**IMAGE BASED NUTRITIONAL ANALYSIS**

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# INTRODUCTION :

### OVERVIEW :

There is a growing concern about chronic diseases and other health problems related to diet including obesity and cancer. Dietary intake provides valuable insights for mounting intervention programs for prevention of chronic diseases. Measuring accurate dietary intake is considered to be an open research problem in the nutrition and health fields. In this paper, we **describe a record** that provides a measure of daily food and nutrient intake. Our approach includes the use of image analysis tools for identification and quantification of food that is consumed at a meal. We describe our approach to image analysis that includes the segmentation of food items, features used to identify foods, a method for automatic nutrition estimation, and our overall system architecture for collecting the food intake information.

### PURPOSE :

Measuring accurate dietary intake is considered to be an open research problem in the nutrition and health fields

# LITERATURE SURVEY :

### EXISTING PROBLEM :

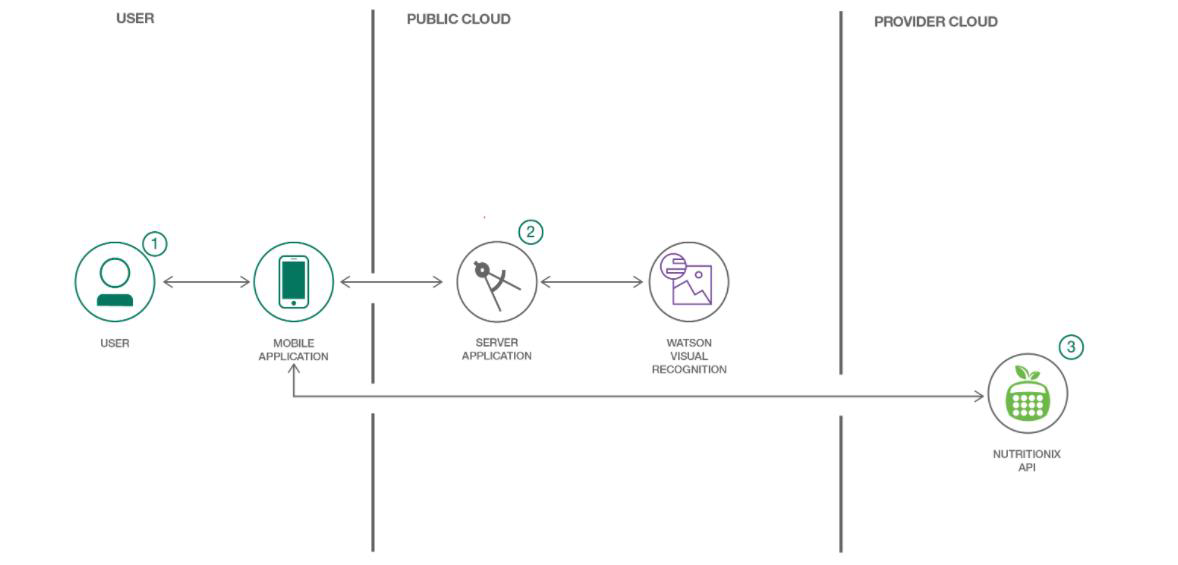
Due to the improvement in people’s standards of living, obesity rates are increasing at an alarming speed, and this is reflective to the risks in people’s health. People need to control their daily calorie intake by eating healthier foods, which is the most basic method to avoid obesity. However, although food packaging comes with nutrition (and calorie) labels, it’s still not very convenient for people to refer. Mobile-based nutrient dashboard systems which can analyses real time images of meal and analyze it for nutritional content can be very handy and improve the dietary habits, and therefore, result in healthy life.

### PROPOSED SOLUTION :

This project aims at building a web App which automatically estimate food attributes such as ingredients and nutritional value by classifying the input image of food. Our method employs IBM Watson food model for accurate food identification and Food API's to give nutritional value of the identified food.

# THEORETICAL ANALYSIS:

### BLOCK DIAGRAM :



### HARDWARE AND SOFTWARE DESIGNING :

This web app uses IBM WATSON visual recognition for recognising food images and NUTRITIONIX API for returning nutritional values of food.

NODE RED is used for creating and designing web app for this service

Cloudant for Cloud services

TEXT TO SPEECH service from IBM

# EXPERIMENTAL INVESTIGATIONS :

### IBM ACCOUNT :

Create an IBM Cloud account and register for VISUAL RECOGNITION service, CLOUDANT, TEXT TO SPEECH service and NODE RED

### NUTRITIONIX API:

Create a registered account in this website and get API and URL information.With respect to the image identified by visual recognition service this API returns the nutritional values of the respective food item.

### VISUAL RECOGNITION:

Create a project and copy the classifier ID for food model and API details for accessing the service.

### TEXT TO SPEECH :

The name of the image uploaded by the user is identified by visual recognition service and the respective result is read out using TEXT TO SPEECH service from IBM.

### NODE RED :

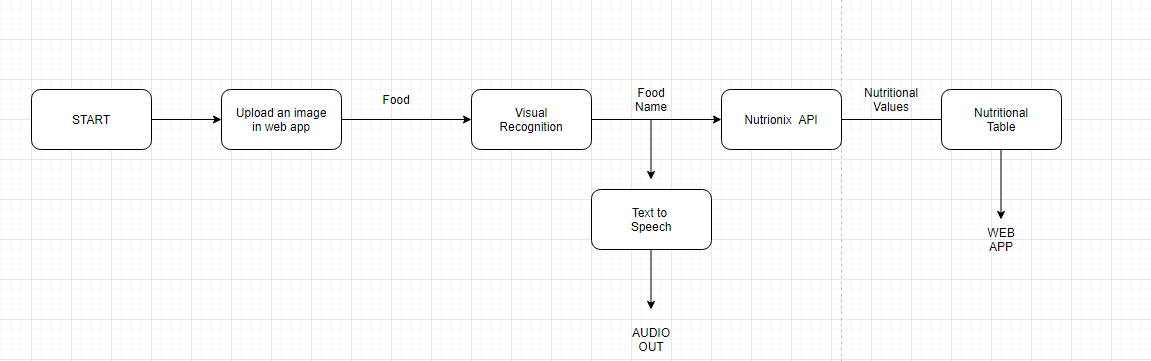
I have used NODE RED for developing the web app .

NODE RED is used to create an environment for the user to upload a image and this image is transferred to VISUAL RECOGNITION service to identify its name which is read out by TEXT TO SPEECH service

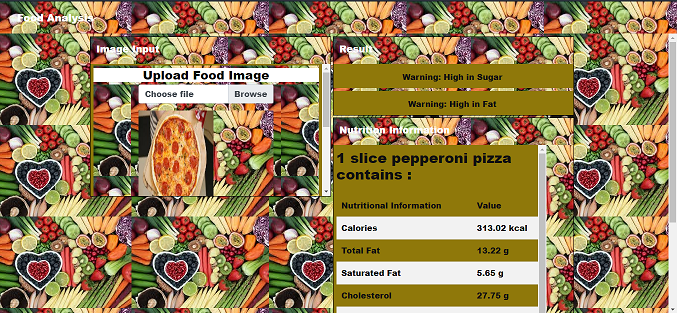
The name of the food is sent to NUTRITIONIX API and a function node to retrieve details from the API

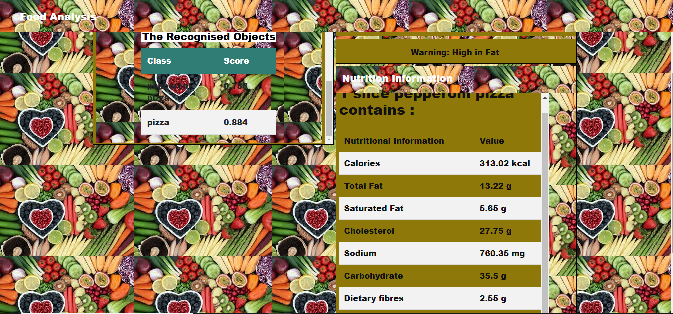
DASHBOARD node is used to display the values and SWITCH node for displaying fat and sugar warnings.

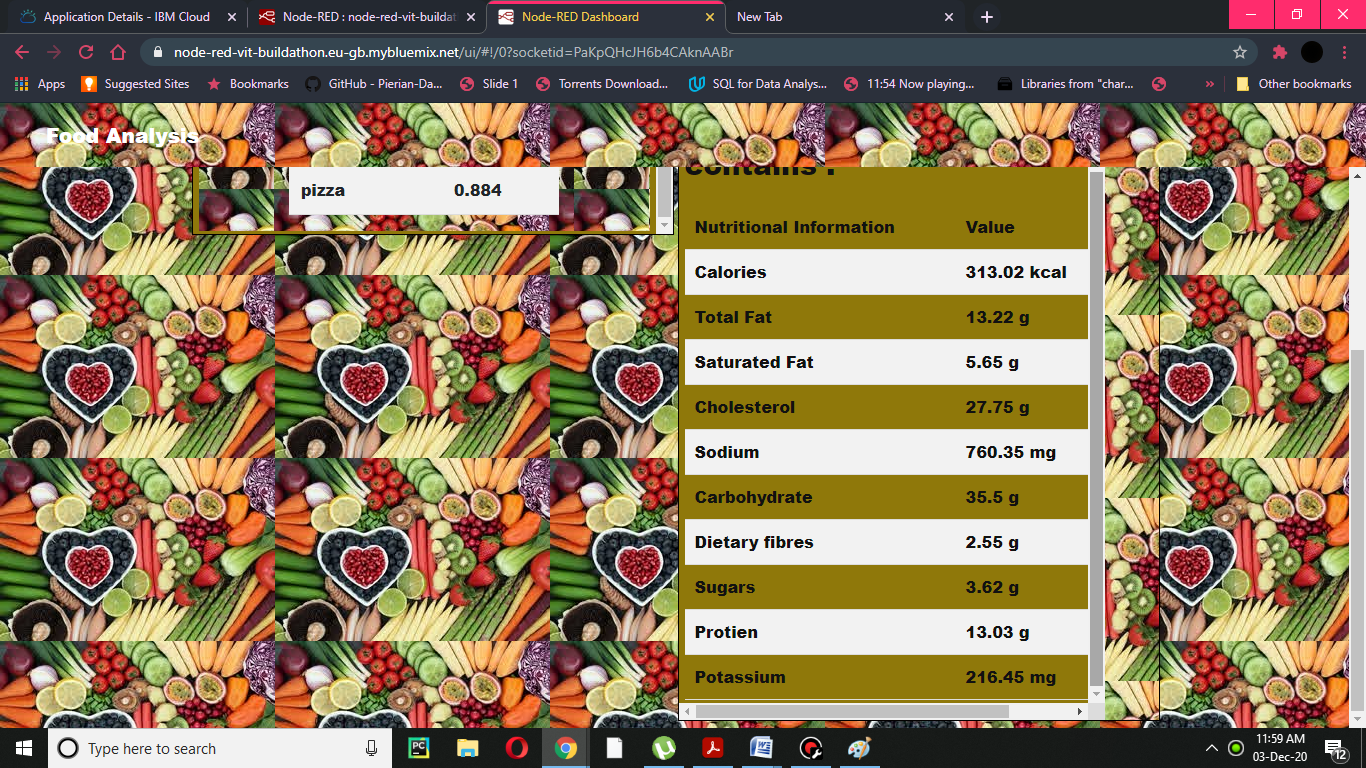
# FLOW CHART :



# RESULT :







# ADVANTAGES AND DISADVANTAGES :

### ADVANTAGES :

* This web app saves time for the users it maintaining a nutritional diet
* I have used an good api which updates in number of food items and increasing accuracy of nutritional; content
* Simple UI
* Easy to use

### DISADVANTAGES :

Accuracy is low for some types of food

# APPLICATIONS :

Measuring accurate dietary intake is considered to be an open research problem in the nutrition and health fields

This is can be used by gyms,fitness studio,Fitness Centers,Hospitals

# CONCLUSION :

Using this webapp user can have constant track of what are eating by which there might be reduction of obesity cases and malnutrition cases

# FUTURE SCOPE :

This can be even more upgraded by creating a login page and connecting it to mysql/mongodb so that the web app itself keeps track of the user's nutrition intake.

Developing it evenmore for recognising volume of foods

# BIBLIOGRAPHY :

<https://smartinternz.com//ibm-project/55>

<https://github.com/IBM/watson-calorie-counter/blob/master/README.md>

<https://github.com/johnwalicki/Node-RED-Twitter-Workshop>

# APPENDIX :

### SOURCE CODE :

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# 

# 