredients, dietary restrictions, and cuisine types. The UI should also provide clear instructions for creating each recipe, including preparation and cooking times, as well as nutritional information.The design should be responsive, working equally well on desktop and mobile devices.

3.2.2 Database:

The database should contain a wide range of recipes, with accurate ingredient lists and step-by-step instructions. The database should also include nutritional information for each recipe, as well as information on dietary restrictions and cuisine types.

3.2.3 Recommendation System:

The recommendation system should use data analysis techniques to provide personalized recipe suggestions based on user preferences and dietary restrictions. The system should be able to learn from user feedback, improving the quality and relevance of its recommendations over time.

3.2.4 **Natural language processing:**

The system should incorporate natural language processing techniques to provide an engaging user experience, allowing users to interact with the system in a conversational manner.

3.2.5 **Performance:**

The system should be designed to handle a large volume of users and provide fast response times, ensuring a smooth user experience.
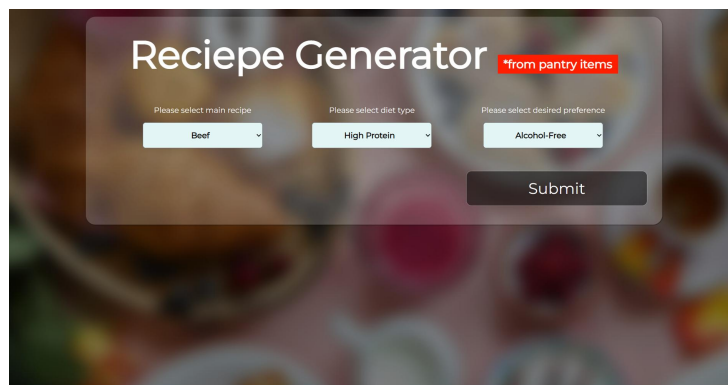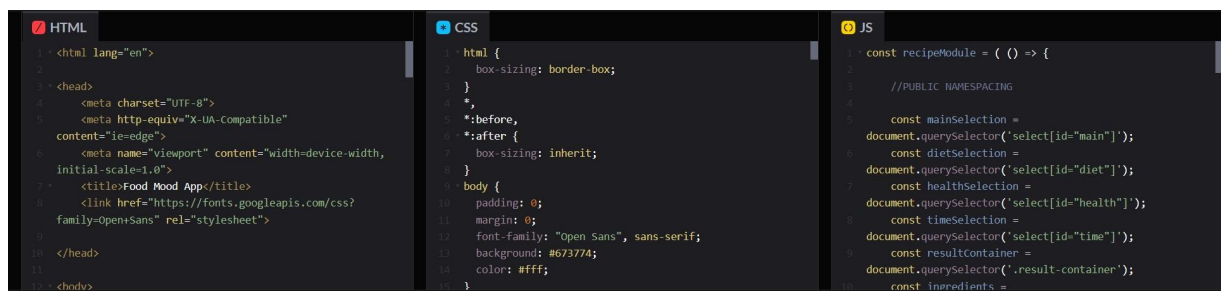
3.3 **DESIGNS**
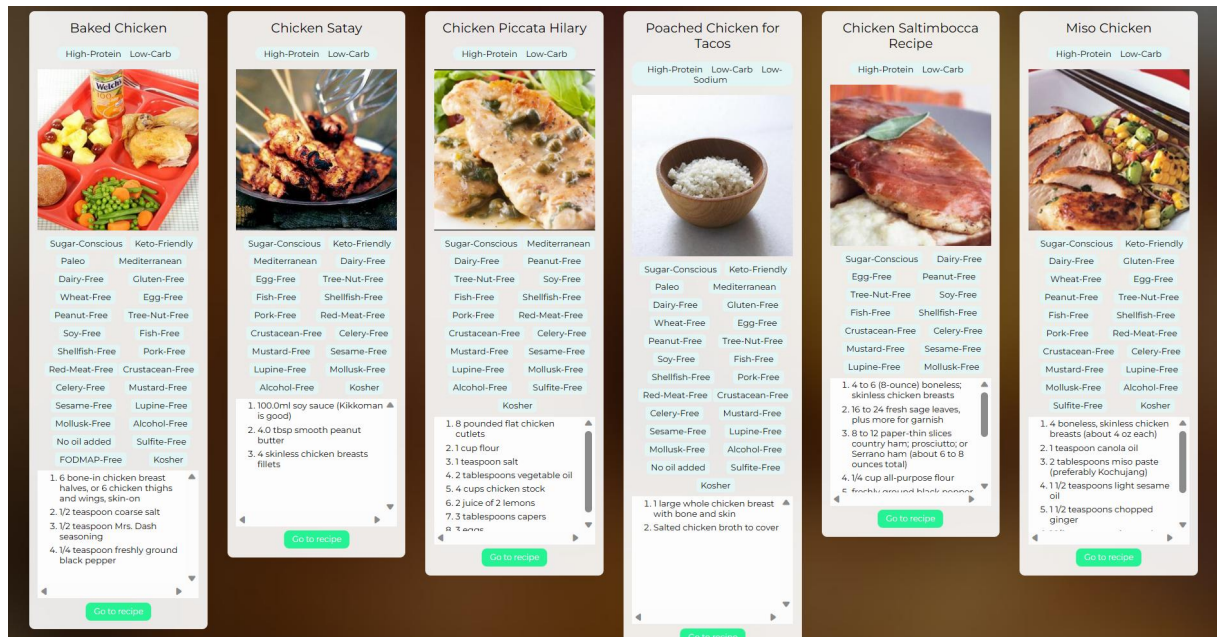

Figure 3.1: LANDING PAGE

Figure 3.2: CODES

Figure 3.3: RECIPES (output)

Chapter 4

Methodology

4.1 Methodology

The following steps can be used to breakdown the approach for creating a Recipe Generator utilizing HTML, JavaScript, CSS and Data Analysis:

4.1.1 Requirements Gathering

- Decide what the recipe generator's users will need, including the features and functionality that will make for a pleasant and individualized experience.

4.1.2 Data Collection

- Assemble a vast database of recipes that includes the ingredients, nutritional facts, and dietary requirements.

- Clean up and pre-process the data to guarantee accuracy and consistency.

4.1.3 Data Analysis

- Utilise data analysis tools to glean pertinent aspects from the dataset, such as user preferences, recipe popularity, and ingredient similarity.

4.1.4 Recommendation System

- Implement a recommendation system that makes use of the data analysis to offer customers customised recipe recommendations based on their preferences and dietary requirements.

4.1.5 **User interface Design**

- Create a user-friendly user interface with HTML, JavaScript, and CSS that enables users to interact with the programme and find recipes that suit their requirements.

4.1.6 **Natural Language Processing**

- Use natural language processing tools to enable conversational user interaction with the system, which will make it more appealing and user-friendly.

4.1.7 **Security and Performance:**

- To ensure a positive user experience, make sure the system is secure, scalable, and capable of handling a large number of users.
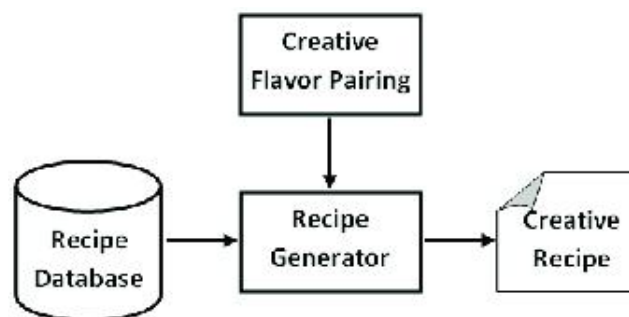
Figure 4.1 : ARCHITECTURE

Chapter 5

Standards Adopted

When preparing a project on Recipe Generator, there are a number of standards that should be upheld. These criteria include:

5.1 Design Standards

- The system should be created with easy-to-use navigation and user-friendly instructions. To make sure the system is simple to use, usability testing should be done.

5.2 Coding Standards

- The system's code should be well-structured and easy to maintain, according to best practises including uniform naming standards, code commenting, and version control.

5.3 Compatibility Standards

- By employing best practises like responsive design, new web standards, and platform testing, the system should be created to be compatible with a wide range of browsers and devices.

5.4 Privacy Standards

- The system should be created using best practices including data encryption, data anonymization and data minimization in order to safeguard user data and preserve user privacy.

Chapter 6

Conclusion and Future Scope

6.1 **Conclusion**

In order to create a highly personalized and engaging platform that makes food recommendations based on user preferences and dietary constraints, the recipe generator project is a challenging but exciting opportunity. The system may provide an intuitive user interface, a comprehensive and accurate recipe database, a personalized recommendation system, natural language processing, security and performance by utilizing HTML, JavaScript, CSS and Data Analytic techniques. The outcome would be a useful tool for consumers wishing to discover new recipes and prepare delicious meals that are customized to their specific requirements and preferences.

6.2 **Future Scope**

6.2.1 **Integration with smart home devices:**

- In the future, voice commands could be used by users to manage cooking times and temperatures on the recipe generator and other smart home appliances like voice assistants or smart ovens.

6.2.2 **Social media integration:**

- Users would be able to share recipes with their friends and family and get advice from others by integrating the system with social media sites.

6.2.3 **Health monitoring:**

- Incorporating the system with wearable health monitoring devices will enable users to monitor their calorie and nutritional intake as well as get individualised suggestions depending on their health objectives.

6.2.4 **Integration with E-Commerce platforms:**

- Users will be able to buy ingredients straight from the app, thanks to the system's integration with e-commerce sites.

6.2.5 **Augmented reality:**

- The system might incorporate augmented reality technology, enabling users to see virtual representations of their finished food and step-by-step instructions superimposed over their workplace.

References

[1]Kaggle - Recipe dataset for data analysis: https://www.kaggle.com/shuyangli94/food-com-recipes-and-user-interactions.

[2] FreeCodeCamp: https://www.freecodecamp.org/news/how-to-build-a-recipe-search-app-using-html-css-and-javascript/

[3] Python for Data Analysis: https://www.oreilly.com/library/view/python-for-data/9781491957653/

[4] github.com.

[5] tutorialpoint.com.

[6] Javapoint.com.

INDIVIDUAL CONTRIBUTION REPORT:

RECIPE GENERATOR

PRATEEK SINGH
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Abstract: The goal of this Data Analytics-Minor project is to create a recipe generator that generates personalized recipe recommendations based on user input using HTML, CSS, and JavaScript. Data collection, preparation of a sizable dataset of recipes, feature selection, engineering for improved data performance and use of data analysis methods like exploratory data analysis are all part of the project.

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The project calls for designing and putting into use a user interface with a responsive front-end that can adjust to various screen sizes and devices. The project's goal is to show that you understand data analysis methodologies.

Individual contribution and findings: As the student responsible for creating the PowerPoint presentation and report for our group's project on Recipe Generator, my contributions focused on compiling and organizing our team's findings into a clear and concise format. To begin, I worked closely with each team member to collect their research and findings related to our project topic. I then compiled this information into a share document, which allowed us to collaborate and refine our ideas together. Once we had a clear plan in place, I began working on PowerPoint presentation. I designed each slide to showcase our project's features and benefits, ensuring that the content was engaging and easy to understand. I also incorporated visual aids, such as screen shots and diagrams to illustrate our points.

Individual contribution to project report preparation: I was in charge of writing numerous sections of the report. In order to make sure the report was well-organized and presented our findings in a logical order, I also assisted in editing and refining the text submitted by my classmates.

Individual contribution for project presentation and demonstration: I was essential in getting our group's message across to the audience during the project presentation and demonstration. I was in charge of introducing the PowerPoint slides I had made and guiding the audience through each function of our Recipe Generator.

Overall, my contributions to this project were focused on compiling and presenting our team's research in a clear and engaging way. By working closely with my peers and taking on a leadership role in the project presentation, I was able to contribute to the overall success of our project.

Full Signature of Supervisor: Full signature of the student:

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INDIVIDUAL CONTRIBUTION REPORT:

RECIPE GENERATOR

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2005438

Abstract: The goal of this Data Analytics-Minor project is to create a recipe generator that generates personalized recipe recommendations based on user input using HTML, CSS, and JavaScript. Data collection, preparation of a sizable dataset of recipes, feature selection, engineering for improved data performance and use of data analysis methods like exploratory data analysis are all part of the project.

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The project calls for designing and putting into use a user interface with a responsive front-end that can adjust to various screen sizes and devices. The project's goal is to show that you understand data analysis methodologies.

Individual contribution and findings: As a member of the project group, my role involved designing the HTML and CSS code. I began by researching and comparing various machine learning models to determine which would be best suited for our project goals. I analyzed the performance of each model by conducting experiments and evaluating the results. Additionally, I collaborated with other team members to optimize the code . To ensure efficient planning, I established time lines and milestones for completing the HTML and CSS code and evaluation phase of the project.

I communicated regularly with other team members to ensure that we were all on the same page and working towards the same goals. During this process, I gained valuable technical knowledge . Through my contributions, the team was able to make informed decisions and achieve the desired project outcomes. Overall, my experience of designing the HTML and CSS code has provided me with a solid foundation , which I will continue to build upon in my future studies and career.

Full Signature of Supervisor: Full signature of the student:
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INDIVIDUAL CONTRIBUTION REPORT:

RECIPE GENERATOR

AVIN PATHAK
2005795

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Individual contribution and findings: As a member of the project group, my role involved designing the java-script code. I began by researching and comparing various machine learning models to determine which would be best suited for our project goals. I analyzed the performance of each model by conducting experiments and evaluating the results. Additionally, I collaborated with other team members to optimize the code . To ensure efficient planning, I established time lines and milestones for completing the javascript code and evaluation phase of the project. I communicated regularly with other team members to ensure that we were all on the same page and working towards the same goals. During this process, I gained valuable technical knowledge.

Through my contributions, the team was able to make informed decisions and achieve the desired project outcomes. Overall, my experience of writing the javascript code has provided me with a solid foundation , which I will continue to build upon in my future studies and career.

Full Signature of Supervisor: Full signature of the student:
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