

Ingredient Based Recipe Search System

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Abstract— The aim of the project is to develop an Ingredients based recipe search system using the concept of data mining and web based application. We present a concept which suggests recipes to groups of users based on available ingredients from the users. In this project we provide the user with recipes based on the ingredients he has and entirely based on these inputs we will provide them with optimal results. The input ingredients should commensurate atleast 60% with the recipes ingredients only then it provides relevant results. if the user wants to share their recipes with us he/she can upload the same. This proposed system satisfies the user query of what to prepare? And how to prepare? This approach supplants the tedious searching from internet and gives appropriate results based on users ingredients.

Key words: Recipe Search System

I. INTRODUCTION

This project is developed to fill a void in a market of recipe based engines and searching tools as well as answer an age old question, “What can I cook in my kitchen with all of these ingredients?”

The problem that many cooking systems and engines presents is that you must know exactly what you are looking for in order to find the results that you want. Searches in recipe engines can be thought of as targeted, searching through the database of recipes for a specific ingredient contained therein and returning the recipes that a match is found. This project works in the opposite way, by taking not a single ingredient, but rather all ingredients found in a kitchen, and returning the recipes that you have all of the required ingredients to create.

The development of this projects prototype akin to a proof of concept was the primary goal.

A. NEED

- This project is developed to satisfy the users query like, “what to prepare? And how to prepare?”
- The problem that many cooking systems and engines presents is that you must know exactly what you are looking for in order to find the results that you want. Searches in recipe engines can be thought of as targeted, searching through the database of recipes for a specific ingredient contained therein and returning the recipes that a match is found. This project works in the opposite way, by taking not a single ingredient, but rather all ingredients found in a kitchen, and returning the recipes that you have all of the required ingredients to create.
- The development of this projects prototype akin to a proof of concept was the primary goal.

B. Basic Concept

It is a web-based application that is designed to assist a person with preparing meal recipes from the ingredients they have in their kitchen. The concept of the project is to build a system where a user has an inventory of ingredients stored in a database backend and allow for that user to discover recipes from which they can cook based on the ingredients the user has. The projects design and architecture are to support scalability for enhancements and ease of changes as well as friendly usage from users of the system.

II. REVIEW OF LITERATURE

The purpose of this chapter is to increase knowledge, architecture and understanding in project background. This chapter gives brief explanation about algorithm and required softwares. Some of the sources have come from several websites, ieee papers and books based on the research that had been done.

During our project research we found that there are some websites which help us to find recipes directly by their name. One of them is food.com[2] this website we can share our recipes but we cannot find recipes by their ingredients. We are planning to use user interaction technique such as sharing their recipes and reviews and also we are planning to use some recipes to create our database for our proposed system[2].

The research paper, that we are referring i.e. “Design Implications for a Community-based Social Recipe System” in which they introduced mobile application called Euphoria (Efficient food Use and food waste Prevention in Households through Increased Awareness)[1]. This application is developed to reduce the wastage of ingredients. The main function of the system is to detect potential food waste and respond by providing social recipes before the food get wasted[1].

From all these references our objective is to build a web based application using data mining technique that provide recipes based on ingredients that user has in their kitchen.

A. Project Requirements

The requirements of this project are twofold.

- The first fold is the ability for users to have an inventory of ingredients which can be queried to return a cookbook of recipes in which that user can create.
- The second requirement is the ability for the project to be scalable so that it can be further enhanced with features conducive of user-based web-applications[1].

B. Technology Breakdown

One way of approaching the problem of dealing with data and inverse abstract queries of that data is in choosing the correct technology for doing so.

Choosing the correct technology in the case of this project meant choosing the proper tools for storing data, manipulating the data that is stored, retrieving data based on manipulated queries of that data and finally displaying that data in a human-readable format.

The decision for the database came in conjunction with the application layer that was selected to interface with the database. MS SQL was chosen as the RDBMS and ASP.NET for Front End.

We are planning to use Apriori Algorithm for our Proposed system[3][4].

C. Apriori Algorithm

The Apriori algorithm learns association rules and is applied to a database containing a large number of transactions. Association rule learning is a data mining technique for learning correlations and relations among variables in a database[5].

The basic Apriori algorithm is a 3 step approach:

- 1) Join. Scan the whole database for how frequent 1-itemsets are.
- 2) Prune. Those itemsets that satisfy the support and confidence move onto the next round for 2-itemsets.
- 3) Repeat. This is repeated for each itemset level until we reach our previously defined size[5][6].

III. EXISTING SYSTEM

A. Food.com

In this website you can search recipes by their names. It has very wide database for the recipes. It shows each recipe independently.

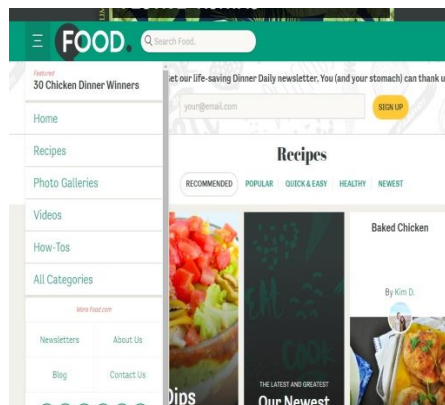


Fig. 1:

B. Euphoria

Euphoria (Efficient food Use and food waste Prevention in Households through Increased Awareness) allows users to log and track available in-home ingredients as well as their Wasteful behaviours.

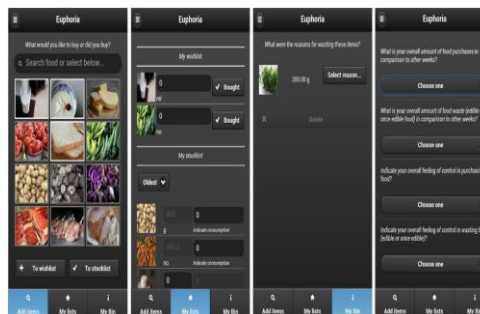


Fig. 2:

IV. PROPOSED SYSTEM

The aim of the project is to develop an Ingredients based recipe search system using the concept of data mining and web based application. We present a concept which suggests recipes to groups of users based on available ingredients from the users. In

this paper we provide the user with recipes based on the ingredients he has and entirely based on these inputs we will provide them with optimal results. The input ingredients should commensurate at least 60% with the recipes ingredients only then it provides relevant results. If the user wants to share their recipes with us he/she can upload the same. This proposed system satisfies the user query of what to prepare? and how to prepare? This approach supplants the tedious searching from internet and gives appropriate results based on user ingredients.

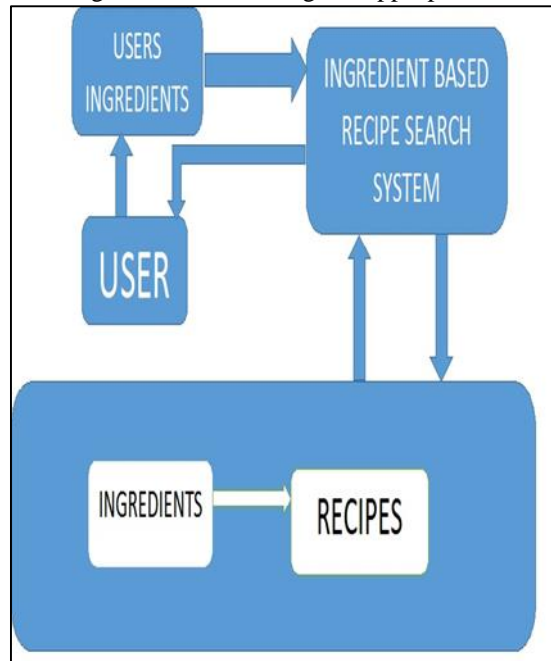


Fig. 3:

V. PROBLEM STATEMENT

Nowadays, people are busy with work some of them don't know what to prepare with the ingredients they have. It is normal to think that a couple or family members who work at a company or a person who lives alone want to cook food for themselves as quickly as possible and they worry about what to cook when they are in rush. If people every day have the same food then they will get bored. They need an easy way to get more recipes.

Thinking of what to cook is also a difficult problem. To attract children with delicious food parents need to change the menu every day. Parents not only think about what recipes to change both also they need to consider nutrition that children will consume. Besides that, some people forget to buy ingredients and this leads to change the menu. It is difficult to cook with the limited ingredients present in the kitchen.

VI. CONCLUSION

Ingredient Based Recipe search system provides recipes to the user based on the ingredients they have. Users can share their unique recipes and reviews with our system by logging in our system.

The user will get the optimal result based on the ingredients he/she provides to the system.

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