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Food Suggestion Engine Based on Mood - Fomos

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Abstract—Are you constantly plagued by daily decisions of what to eat? And, do you live just by yourself where you have no one to cook for you? You sit with your phone and open a food app and see hundreds of option and you can't decide, which leads to multiple thoughts, frustration and maybe you end up ordering food that was not the best choice for you. If, you have an alltime companion who will suggest you food items based on a lot of parameters including knowing the emotions and sentiments of the person? Hence, the FoMos (Food Moods) app is a high power analyzing engine used to suggest relevant food items that contain certain nutritional contents that are required to stabilize the emotions of humans. The key result is giving a customercaring experience.

Index Terms—Emotional Analytics, FoodMood, Django, Nutrient Requirement

I. INTRODUCTION

Food is considered to be the most important element of not only survival but also the mental or emotional stability of humans. It is proven that there is a high correlation between the food and the mood [3] [5]. The mood changes indicate nothing but the want of certain nutritional contents that would stabilize our emotions. We face this dilemma of what we should eat a lot.

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This problem either gets solved by the person taking the same food item again or if he is suggested a food item by someone else. What if, this dilemma could be removed by someone who could sense and analyze you and your emotions and based on that suggest you delicious and your favorite food items that only take care of the dilemma issue [6]. This solution is highly based on how our mood affects the food choices we make.

For example, it is currently proposed that people like pleasurable foods when in a negative mood as such mood is more focused on current pleasures like flavor and experience of the human senses, and current concerns like fixing the mood. On the other hand, people like healthy foods when in a positive mood as such a mood is focused on better health aspects and long-term well-being. If you've ever found yourself in front of the TV after a bad day, mindlessly and carelessly scooping ice cream out of the ice cream box with a spoon, this does show that mood and food are sometimes linked. But while stress eating is a verified phenomenon, the link between food and actual mood disorders, such as depression, is less clear. Finally, in a fast-moving stressful and hurried world, a lot of our poor food choices are a result of poor planning. You cannot eat healthy food if there is no healthy food in the house and about more than half the people make an unhealthy decision whenever it comes to ordering food. Moreover, you cannot expect to make a good food decision after waiting until you're half-starved. Deciding when and what you're going eat ahead of time can make a huge difference in how well you eat i.e. you need planning.

II. PROBLEM STATEMENT

Researches have concluded that an average person makes around 250 decisions about food every day i.e. whether to have breakfast or no breakfast? Part of it or all of it? Kitchen or order? Yet out of these 200+ food decisions, we are unable to explain the reason behind it.

The key to getting a hold on food is to become aware of the series of choices you make every day. Food is considered to be the most important element of not only survival but also the mentally or emotional stability of humans.

It is proven that there is a high correlation between the food and the mood. The mood changes indicate nothing but the want of certain nutritional contents that would stabilize our emotions. We face this dilemma of what we should eat a lot.

III. NEED FOR THE SYSTEM

Food and mood have a awfully robust relationship.

Some researches were conducted that checked the results of excellent mood on assessments of healthy and indulgent things. people United Nations agency were in a very sensible mood and had healthier foods responded additional completely as opposition those in a very management cluster United Nations agency selected to possess comfort foods.

Another analysis found examined the results of negative and positive moods on the alternatives of healthy and luxury foods people United Nations agency were in a very jolly mood had additional favorable evaluations of healthy foods as compared to comfort foods, whereas those in unhealthy moods had additional positive decisions of indulgent foods than healthy ones. Also, not like folks in negative moods, those in sensible mood responded completely concerning staying healthy as they grew older. Another analysis hunted for the sensible—the great—the nice and unhealthy outcomes of unhealthy and good moods on future focus and gift focus and its impact on the intake of foods. it had been found that the magnitude relation of comfort foods to total consumed foods was higher in participants within the gift focus state of affairs as compared to those within the state of affairs of future focus [4] [7]. Another analysis checked health advantages versus the enjoyment facet of the impact of mood on food intake. The study had subjects in negative, positive, and neutral moods at the side of temporary gift focus and future focus situations. it had been found that people opted for healthier dishes once all dishes within the set had a mixture of unhealthy and healthy foods as compared to once a dish with simply food or dish with simply healthy food was supplemental to the set. folks with future focus conditions opted for dishes with larger amounts of healthy foods as compared to people within the present-focus condition. Here area unit some samples of the food decisions that stabilize the emotional conditions of humans [1] [2].

1) Anger = stressed - calming foods containing atomic number 12 like chocolate, pumpkin seeds, brown rice, avocado, black beans, and nuts.
2) Disgust = enlightened (disinterested/apathetic) - foods to extend mood and brain operate particularly omega

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3s (oily fish like salmon, mackerel, sardines, walnuts, flaxseed).

3) worry = anxious - calming foods consisting of acids like essential amino acid and things like bats, seeds, tofu, cheese, red meat, chicken, turkey, fish, oats, beans, lentils, and eggs.
4) Surprise = excited - glucose regulation low glycemic index foods like whole grains, lean macromolecule (fish, chicken, low-fat farm, lentils, and beans)
5) disappointment = tired - cholecarciferol made foods to spice up moods like farm merchandise, eggs, and oily fish.
6) Joy = cheerful - keep mood stable with B vitamin found in potatoes, chicken, and eggs

IV. OBJECTIVE

Finally, in a fast-moving stressful and hurried world, a lot of our poor food choices are a result of poor planning. You cannot eat healthy food if there is no healthy food in the house and about more than half the people make an unhealthy decision whenever it comes to ordering food. Moreover, you cannot expect to make a good food decision after waiting until you're half-starved. Deciding when and what you're going eat ahead of time can make a huge difference in how well you eat i.e. you need planning. Hence the objective of the application is the help customer get involved more in the fact of what they should eat and why.

It gives detailed nutritional value information to create personalized awareness in the person's body.

Moreover, it does a computer vision analytics to find out the emotion of the person so that the nutritional needs can be defined.

V. SYSTEM FLOW AND TECH STACK

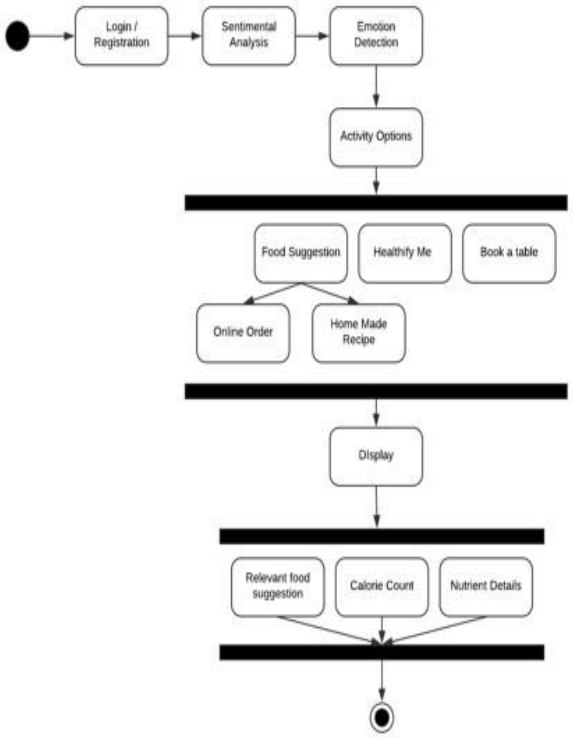

Fig. 1. Activity diagram of FoMos

A. Django

Django is a web server side framework which is coded in python and is a free platform, which follows the modeltemplate-view architectural pattern. It is prefered over NodeJS because it is fast, fully Loaded, secure, has Better Design, Simpler Syntax, Debugging tools.

B. Web Front-end Technologies - HTML, CSS, Bootstrap

The application user interface is developed using basic HTML, CSS, Bootstrap technology.

HTML stands for HyperText Markup Language and is a markup language that focuses on organizing and displaying content (i.e. paragraphs, headings, images, links, etc.) in an application capable of supporting the language.

CSS stands for Cascading Style Sheets. It is used to describe the visual display of the html page on the screen i.e. it is a decorator.It saves a lot of work and can control the layout of

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multiple web pages all at once. You can include the CSS files in thee HTML in three ways i.e. Internal,External and Inline.
The application should be supportive of the variable sizes of screens i.e. PC's, Tablets and Smart Phones. Bootstrap is a frontend development framework for the websites and web apps. It is a free platform and open source in nature. This framework is built on HTML, CSS, and JavaScript to provide the development of responsive, mobile-first sites and apps.

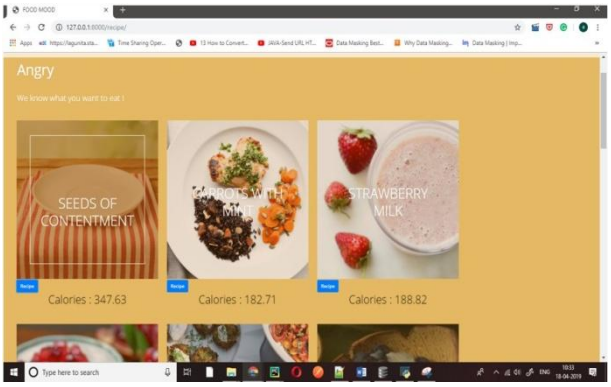


Fig. 2. User Interface of FoMos

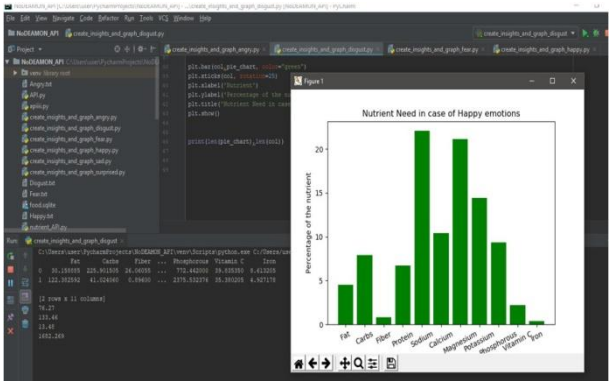
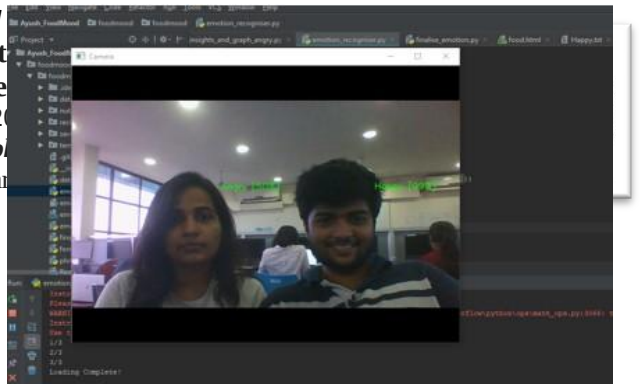


Fig. 3. Nutrient Analysis

C. Python Tensor Flow and Computer Vision



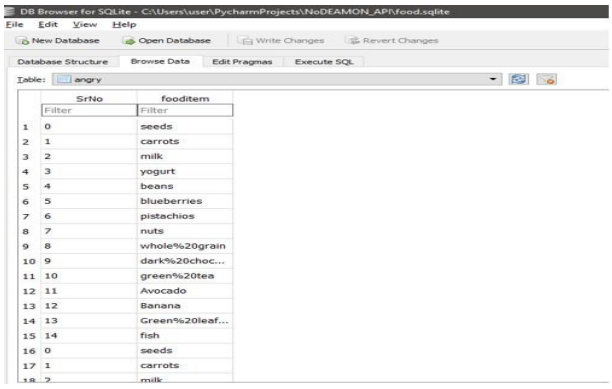
OpenCV that abbreviates to Open supply pc Vision could be a assortment of microservices of programming functions primarily geared toward period of time pc vision. In easy language it's library used for Image process. it's primarily wont to do all the operation associated with pictures. TensorFlow could be a library created by the Google Brain team. it's written in python and is open supply in nature. TensorFlow compiles many alternative algorithms and models along, sanctioning the user to implement deep neural networks to be used in tasks like image recognition/classification. feeling detection victimisation image processsing includes face detection, non-skin region extraction and morphological process finally, feeling recognition.

Fig. 4. Emotion Detection

D. SQLite3

SQLite is an in-process library that implements a selfcontained, zero-configuration, serverless, transactional SQL database engine.

As a prototype application, the SQLite database is used to store the Emotions vs the required nutrients with respect to that emotion dataset that is created using the Researched data.



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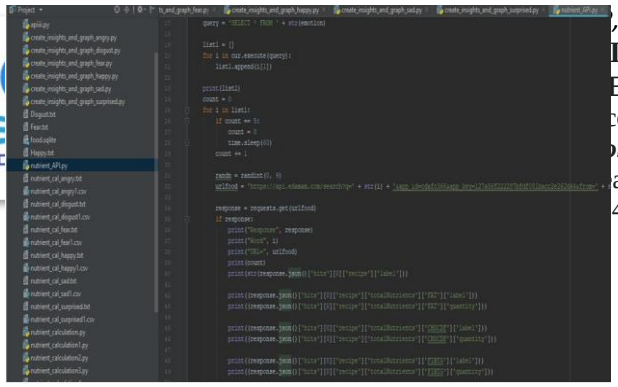

Fig. 5. Mood Nutrient

E. Predefined APIs

API stands for Application program interface. The edanam API outputs different food dishes with information like the recipe, the in depth calorie count, the nutrients present, the nutritional value, the category it belongs to, the ingredients and so on.

So once the emotion detection engine detects the emotion and from the database we come to know the nutrients/ingredients we should have in our food choice, the API helps to filter, acting as a suggestion system in abstract, the dishes based on the nutrients/ingredient and the veg/non type.

Fig. 6. Edanam Food API

VI. METHODOLOGY

The FoMos (Food Moods) app is a high power analyzing engine used to suggest relevant food items which contain certain nutritional contents that are required to stabilize the emotions of humans. The key result is basically giving a customer caring experience.

This dilemma could be removed by someone who could sense and analyze you and your emotions and based on that suggest you delicious and your favorite food items that only take care of the dilemma issue.

1) The user has to register into the application if the user is using it for the first time otherwise login directly
2) This registration accounts in taking basic user details (E.g.: Name, Email, Age, Gender etc.) and the constant food related information with respect to the user

   (Whether Veg/Non-Veg, Fitness freak/Flexible Diet etc)
3) The user is directed to the page where quick questions are asked about the food items inferring to the users Sentimental Analysis (not implemented though). In the background, the users facial expressions are recorded and the emotion of the user is predicted. Based on the emotion and sentiments, the FoMos app analysing engine tries to suggest food items that would be the best choice for the users based on what nutritional contents are required to stabilize the users emotion
   a) This would not only help the user to decide the kind of food he/she should would eat but also prevents the wrong choices that the user makes due to dilemma.
4) Once the user knows the type of food there are a few features integrated with it.
   a) In the suggested food tab, there are two option
      i) This is for the people who wish to know what they should eat and they prefer making the food item at home
      ii) This is for the people who face the dilemma of what they should eat, when they see hundreds of options that the online food ordering companies offers. In this case the app will suggest the right choice from these online ordering apps
   b) There is a current nutritional value needed insights tab which will display the detailed nutritional contents needed as per the current analysis and inform the user that current you are lacking of so and so vitamins or minerals etc
5) Once the user choose to make the food item at home, he is directed to how to make Recipe guide that will provide a pictorial step by step of how to make that item
6) If the user chooses the online ordering platform, then the user can proceed the normal way via delivery setting and payment gateway
7) All the historical data of the person is saved for further analysis of the users emotional eating and food habits

VII. RESULTS

The FoMos (Food Moods) app is a high power analyzing engine used to suggest relevant food items which contain certain nutritional contents that are required to stabilize the emotions of humans. The key result is basically giving a customer caring experience.

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This dilemma could be removed by someone who could sense and analyze you and your emotions and based on that suggest you delicious and your favorite food items that only take care of the dilemma issue.

VIII. FUTURE SCOPE

The app handles instant care of what the user should consume based on certain factors like emotions and sentiments. However, as a future scope, integrating this app with a healthy me kind of an app would make the entire purpose of leading a healthy and a planned and known life in terms of food complete. Instead of just tracking each food transaction independently, incorporating the historical data to guide the user that he/she should watch out on certain things as its not good for health. Moreover, we can integrate this app with finedine restaurants as Book a table. What this can do is give insights to the restaurants as people coming to this restaurant generally come with so and so emotions and sentiments. So the restaurant can use this personalized information about the customers to know that their overall popularity is rising or falling and they can also get to know the kinds of people coming to the restaurants.

Finally, this entire idea is capable of creating and integrating four different businesses, all in one. Self FoMos app business, business from the apps like Swiggy, Zomato and Foodpanda (who are the online ordering platforms), business from the healthify me kind of apps and business with the fine dine restaurants via book a table.

IX. CONCLUSION

Since the mood and emotions that carry can define the food that we should consume, this App can help a lot of people with that one question of ”what should we have ?” and the user’s can benefit from the suggestion as it indirectly takes care of the health of the person and prevents them from making irrational decisions. Thus the FoMos app.

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