SMART Calorie Calculator

A Minor Project Report Submitted To

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal

Towards Partial Fulfillment for the Award of

Bachelor of Engineering

In

Computer Science and Engineering

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CERTIFICATE

This is certified that project entitled " "Smart Calorie Calculator" " *submitted by* *Akash Yadav(9179367044),Rajveer Joshi(7828465682), Sonika Koshal (9691544481) is a satisfactory account of the bona fide work done under our supervision and is recommended towards partial fulfillment for the award of the degree* ***Bachelor of Engineering*** *in* ***Computer Science and Engineering*** *to Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (M.P.)*

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ACKNOWLEDGMENT

I would like to place on record my deep sense of gratitude to Mrs. Amrata Chouhan Department of Computer Science And Engineering ,Prashanti Institute of Technology And Science College Ujjain,for her generous guidance,help and useful suggestions.

I expess my sincere gratitude to Mr.Pankaj Malik,H.O.D,Department of Computer Science & Engineering ,Prashanti Institute of Technology And Science College Ujjain,for his stimulating guidance, continuous encouragement and supervision throughout the course of present work.

I also wish to extend my thanks to other colleagues for attending my seminars and for their insightful comments and constructive suggestions to improve the quality of this project.

I am extremely thankful to my Pricipal ,Prashanti Institute of Technology And Science, Ujjain, for providing me infrastructural facilities to work in , without which this work would not have been possible.

CHAPTER 1

INTRODUCTION

1.1 OBJECTIVE

" **H**ealth is wealth" **O**bviously, you have heard it a thousand times but as we grow older we often realize it' s true and this app provides an interesting way to get started with the very boring term "dieting" as we already know "**FITNESS START WITH WHAT WE EAT**".

Let' s develop an interesting project - Calorie Calculator to record and estimate number of calories we need to consume daily. **T**his app can also provide guidelines for gaining or losing weight.

Maintaining a healthy lifestyle has been one of the main concerns of this century.

It will calculate the calories required by a person daily based on a person ' s height, weight, age, and gender.

Keep in mind that this tool only provides general guidance, as activity levels and many other factors influence your daily calorie needs. **T**hus, this calculator will likely provide a number that' s close to your calorie needs, but it' s not a perfect tool.

1.2 How Many Calories Do You Need?

Some factors that influence the number of calories a person needs to remain healthy include age, weight, height, sex, levels of physical activity, and overall general health. For example, a physically active 25-year-old male that is 6 feet in height requires considerably higher calorie intake than a 5-foot-tall, sedentary 70-year-old woman. Though it differs depending on age and activity level, adult males generally require 2,000-3000 calories per day to maintain weight while adult females need around 1,600-2,400 according to the U.S Department of Health.

The body does not require many calories to simply survive. However, consuming too few calories results in the body functioning poorly, since it will only use calories for functions essential to survival, and ignore those necessary for general health and well-being. Harvard Health Publications suggests women get at least 1,200 calories and men get at least 1,500 calories a day unless supervised by doctors. As such, it is highly recommended that a person attempting to lose weight monitors their body's caloric necessities and adjusts them as necessary to maintain its nutritional needs.

CHAPTER 2

Literature Survey

LITERATURE SURVEY

Food Image Recognition By Personalized Classifier In this model, the authors[12] applied some different and practical approach to food image recognition. since the datasets, Food-101 [13] and UECFOOD-256 [14] are having fixed classes but in the real world the food may differ between nationality and there may be inter class and intra class classification so which constitutes too many varieties of classes because of this they built a personalized classifier which combines Nearest Class Mean(NCM) Classifier and Nearest Neighbour (NN) classifier for each particular user because of the class imbalance problem. In these new classes can be added at nearly zero cost and the problem of food image variation can be avoided. The newly proposed time-dependent food distribution model and weight optimization algorithm to make personalized classifiers learn the user's data and adapt to users eating habits. G. Food Calorie Measurement Using Deep Learning Neural Network Here authors[15] have proposed the Deep Learning Neural Network method handles the training and testing requests at the top layers, without affecting the central layers. Firstly the segmentation is done using Graph Cut segmentation followed by deep learning method. Here the user's thumb is used for size calibration. In this method, the first step is to generate a pre-trained model file and then the system is trained with a positive set of images. In the second step, they re-train the system with the set of negative images (images that do not contain the relevant object). In this system, once the model file is generated from the training, they load it into the application and test it against the images captured and submitted by the user. The system then performs the image recognition process and generates a list of probabilities against the label name. The label with the highest probability is prompted to the user in the dialog box, to confirm the object name. Once the object name is confirmed, the system performs the calorie computation part by calculating the size of the food item concerning the thumb in the frame. It finally prints the output to the user with the required calorie.

A Study of Food Recognition Techniques Accurate recognition of food from only an image can be a cumbersome task. The food items may be deformable, vary in the style of cooking or in the way they are garnished; this further makes it more complex to identify the food in the image. Candidate Region Detection is used to distinguish between multiple foods present in the image. The food is distinguished in one of the following ways: The whole Image – we assume that one image contains one food;
Circle Detector – Identifies food based on shape, it extracts circular contours from the image; Region Segmentation – JSEG divides an image by color using a color class map. After each food is segmented, the features of the food are extracted using: SIFT and CSIFT; Histograms of Oriented
Gradients (HoG); Gabor texture feature.

CHAPTER 3

Technical Specification

Technical Specification

A web-app is developed with the all the detailed functionalities mentioned throughout this documentation

Front-End

- Angular JS,
- CSS
- HTML

Back-End

- Python/Django
- SQL-Database

Description

Angular Js :- AngularJS is a structural framework for dynamic web apps. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application's components clearly and succinctly. AngularJS's data binding and dependency injection eliminate much of the code you would otherwise have to write. And it all happens within the browser, making it an ideal partner with any server technology.

AngularJS is what HTML would have been, had it been designed for applications. HTML is a great declarative language for static documents.

CSS :- **Cascading Style Sheets (CSS)** is a style sheet language used for describing the presentation of a document written in a markup language such as HTML CSS is a cornerstone technology of the WORLD WIDE WEB , alongside HTML and Java Script.

CSS is designed to enable the separation of presentation and content, including layout,colours, and fonts. This separation can improve content accesibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file which reduces complexity and repetition in the

structural content as well as enabling the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

HTML :- HTML stands for **H**yper**t**ext **M**arkup **L**anguage, and it is the most widely used language to write Web Pages.

Hypertext refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.

As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

PYTHON/DJANGO:-Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It' s free and open source.

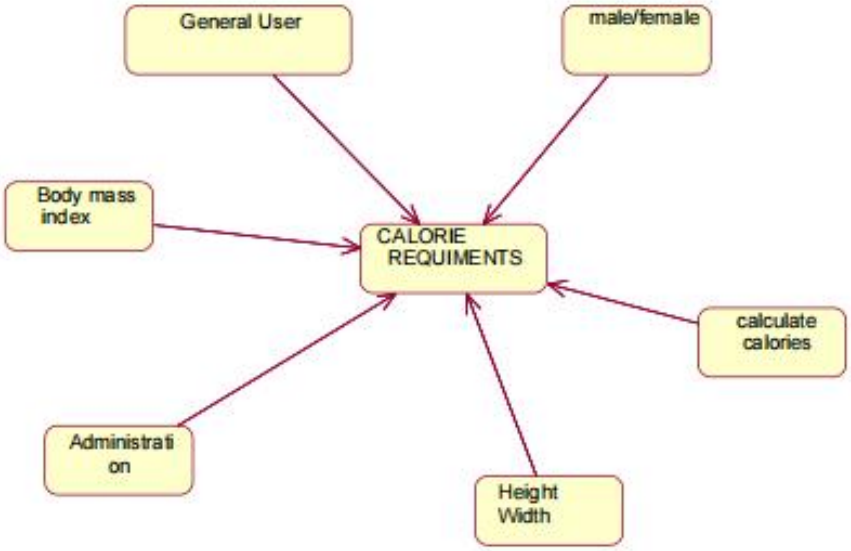
SQL Database :- A database models real-life entities like professors and universities by storing them in tables. Each table contains data from a single entity type. This reduces redundancy by storing entities only once

SQL is Structured Query Language, which is a computer language for storing, manipulating, and retrieving data stored in a relational database.

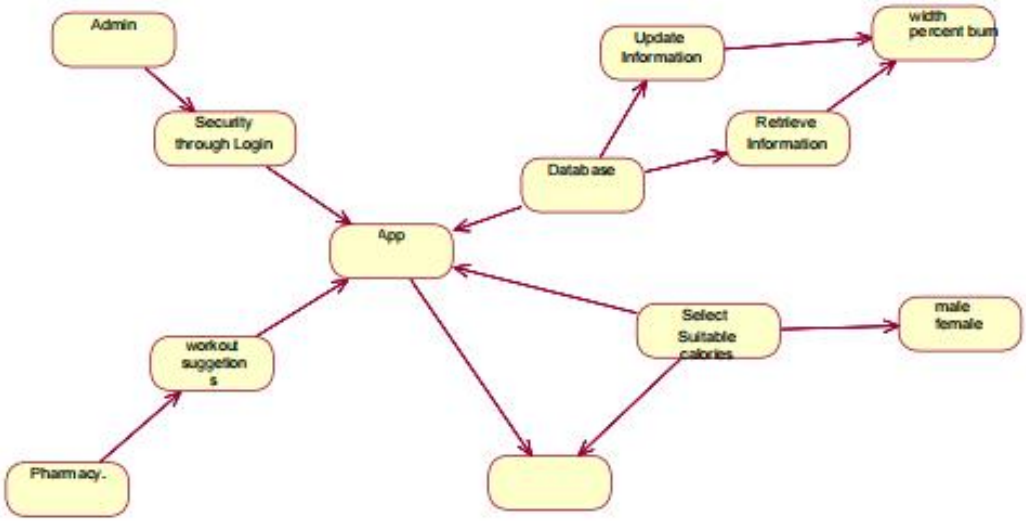
SQL is the standard language for Relational Database System. All the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres, and SQL Server use SQL as their standard database language.

CHAPTER 4

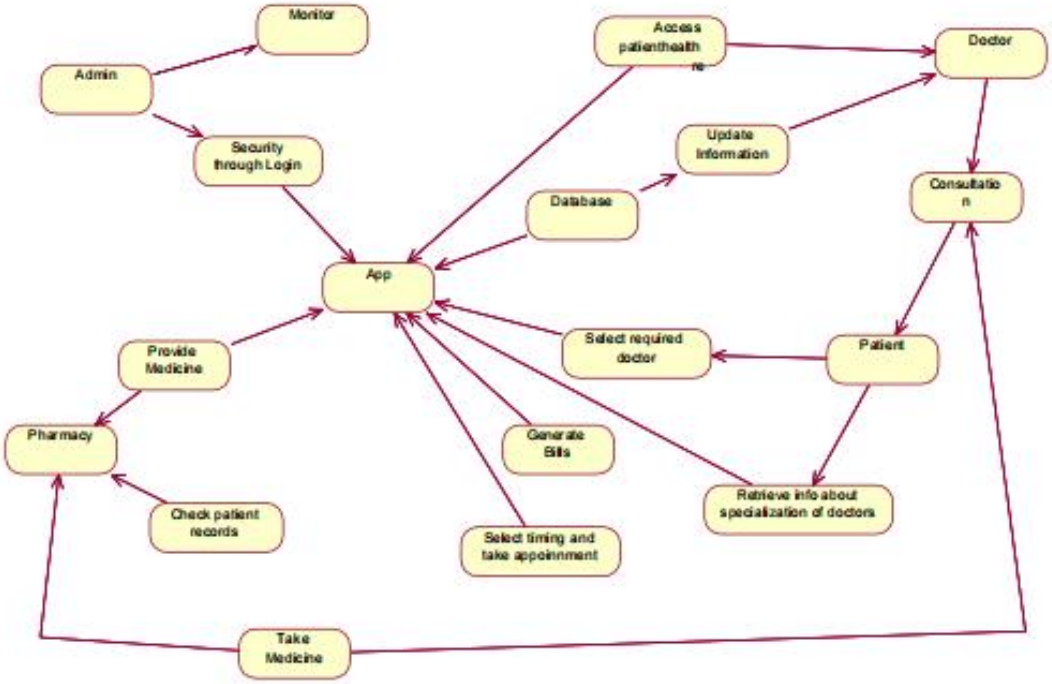
DESIGN



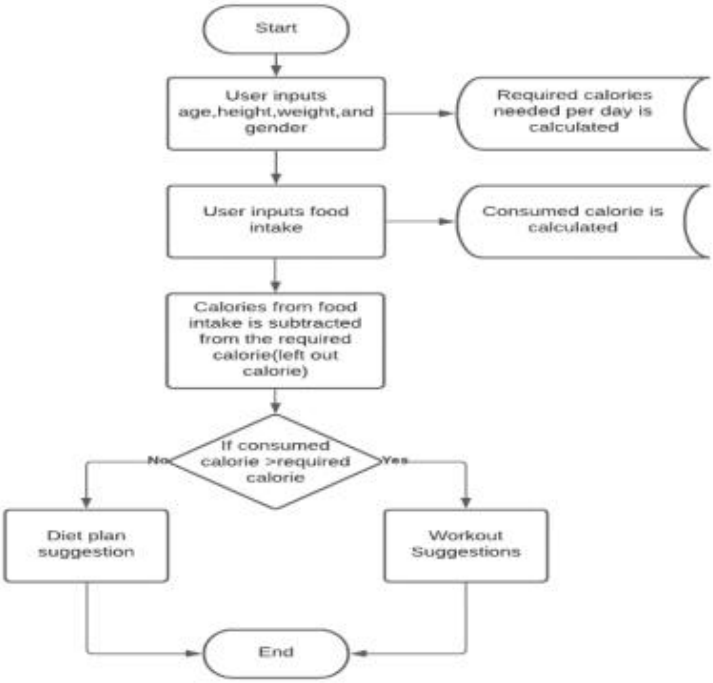
DATA FLOW DIAGRAM FOR CALORIE REQUIRMENTS

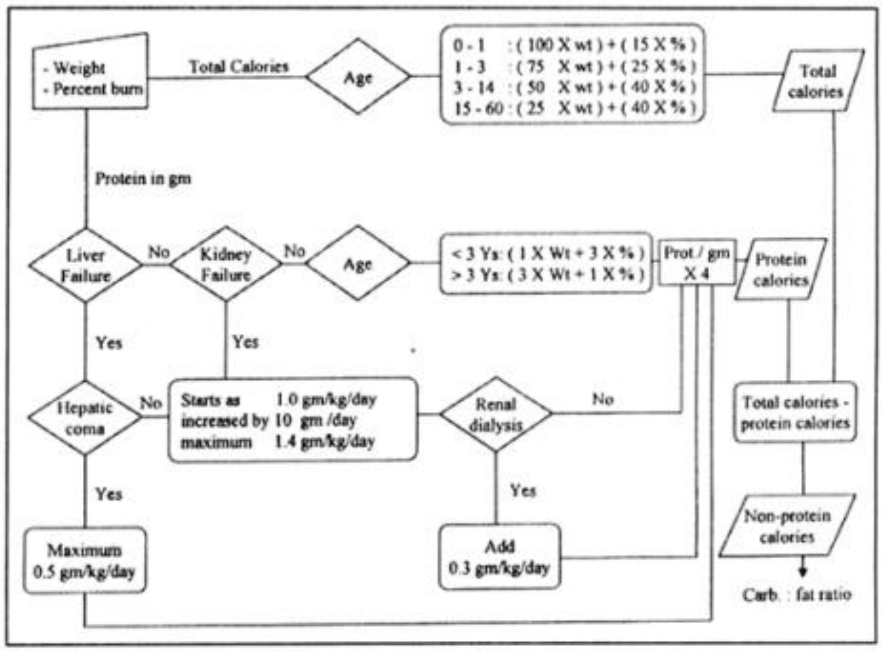


DATA FLOW DIAGRAM (2)



DATA FLOW DIAGRAM (3)


Start
User inputs age,height,weight,and gender
Required calories needed per day is calculated
User inputs food intake
Consumed calorie is calculated
Calories from food intake is subtracted from the required calorie(left out calorie)
If consumed calorie >required calorie
No
Yes
Diet plan suggestion
Workout Suggestions
End

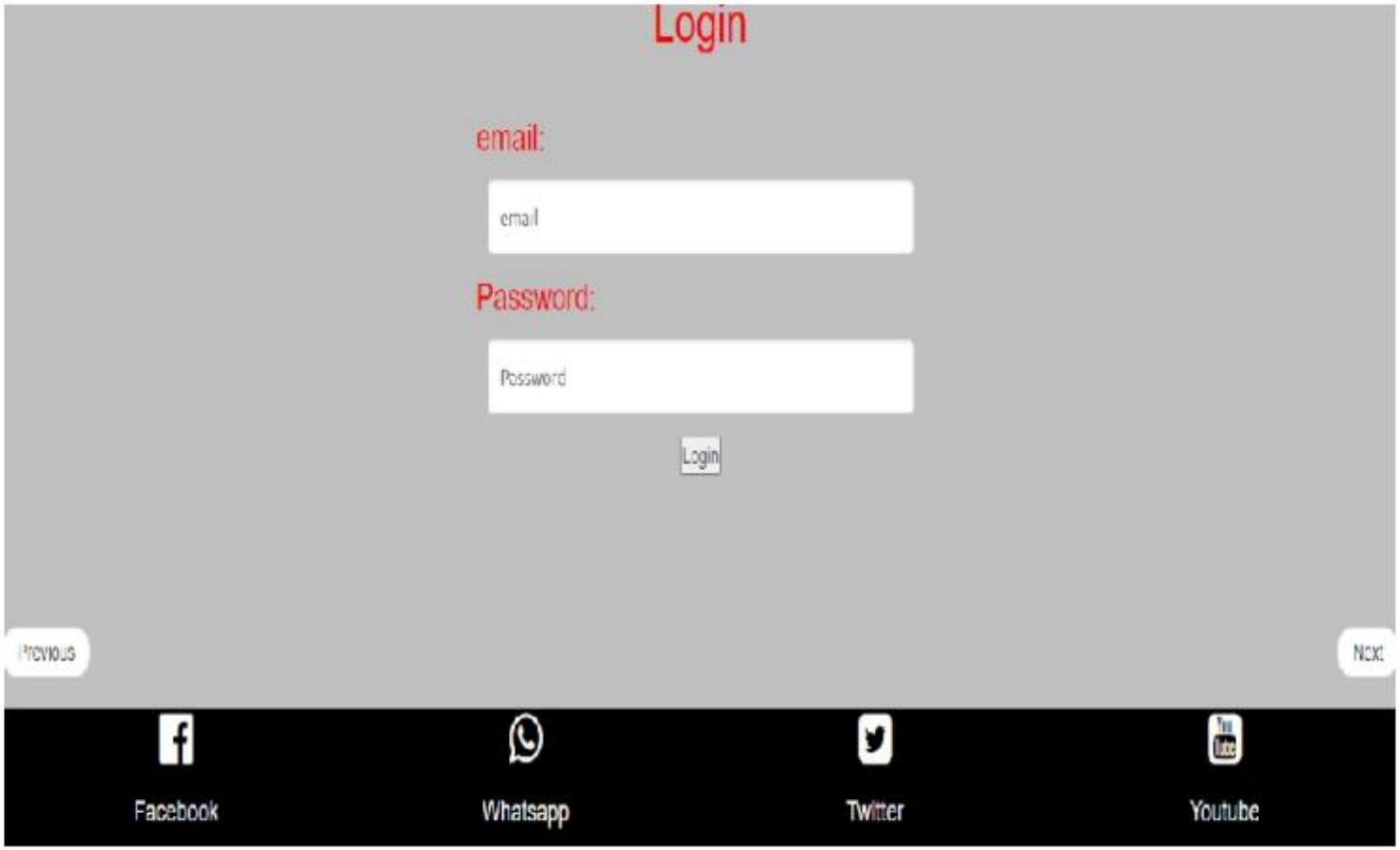

- Weight
- Percent burn
Total Calories
Age
0 - 1 : (100 X wt) + (15 X %)
1 - 3 : (75 X wt) + (25 X %)
3 - 14 : (50 X wt) + (40 X %)
15 - 60 : (25 X wt) + (40 X %)
Total calories
Protein in gm
Liver Failure
No
Kidney Failure
No
Age
< 3 Ys: (1 X Wt + 3 X %)
> 3 Ys: (3 X Wt + 1 X %)
Prot / gm X 4
Protein calories
Yes
Yes
Hepatic coma
No
Starts as 1.0 gm/kg/day
increased by 10 gm /day
maximum 1.4 gm/kg/day
Renal dialysis
No
Total calories - protein calories
Yes
Yes
Maximum 0.5 gm/kg/day
Add 0.3 gm/kg/day
Non-protein calories
Carb. : fat ratio

CHAPTER 5

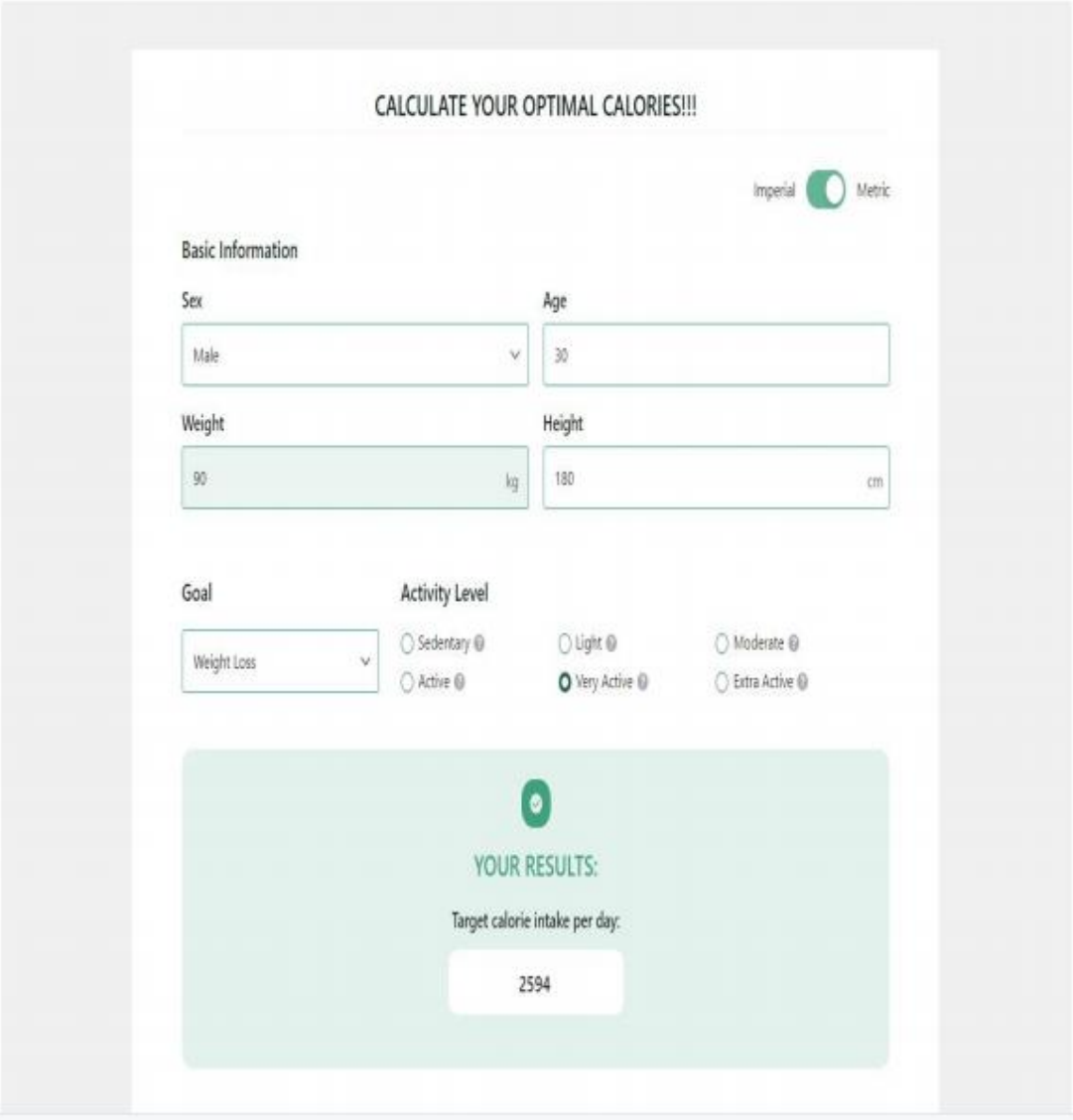
Snapshot

It is known as main page /index page/home page.This page contain the header , footer, navbar, direct access login system , registration form,login from, about the website.

This page contain a login form. We can not directly access this page .First we have to registered ourself then we have to access this page, with the help of this page we have to login .



This is the calculate form .They contain various field which we have to feed our personal information for our doctor support. These can be used for patient information. This snapshot contain person sex,age,height,width.



This **page is known as** calorie calculator

Calorie Calculator			
1. Breakfast			
Food Details	**Quantity**		**Calorie**
	Amount	**Measure**	
Omelete	2	Pcs	240
Chapati	4	Pcs	240
Tea	2	cups	20
Fresh Juice	1	Glass	240
Total Calories Intake in Breakfast			**740**

This page is also a part of contact page .We have to fill the following form for more enquiry.

FOR ENQUIRY

Your Name

Enter Your name..

Your Email

Enter your Email..

Your mobile number

Enter your Mobile Number

Your City

Enter your City

Submit

Calorie Sheet			
Sr. No.	Food Item	Quantity	Caloric Value
1	Boiled Egg	1	125
2	Egg Fried	1	110
3	Egg Omelette	1	120
4	Bread slice with butter	1	90
5	Chapati	1	60
6	Puri	1	75
7	Paratha	1	150
8	Subji	1 Cup	150
9	Idli	1	100
10	Dosa Plain	1	120
11	Dosa Masala	1	250
12	Sambhar	1 Cup	150
13	Cooked Rice - Plain	1 Cup	120
14	Cooked Rice - Fried	1 Cup	150
15	Phulka	1	60
16	Nan	1	150
17	Dal	1 Cup	150
18	Curd	1 Cup	100
19	Curry, Vegetable	1 Cup	150
20	Curry, Meat	1 Cup	175

CHAPTER 6

RESULT AND DISCUSSION

AND PROPOSED SYSTEM

1. Recommender systems that are available today appends the user about various recipes.
2. Output of the recommender system is quite unfeasible sometimes due to lack of available ingredients.
3. Recommender system may not give the result as per the users taste.
4. Indian culture has sets of in particular recipes . Existing system would give recipes like thai foods , Chinese . It won't be acceptable by Indian consumers.

This Calorie Calculator is based on several equations, and the results of the calculator are based on an estimated average. The Harris-Benedict Equation was one of the earliest equations used to calculate basal metabolic rate (BMR), which is the amount of energy expended per day at rest.

CHAPTER 7

CONCLUSION AND REFERENCE

CONCLUSION

The system provides a user friendly interface which would interactively receives information from approached system which gives optimal solution for end user.a method for measuring calories and nutrition of food object is carried out. The systems help people closely controlling their daily food intake. They focused on identifying food and extracting ingredients from the food image and predicting the calorie content from the quantity of food.

REFERENCE

.WEBSITES