

# Food Recipe Generator System

Minor Project (4IT32)

## Project Members

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Project Guide

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# Overview

Today's Agenda

- Objective and scope
- Project Overview
- Modules
- Technologies
- Implementation
- Live Demo
- Conclusion

# Introduction

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## WHAT IS RECIPE GENERATOR SYSTEM?



Aim of recipe generator system to make a user aware of the various dishes which can be cooked from available set of ingredients or an input image given by a user. Thus, systems like this never get their place in real life. We decided to develop a Recipe Generation model by applying Neural Network on it.

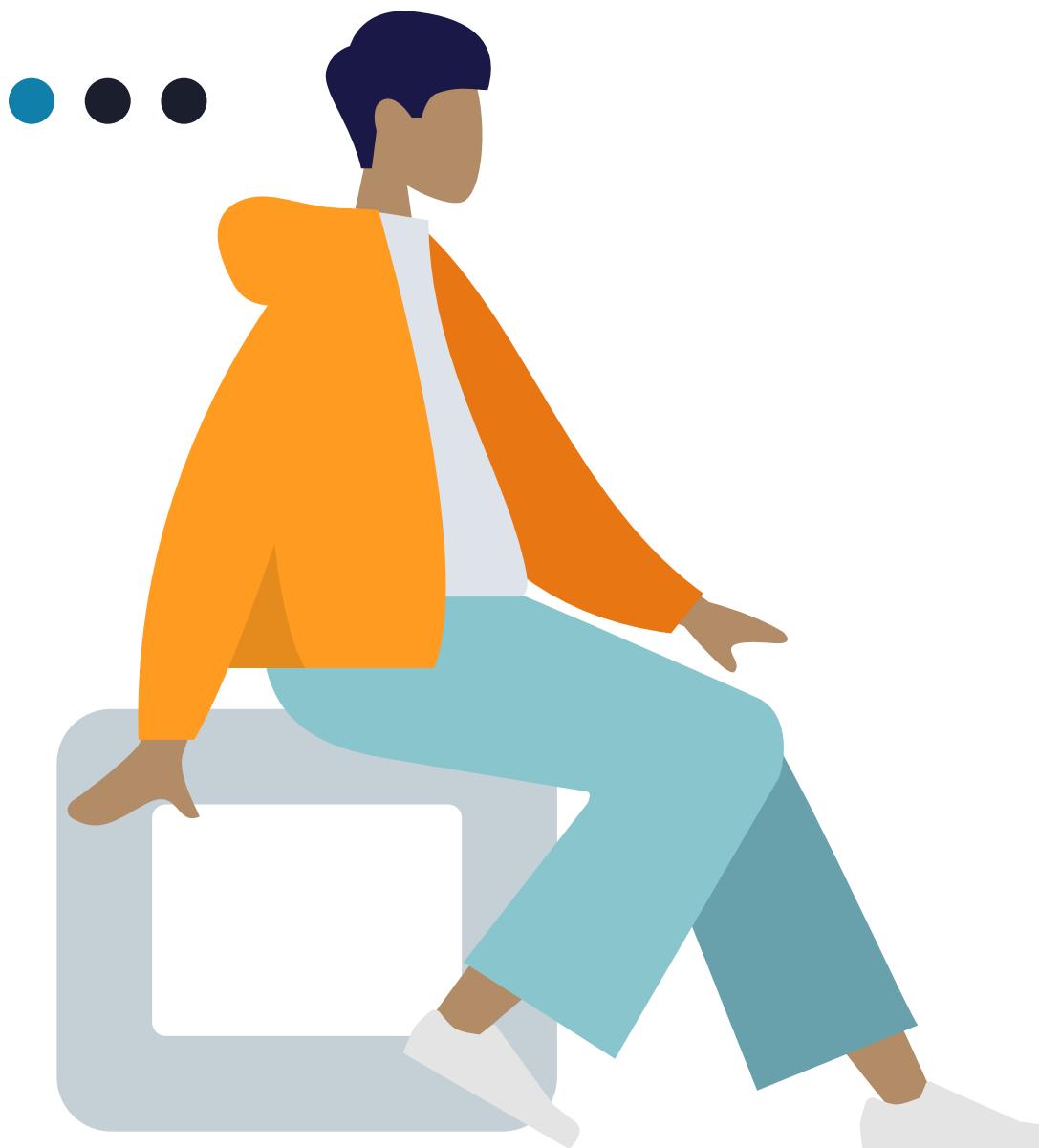
A dynamic website incorporating machine learning techniques.

Search options:

- Search by name
- Search by food image

Output: self generated recipes

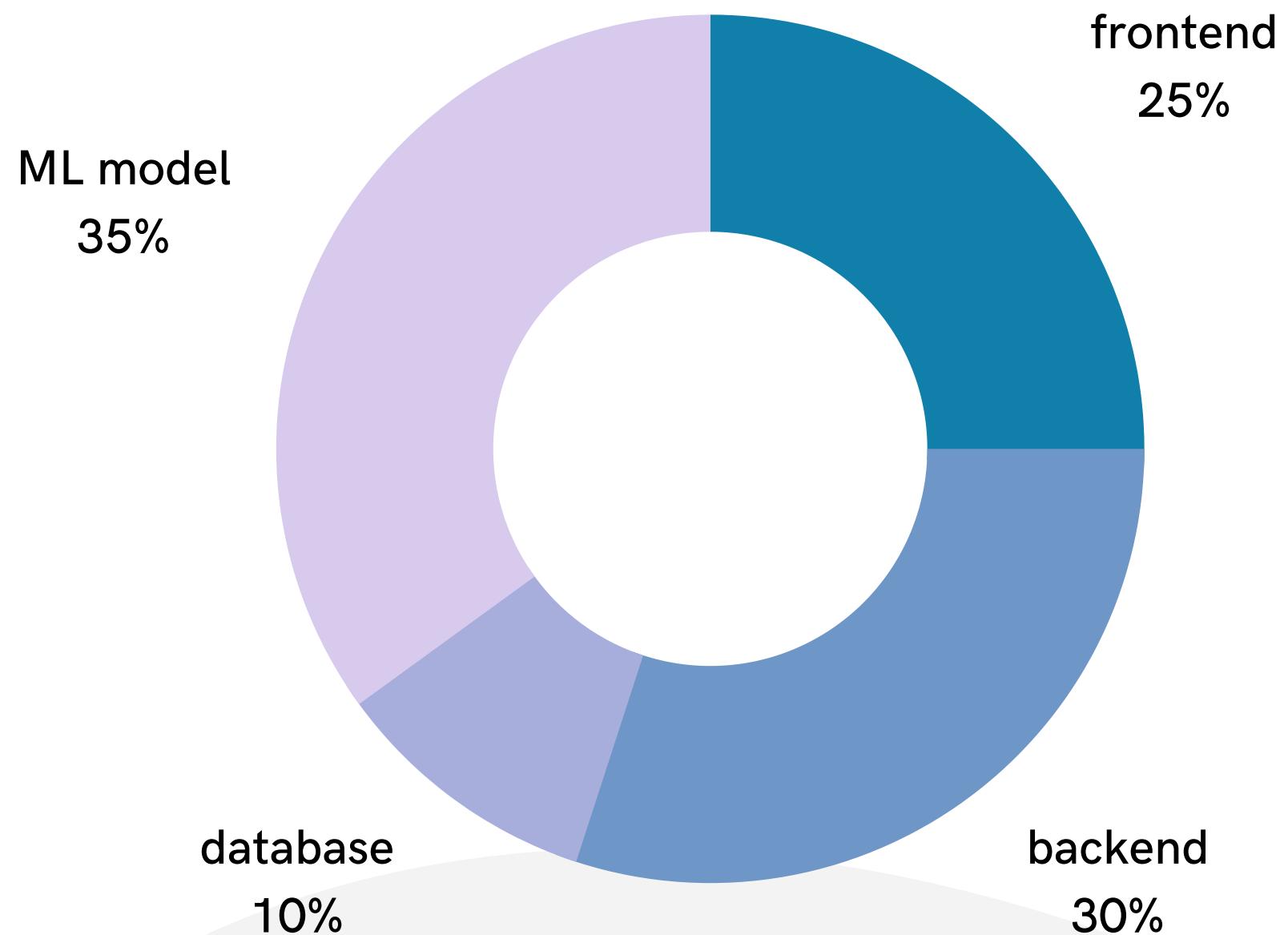
It is a recipe generator system and not a recommender system!!!



# Modules

- **Authentication**
- **User profile**
- **By Name :** Enter the name of food on search bar and you can see its ingredients
- **By Image :** You can upload the image of food and its generate the recipe of food
- **Comment**
- **Admin Panel**

# Technology



## Frontend

- HTML
- CSS, Bootstrap
- JavaScript

## Backend

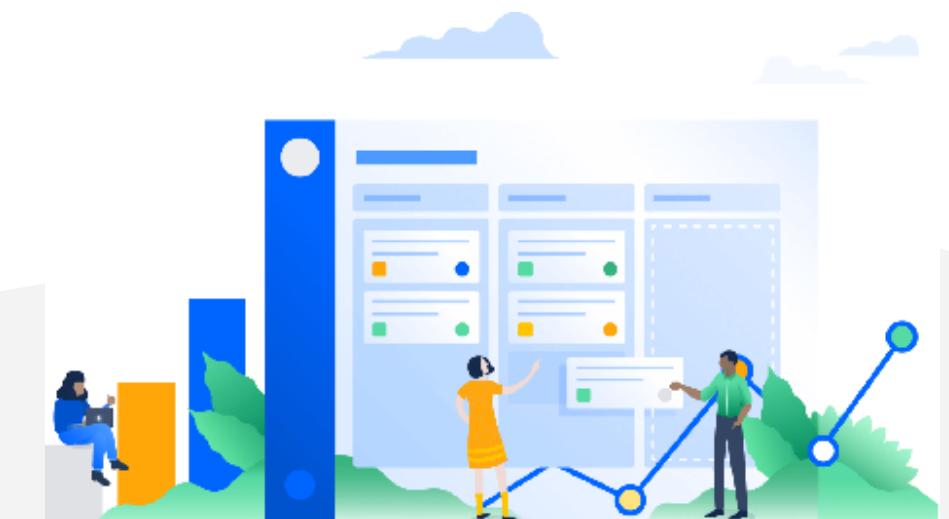
- Python
- Django

## Database

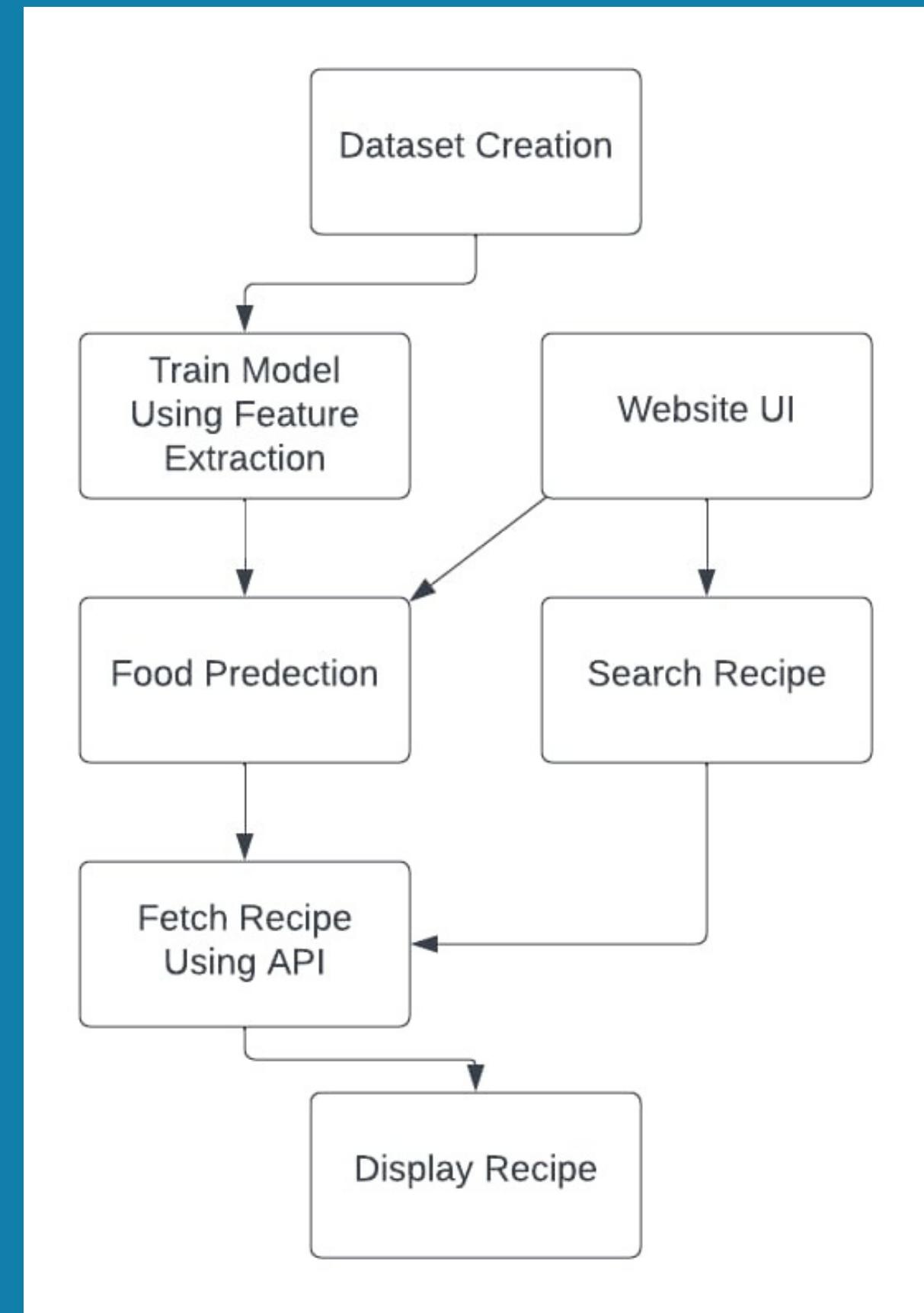
- Mysql

## Machine learning, Deep learning framework and Libraries

- TensorFlow
- Keras



# System Flow chart



# implementation

## Food Predict Dataset Creation

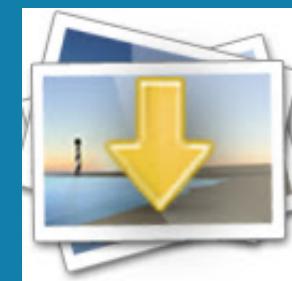
First we did classification, training and testing on food 101 dataset which is open source dataset on Kaggle.

Later as we instructed our project guide, we Created our own dataset of Indian food items which contains 50 food items and in each we have 150 images of that food. So we created a Indian food dataset with 7500 images.



ImageAssistant

(chrome extensions)

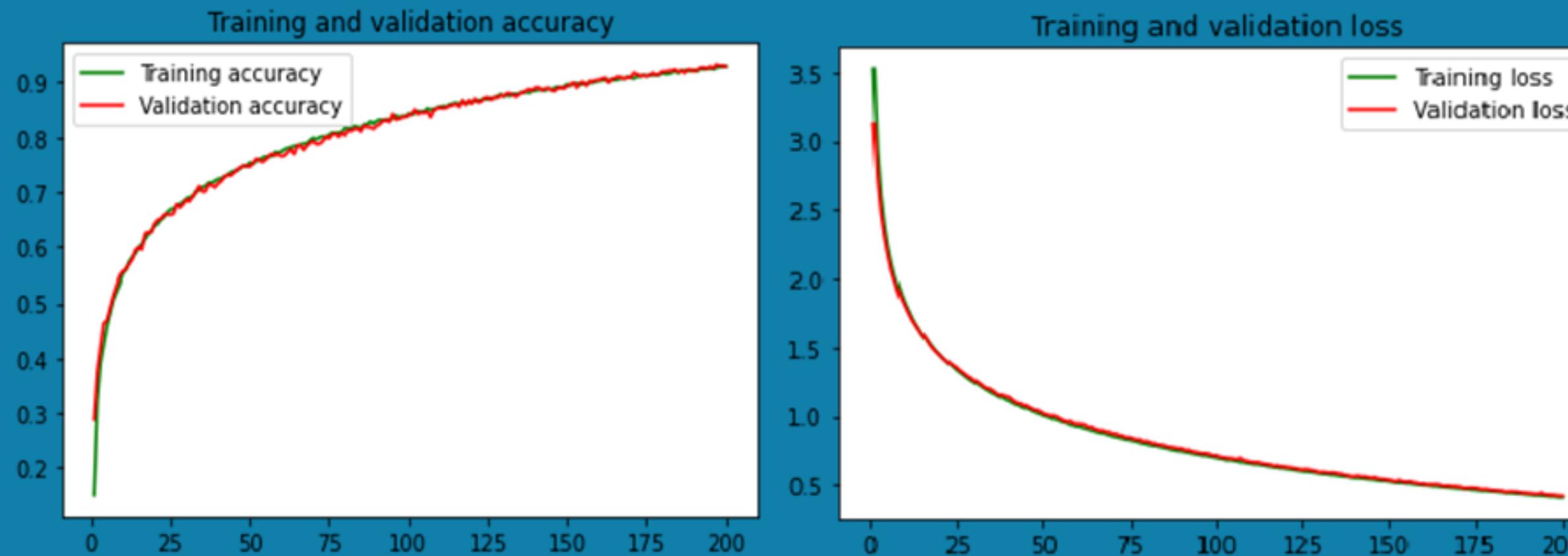


Fatkun Batch Download

# Training model

For training we are using 70% images to train set.

We trained our model using various pre trained models like mobilenetV2, InceptionV3, Resnet50.



# Testing model

For testing we used 30% images from dataset. By comparing all trained models we got maximum accuracy using mobilenetV2 which is around 92%.

```
Epoch 195/200
469/469 [=====] - 3s 6ms/step - loss: 0.4244 - acc: 0.9264 - val_loss: 0.4317 - val_acc: 0.9289
Epoch 196/200
469/469 [=====] - 3s 5ms/step - loss: 0.4206 - acc: 0.9240 - val_loss: 0.4305 - val_acc: 0.9258
Epoch 197/200
469/469 [=====] - 3s 6ms/step - loss: 0.4178 - acc: 0.9264 - val_loss: 0.4282 - val_acc: 0.9324
Epoch 198/200
469/469 [=====] - 3s 6ms/step - loss: 0.4181 - acc: 0.9281 - val_loss: 0.4276 - val_acc: 0.9302
Epoch 199/200
469/469 [=====] - 3s 5ms/step - loss: 0.4144 - acc: 0.9280 - val_loss: 0.4246 - val_acc: 0.9307
Epoch 200/200
469/469 [=====] - 3s 6ms/step - loss: 0.4134 - acc: 0.9293 - val_loss: 0.4219 - val_acc: 0.9284
```

# Food Prediction

After Successfull training we save the model name as food\_detector.modeluploaded images will be predicted by this model



chhole\_bhature



alu\_matar



mango\_lassi



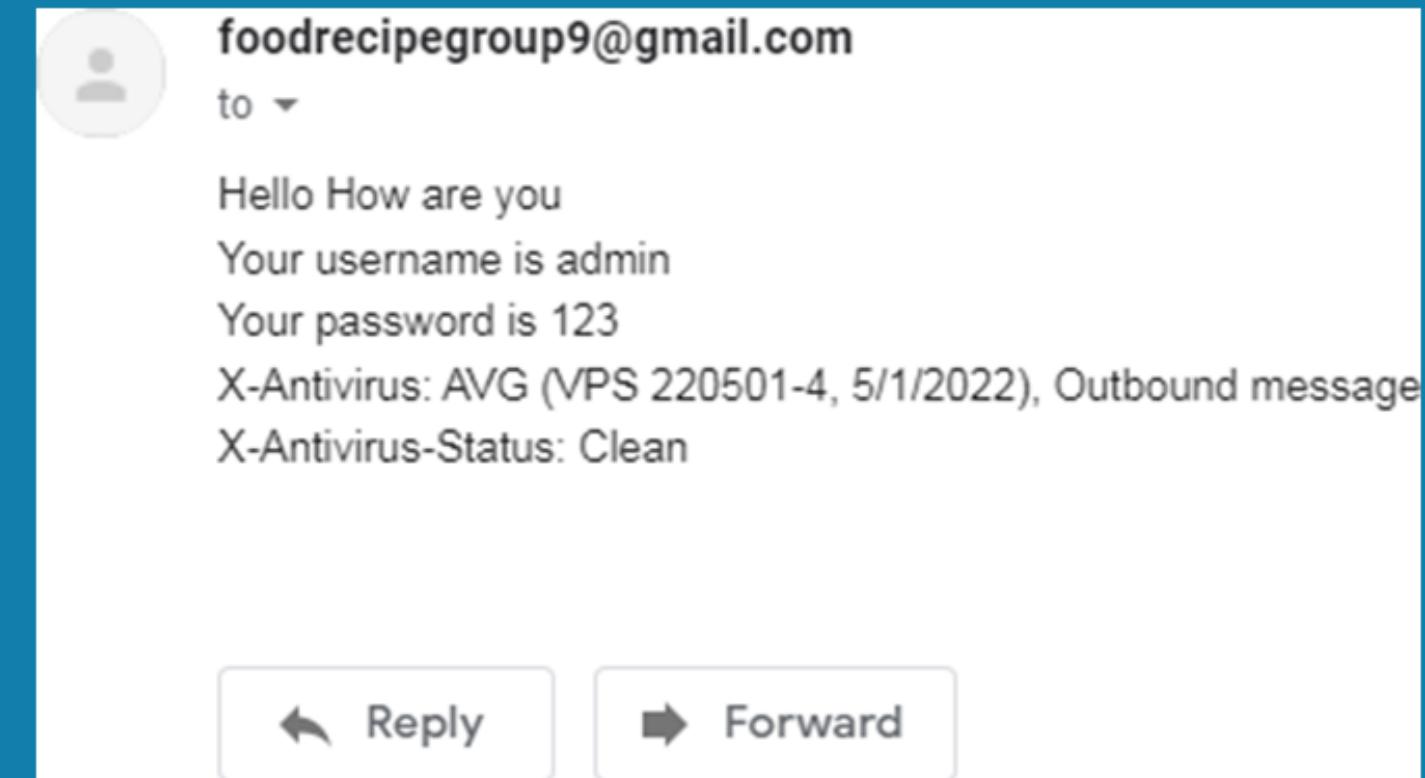
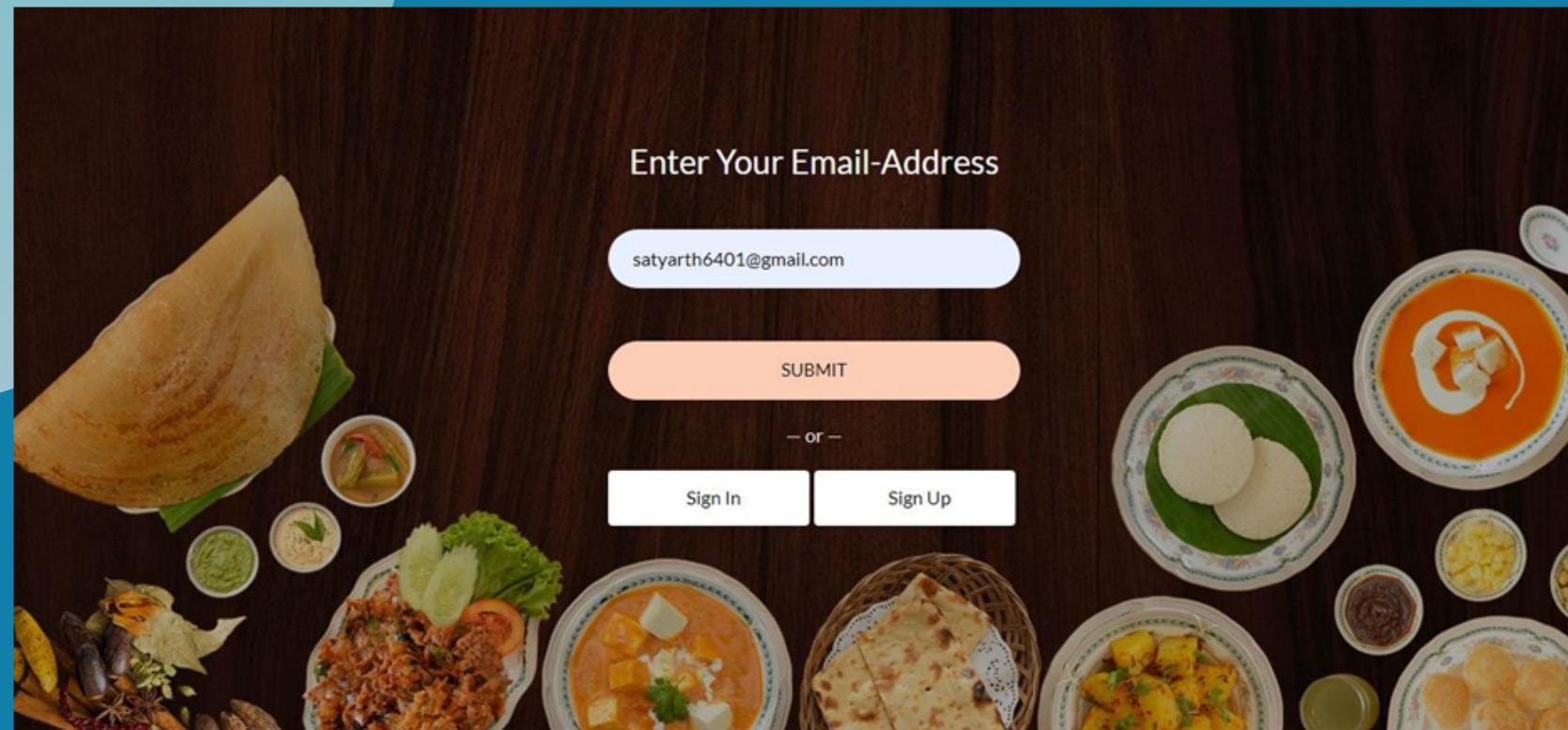
french\_fries

# Website Interface

- Login Page
- Forgot password
- Home Page
- Food detection
  - Food Recipe by Image
  - Food Recipe by search
- Comment page
- Administrator

# Forgot password

If user forget the password then he can click on forgot password option. User have to provide his email id and he will get password through mail.



# Home Page

After finishing authentication or login user is landed to easy to use and Beautiful Home Page, therethen they find By Image and By Search option to proceed further



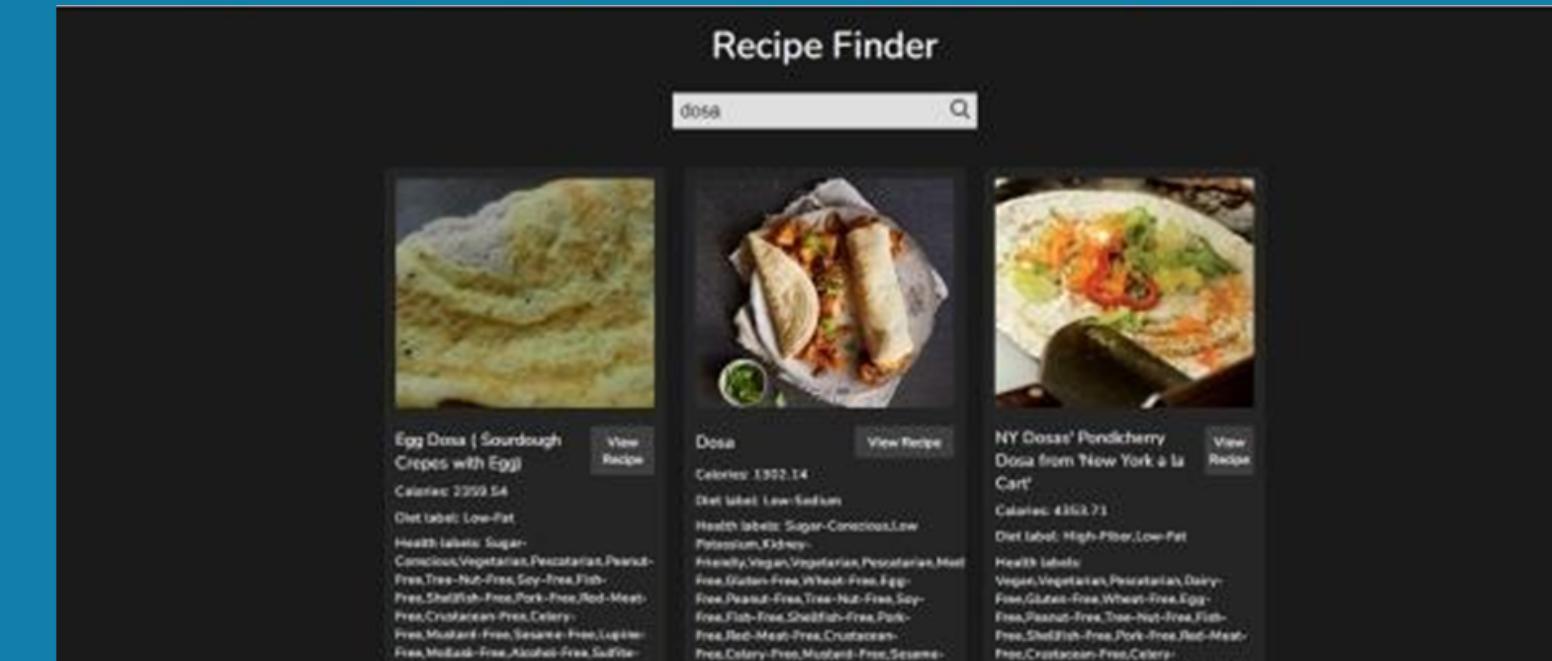
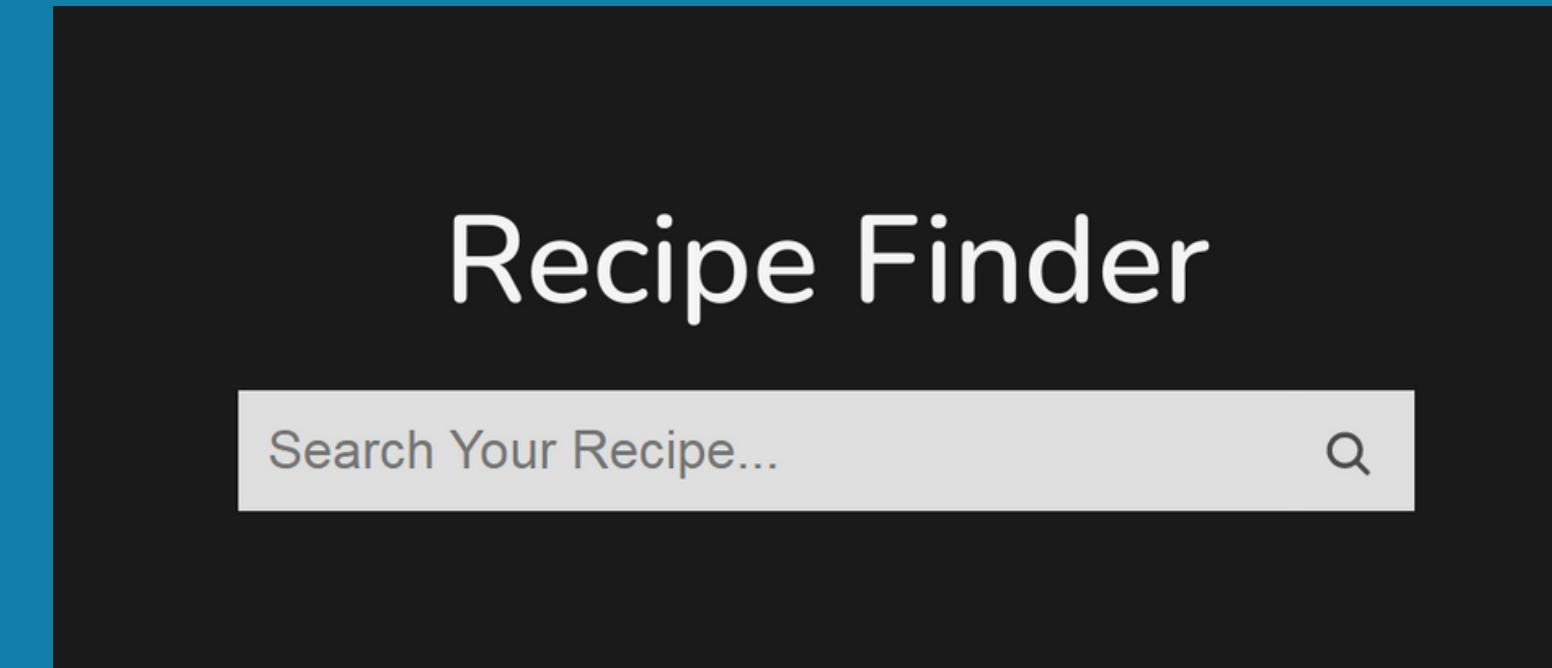
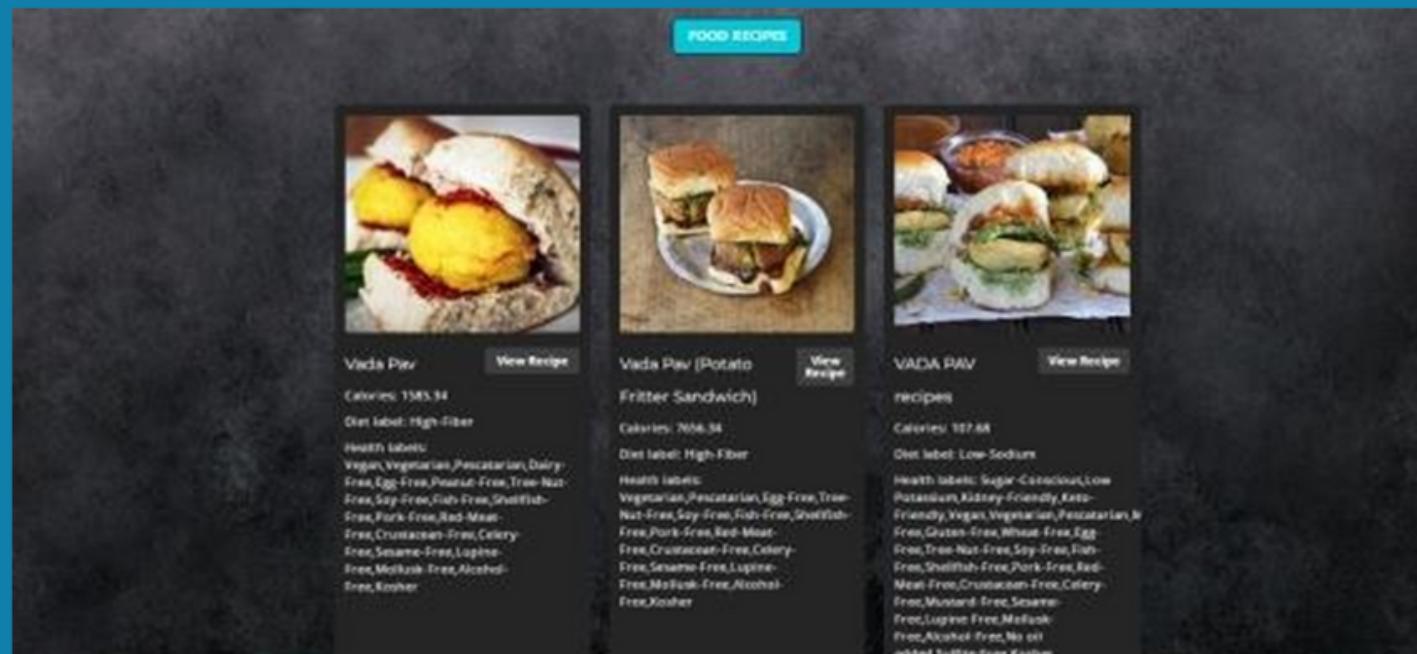
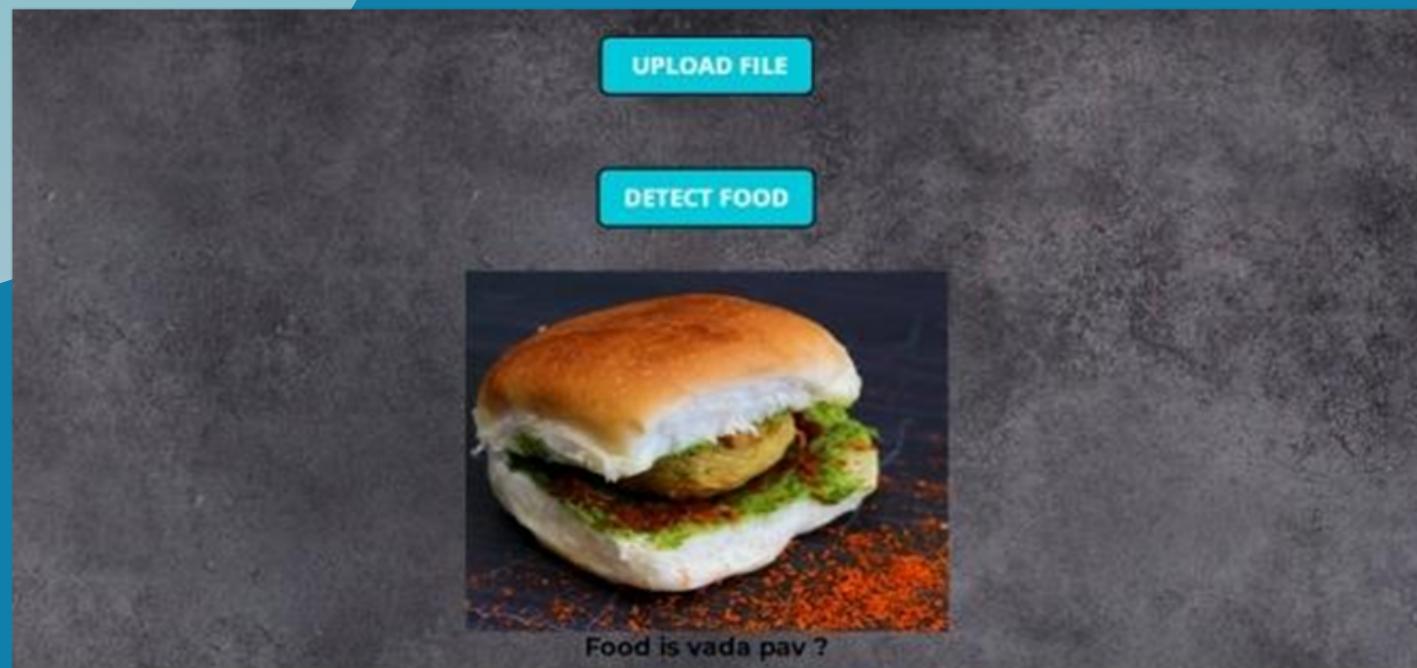
# Food detection

- Upload File

That means user have to upload the photo of cuisine that they want find recipe about and name of that recipe.

- Detect Food

By clicking this user become able to find the recipe name and below that page our system also shows the recommendation videos of the same cuisine, by using that you would become able to find recipe making procedure.



# Comment page

User can add comment and share their opinion and read others comment also. based on that we can improve our website.

# Administrator

Admin can see the details of all registered users block any particular user and delete his/her account.

Admin can see all the comments and delete particular comment.



# Recipe Search API

For recipe search from predicted food item we are using Edamam's API.

Edamam's Recipe Search API lets you integrate recipes and faceted recipe search into your websites or mobile applications.

The screenshot shows the Edamam Recipe Search API pricing page. The top navigation bar includes links for EDAMAM, APIs, Nutrition Wizard, Recipes, Partners, Signup API, Login, and a menu icon. The main heading is "Recipe Search API" with a subtext: "Edamam's Recipe Search API lets you integrate recipes and faceted recipe search into your websites or mobile applications." Below the heading is a navigation bar with links: Pricing (underlined), Try API Demo, Documentation, Showcases, FAQ, and Attribution. The main content area features a table comparing pricing plans:

	DEVELOPER	ENTERPRISE CORE	ENTERPRISE UNLIMITED
Monthly fee	<b>FREE</b>	\$49 per month	\$999 per month
Overage cost per hit	Not allowed	\$0.01/per hit	\$0 per hit
	<a href="#">Get Started</a>	<a href="#">Subscribe Now</a>	<a href="#">Contact Us</a>
API calls limits	10,000 month	50,000 month	unlimited*
Throttling calls/min	10/minute	unlimited*	unlimited*

At the bottom right of the table is a green button labeled "Support".



Three decorative dots in the top right corner: a teal dot and two dark navy dots.

# Live Demo

# Conclusion & Future work

- As we planned and discussed to explore various related datasets and perform data preprocessing in order to extract the desired attributes and also perform model training using Machine Learning or Deep Learning algorithms to find the food name and its recipe through Edamam's API.
- In future we will add more images in our dataset to get more accuracy. Also add some feature like favorite recipe, comment on post, rating of recipe.

A large, stylized graphic of leaves in shades of blue, teal, and white occupies the left and right sides of the slide. The leaves are layered and overlap, creating a sense of depth. The background behind the text is a solid teal color.

Thank you

