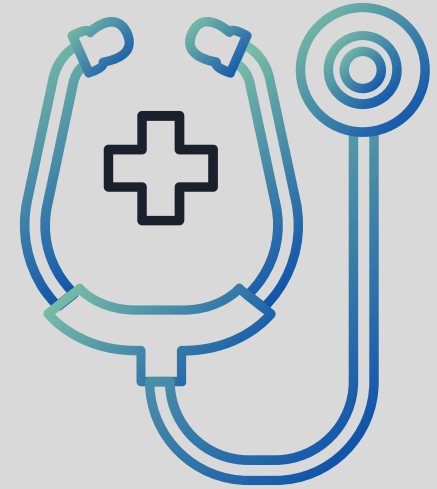
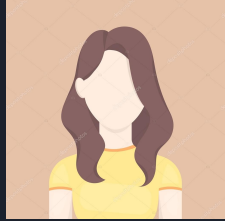


Healthcare Center

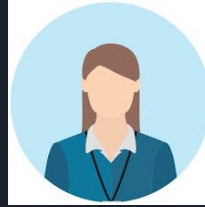
Here your journey begins to become fit.



Our team



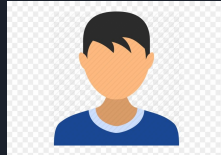
ANSHIKA AGRAWAL-21BCE10449
CO-FRONTEND DEVELOPER



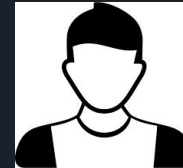
MANSAA NARANG-21BCE10510
CO-FRONTEND DEVELOPER , PPT HEAD,
CO-WEEKLY REPORT & CO-PROJECT REPORT
HEAD



JYOTIRADITYA PATIL-21BCE10496
BACKEND DEVELOPMENT HEAD



PRIYANSHU AGNIHOTRI-21BCE11637
BACKEND DEVELOPMENT HEAD



AYUSH KARKARE-21BCE10517
CO-WEEKLY REPORT HEAD AND CO-PROJECT REPORT
HEAD

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01

INTRODUCTION





INTRODUCTION

With the website you can calculate your Body Mass Index (BMI) and get information on diet and yoga asanas. The BMI calculator provides a quick and easy way to determine your BMI score based on your height and weight. In addition, the website offers information on healthy diets and provides guidance on how to incorporate nutritious foods into your daily routine according to your BMI. It also have a section on yoga asanas, which are physical postures that can help you improve your physical and mental well-being. If you're looking to maintain a healthy weight, improve your overall health, or just want to learn more about diet and yoga, our website has something for everyone.

02

EXISTING WORK WITH LIMITATION



While our website provides valuable information on Body Mass Index (BMI), yoga asanas, and diet plans, it's important to keep in mind that it has some limitations.

- ❑ Limitations of BMI: BMI is a simple calculation and doesn't take into account factors such as muscle mass, body fat percentage, and overall health. It may not be accurate for athletes or older individuals, and it may overestimate body fat in muscular individuals.
- ❑ Limitations of Yoga: Yoga can be beneficial for physical and mental health, but it's important to remember that everyone's body is different and what works for one person may not work for another. It's important to consult a doctor before starting a new yoga routine and to work with a qualified instructor to ensure you're doing the poses safely and correctly.
- ❑ Limitations of Diet Plans: Our website provides information on healthy diets, but it's important to remember that everyone's nutritional needs are different. A diet that works for one person may not be suitable for another, and it's important to consult a doctor or registered dietitian before starting a new diet.

03

PROPOSED WORK WITH METHODOLOGY



A proposed method for our BMI, diet plan, and yoga website could be as follows:

First the user when visits the main website so there are three sections available.

- ❑ BMI Calculator: Our website should have an easy-to-use BMI calculator that requires users to input their height and weight. The calculator should then provide an instant BMI score and interpretation of the user's weight status.

If the user has already calculated his/her BMI so they can directly go and check the diet plans and yoga asanas.

- ❑ Diet Plans: Our website offers diet plans based on the user's Body Mass Index. So we will be providing diet charts with the items that are easily available and affordable.
- ❑ Yoga Asanas: Our website have a section dedicated to yoga asanas, with clear instructions and images for each pose. This section should also include information on the benefits of each pose and how to perform them safely.

04

NOVELTY OF PROJECT



Our website, which combines Body Mass Index (BMI) calculation, diet plans, and yoga asanas, differentiates itself from other websites in the following ways:

- ❑ **Personalized Approach:** Our website diet plans based on the user's specific BMI, instead of a one-size-fits-all approach. This ensures that the diet plans are tailored to the user's individual needs and goals.
- ❑ **Integration of BMI, Diet and Yoga:** Our website integrates BMI calculation, diet plans, and yoga asanas, providing a comprehensive approach to health and wellness. By combining these three elements, our website offers a unique and holistic approach to weight management.
- ❑ **User-Friendly Design:** Our website should have a user-friendly interface that makes it easy for users to navigate and find the information they need. The BMI calculator and diet plan are straightforward and easy to use.
- ❑ **High-Quality Content:** Our website should provide high-quality and accurate information on BMI calculation, healthy diets, and yoga asanas. This will help users make informed decisions about their health and wellness.

For the BMI framework our project differs as :

- We have trained our BMI framework with the dataset consisting of more than 1K images.
- With being trained with dataset consisting of more than 1K images the we get an accurate result .Chances of getting an error has been reduced.
- Our model is highly precise if photo are taken properly that is there are proper lightings,the visibility is proper,proper background.

05

REAL TIME USAGE



- ❑ A BMI website is a great way to keep track of your weight and BMI. These websites offer a range of tools and resources to help you stay on track with your weight goals.
- ❑ Using a BMI calculator, diet plan, and yoga asanas can help you reach and maintain a healthy BMI.
- ❑ A BMI calculator can help you calculate your BMI and determine whether you are underweight, normal weight, overweight, or obese for your height.
- ❑ A diet plan can help you create creating plan to reach and maintain a healthy weight.
- ❑ Yoga asanas can help you build strength and flexibility while burning calories. Practicing yoga can also help you manage stress and improve your mental health.
- ❑ They can help you calculate your BMI, create a diet plan and exercise plan, and track your progress over time.

06

HARDWARE AND SOFTWARE REQUIREMENTS



HARDWARE REQUIREMENTS

The hardware requirements are:

1. 4GB of RAM
2. Intel i5 or higher processor
3. 64 bits operating System

SOFTWARE REQUIREMENTS

VISUAL STUDIO CODE

Visual Studio Code is a streamlined code editor with support for development operations like debugging, task running, and version control. It aims to provide just the tools a developer needs for a quick code-build-debug cycle and leaves more complex workflows to fuller featured IDEs, such as Visual Studio IDE. It runs on macOS, Linux, Windows.

Atom

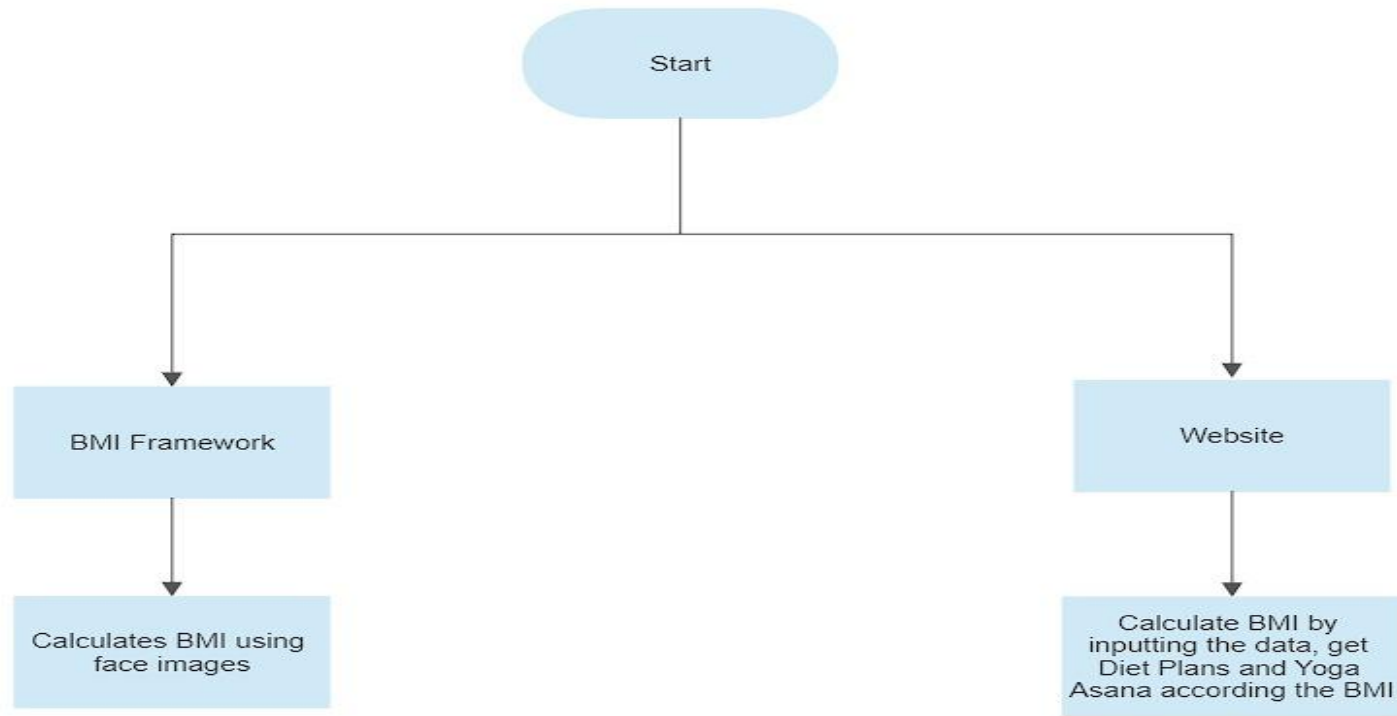
Atom is a free and open-source text and source code editor developed by GitHub (Atom – A Hackable Text and Source Code Editor for Linux). Its developers call it a "hackable text editor for the 21st Century" (Atom 1.0). Atom enables users to install third-party packages and themes to customize the features and looks of the editor, so you can set it up according to your preferences and with ease (Atom). It is as welcoming to a newbie as it is for an experienced developer.

07

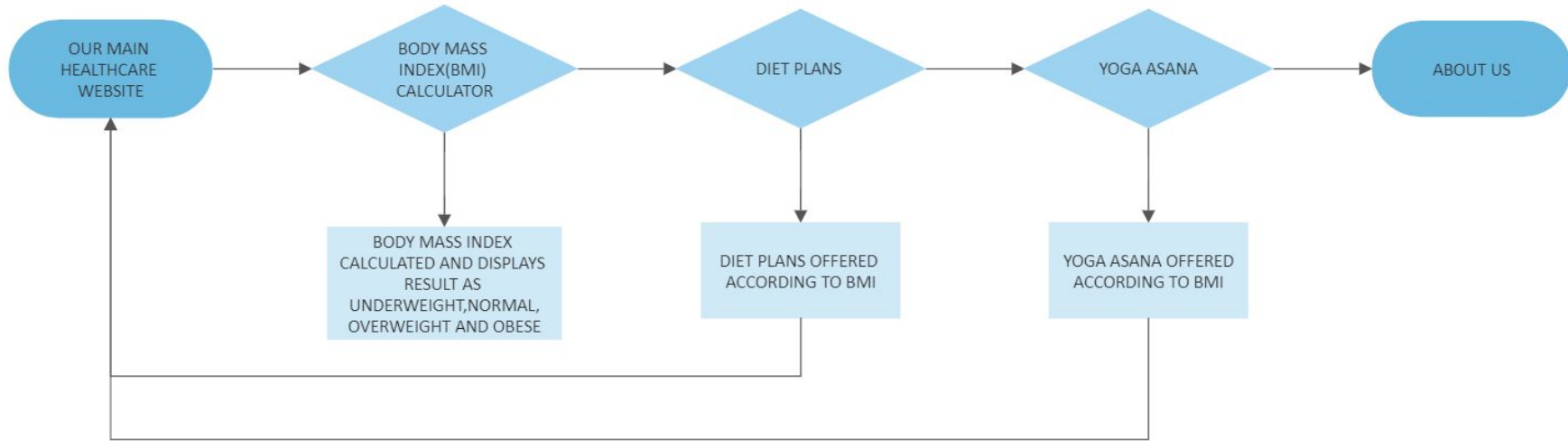
ARCHITECTURE



ARCHITECTURE



OVERALL ARCHITECTURE



08

LITERATURE REVIEW



LITERATURE REVIEW

The purpose of this literature review is to explore the potential use of a website that calculates BMI, offers diet plans, and yoga asanas. The review will focus on the potential health benefits of such a website, as well as the potential risks. The review will also explore the potential impact on user's health and lifestyle.

- ❑ The website offers a range of health benefits by providing users with a comprehensive diet plan and yoga asanas. These can help users to maintain a healthy weight, improve their physical fitness, and reduce their risk of developing chronic illnesses.
- ❑ The website also carries the potential risk of users becoming overwhelmed by the amount of information available, leading to confusion and frustration.
- ❑ The website has the potential to have a positive impact on users' health and lifestyle. It can provide users with the tools and information they need to make healthy lifestyle choices, such as eating a balanced diet and exercising regularly.

09

MODULE DESCRIPTION



OpenCV-Python

It is a library of Python bindings designed to solve computer vision problems. `cv2.imread()` method loads an image from the specified file. If the image cannot be read (because of missing file, improper permissions, unsupported or invalid format) then this method returns an empty matrix.

NumPy

NumPy (Numerical Python) is an open source Python library. NumPy library contains multidimensional array and matrix data structures (you'll find more information about this in later sections). It provides `ndarray`, a homogeneous n-dimensional array object, with methods to efficiently operate on it. NumPy can be used to perform a wide variety of mathematical operations on arrays. It adds powerful data structures to Python that guarantee efficient calculations with arrays and matrices and it supplies an enormous library of high-level mathematical functions that operate on these arrays and matrices. The NumPy API is used extensively in Pandas, SciPy, Matplotlib, scikit-learn, scikit-image and most other data science and scientific Python packages.



TRAIN GENERATOR

One of the most flexible ways to train machine learning models is by feeding the training data to the fit function via a python generator. This method has several advantages, it allows to preprocess the data in a customized way for every training loop (e.g. data augmentation) it allows to automatically deal with the batch size and the shuffling of the data for different epochs, and finally, it can be used to use gradually the training dataset if its size does not allow to load everything into the RAM.

CONFIG FILES

Config files are used to store key value pairs or some configurable information that could be read or accessed in the code and at some point, of time. Using config files makes your settings and code more reusable and keep the settings information at a centralized location and segregated.

AUGMENTOR

Augmentor is a Python package designed to aid the augmentation and artificial generation of image data for machine learning tasks. It is primarily a data augmentation tool, but will also incorporate basic image pre-processing functionality.



PANDAS

Pandas is an open-source library that is made mainly for working with relational or labeled data both easily and intuitively. It provides various data structures and operations for manipulating numerical data and time series. This library is built on top of the NumPy library. Pandas is fast and it has high performance & productivity for users.

Matplotlib

Matplotlib is an amazing visualization library in Python for 2D plots of arrays. Matplotlib is a multi-platform data visualization library built on NumPy arrays. One of the greatest benefits of visualization is that it allows us visual access to huge amounts of data in easily digestible visuals. Matplotlib consists of several plots like line, bar, scatter, histogram etc.



ImageDataGenerator

ImageDataGenerator is used for getting the input of the original data and further, it makes the transformation of this data on a random basis and gives the output resultant containing only the data that is newly transformed. Image data generator class is also used to carry out data augmentation where we aim to gain the overall increment in the generalization of the model. Operations such as rotations, translations, shearing, scale changes, and horizontal flips are carried out randomly in data augmentation using an image data generator.

ResNet50

Resnet is short name for Residual Network that supports Residual Learning. The 50 indicates the number of layers that it has. So Resnet50 stands for Residual Network with 50 layers. In general the trend is to go more deeper number of layers to solve complex tasks and to increase the classification and recognition accuracy. But as we go deeper with the neural networks the accuracy starts saturating and then degrades also. Residual training tries to solve this problem.



Model

An application describes the kinds of data it uses with *models*. A model is a Python class that inherits from the Model class. The model class defines a new Kind of datastore entity and the properties the Kind is expected to take. The Kind name is defined by the instantiated class name that inherits from db.Model.

Dense

Tensorflow dense is the type of layer and function available in Neural networks while implementing Artificial Intelligence and deep learning in a python programming language. Deep connections exist between the neurons in the neural network in dense layers. The pattern followed by them is such that each and every individual neuron gets the input of data from all of the previous layer neurons, forming the complex pattern. Dense is also a function used in the neural networks of TensorFlow, which produces the output by applying activation of the dot of Kernel and input and adding the bias effect to it.



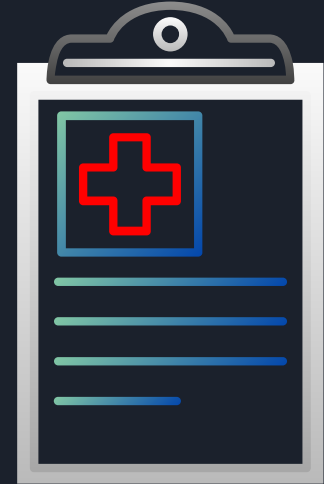
FOR DIET PLAN AND YOGA ASANAS

HTML

HTML stands for Hyper Text Markup Language, which is the most widely used language on Web to develop web pages. HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.

CSS

CSS stands for Cascading Style Sheets. It is a style sheet language which is used to describe the look and formatting of a document written in markup language. It provides an additional feature to HTML. It is generally used with HTML to change the style of web pages and user interfaces

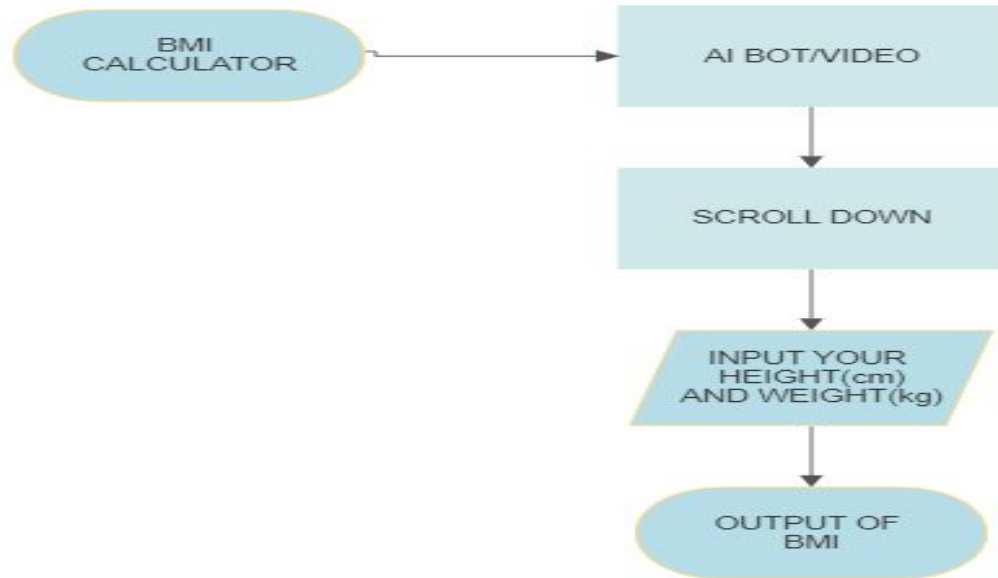


10

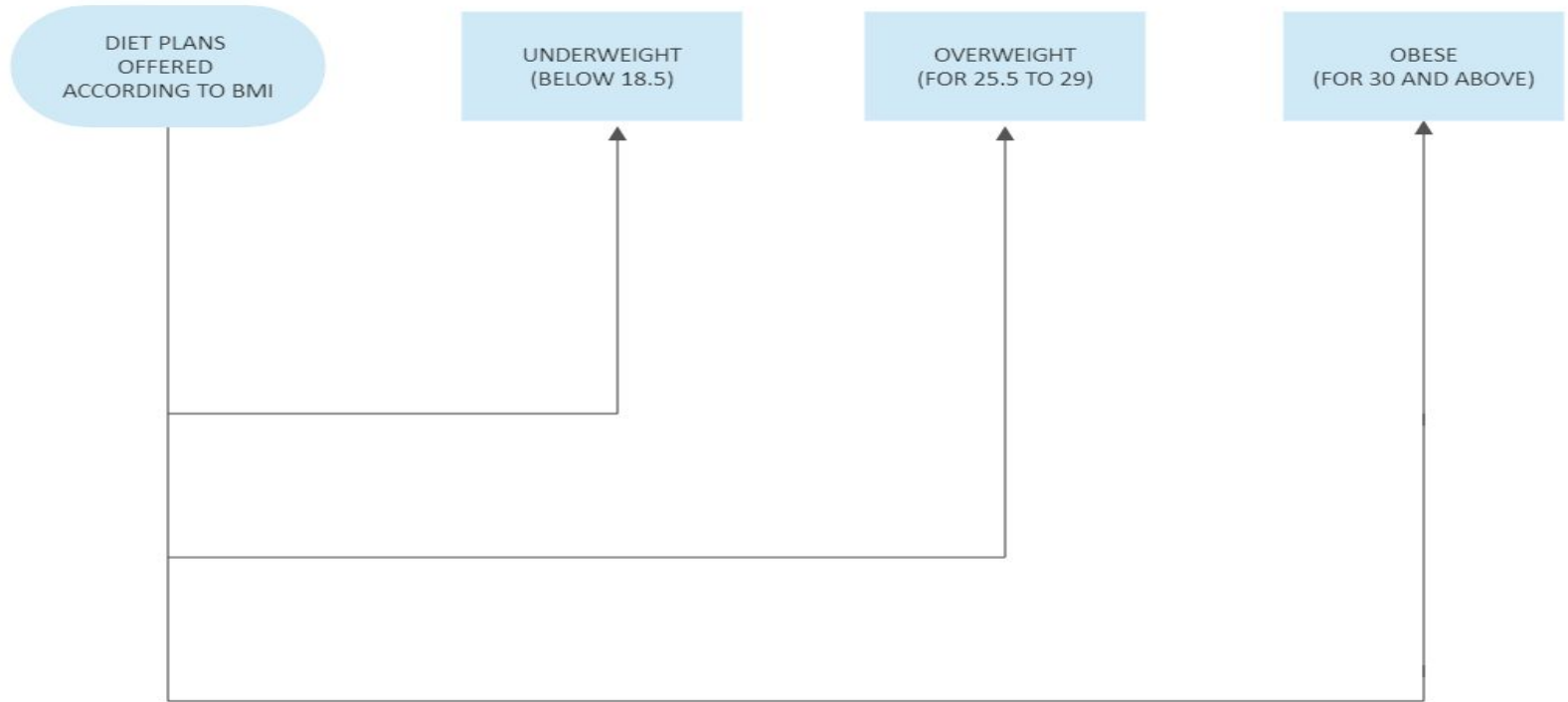
MODULE WORKFLOW EXPLANATION



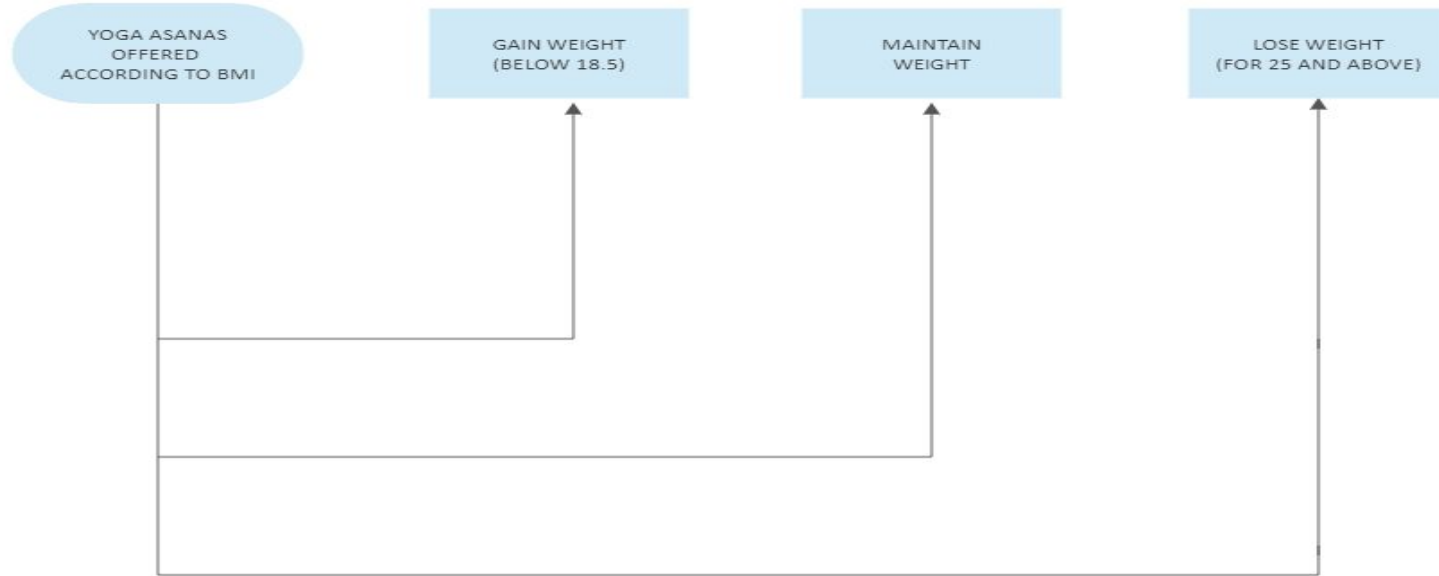
BMI CALCULATOR



DIET PLAN ARCHITECTURE



YOGA ASANA ARCHITECTURE



11

IMPLEMENTATION AND CODING SNAPSHOTS



MAIN WEBSITE

```
<div id="about" class="about-us section">
  <div class="container">
    <div class="row">
      <div class="col-lg-6 align-self-center">
        <div class="left-image">
          
        <div class="section-heading">
          <h2>Improve your Health with our <em>options</em> and <span>facilities</span> provided</h2>
          <p>Here we are providing you three columns of BMI calculator, Diet maker and Yoga Asanas do visit this page
        <div class="row">
          <div class="col-lg-4">
            <div class="fact-item">
              <div class="count-area-content">
                <div class="icon">
                  <img src="https://t4.ftcdn.net/jpg/02/78/69/33/240_F_278693388_nFLHL4xka65jpWnUw7fSBxffv6nmZR6C_j
                </div>
```



Improve Your Health With Our **Options** And **Facilities** Provided

Here we are providing you three columns of BMI calculator, Diet maker and Yoga Asanas do visit this pages step by step and get a proper and healthy daily routine.



Yoga Asanas
provided



Proper Diet Chart
available



Easy to calculate BMI

BODY MASS INDEX

```
1  import os
2  import cv2
3  import dlib
4  from matplotlib import pyplot as plt
5  import numpy as np
6  import config
7
8  detector = dlib.get_frontal_face_detector()
9
10
11  def crop_faces():
12      bad_crop_count = 0
13      if not os.path.exists(config.CROPPED_IMGS_DIR):
14          os.makedirs(config.CROPPED_IMGS_DIR)
15          print('Cropping faces and saving to %s' % config.CROPPED_IMGS_DIR)
16          good_cropped_images = []
17          good_cropped_img_file_names = []
18          detected_cropped_images = []
19          original_images_detected = []
20          for file_name in sorted(os.listdir(config.ORIGINAL_IMGS_DIR)):
21              np_img = cv2.imread(os.path.join(config.ORIGINAL_IMGS_DIR, file_name))
22              detected = detector(np_img, 1)
23              img_h, img_w, _ = np.shape(np_img)
24              original_images_detected.append(np_img)
25
26              if len(detected) != 1:
27                  bad_crop_count += 1
28              continue
```

```
1  from keras.preprocessing.image import ImageDataGenerator
2  import pandas as pd
3  import Augmentor
4  from PIL import Image
5  import random
6  import numpy as np
7  import matplotlib.pyplot as plt
8  import math
9  import config
10
11
12  def plot_imgs_from_generator(generator, number_imgs_to_show=9):
13      ... print('Plotting images...')
14      ... n_rows_cols = int(math.ceil(math.sqrt(number_imgs_to_show)))
15      ... plot_index = 1
16      ... x_batch, _ = next(generator)
17      ... while plot_index <= number_imgs_to_show:
18          ...     plt.subplot(n_rows_cols, n_rows_cols, plot_index)
19          ...     plt.imshow(x_batch[plot_index-1])
20          ...     plot_index += 1
21      ... plt.show()
22
```


DIET PLAN

Diet plan.html > html > head > style > .row

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <style>
5     body{
6       background-image:url("https://static01.nyt.com/images/2016/08/11/well/well_nutritionforrunners_gif/well_nutritionforrunners_gif-jumbo-v5.gif");
7       background-size:100%;
8       background-repeat:no-repeat;
9       background-blend-mode: lighten;
10    }
11  }
12  .grid {
13    display: table;
14    border-spacing:60px;
15    border-image-width: auto;
16  }
17 }
18 .row {
19   display: table-row;
20   text-align: center;
21 }
22 .cell {
23   width: 70px;
24   height: 70px;
25   display: table-cell;
26   box-shadow: 5px 5px 5px black;
27 }
28 }
29 h1{
30   font: 400 100px/1.5 , Helvetica, sans-serif;
31   color: whitesmoke;
32   margin-bottom: 40px;
33   font-size: 55px;
34 }
35 </style>
36 <title>DIET PLAN</title>
37 </head>
```



YOGA ASANAS

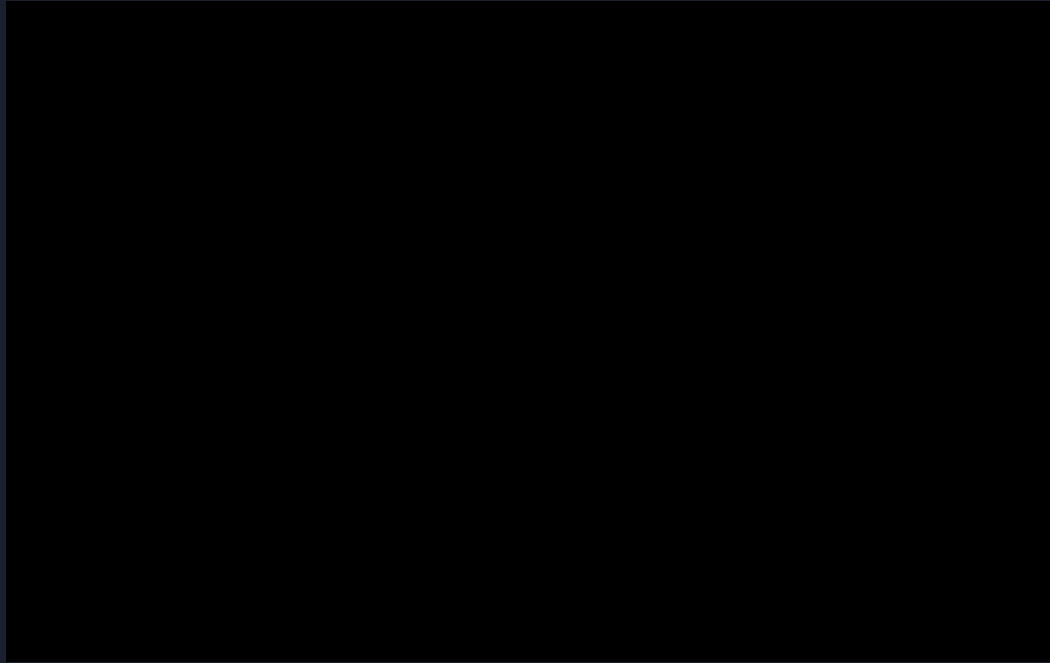
index.html

```
110     <div class="row" data-aos="fade-up" data-aos-duration="400">
111         <div class="col-md-3">
112             <figure>
113                 
114             </figure>
115             <div class="gradient"></div>
116         </div>
117         <div class="col-md-9 right-part">
118             <div class="row">
119                 <div class="col-md-12">
120                     <h2>Yoga Is Good For Everyone!</h2>
121                     <h3>Good for all men, women and childrens</h3>
122                     <p>Our this yoga coloumn of webste will help you to get proper yoga asanas with steps to mai
123                 </div>
124                 <div class="col-md-12">
125                     <div class="row">
126                         <div class="col-xl-4 col-lg-6 col-md-6 col-12 contant-part-1">
127                             <ul>
128                                 <li><i class="fa fa-envira" aria-hidden="true"></i><span><a href="services.html"
129                                 <li><i class="fa fa-envira" aria-hidden="true"></i><span><a href="services.html"
130                                 <li><i class="fa fa-envira" aria-hidden="true"></i><span><a href="services.html"
131                                 <li><i class="fa fa-envira" aria-hidden="true"></i><span><a href="services.html"
132                             </ul>
133                         </div>
134                         <div class="col-xl-4 col-lg-6 col-md-6 col-12 contant-part-2">
135                             <ul>
136                                 <li><i class="fa fa-envira" aria-hidden="true"></i><span><a href="services.html"
```

12

DEMO





13

TESTING



The result of testing a Body Mass Index (BMI) framework would depend on a number of factors, such as the accuracy of the input data (height and weight), the algorithm used to calculate the BMI, and the population for which the framework was designed.

The result of the BMI test would be a number that represents an individual's weight status in relation to their height. The number would be used to categorize the individual as underweight, normal weight, overweight, or obese based on established categories set by the World Health Organization (WHO) or other relevant health organizations.

The population for which the framework is designed is for age group 16-60 years.

When tested for the accuracy of input of data an error of approximate 10 kg/m^3 was detected.

14

RESULTS AND DISCUSSION



Body Mass Index Calculator

Enter Your Height in Centimeters:

Enter Your Weight in Kilograms:

Calculate BMI

BMI Value:

Status:

Body Mass Index Calculator

160

55

Calculate BMI

BMI Value:

Status:

Body Mass Index Calculator

160

55

Calculate BMI

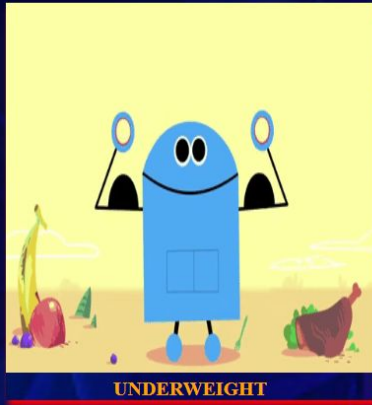
BMI Value:

21.484374999999996

Status:

Normal Weight

DIET CHARTS



NOTE:THE OPTIONS SHOWN HERE IN DIET CHARTS ARE GIF



Yoga Is Good For Everyone!

Good for all men, women and childrens

Our this yoga coloumn of webste will help you to get proper yoga asanas with steps to maintain good health.

🌿 Yoga Cures Cancer

🌿 Improves Attention

🌿 Yogs Makes You Young

🌿 Yogs Boost Energy

🌿 Get Fit and Well

🌿 Yoga Improves Focus

🌿 Yoga Is Great!

🌿 Yoga Recovers Pain!



15

CONCLUSION



BMI (Body Mass Index) is a measure of body fat based on height and weight. A balanced diet plan, including the right amount of nutrients and caloric intake, is important for maintaining a healthy BMI. Yoga asanas can also help with weight management by improving flexibility, strength and reducing stress. Websites providing information on BMI, diet plans, and yoga asanas can be useful resources for individuals looking to improve their overall health and well-being.



Thanks!