Final year-Project Report On

AI DIETICIAN

is submitted in partial fulfillment of the requirement of semester VII

B.E. (I.T Engineering)

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CERTIFICATE

This is to certify that the following students have submitted the Final year- project report on AI DIETCIAN in the partial fulfillment for BE (Information Technology Engineering) semester VII during the academic year 2020-2021 as prescribed by University of Mumbai.

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Abstract

This work proposes an intelligent agent, called the personal dietitian agent, based on the user's characteristics and specification. The agent can create a meal plan according to a person's lifestyle and particular health needs. The experts recommend eating a wide variety of foods, including vegetables, whole grains, fruits, non-fat or low-fat dairy products, beans, lean meats, poultry, and fish. However, each person has a unique dietary pattern and have different health issues so a dietitian creates a meal plan depending on each case. The online artificial dietitian is an application with artificial intelligence about human diets. It acts as a diet consultant similar to a real dietitian. This system acts in a similar way as that of a dietitian. A person in order to know its diet plan needs to give some information to the dietitian such as its body type, weight, height and its working hour details. The system asks all this data from the user and processes it to provide the diet plan to the user. Thus the user does not need to visit any dietitian which also saves time and the user can get the required diet plan in just a click.

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1.INTRODUCTION

Smart phones and the Internet have revolutionized the communication and with it the lifestyle of people. An increasing number of smart phones and Personal Digital Assistants (PDA) allow people to access the Internet where ever they are and whenever they want. By using internet they can obtain on one hand information on almost everything they wish to. Therefore just by using smart phones user can get diet assistance anytime at free of cost. Artificial dietitian is an application with artificial intelligence about human diets. It acts as a diet consultant similar to a real dietian . This system acts in a similar way as that of a dietitian .A Person in order to know his/her diet plans needs to give some information to the dietitian such as its body type, weight, height, and working hour details.

Similar way this system also provides the diet plan according to the information entered by the user. The System asks all his data from the user and processes it to provide the diet plan to the user. Thus the user does not need to visit any dietitian which also saves time and the user can get the required diet plan in just a click.

The project also has a login page where in the user is required to register his/her account then they can use the app. This project requires Internet access and thus there is a disadvantage of server failure.

The system give more accurate results as it accepts the data entered by the user and process it depending on some metrices already known to the application on the basis of which a diet plan is generated and ask her the user if the user accepts the diet plan. If not accepted the system may also give an alternatve diet plan.

2. LITERATURE SURVEY

Husain et al. [1cancer is very severe disease. It is occurring frequently now days. Some systems are available in market which suggests diet for cancer but they are not sufficient. These systems only suggest one or two food items which help to secure from disease. This system provides a complete diet plan for cancer .cancer is a disease which is not curable. It needs kemo therapy which has side effects. Therefore the one and only solution to this is to take proper diet to prevent from getting such type of disease.

Abbas Lokman and Jasni Zain [2] This work describes the diet plan for diabetic patients. This system is based on a virtual dietician concept. a chat bot is designed which works as a dietician. The history and view of chat bot is provided in this system. Diet plan for diabetic patients is given using this chat bot. this system is the interface

between man and machine. chat bot concept provide interface that gives the diet plan for diabetic patients.

Barnett et al. [3] This work provides diet plan for obese people.As obesity is a major health problem proper diet is very essential. To lose weight for obese people is a very difficult task. There are certain ranges of BMI which decides normal, underweight or overweight. The BMI above30 is refer as BMI for overweight people. This paper provides a system which manages weight and provides a good diet to lose weight. There is face to face consultation between dietician and a person. Because of this dieticians get clients automatically and clients get the proper advice without wastage of time for travelling to dietician.

Carl J. Brandt et al. [4] Obesity is a major health problem . Each and everyone should take care of his/her health and should maintain a proper health condition. This system provides a diet plan to the user to lose weight. As today's world is internet world and there is Gmail service available, this work gives a system which uses the emailed of the user. Based on email id of user the system sends the diet plan to him/her on their respective email ids.

Talapanty Shwetha et al. [5] this work provides an intelligent agent which will give a diet plan to user. Eating habits of different person are different therefore their diet plan should be different. Lifestyle of each person is different. The different tensions are there for different professions. Because of this stress a proper diet is essential to follow. This work gives a proper diet which is different for each person. The user has to enter the information about his lifestyle and according to that, the diet plan will be displayed.

HITESH PRUTHI et al. [6] This work describes website. This website contains all the data about various health issues and their remedies. The required all information about health maintenance is provided in the website. This website is easily accessible to all people from lower age to higher age no issues. Admin and user are two

important keywords in this website. The user is a common people who want to take some information . A unique login id is given to the each user from which he/she can login to the website. the website is linked with different gyms from which gym book is taken and provided to the each user.

3.EXISTING SYSTEM

Many of the systems has a diet plan is described in simple way in our system we have explained all the diet plans for the various Diseases .If the user has any dought regarding any query related to their diet they can simply ask the query to our dietcian. We have also provided a chatbot in our application this system is the interface between the user and the machine in chat bot it will recommend u with our Dietcian.

Our app basically calculates the BMI, which takes the input from the user about their Height and Weight it also tells you about your BMI status that you are Normal,Overweight or Underweight. The BMI above 30 is refer as BMI for overweight people. This paper provides a system which manages weight and provides a good diet to lose weight. There is face to face consultation between dietician and a person. Because of this dieticians get clients automatically and clients get the proper advice without wastage of time for travelling to dietician.

In our system we had provided the diet tips to help our client they don’t have to waste the time or money on the nutrition they can get the diet plan by checking the goal that they want to loose the weight or they want to gain the weight in this app they will get the diet.

Our app has the facility that if they have any diseases the plan also has the diet for different diseases.

1. According to current health survey in India there are more then 70% of people suffer from one or the other disease

2. This is because they don’t know how much they should eat

3. People avoid going to nutritionists or diet planner because of their high fees

4. Unaware of amount of fat required by body

4 PROBLEM DEFINATION

This project is having 5 Modules:

1. User Registeration
2. User login
3. Online Consulting ability
4. Diet Data processing
5. User nutrition counseling
6. Efficient user handling
7. Chatbot

Description:

1) User Login:
   - Here, the Consulting user put his credentials in the Login page and also new user can register on the website.
2) Online Consulting Ability:
   - Here, the User is able to consult online with the Bot Dietitian regarding various queries and exchanging information.
3) Calculate BMI:
   - Based on details provided by the user, system automatically calculates the BMI of the user.
4) View Diet Plan:
   - The diet plan for the user is generated by the system itself using artificial intelligence.
5) Diet Data Processing:
   - Here the system will process the input query information provided by the Consulting User and will generate the appropriate Diet information as output.
6) User Nutrition Counselling:

- Here, the System provides the counselling to the Consulting User regarding Diet, Health, and Nutrition etc...

7) Efficient User Handling:

- Here, system handles the Consulting User by providing them appropriate diet information, satisfying the user's needs and keeping the track of the history for future use.

Proposed System

- ➢ Considering the anomalies in the existing system computerization of the whole activity is being suggested after initial analysis.
- ➢ **"Artificial Intelligence Dietitian"** is a BOT with artificial intelligence about human diets.
- ➢ It acts as a diet consultant similar to a real Dietitian
- ➢ User may log in and view various diet information
- ➢ A Dietitian consults a person based on his schedule, body type, height and weight. The system too asks all this data from the user and processes it.
- ➢ **"Artificial Intelligence Dietitian"** asks about how many hours the user works, his height, weight, age etc.
- ➢ **"Artificial Intelligence Dietitian"** stores and processes the above data and then calculates the nutrient value needed to fill up user's needs.

- **"Artificial Intelligence Dietitian"** then shows an appropriate diet to the users and asks if user is ok with it, else it shows other alternate diets to fill up user's needs.

5.REQUIREMENT ANALYSIS

5.1SOFTWARE REQUIREMENT

- Windows 7 or higher
- Java
- JDK
- Firebase
- Android Studio

5.2HARDWARE REQUIREMENT

- Processor –Core i3
- Hard Disk – 500 GB
- Memory –4 GB RAM (Minimum)
- Monitor

METHODOLOGY

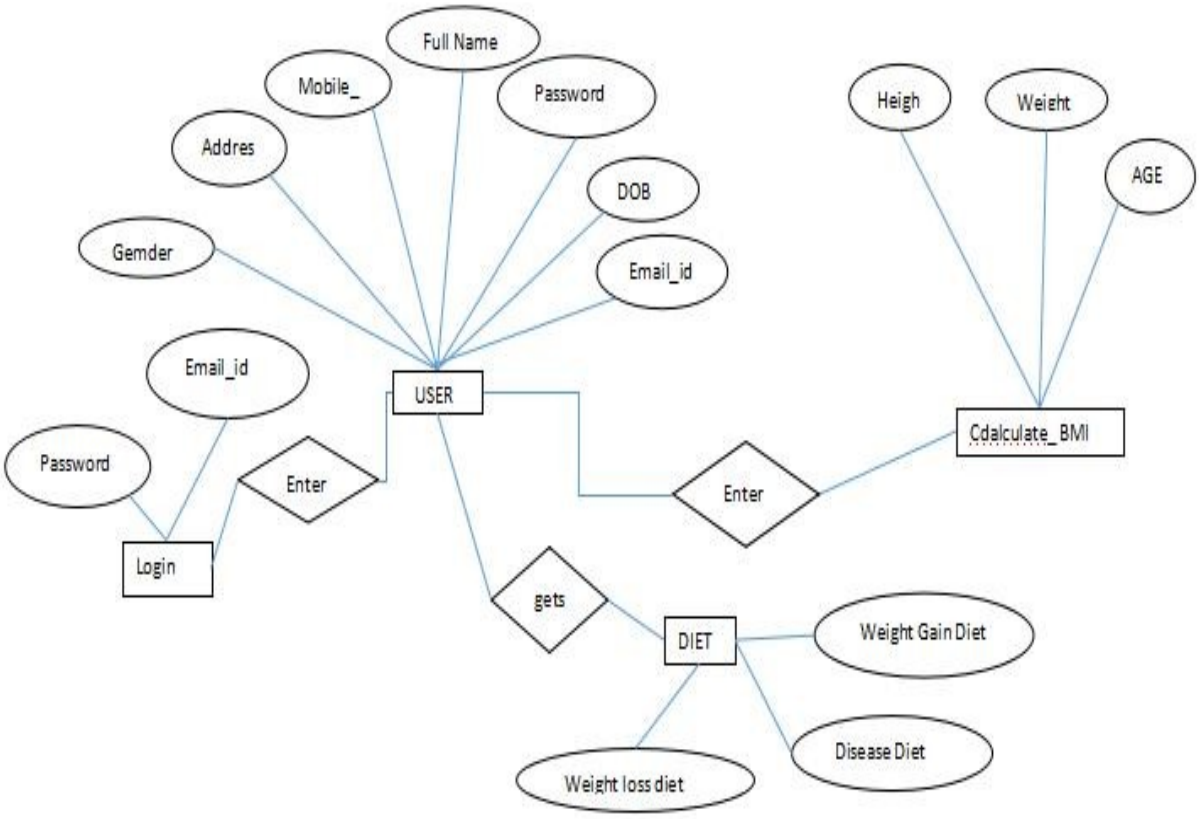
6.1 E-R Diagram

ER Model is used to model the logical view of the system from data perspective which consists of these components:

Entity, Entity Type, Entity Set –

An Entity may be an object with a physical existence – a particular person, car, house, or employee – or it may be an object with a conceptual existence – a company, a job, or a university course.

Attribute(s):
Attributes are the **properties which define the entity type**. For example, Roll_No, Name, DOB, Age, Address, Mobile_No are the attributes which defines entity type Student. In ER diagram, attribute is represented by an oval.



6.2 Use Case Diagram

A use case diagram is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

The use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses.

The use-case diagram can help provide a higher-level view of the system. They provide the simplified and graphical representation of what the system must actually do.

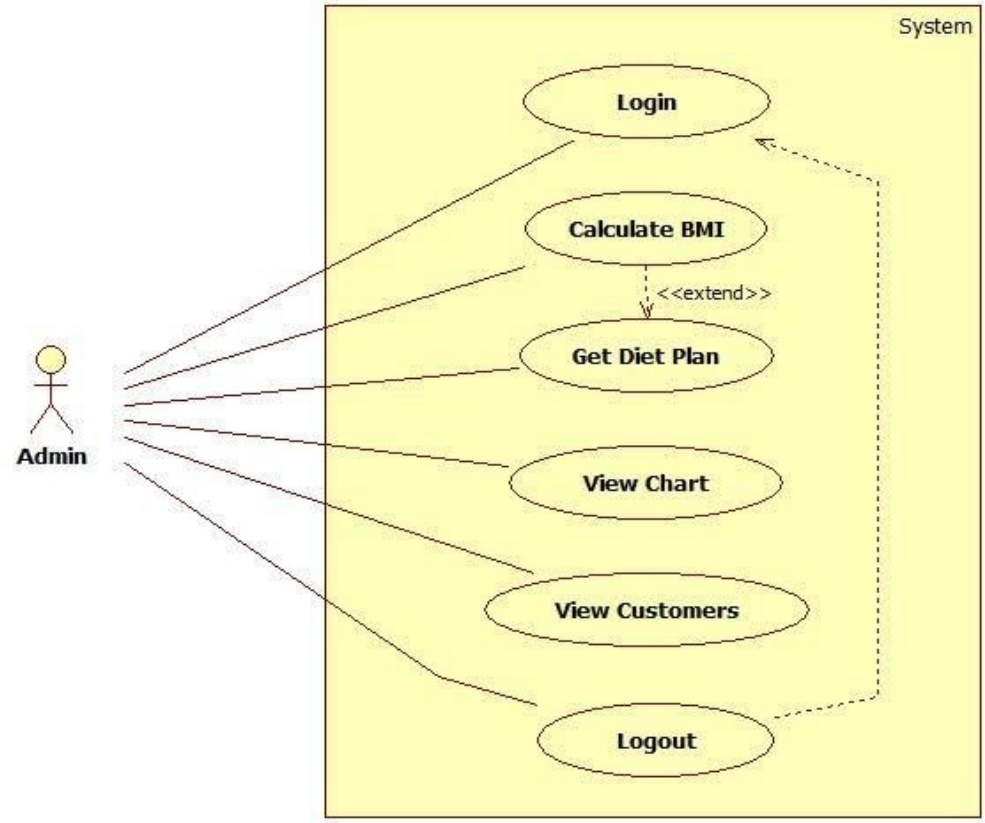


Fig. Use Case Diagram for Admin

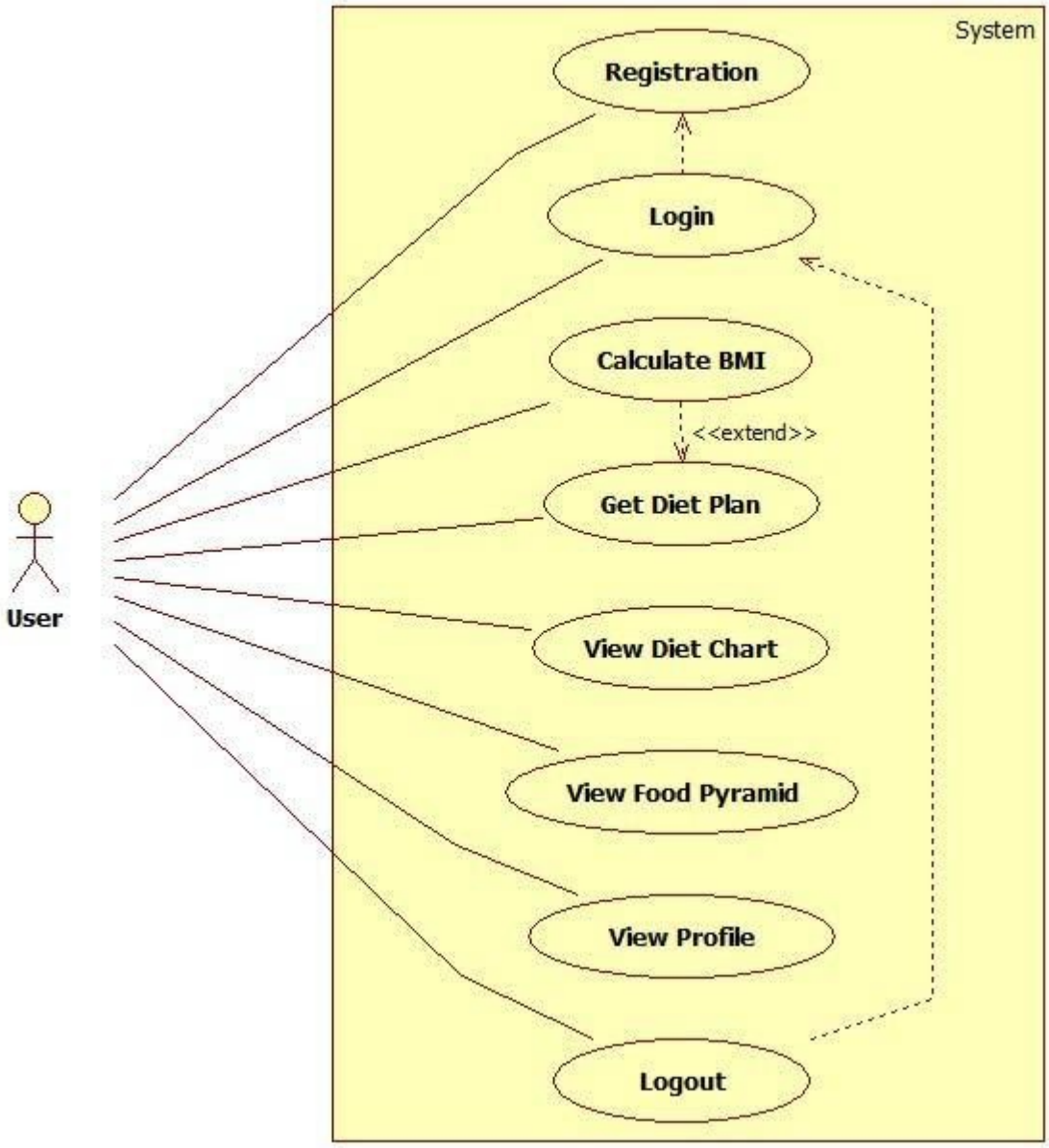


Fig. Use Case Diagram of User

6.3 Activity Diagram

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. The activity diagrams are intended to model both computational and organizational processes (i.e., workflows), as well as the data flows intersecting with the related activities. Although activity diagrams primarily show the overall flow of control, they can also include elements showing the flow of data between activities through one or more data stores.

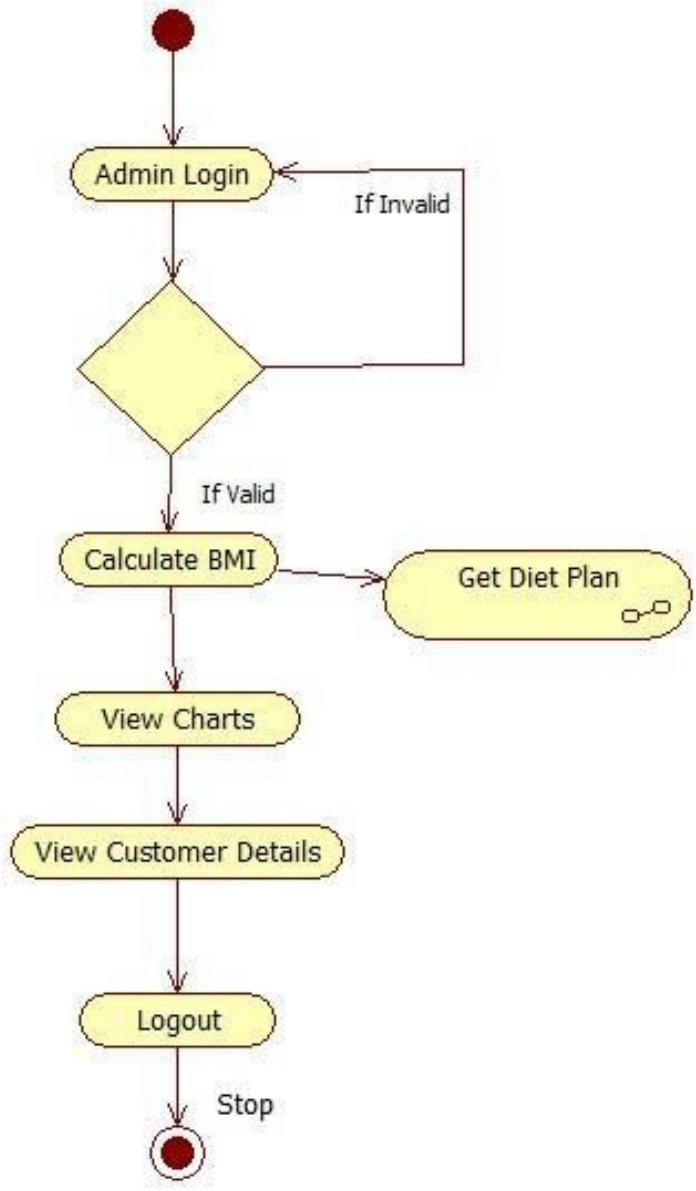


Fig. Activity Diagram of Admin

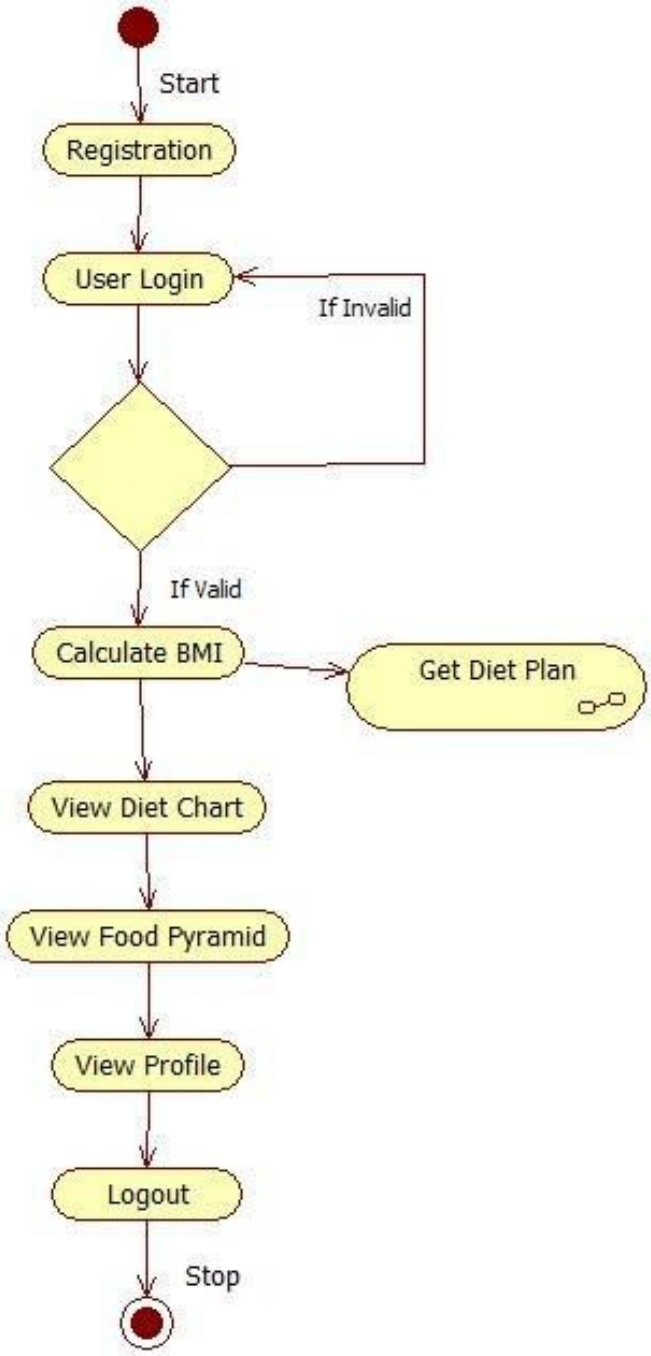


Fig. Activity Diagram of User

7.ADVANTAGES OF PROJECT

1. No need of consulting doctor for diet plans.
2. This system provides full details of the nutrient constitution in body and if required more or not along with the plan by just answering to some queries.
3. Saves money and very effective and give accurate results as it is coded with keeping diet chart in mind.
4. There are alternative diet chart provided by the system if the user don't like any.

8.Limitations:

- One has to be sure about their details while entering fields like age height weight working hours and many more otherwise this system would give results that is not suitable for user if not sure about what they entered.

9.Applications:

- Dietitians can use this system to make sure what they recommend patients.

- This system can be very well used in medical colleges for teaching and practicing purposes so that student can learn from it.
- This system can also be utilized in gym particularly for calculating the customers' calories and diet plans.
- Individual can also use this software especially for themselves in home.

10. Features

1) Load Balancing:

Since the system will be available only the admin logs in the amount of load on server will be limited to time period of admin access.

2) Easy Accessibility:

Records can be easily accessed and store and other information respectively.

3) User Friendly:

The Website will be giving a very user friendly approach for all user

4) Efficient and reliable:

Maintaining the all secured and database on the server which will be accessible according the user requirement without any maintenance cost will be a very efficient as compared to storing all the customer data on the spreadsheet or in physically in the record books.

5) Easy maintenance:

Artificial Intelligence Diet website is design as easy way. So maintenance is also easy.

11.CONCLUSION

Artificial Intelligence and the technology are one side of the life that always interest and surprise us with the new ideas, topics, innovations, products …etc. AI is still not implemented as the films representing it (i.e. intelligent robots), however there are many important tries to reach the level and to compete in market, like sometimes the robots that they show in TV. Nevertheless, the hidden projects and the development in industrial companies.

At the end, we've been in this research through the AI definitions, brief history, and applications of AI in public, applications of AI in military, ethics of AI, and the three rules of robotics. This is not the end of AI, there is more to come from it, who knows what the AI can do for us in the future, maybe it will be a whole society of robots.

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