FOOD4U-THE RECIPE IDENTIFIER

A MINI-PROJECT REPORT

Submitted by

SAKAMURI ANILA CHOWDARY (11152014130)
SHAIK SAMEEHA TABASSUM (11152014141)
SANGANA SWARNA(11152014132)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

R.M.D. ENGINEERING COLLEGE

(An Autonomous Institution)

KAVARAIPETTAI – 601 206
ANNA UNIVERSITY: CHENNAI 600 025

NOVEMBER 2022

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report " **FOOD4U-THE RECIPE IDENTIFIER"** is the bonafide work of **"SAKAMURI ANILA CHOWDARY (111520104130), SHAIK SAMEEHA TABASSUM (111520104141), SAGANA SWARNA(111520104132)"** who carried out the project work under my supervision.

SIGNATURE

Dr.P.Ezhumalai M.Tech, F.I.E, Ph.D.,

HEAD OF THE DEPARTMENT
Department of CSE,

R.M.D Engineering College

R.S.M. Nagar,

Kavaraipettai–601206

SIGNATURE

Ms.S.Geetha Priya, M.E

SUPERVISOR
Department of CSE,

R.M.D Engineering College

R.S.M. Nagar,

Kavaraipettai –601206

VIVA – VOCE EXAMINATION

The Viva – Voce Examination of the following students who have submitted this project work is held on.....

SAKAMURI ANILA CHOWDARY	**111520104130**
SHAIK SAMEEHA TABASSUM	**111520104141**
SANGANA SWARNA	**111520104130**

INTERNAL EXAMINER **EXTERNAL EXAMINER**

ACKNOWLEDGEMENT

It is our immense pleasure to express our deep sense of gratitude to our Chairman **Thiru R. S. MUNIRATHINAM** , our Vice Chairman **Thiru R.M.KISHORE**, our Director **Thiru R. JOTHI NAIDU**, and our Secretary **Thiru YALAMANCHI PRADEEP**, for the facilities and support given by them in the college.

We are extremely thankful to our principal **Dr. N. ANBUCHEZHIAN, B.E., M.S., M.B.A., M.E., Ph.D.,** for having given us an opportunity to Serve the purpose of education.

We take this opportunity to give profound and heartfelt thanks to the Dean-of Research **Dr.K.K.THYAGHARAJAN B.E., M.E., Ph.D.,** for their continuous support in the successful completion of this project.

We are indebted to **Dr.P.EZHUMALAI B.E., M.Tech., F.I.E., Ph.D.,** Professor and the Head of the Department of Computer Science and, Engineering or his valuable guidance and useful suggestions during the course of the project.

We are thankful to our project supervisor Ms.S.Geetha Priya, M.E Assistant Professor**,** Department of Computer Science and Engineering, R.M.D Engineering College for her helpful guidance and valuable support is given to us throughout the project.

ABSTRACT

In — Today's world, many people don't know how to cook. It is difficult for many people to rely on others to learn how to cook. In this hustle life, it is difficult to find someone who is willing to teach others about cooking. Everyone is involved in their respective jobs allocated. These days, the Usage of websites is the most common thing. In this snowballing society, people find it hard to cook food with the limited ingredients they have. Others face difficulty in finding the recipe that suits their health condition. Using the most popular technology among the common people and using it to satisfy their basic needs would be magnificent. Not all websites need to have a proper net connection. Some apps work offline too. Many technologies could be implemented and we can develop a new efficient website that has all the mentioned requirements. We have designed a website that includes a lot of features that are all required to cook food at the home. People now not needed to worry about cooking. With our website, people can easily prepare desired unique dishes that assure the quality of ingredients, and food as well.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER - 1 INTRODUCTION

OBJECTIVE

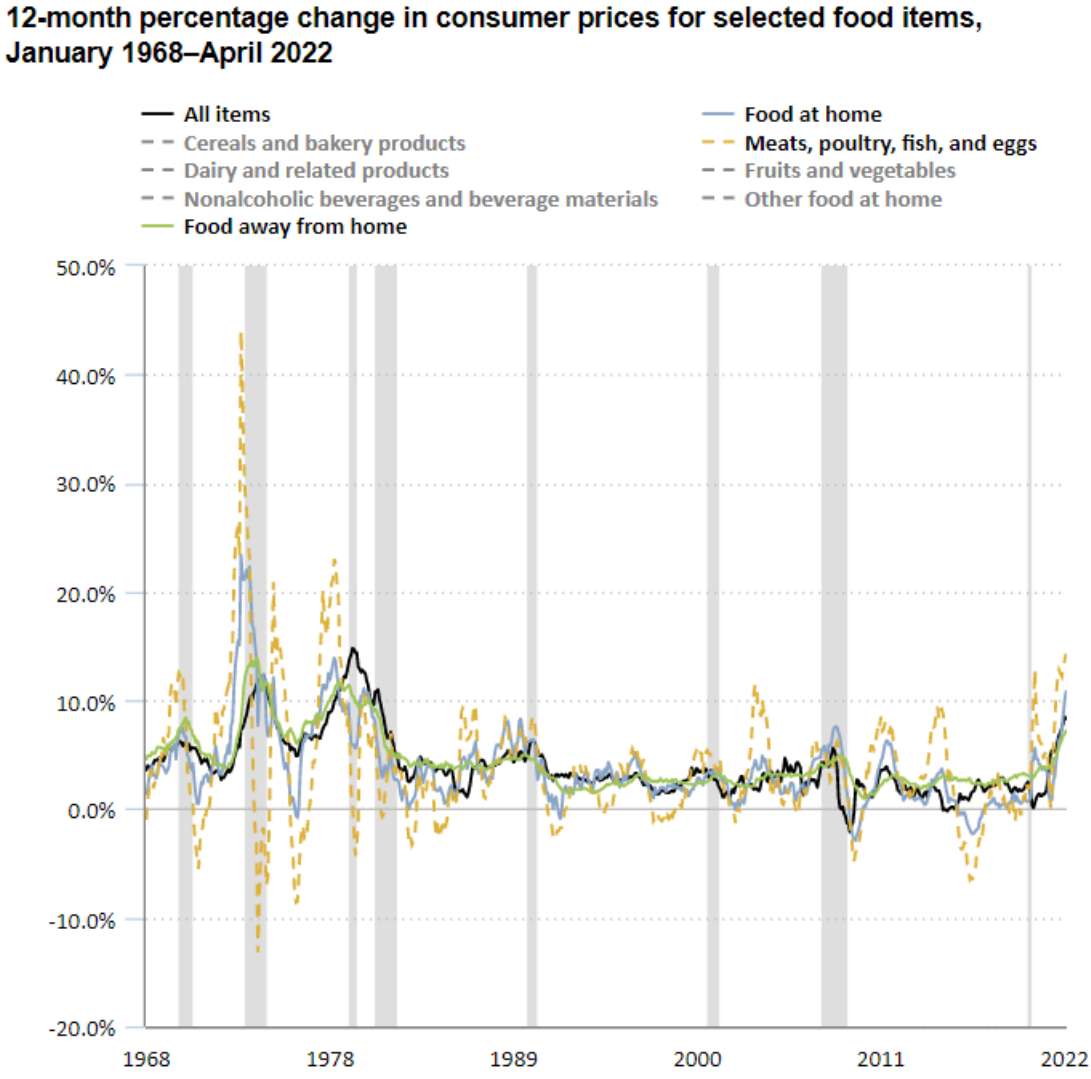
Food is a need for the survival of a specie. There is no life without food. There are many types of food around this world. Different people have different tastes. Even there is a specific food that belongs to a particular culture. There are various categories of food like spice food, vegan food, non-veg food, etc. Our world is growing fast. Our technology is expanded. We have tremendous technologies to know the place where the desired food is available, How to buy the Food, Where to buy it, and How much it costs too. But we find that the living expenses of the current world have grown rapidly. Living expenses in this world nearly increased by 11.1% in 40 past years.

We have different apps for different reasons. We have apps for buying food where the food directly approaches you by the delivery person. You may be given eye-satisfying offers in those kinds of apps. But actually, the offers are just to attract customers. They may give you an offer but the cost of it would surely be lower than how much it actually costs. We cannot give assurance for the quality of food too. We do not know what brand of oil is being used or if the quality of the vegetables is fine. There are many restaurants that are being closed by officials of health organizations due to poor maintenance and quality.

Of course, there are considerable cons of buying the food outside but when compared to making the food on your own hits are different. Buying food outside either by using apps or getting it directly from a store really costs high. There is a need for food that fits in their pocket. The food production rates increased by 8.3% from 1980[6]. Since the production rates were being increased, the cost of making a dish in a restaurant would also cost you high. There are many things that common people cannot afford. It’s okay if we want to get food from outside occasionally.

But, it is not really fine if you just get your food daily from restaurants which may affect your health too. With a small effort which includes your interest, you can prepare your own food. Which may be a passion for some people.

1.1. Graph of the increased cost of productions



Nowadays, our education system's subjects are vast. There are a lot of subjects to be learned even for small kids. Every student including kids of 1-5 years is getting busy with their homework who are trying to compete with the running world of technology. Everyone is busy learning subjects that are related to their professional careers. But sadly people are forgetting to just have a glace about the things that are essential to our life. This includes cooking too.

Many people around this Gen-Z world don’t know how to cook. Some of them don’t even know how to cut a vegetable. It’s really hard for the one who doesn’t know how to cook.

Since many people don’t know to cook them in a proper way they keep on wasting food. The ingredients of the dish will be wasted by many since they don’t know how to cook them in a proper way. because of this, a lot of production is being wasted annually.

If someone who doesn’t know how to cook food is expecting help from others then sure, the wait would go in vain. The people are involved in their busy schedules. Nowadays no one is finding time to involve in others’ work. Everyone has a lot of growth stress. So, we cannot depend on someone else for learning how to cook. It’s their own responsibility to learn how to cook. There are many apps like YouTube where there are many learning videos but you need to have a proper net connection for that. And, also it cannot show the dish that you want to make with the specified ingredients that you have.

By considering all the things, If you find something that is affordable and trustworthy to learn cooking is a website that is free. We can use the latest technology to satisfy our needs. We can design a website that works offline. If we have this feature on the website then we can learn cooking food easily. This will guide you on how to prepare a dish, what ingredients require, and what are tips can be followed in the kitchen.

A website can be built using the languages like HTML, CSS, and JavaScript. We can use the framework called bootstrap for the smoother use of the website on mobile too. Hence, our app could be used on both laptops and mobile. This could be a dynamic website as well. But for smoother performance, a static website is preferred. We have even used the Vanilla JavaScript frameworks then and there this could give us the light weighted website.

The famous languages that require are Html and CSS for building a website. They are the basic frameworks that are required. Html is the Hyper Text Markup Language a standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages. The CSS is Cascading Style Sheet. This is used to style the page looks.

CHAPTER -2
LITERATURE SURVEY

SURVEY OF PAPERS

1.

TITLE	Clustering for Similar Recipes in User-generated Recipe Sites based on Main Ingredients and Main Seasoning
AUTHOR	Akiyo Nadamoto, Shunsuke Hanai, Hidetsugu Nanba, IEEE
YEAR	2016

DESCRIPTION

In this paper, the author is saying about the current scenario that a majority of folks frequently use websites with user-generated recipes when making meals. On recipe websites, users search for recipes for their meals. However, when they search for a recipe using the name of an ingredient, they come across a massive amount of pages that are either duplicates or strangely identical. In addition, a user who searches for a recipe often does not choose a recipe that ranks highly in the search results, responding better than one might with typical web searches. It seems tough for people to compare different recipes because there are so many similar recipes included in the search results. Users need to better understand the differences between comparable recipes when they compare them. Users must bear a heavy burden because of this demand for comparison. As a result, users would benefit from a system that instantly categorizes search results based on pages that are related to the user's search terms. So, we suggest a clustering method for user-generated recipe sites based on page structure, the main ingredient, and the main seasoning of the food. It offers a way to group similar pages in the user search results. The outcomes of the experiment demonstrate the positive aspects of our proposed methodology, which groups similar recipes based on their main ingredient and main seasonings.

2.

TITLE	Cooking Video Summarization Guided By Matching with Step-By-Step Recipe Photos
AUTHOR	Ryo Sobue, IEEE
YEAR	2019

DESCRIPTION:

In this paper, the author used useful search methods for locating recipes from big recipe databases. The search method requires a structured query that specifies the necessary data as well as restrictions on how browsing processes must be arranged. By adding indexing structures designed to meet information search requirements based on recipes, we enhance explicit state representation-based model verification techniques.

If the needed information is dispersed across several websites, searching for it online might be difficult. For instance, assembling the list of recent journal publications of the ICWS track chairs with the aid of existing search engines is still a time-consuming operation, despite the existence of pages listing track chairs of the previous ICWS conferences and web-accessible bibliography databases. The Deep Web makes it even more difficult to access content since it necessitates user interactions that are challenging for automated crawlers to replicate.

Semantic search using structured data aims to effectively address information needs, but it depends on provider collaboration to have access to their data. By offering online browsing recipes—goal-oriented end-user browsing routines that In this paper, they suggest a useful search method for locating recipes from big recipe databases. Our search method requires a structured query that specifies the necessary data as well as restrictions on how browsing processes must be arranged. By adding indexing structures designed to meet information search requirements based on recipes, we enhance explicit state representation-based model verification techniques.

3.

TITLE	Ingredient/Recipe Algorithm using Web Mining and Web Scraping for Smart Chef
AUTHOR	Shilpa Chaudhari, Aparna R, Vinay G Tekkur, Pavan G L, and Shreekanth R Karki,IEEE
YEAR	2020

DESCRIPTION:

In this paper, a method is proposed for web scraping to extract all recipe information and for Python and MongoDB to search for recipes that include the desired ingredient. Using the Python scrappy module, web scraping retrieves a web page's contents and creates a database of those contents in the MongoDB format. This database is utilized for more study on the smart chef application for healthy diet dishes of various kinds. For smart chefs who want to live healthy lives by preparing a range of dishes, a web and mobile app has been created. It will help those who consume diet food in accordance with the ingredients rules. Asking a chef to prepare a variety of foods in accordance with a diet plan is challenging. There are numerous recipes available online, encouraging cooks to produce them without understanding the adverse effects and ingredient proportions of their diet. Additionally, it is still difficult to identify all recipes that use a particular item

4.

TITLE	Efficient Search for Web Browsing Recipes
AUTHOR	Martin Junghans, Sudhir Agarwal,IEEE
YEAR	2013

DESCRIPTION:

Users may quickly grasp the cooking process by watching cooking videos posted on social media. Such summarizing videos are hard to make, however, as high-quality content demands experience in video editing. In this article, they suggest a semi-automatic technique for summarizing cooking videos using an entire video of the cooking

process and a number of step-by-step recipe images. Anybody can produce shareable cookery videos. Because the recipe photographs on internet recipe websites effectively describe the steps involved in meal preparation, we concentrate on them. Using characteristics of an Inception Net that have been tuned to recipe photos, this system initially searches for scenarios that are similar to each recipe image. These matches are then used as potential key frames from which consumers can choose their preferred scenes. Finally, utilizing automatic editing techniques like speeding up, this system produces a shortened video. High levels of satisfaction among editors and viewers were shown in user studies, highlighting the advantages of the suggested system.

5.

TITLE	Extraction of Preference of Recipe Providers and Users on Recipe-Sharing Websites
AUTHOR	Mamoru Emoto, IEEE
YEAR	2015

DESCRIPTION:

The expansion of the Internet gives us quick access to information and approaches for market analysis are being suggested. The method described in this paper leverages Key Graph to extract and visualize preferences from data on a recipe sharing website, allowing us to understand user preferences and identify business prospects. Additionally, a number of analyses are performed to rate the suggested approach. On the basis of understanding the network structure that Key Graph produces, which expresses relationships between nodes, numerous theories concerning users' preferences are developed. Two analyses are performed here to assess the method's validity. One technique uses data from Google Trends to discover periodic variation, and the other uses POS analysis. The outcomes demonstrate the method's potential for preference extraction.

CHAPTER 3

SYSTEM ANALYSIS

3.1 Proposed System:

In our proposed system, we mostly concentrated on the individuals who are having trouble cooking with the ingredients that are readily available to them. The Project is composed of six distinct features.

- Search by ingredient
- Search by recipe
- Tips and Tricks
- Health Consciouness
- Bookmarks
- Notes

***SEARCH BY INGREDIENT*:**

On this page, the recipe can be searched using the provided ingredient in the search bar. A variety of recipes are presented to them based on the ingredient they have been given. Each dish includes information about how to prepare the food, a balanced diet, and calories. We must select a certain recipe from the variety of recipes, and it will then navigate to another page that will explain the recipe to us in clear and detailed terms. The recipe is also available on YouTube, where they are demonstrated graphically before being used to make delicious food.

***SEARCH BY RECIPE*:**

We are aware of the delicious foods we should eat, but we are unaware of the ingredients and other items that should be included. Simply entering the recipe's name in the search bar will provide several recipes for us to choose from. Then, after selecting a specific recipe, we'll give you the calories, a balanced diet, and instructions for making it. We'll go on to another page, which contains the recipe's step-by-step instructions. The recipe is also

available on YouTube, which uses videos to demonstrate how to make the dish.

TIPS AND TRICKS:

This page contains various cooking tips and tricks as well as instructions on how to safely prepare food while cooking. It enhances cooking techniques. Most people don't have knowledge about cooking techniques. Even individuals without any prior cooking experience can acquire some advice and eventually generate their own suggestions. With those pointers, we can successfully learn to cook. Visiting and learning the tips and tricks on our page helps people to learn about the things we don't know will be quite interesting. There is a lot of information for simple and easy cooking in these tips and tricks. We can prepare a recipe using the information of tips and tricks which are provided to us.

HEALTH CONSCIOUSNESS:

This page specifically lists the recipes that are based on health care. It is used to promote people's health. We used four sections of healthcare categories to make our selections of food. The first section is used for diabetic patients, the second section is used for heart care, the third section is used for skin and body care, and finally, the fourth section is used for acidity and ulcer care who are permitted to eat the provided meal. It will assist people in learning what food to consume and what to avoid. This will ensure that people will be leading healthy, productive lives.

BOOKMARKS:

A bookmark is a web browser feature used to save a website's URL address for future reference. Bookmarks are convenient when you find a recipe that you want to remember and look at another day. Storing favorite recipes on the Internet makes it easier to search for that particular dish. When you bookmark a web page, you create a shortcut for quick access to that recipe. You can access that bookmark at any time to view that recipe again without searching on the internet.

Notes:

Users' significant notes were stored in notes, which he intended to keep. Notes contain information about the collection of recipes, instructions, and information about the preparation of that dish. Notes can be created by Title of that dish, Description of that dish, Preparation and cooking time of that dish, Number of servings and serving size of that dish, List of ingredients with accurate, measurements of that dish, Temperature to be maintained to keep that dish delicious, Step-by-step directions to cook that dish

SOFTWARE:

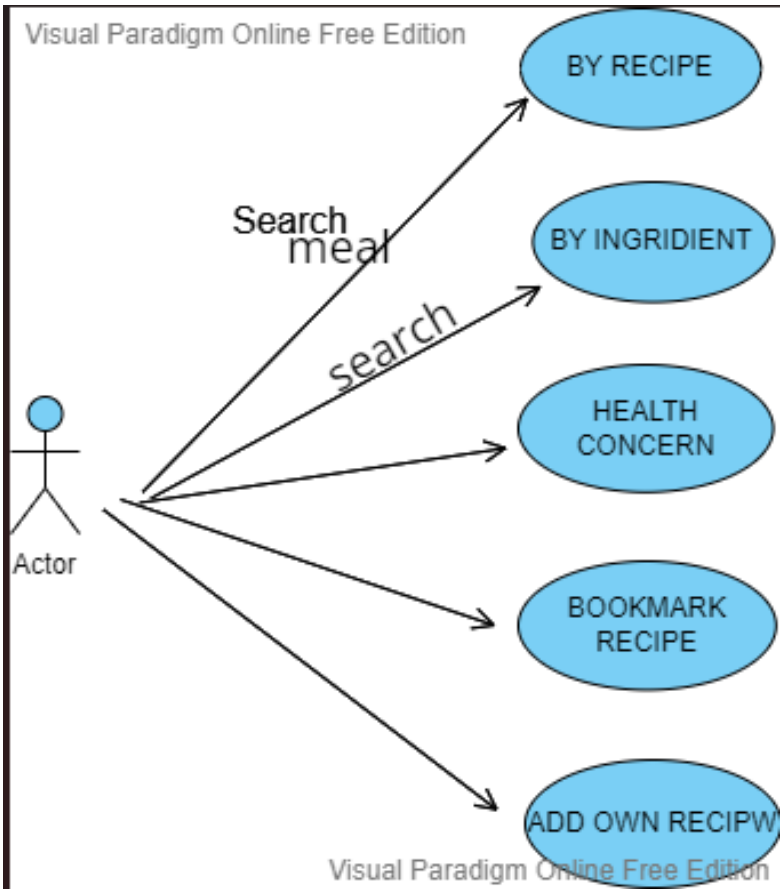
- FRONT-END DEVELOPMENT
    - HTML
    - CSS
    - JavaScript
    - Bootstrap

HARDWARE:

- MOBILE OR LAPTOP

CHAPTER 4

IMPLEMENTATION



4.1. USE CASE DIAGRAM

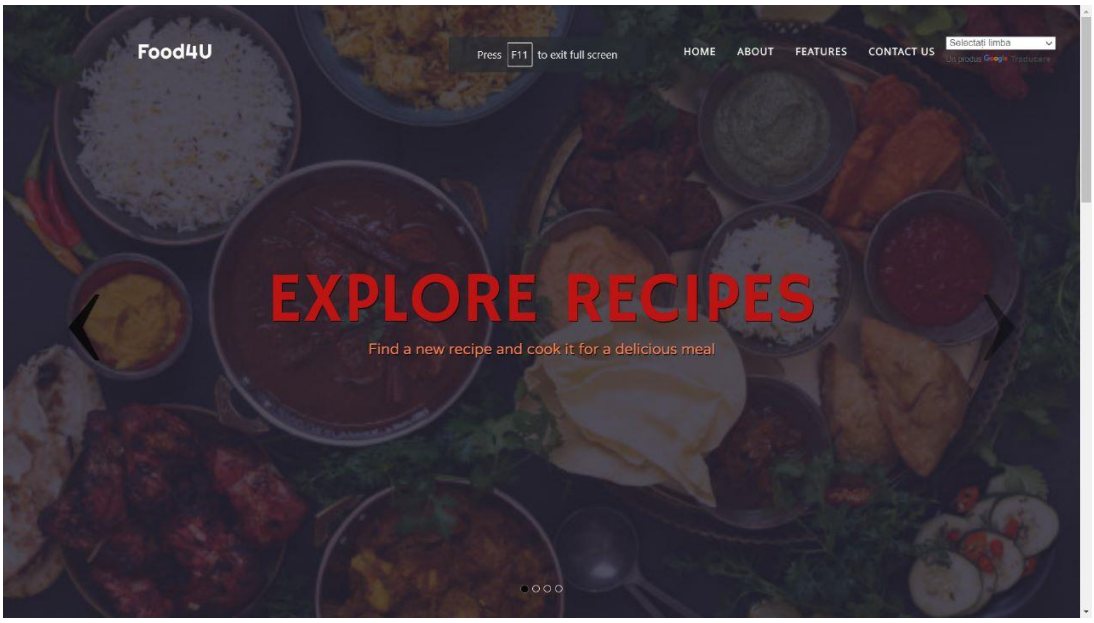
4.2 MODULE DESCRIPTION

Create the application, several tools are used in this project. The steps involved in developing this application are detailed here. This is a Heroku app that has been deployed. You can create a website development timeline for your project by adding tasks and establishing milestones. It is the most effective method for monitoring project progress. The website development project does not begin with coding and does not end when your website is finally launched. The preparation stage has an impact on all subsequent stages, determining how productive the development process will be. The bootstrap framework was used to create this app. The logic language in this framework is JavaScript, with additional

When you first open your browser, the default document is home. In the browser's preferences, it can be set to display a specific website. Initially, in the home page, there is no login option on this website, so anyone can visit this application and get whatever they want to cook. The navbar is a standard user interface component that allows users to quickly and comfortably navigate websites. It is regarded as one of the most crucial aspects of any website. So we've included four items in this section: home, about, features, and contact. The website footer is the section of content at the very bottom of a web page. It typically includes a copyright notice, contact information, social media icons, and so on. In short, a footer contains information that improves a website's overall usability. Anyone with questions or concerns can contact us via email or phone.

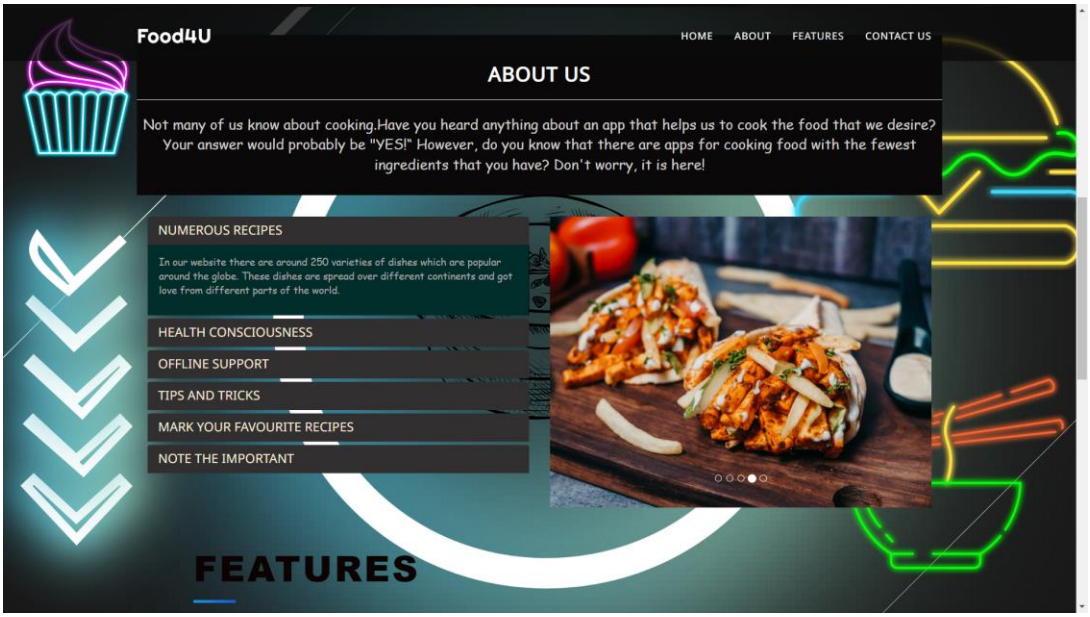
When you get to the home page, a slide bar with pictures shows you what this application has to offer. It has the content about the features of the application.

FIG.4.2.1: HOME PAGE



Then there is a brief description of the features of our app, which describes the application's uniqueness. The main body of the application is then visible to the user. It primarily consists of six options.

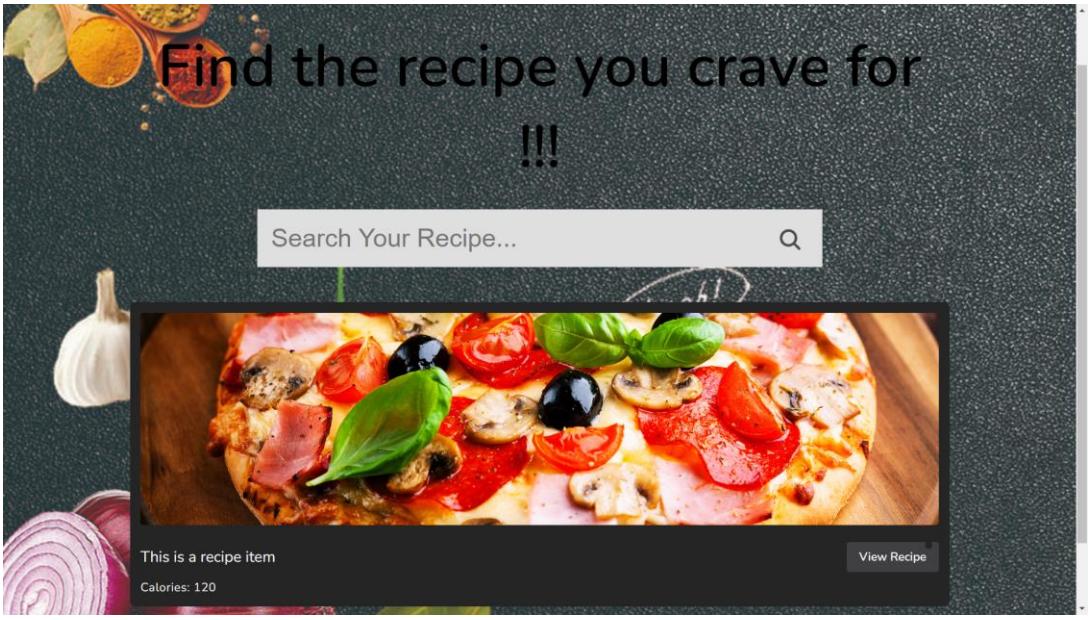
FIG.4.2.2: THE ABOUT PAGE



The first thing is to look for a meal by entering a recipe name into the search bar. Once the recipe name is entered, all of the meals appear. The Euclidean equation is the method or step used by this application to find the recipe with the most similar material possessed by the user. User input data is first converted into a data vector, and then the distance that appears on each data is calculated one by one using Euclidean data with existing data on the database. Following that, a new ranking for each data set was created, ranging from the closest or most similar to the greatest distance or least close to the similarity. The value of in Equation 1 is the Euclidean distance between points p and q. While each p value and q has a data length of 6 data based on the list of existing ingredients of rice, meat, chicken, eggs, noodles, and fish. The length of the data is denoted by the value of n, which is 6 in this case.

The ability of Euclidean distance to calculate the distance between two data vectors is why it is used. According to statistics, this is the most commonly used method for calculating the Euclidean distance vector. Furthermore, the use of this method is quite simple to implement in the programming language web or specifically in Android. on a new page called recipe search results. The results will show a list of recipes ordered by degree of similarity from top to bottom. The greater the degree of similarity.

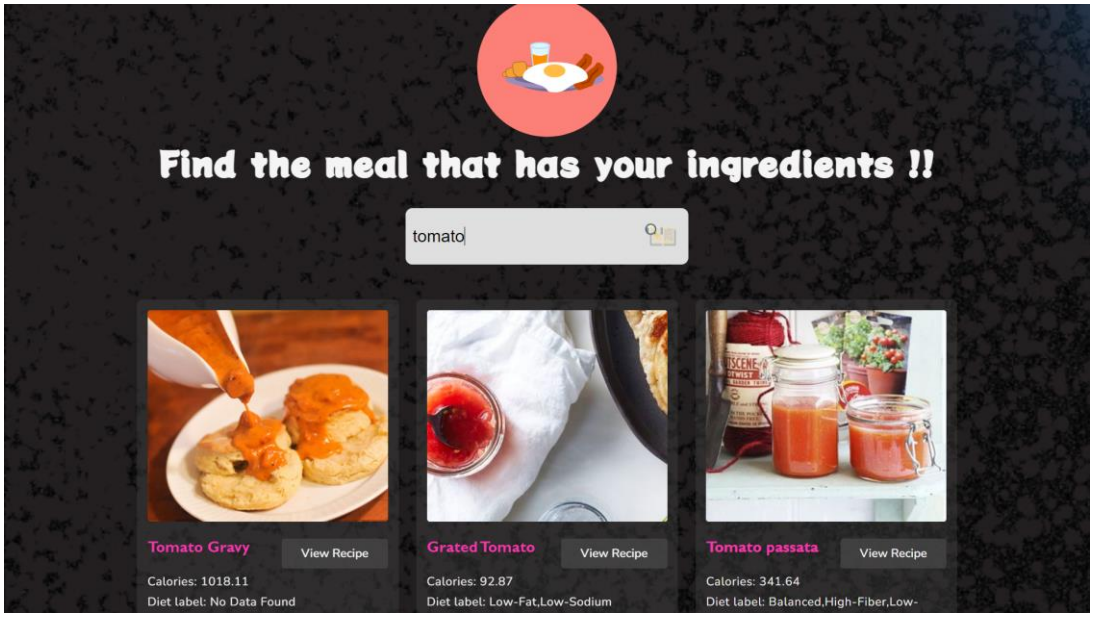
FIG.4.2.3: SEARCH BY RECIPE PAGE



The second option requires the user to enter an ingredient with which they want to cook food, and then the recipes will show above, the user can find the recipe that the user needs to be based on the name that the user has. There are a total of 7 materials that can be used as a reference. The look of this search page is shown. The Euclidean equation is the method or step used by this application to find the recipe with the most similar material possessed by the user. User input data is first converted into a data vector, and then the distance that appears on each data is calculated one by one using Euclidean data with existing data on the database. Following that, a new ranking for each data set was created, ranging from the closest or most similar to the greatest distance or least close to the similarity. The value of in Equation 1 is the Euclidean distance between points p and q. While each p value and q has a data length of 6 data based on the list of existing ingredients of rice, meat, chicken, eggs, noodles, and fish. The length of the data is denoted by the value of n, which is 6 in this case.

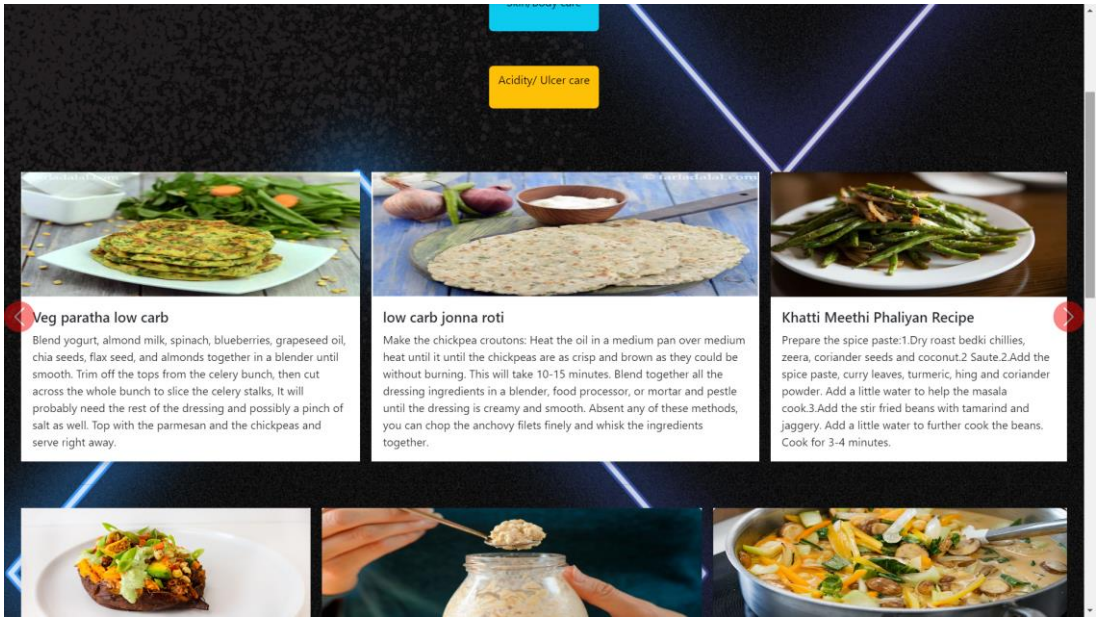
The ability of Euclidean distance to calculate the distance between two data vectors is why it is used. According to statistics, this is the most commonly used method for calculating the Euclidean distance vector. Furthermore, the use of this method is quite simple to implement in the programming language web or specifically in Android. on a new page called recipe search results. The results will show a list of recipes ordered by degree of similarity from top to bottom. The greater the degree of similarity.

FIG.4.2.4: SEARCH BY INGREDIENT PAGE



The third option includes a very useful feature called Special care, which means that several health problems are mentioned here so that if the user needs meals and is aware of any of these diseases, they can select the button and find out the recipes, the user can find the recipe that the user needs to be based on the material that the user has. There are a total of 7 materials that can be used as a reference. The look of this search page is shown the fig.

FIG.4.2.5: SPECIAL CARE



The next available option is tips and tricks, which contain efficient cooking tips, food-saving and management tips, meal-making tricks, cutting tips, and so on, which a user can read and use. People are sharing some of their best cooking tips online, and it's time to take notes on everything from simple hacks to learning how to keep food fresh to finding the best recipe.

FIG.4.2.6: TIPS AND TRICKS

This application includes a bookmark option where a user can mark their favorite recipe, most frequently made recipe, or whatever they want. A bookmark in handy when you find a web page that you want to remember and look at another day. When you bookmark a web page, you create a shortcut for quick access to that web page. You can access that bookmark at any time to view the web page again without having to search the Internet to find it.

The final option notes, when you use online notes, you can save your thoughts by creating an electronic version of your handwritten notes and storing them in any location you want. Today's online notes include everything from taking a Google doc to creating notes with apps like Evernote to using online notepads. where a user can write their own recipes or notes, dish names, or meal plans for a specific time period.

CHAPTER 5

EXPERIMENTAL WORK

Our project “Food4U” is a Front-end web development project which mainly focuses on finding the recipe by mentioning the ingredients list or you can just search by the name of the recipe. You will get the recipe’s procedure which tells you how to make the dish. It will also give what are all the ingredients required for making that particular dish.

You can search by listing the name of ingredients too. When you specify a list of items. In the search bar, you can find all the recipes that include the given ingredients. This will be saving the ingredients that you find as waste. With this, you can save your vegetables which you think that they would get rotten in a few days.

There is a “Health care” feature in our app where you can find the food items that suit your health condition. Here you can find different varieties of food that are classified based on medical conditions such as diabetes, and BP. You can find skin and body care tips to enhance your metabolism.

You can include the things that you find interesting and tasty in a separate class called a bookmark. You can find the bookmarked dish in this column. The feature “Note” allows you to add some key points that you wanted to remember further. Here you can note several things like what are the recipe names, tips you found interesting, etc.

If you wanted to contact us you can call us or mail us. This is specified in the footer i.e, contact page. We even have an option where you can change the language of the website.

CHAPTER 6

CONCLUSION AND FUTURE WORK

Our website is a handy digital book that contains around 250 unique varieties of food. This includes many useful features such as bookmarks, notes, and searching the recipe by name as well as by the list of ingredients. Using the external database and generating the results that contain the procedure of making a dish. All these features including the translation option are really helpful for people who just know their mother tongue.

IMPROVEMENTS :

1. SEARCH BY IMAGE

We are expecting to add the search-by-image option in the future. This will let the user search about the process of making a recipe and the ingredients required in this process, etc. This option will let the users search for the dish even if they don’t know the name. The users can take a picture of the dish and they can submit it to the website then they can get all the related information about the dish in their preferred language.

2. FILTER BASED ON FEEDBACK

For every dish, the user can give feedback. Based on the user’s feedback, the ranking for that specific item will be given. Based on the ranking the food items will be suggested toother users. On our website, we will be including the filter by the feedback option. Here, we will filter out the recipes based on the rating given by each user for that particular dish. With this, the users can easily find that one dish that many of people like. With this feature, users can easily find tasty recipe among the list of recipes that matches the user's search.

3. SUBMIT USER RECIPES

The users can submit their own recipes. They can post their personal recipes with other users through our website by sharing the required fields like the process of making, What ingredients are required, etc. The other users can give their feedback in the form of ratings about that recipe. The top-rated recipe will be often suggested to the other users

Chapter 7

REFERENCES

[1] “Clustering for Similar Recipes in User-generated Recipe Sites based on Main Ingredients and Main Seasoning” by Akiyo Nadamoto, Shunsuke Hanai, Hidetsugu Nanba, IEEE,2016

[2] “Cooking Video Summarization Guided By Matching with Step-By-Step Recipe Photos” by Ryo Sobue, IEEE,2019

[3] “Ingredient/Recipe Algorithm using Web Mining and Web Scraping for Smart Chef” by Shilpa Chaudhari, Aparna R, Vinay G Tekkur, Pavan G L, and Shreekanth R Karki, IEEE,2022

[4] “Efficient Search for Web Browsing Recipes” by Martin Junghans, Sudhir Agarwal, IEEE,2013

[5] “Extraction of Preference of Recipe Providers and Users on Recipe-Sharing Websites” by Mamoru Emoto, IEEE,2015

[6] “By the US bureau of labor statistics”, The official website of the United State government.