

**North South University**

Department of Electrical & Computer Engineering

**Project Proposal**

**Summer 2019**

**Project Name**: Eat Healthy

**Course No**: CSE 299 **Sec:** 16

**Semester**: Summer 2019

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**Group No**: 7

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**INTRODUCTION**

Food and nutrition is an integral part of everyday life. We often say “Food is life” and although that can be true for the majority, we lose control and end up having an unbalanced diet causing severe health issues.

Eat Healthy is a simple yet powerful AI integrated mobile application. Its main purpose is to detect the calorie count of the food we are having in our everyday lives. A user can easily keep track of the amount of calories they are consuming each day by taking a picture of the food they are having. It also provides the user with daily health tips.

Eat Healthy is a cross-platform mobile application available both for Android and IOS which allows users from both popular platforms to have access to the app.

**FEATURES**

* Food Recognition – It will detect the food a user is having
* Calorie Count – It will inform the user the amount of calories present in the food
* Other Nutrition Facts – It will provide additional data on the nutrition present
* Daily Health Tips – Random Health Tips would be generated daily
* Calorie Tracker – It will let the user know the total calorie consumed each day
* Signing up using Google and/or Facebook account

**TECHNOLOGY**

We decided to go with latest technologies for developing this application in order to give users a better experience.

*Frontend*

For the front end we will be using React Native/ Flutter. This enables cross platform development which allows the app to be compatible with both IOS and Android. It also gives a more premium User Interface and Experience.

*Backend*

Node.JS will be used as the app’s backend. Node.JS is an excellent technology especially for streaming data, real-time chat applications and APIs.

*Database*

We will be using MongoDB as the database. MongoDB uses JSON or BSON documents to store data and provides high performance, availability and automatic scaling.

*Artificial Intelligence*

Image classification can be a very useful technology to give us an idea on what is in a picture. However, what we are doing here is detecting what food is in the picture with a 98% accuracy and get information. TensorFlow lite and/or Keras would be used to produce such results. With the help of YOLO V2 Tiny and Python, the initial set of data will be trained and then transferred to the app accordingly. YOLO (You Only Look Once) is a powerful real time object detection system which can be trained to identify the various type of food available.

*Payment method*

The Payment Request API will be used for making payments. This API allows custom ways to take payments – Credit cards, Gift cards etc. We will be using this API to ensure that users can pay using their Visa Cards and MasterCards.

For additional details on the API please visit - <https://www.w3.org/TR/payment-request/>

*Additional technologies*

OAuth for React native/ Flutter will be used to allow users to login using their Facebook and/or Google account.

To keep up with the modern forms of technology we would be using additional technologies to ensure complete user satisfaction. GraphQL is a query language which will act as a bridge between the server-side and the client-side. It provides a faster and efficient way of pulling data from the database.

Health tips would be scrapped from websites and updated to show the user on a daily basis.

We may use additional APIs and technologies to broaden our database of the food we have such as Clarifai’s image recognition API and IBM Watson Visual Recognition.

**Monetization**

As the app is targeting the Bengali food market, information is limited on the food available. Users can add custom foods with the calorie count and relevant details with a charge of BDT 50 per food item after 5 items have already been added. This will ensure the users to have a better estimation of the calorie intake each day.

The initial purpose of the app is to give users the calorie count of the food they are having. However, with a one-time charge of BDT 100, users can also get information on other nutritional facts each time they take a photo of the food they are consuming.