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# Find me Recipes Website

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**ABSTRACT:** Today, there are a lot of recipes or cookbooks out there. There are a lot of recipe software applications and, literally, thousands of websites have recipes for everything. Though there is now more recipe or food or kitchen information available than ever, most of it is stuck in the trappings of the old fashioned cookbook where the user still have to flip paper pages, cannot combine multiple recipes into one meal and, unless the user have a very good memory, can seldom remember which book had what recipe the user might want. As the days go by, we tend to choose meals on the spur of the method, often based on what is easy or available. On the other hand this website will help you to find out recipe based on ingredients. Our website makes it easier to find recipe by searching ingredients.

**KEYWORDS:** Software Applications, recipes, food, website, ingredients.

## I. INTRODUCTION

The advancement in technology has made our lives easy like never before. Everything that we require is available at our fingertips. With a few taps on our smartphones, we can complete tasks in minimal time. From entertainment to learning and from fitness to cooking, there are various applications for everything that we need. With just a click of a button, you can get access to multiple recipes within a second. Each recipe provides you with all the information, from the ingredients required to each step required to cook the different parts of the dish. These applications are generally used by people who want to try to make some new dish or by people who live all by themselves, or by working people who are always short on time. Even though there has been such a huge advancement in technology, all these applications provide you with the ingredients required, and you must go and buy the ingredients that are not available to you currently.

The solution we came to is a web Application that will provide you recipes based on the ingredients that you already have with you, resulting in less wastage of time and money in buying the unavailable ingredients. The application contains an available database of food recipes that can be browsed through by the user. Most importantly the user can choose to only see those recipes with a specific set of ingredients available to it. The user also has the option to filter, sort and favourite those recipes based on its preference.

## II. PROBLEM STATEMENT

We all have those times when we don't know what we could make for ourselves to eat from what we have available with us. Even if we do we may, not know about a new recipe that can be made from the same ingredients or an old recipe that can be made in a different way.

Today there are innumerable applications that provide consumers with recipes ranging from quick to healthy and from beginner to expert, all intending to save time. But, none of these applications take into account whether the recipes ingredients are available with the consumer at the point of time or not. They fail to provide recipes containing only the ingredients that are available, thus proving to be inefficient and wasting time rather than saving it. These contemporary applications also do not evaluate and learn from the user's choices thus further increasing the user's task of repeating already fed information again.

We plan on using a content-based recommendation system that will learn from user's inputs and provide the user with refined recommended recipes which suit the user's needs.

### III. TECH STACK

#### History of Website -

Tim Berners-Lee, a British scientist, invented the World Wide Web (WWW) in 1989, while working at CERN. The Web was originally conceived and developed to meet the demand for automated information-sharing between scientists in universities and institutes around the world.

Tim Berners-Lee wrote the first proposal for the World Wide Web in March 1989 and his second proposal in May 1990. Together with Belgian systems engineer Robert Cailliau, this was formalised as a management proposal in November 1990. This outlined the principal concepts and it defined important terms behind the Web. The document described a "hypertext project" called "WorldWideWeb" in which a "web" of "hypertext documents" could be viewed by "browsers". By the end of 1990, Tim Berners-Lee had the first Web server and browser up and running at CERN, demonstrating his ideas. He developed the code for his Web server on a NeXT computer.

#### What is Website? –

A website is a collection of related material that contains text, images, and may also include video, audio or other media. Websites can be used in various fashions: a personal website, a corporate website for a company, a government website, an organization website, etc. Websites can be the work of an individual, a business or other organization, and are typically dedicated to a particular topic or purpose. Any website can contain a hyperlink to any other website, so the distinction between individual sites, as perceived by the user, can be blurred.

Some websites require user registration or subscription to access content. Examples of subscription websites include many business sites, news websites, academic journal websites, gaming websites, file-sharing websites, message boards, web-based email, social networking websites, websites providing real-time stock market data, as well as sites providing various other services.

While "web site" was the original spelling (sometimes capitalized "Web site", since "Web" is a proper noun when referring to the World Wide Web), this variant has become rarely used, and "website" has become the standard spelling.

#### Classification of Website:-

Websites are classified into two categories:-

- Static website
- Dynamic website

#### Static website -

A static website is one that has web pages stored on the server in the format that is sent to a client web browser. It is primarily coded in Hypertext Markup Language (HTML); Cascading Style Sheets (CSS) are used to control appearance beyond basic HTML. Images are commonly used to create the desired appearance and as part of the main content. Audio or video might also be considered "static" content if it plays automatically or is generally non-interactive. This type of website usually displays the same information to all visitors. Similar to handing out a printed brochure to customers or clients, a static website will generally provide consistent, standard information for an extended period of time. Although the website owner may make updates periodically, it is a manual process to edit the text, photos, and other content and may require basic website design skills and software. Simple forms or marketing examples of websites, such as classic website, a five-page website or a brochure website are often static websites, because they present pre-defined, static information to the user. This may include information about a company and its products and services through text, photos, animations, audio/video, and navigation menus.

Static websites may still use server side includes (SSI) as an editing convenience, such as sharing a common menu bar across many pages. As the site's behaviour to the reader is still static, this is not considered a dynamic site.

#### Dynamic website -

A dynamic website is one that changes or customizes itself frequently and automatically. Server-side dynamic pages are generated "on the fly" by computer code that produces the HTML (CSS are responsible for appearance and thus, are static files). There are a wide range of software systems, such as CGI, Java Servlets and Java Server Pages (JSP), Active Server Pages and ColdFusion (CFML) that are available to generate dynamic web systems and dynamic sites. Various web application frameworks and web template systems are available for general-use programming languages like Perl, PHP, Python and Ruby to make it faster and easier to create complex dynamic websites.

A site can display the current state of a dialogue between users, monitor a changing situation, or provide information in some way personalized to the requirements of the individual user. For example, when the front page of a news site is requested, the code running on the webserver might combine stored HTML fragments with news stories retrieved from a database or another website via RSS to produce a page that includes the latest information. Dynamic sites can be interactive by using HTML forms, storing and reading back browser cookies, or by creating a series of pages that reflect the previous history of clicks. Another example of dynamic content is when a retail website with a database of media products allows a user to input a search request, e.g. for the keyword Beatles. In response, the content of the web page will spontaneously change the way it looked before, and will then display a list of Beatles products like CDs, DVDs, and books. Dynamic HTML uses JavaScript code to instruct the web browser how to interactively modify the page contents. One way to simulate a certain type of dynamic website while avoiding the performance loss of initiating the dynamic engine on a per-user or per-connection basis is to periodically automatically regenerate a large series of static pages.

#### IV.ALGORITHM

##### K-Nearest Neighbor–

- K-Nearest Neighbour is one of the simplest Machine Learning algorithms based on Supervised Learning technique.
- K-NN algorithm assumes the similarity between the new case/data and available cases and put the new case into the category that is most similar to the available categories.
- K-NN algorithm stores all the available data and classifies a new data point based on the similarity. This means when new data appears then it can be easily classified into a well suite category by using K- NN algorithm.
- K-NN algorithm can be used for Regression as well as for Classification but mostly it is used for the Classification problems.
- K-NN is a non-parametric algorithm, which means it does not make any assumption on underlying data.
- It is also called a lazy learner algorithm because it does not learn from the training set immediately instead it stores the dataset and at the time of classification, it performs an action on the dataset.
- KNN algorithm at the training phase just stores the dataset and when it gets new data, then it classifies that data into a category that is much similar to the new data.

**Example:** -Suppose, we have an image of a creature that looks similar to cat and dog, but we want to know either it is a cat or dog. So for this identification, we can use the KNN algorithm, as it works on a similarity measure. Our KNN model will find the similar features of the new data set to the cats and dogs images and based on the most similar features it will put it in either cat or dog category.

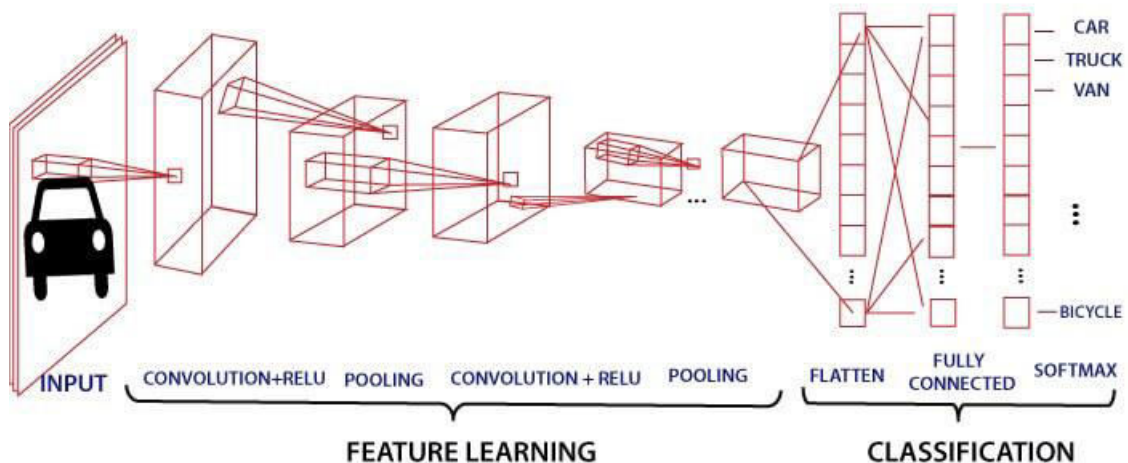


**Convolutional Neural Network–**

Convolutional Neural Network is one of the main categories to do image classification and image recognition in neural networks. Scene labeling, objects detections, and face recognition, etc., are some of the areas where convolutional neural networks are widely used.

CNN takes an image as input, which is classified and process under a certain category such as dog, cat, lion, tiger, etc. The computer sees an image as an array of pixels and depends on the resolution of the image. Based on image resolution, it will see as  $h * w * d$ , where  $h$ = height  $w$ = width and  $d$ = dimension. For example, An RGB image is  $6 * 6 * 3$  array of the matrix, and the grayscale image is  $4 * 4 * 1$  array of the matrix.

In CNN, each input image will pass through a sequence of convolution layers along with pooling, fully connected layers, filters (Also known as kernels). After that, we will apply the Soft-max function to classify an object with probabilistic values 0 and 1.



## V. WORKING

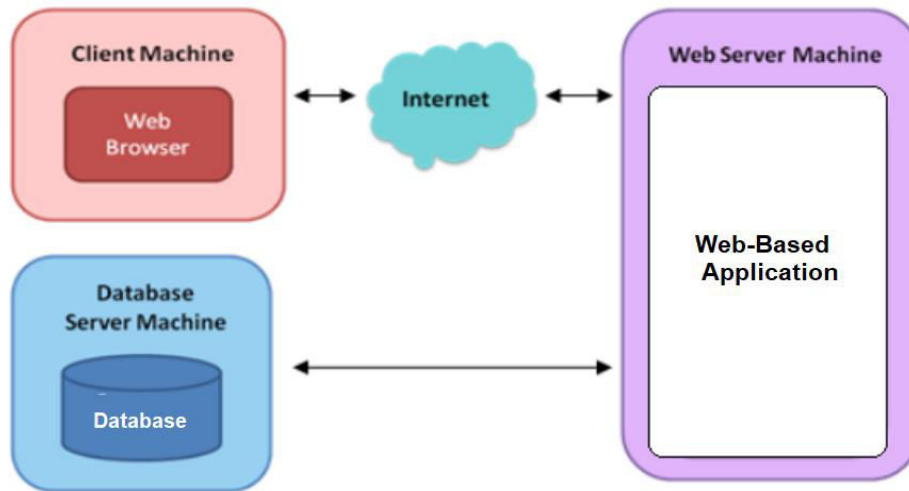


Fig. System Architecture

The main purpose of our application is to provide recipes to the consumers based on the ingredients already available with them, unlike other recipe providing applications where the ingredients available with the consumer is not taken into consideration.

The proposed system will provide recipes to the users based on the ingredients available with them. From a list of ingredients, the user has to select the available ingredients and then the application will display a list of recipes which will use the ingredients selected by the user. The user will have filters to select the kind of recipe it wants and then the result can be sorted and filtered according to the user needs.

Modules in the Project:-

**1. Search by Ingredients** -This is the major functionality of the application. The user can select the ingredients he/she wants and the application will display the recipes that contain those ingredients. The user can further filter and sort the ingredients to his/her needs. The application also provides a search bar where the user can input the wanted ingredient instead of scrolling down to it.

**2. View all recipes** -This page displays all the recipes in the database. The user can browse through the recipes and display the selected recipe details. The user can also search the recipe from the search bar present at the top of the page.

## VI. CONCLUSION

**The conclusion is** -This application allows the user to select the ingredients he or she wants and view recipes that contain those ingredients. These ingredients can be sorted and filtered to the user's convenience. The user can also view recipes directly and select the one to cook. This application was developed to solve one of the problems most people have, what could be made from the available ingredients.

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