

“Nutri-Freak” Artificial Intelligence based Dietician Chat Bot

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Abstract— Nutri-Freak is an internet based chat bot which suggests diet plan supported by user’s height, weight and eating habits. The system measures a user’s basal metabolic rate using his/her height, weight, gender & age. The system has been trained with large dataset of food varieties and their nutritional values. Once the system has the user’s body mass index, it must know eating habit of the user. The user must provide information about the timings he eats. Timings for breakfast, lunch, snacks and dinner are entered by the user according to which the diet plan is set. Once the system has this information, it suggests the user a diet plan as per the user’s basal metabolic rate. If the user doesn’t just like the diet plan the system modifies the diet plan keeping nutritional value the identical. This is often done to confirm that the user likes the diet suggested to him. Thus the necessity to visit a dietician to grasp the diet plan are often removed. The users can get a diet plan supported their body mass index if they know their height and weight. No need not have to pay a visit to local dietician to anymore.

Keywords: Artificial Intelligence, Chat Bot, NLU, NLP, Python, BMI (Body Mass Index), BMR (Basal Matabolic Rate)

I. INTRODUCTION

Smart phones and also the Internet have revolutionized the communication and with it the approach to life of individuals. An increasing number of smart phones and private Digital Assistants (PDA) allow people to access the web where ever they’re and whenever they require. By using internet people can obtain on one hand information on almost everything they want to. Therefore just by using smart phones user can get diet assistance anytime at freed from cost. Nutri - Freak is an application based on online chat bot feature of Artificial Intelligence about human diets. It acts as a diet consultant just like a true dietitian.

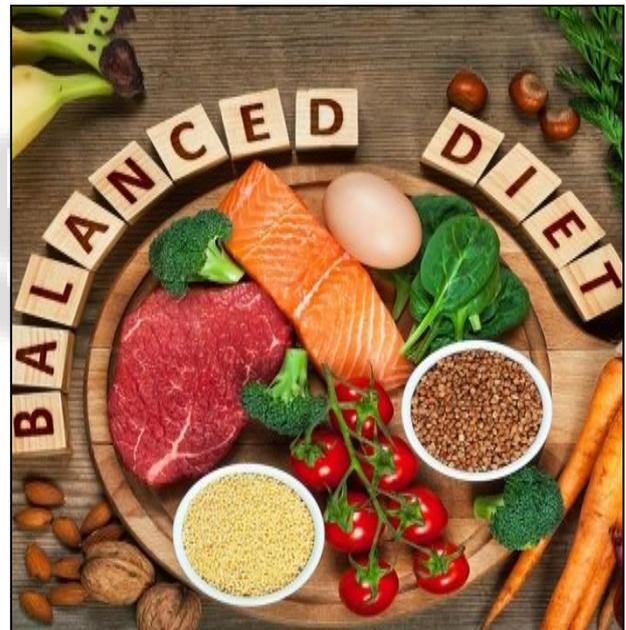
The interesting features of the application include the capability of patient to review his diet plan anytime anywhere & is not bounded to their respective dietician. User gets diet plan for faster recovery from any past disease or medical treatment via online chat bot. It bridges the time gap between dietician and patients. Gaining healthy lifestyle from an economic and cost effective dietician is just one click away with Nutri - Freak.

The existing system of getting a diet plan is totally manual. People have to visit their local dietician physically to understand the suggested diet plan. The user must anticipate their appointment with the dietician. The user may need to attend for long hours some times. This makes it very inconvenient for the users to urge their diet plan. They need to attend just to urge the data about what they must eat. This can be not efficient when looked from an end user’s point of view.

The proposed system is a web based chatbot having capability of generating diet plans. The system measures a user’s basal metabolic rate supported by his/her height,

weight, age & gender. The user must then enter his eating timings and therefore the system presents him/her the diet plan that will be best for that individual. All the food items together with the amount is shown to the user. If the user doesn’t just like the current diet plan, the system modifies food items keeping the whole nutritional value same.

The system persuade be advantageous as dieticians are available anytime so there’s no need of visiting clinics and hospitals and also it provides full details of the nutrient constitution in body and if required more or not together with the plan by just answering to some queries..It Saves money and really effective and provides accurate results because it is coded with keeping diet chart in mind. There are alternative diet chart provided by the system if the user detest any. Web based chat bot which will be accessed anytime and from anywhere. AI domain gives a fringe of generating a correct diet plan which lacks in other system because the domain isn’t the identical.



II. LITERATURE SURVEY

The online artificial dietician is a web-based chat bot enabled with AI about human diets. It acts as a diet consultant almost like a true dietician. The biggest advantage of using this standalone application is that the time required by the people to jaunt the dietitian is going to be reduced and also it reduces the price of hiring dietitians for a few particular purpose. The System suggests diet plan supported by user’s height, weight age, gender and eating habits. The user must fill personal information including age, weight, height, gender and exercise level. For calculating BMI, age, weight, height, gender and exercise level are necessary. On the idea of calculated BMI (Body Mass Index), Nutri - Freak will display the right diet plan for user. The project aims at the subsequent matters like

food calorie and nutrition measurement, to measure the user's body mass index using his/her height and weight, to keep up large dataset of food varieties and their nutritional values, to change the diet plan keeping nutritional value the identical. if the user doesn't just like the diet plan, user login, Online Chatting Ability, Diet processing, User nutrition counseling, Efficient user handling. Unlike, the prevailing Diet Consultant system where the diet plan is totally manual. People must visit their local dietician physically to grasp the suggested diet plan. The user must watch for their appointment with the dietician. The user may need to attend for long hours some times. This makes it very inconvenient for the users to urge their diet plan. they need to attend just to urge the data about what they ought to eat. This is often not efficient when looked from an end user's point of view.

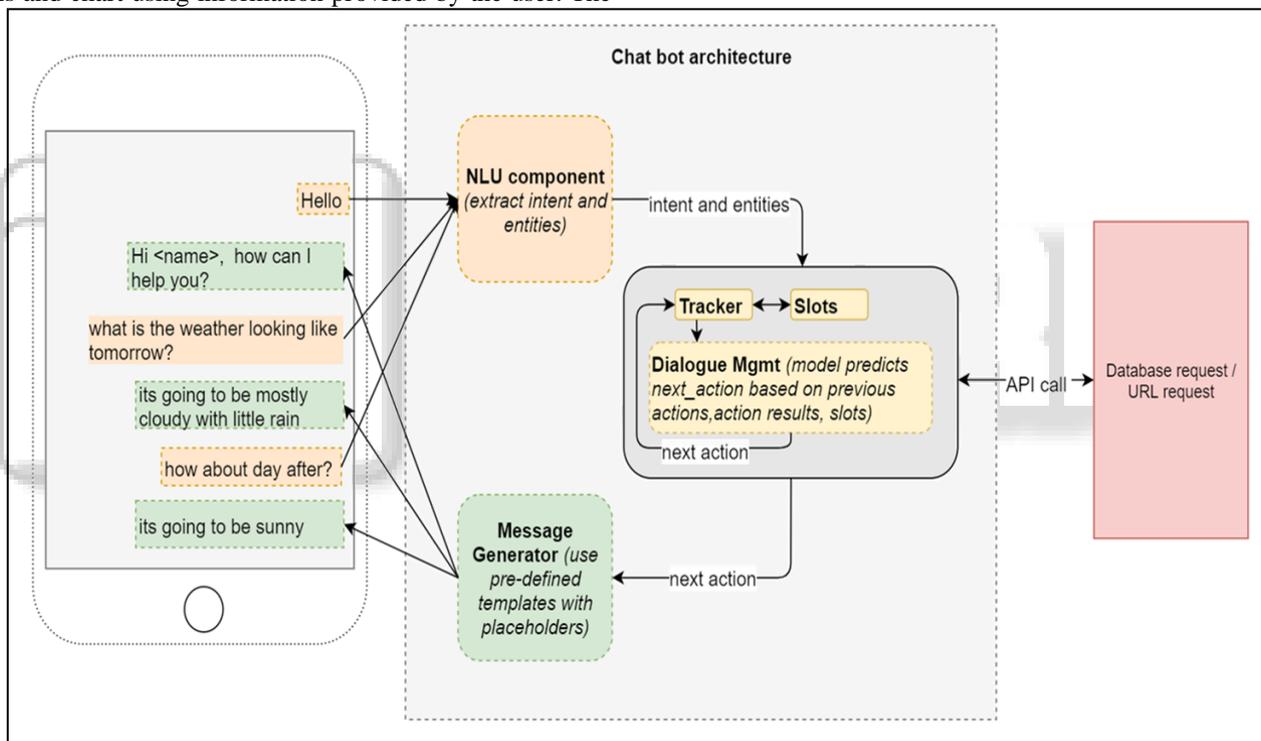
III. RESEARCH METHODOLOGY

Artificial Intelligence Chat bot is used to extract the diet plans and chart using information provided by the user. The

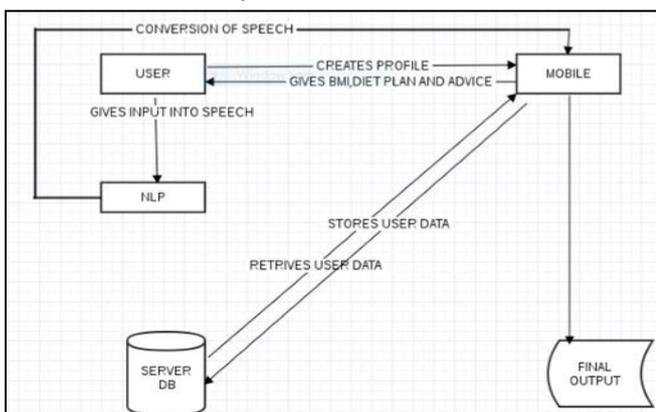
project is implemented through Python programming language Interactive user-friendly application is designed through PHP (Hypertext Preprocessor) and CSS (Cascading Style Sheets).

A. Communication Interface

The Chatbot act as a Communication Interface Based on AI. For many applications, the chatbot is connected to the database. The database is utilized to sustain the chatbot and provide appropriate responses to every user. NLP can translate human language into data information with a blend of text and patterns that can be useful to discover applicable responses. There are NLP applications, programming interfaces, and services that are utilized to develop chatbots. The primary point here is that smart bots can help increase the customer base by enhancing the user support services, thereby helping to increase patients. the system takes height weight gender, age as an input from the user. Other vital information such as whether user is diabetic or a B.P Patient or allergic to a certain food item etc.



B. Process Flow Diagram



C. Diet Plan Generation

– BMR(Basal Metabolic Rate):

Basal Metabolic Rate (BMR) is the number of calories a person would burn with NO activity. It is calculated as:

- 1) MEN:

$$BMR = 66 + (6.23 * \text{weight in lbs}) + (12.7 * \text{height in inches}) - (6.8 * \text{age})$$
- 2) WOMEN:

$$BMR = 65.5 + (4.35 * \text{weight in lbs}) + (4.7 * \text{height in inches}) - (4.7 * \text{age})$$

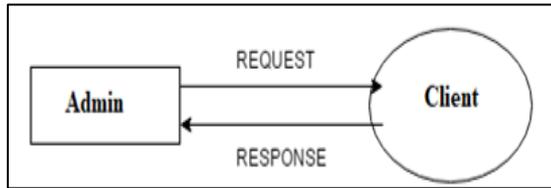
The Target Daily Calorie Needs of the Patient is as follows:

- 1) Little or No Exercise : $BMR * 1.2$
- 2) Light Exercise/sports 1-3 day/week: $BMR * 1.375$
- 3) Medium Exercise/sports 3-5 days a week: $BMR * 1.55$
- 4) Hard Exercise/sports 6-7 days a week: $BMR * 1.725$

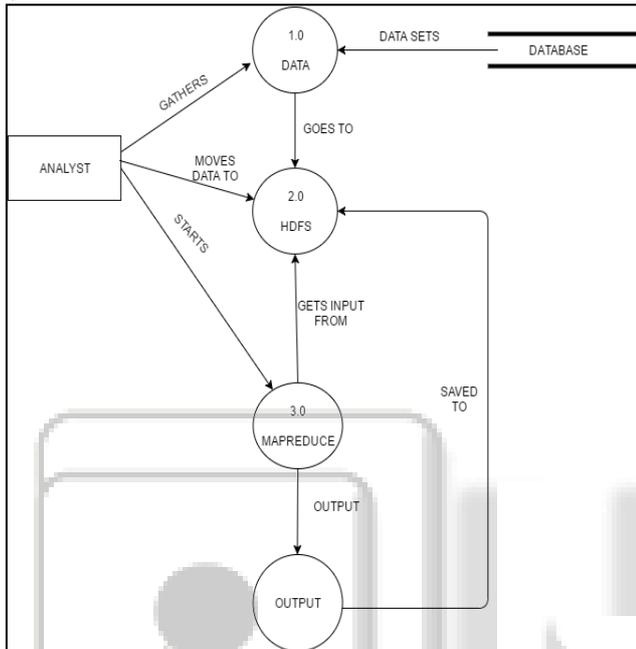
5) Intense exercise/sports, physical job or twice/day training: BMR *1.9

D. Data Flow Diagram

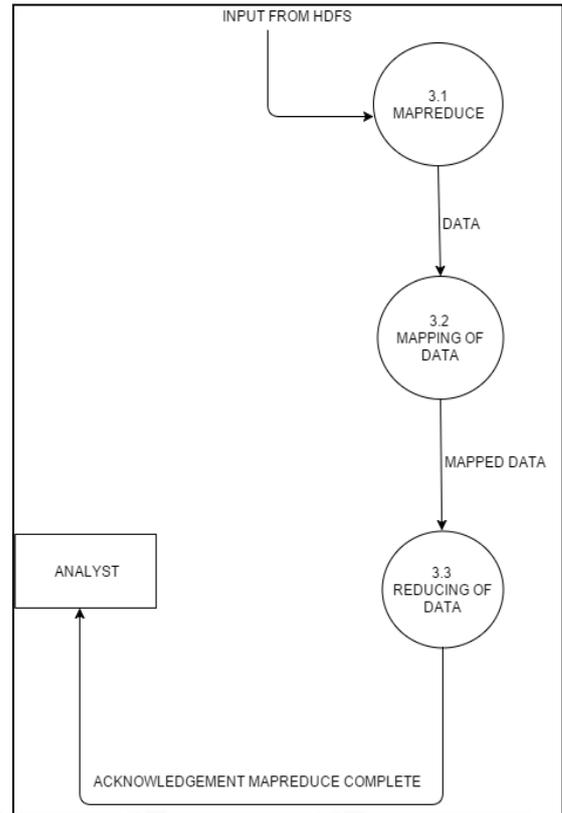
1) Level 0 DFD



2) Level 1 DFD



3) Level 2 DFD



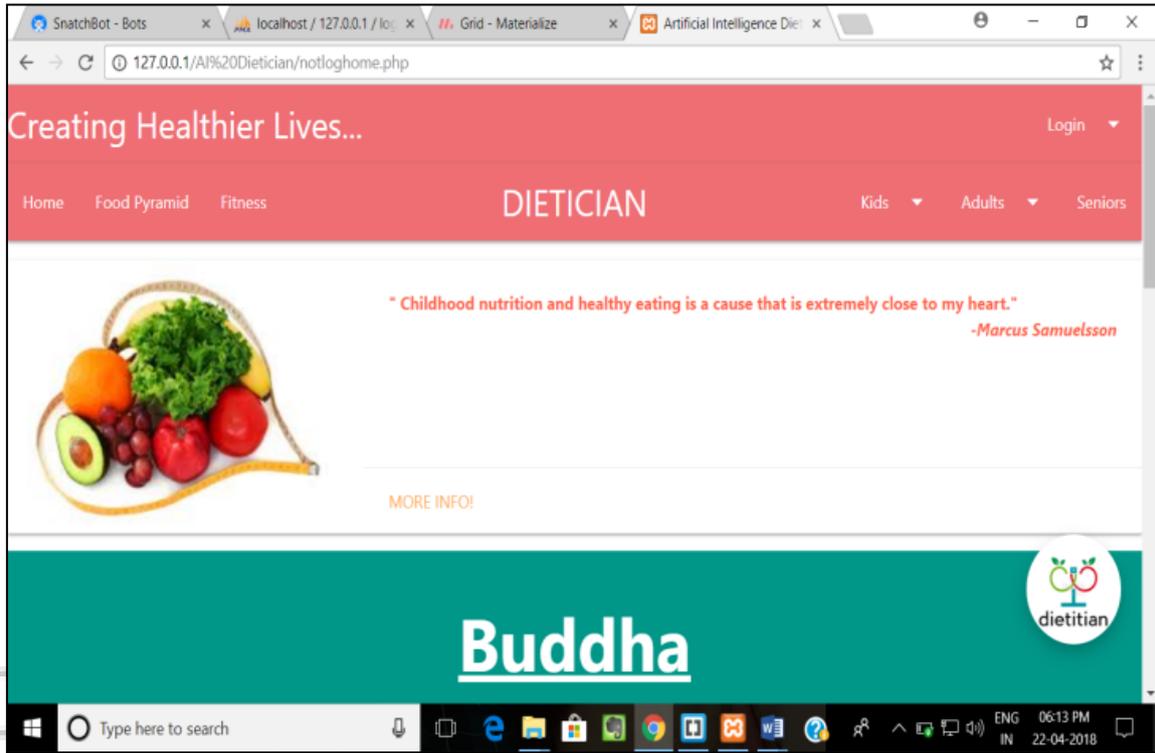
IV. FUTURE SCOPE

The Future scope of the research includes the following :-

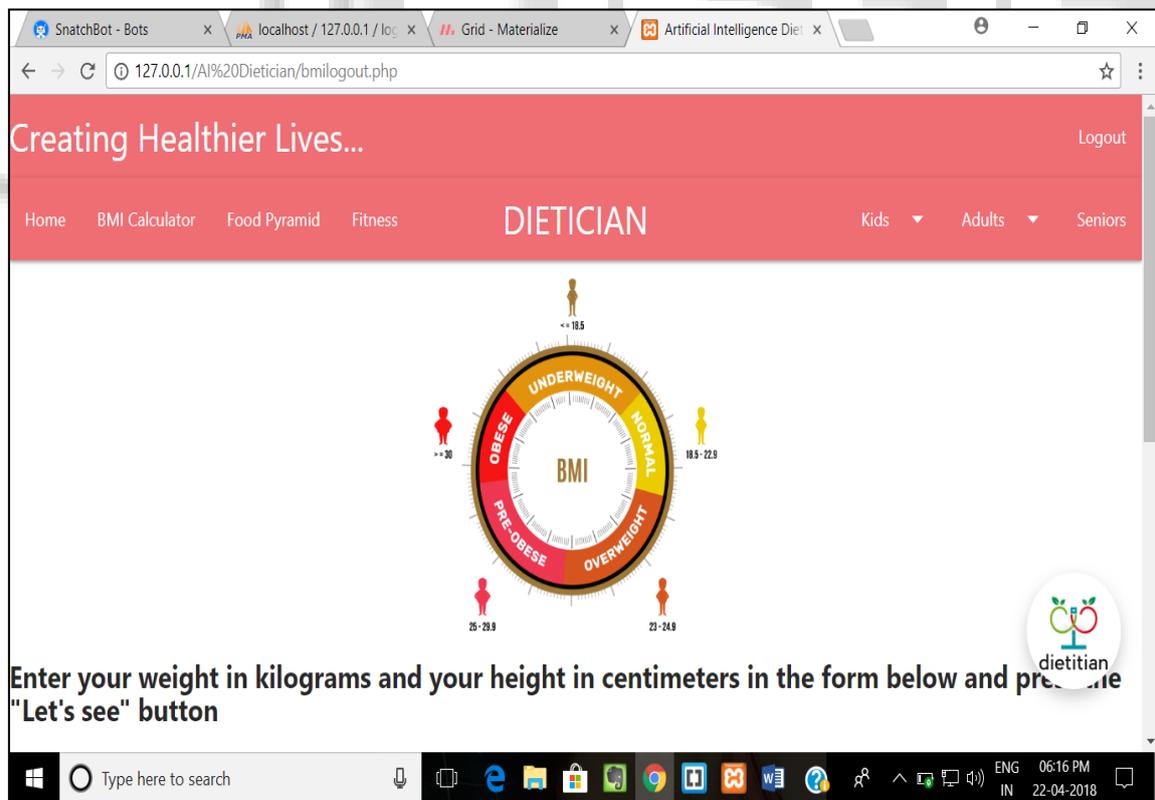
- 1) Nutri - Freak can be enabled with Amazon Alexa skills so that elderly people with less technical knowledge can easily get the diet plan.
- 2) The project can be advanced and more helpful by enabling Video Calling of the patients.
- 3) Dietitians can use this system to make sure what they recommend patients.
- 4) This system can be very well used in medical colleges for teaching and practicing purposes so that student can learn from it.
- 5) This system can also be utilized in gym particularly for calculating the customers' calories and diet plans.
- 6) Individual can also use this software especially for themselves in home.
- 7) It can also be used at restaurants so that diabetic or cardiac patients can have healthy meals

V. RESULTS

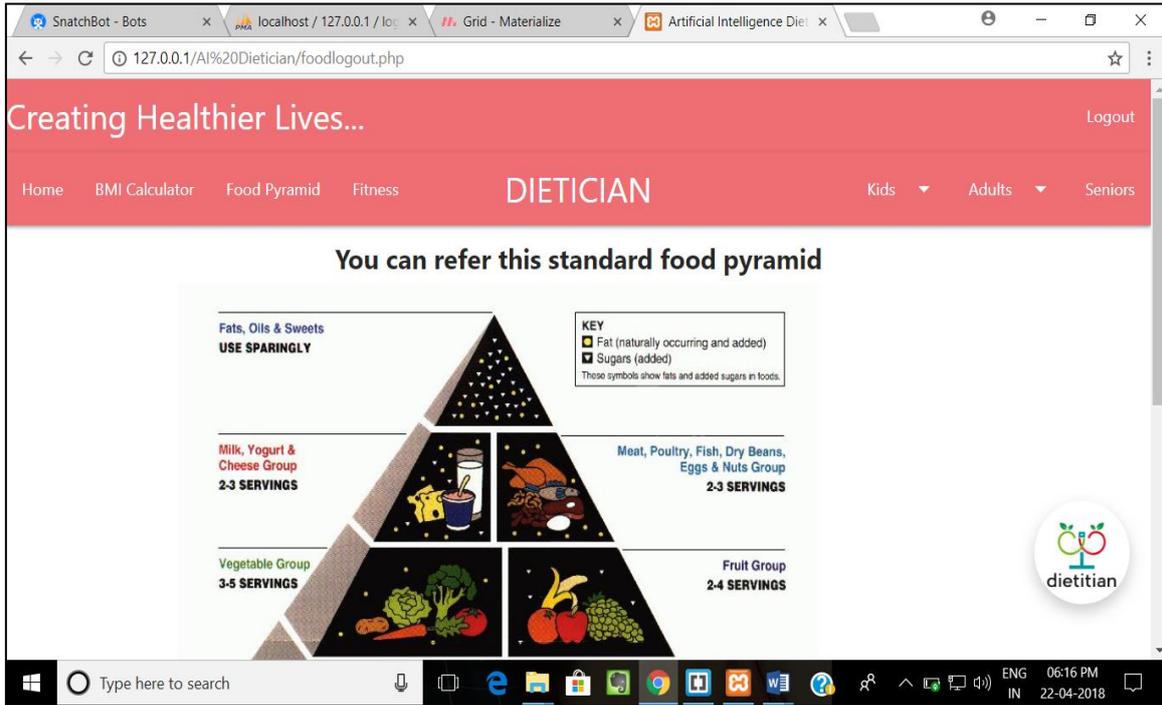
A. The Home Page



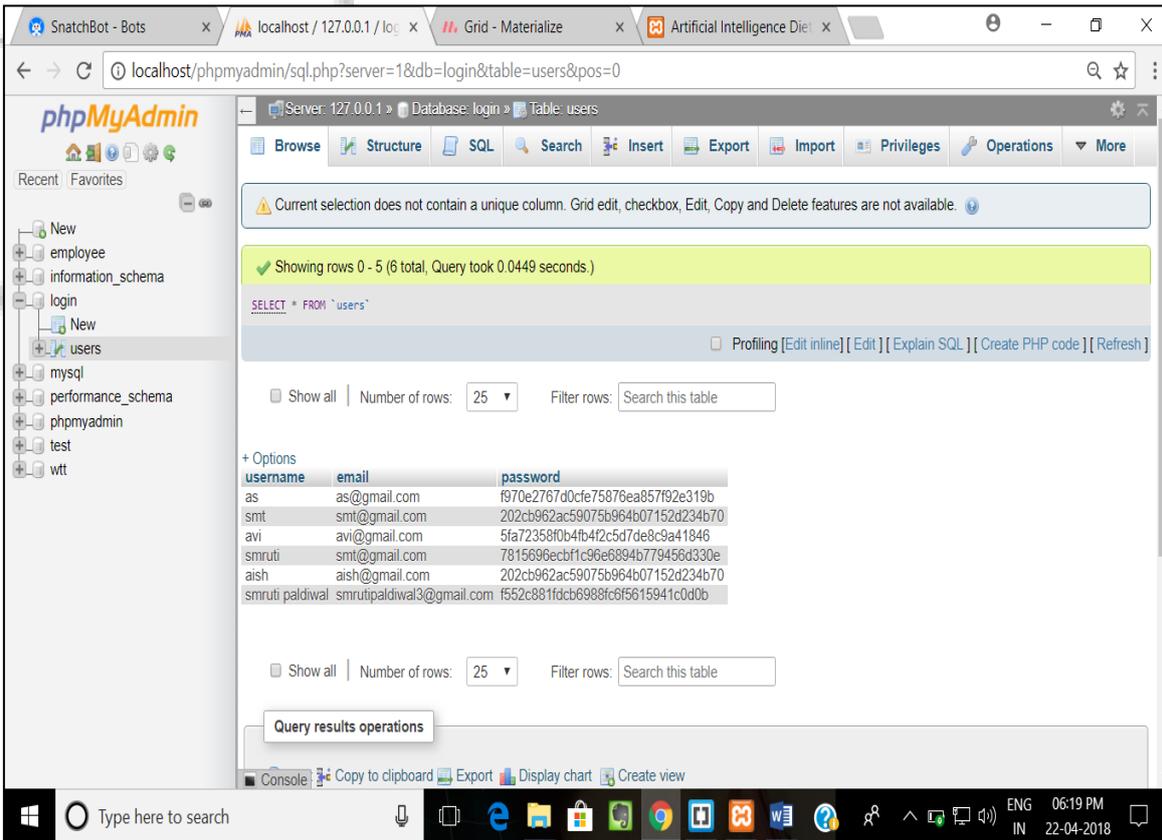
B. BMI Calculator



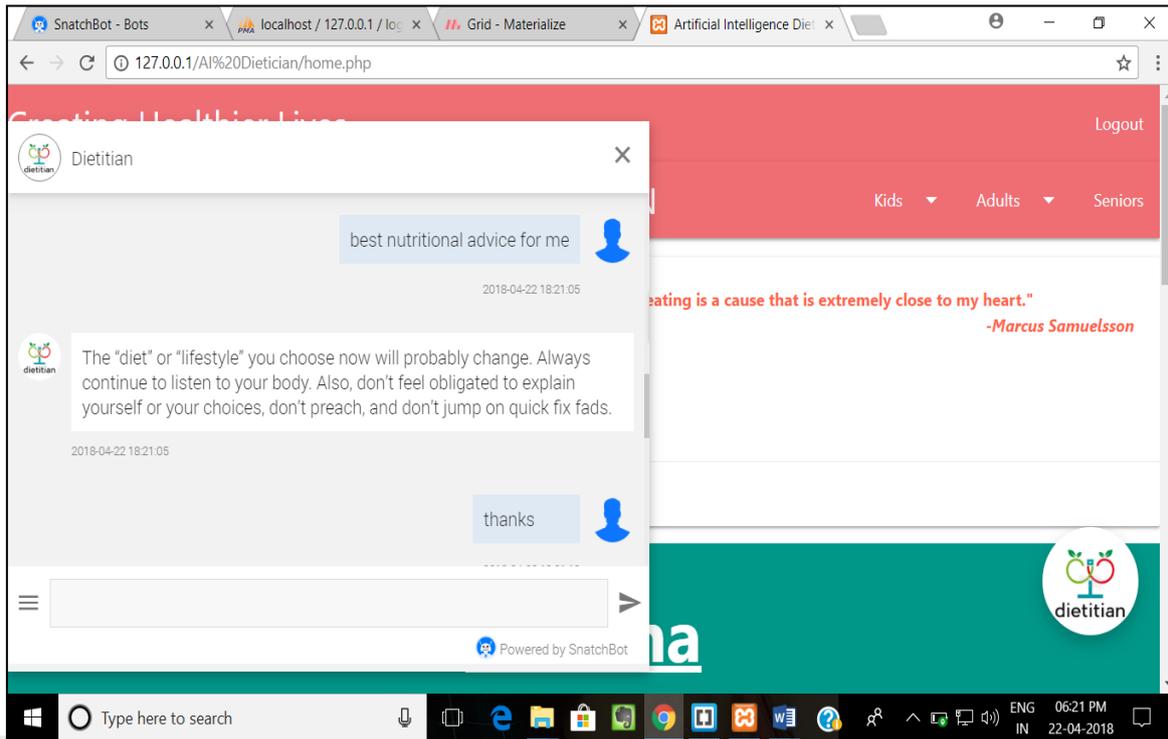
C. Food Pyramid



D. Database Server Page



E. Chat Bot



VI. CONCLUSION

"Nutri-Freak" allows the user to grasp about his/her actual diet information i.e. what proportion user had calories in their body on this basis system displays workout and food suggestions. This software package could be a strong enough to face up to regressive facility for the Handicapped Peoples. This software reduces the time span and value for expert advices for diet. This site is exceptionally valuable to wellbeing cares and dietician. This product diminishes the time compass and value for master advices for eating routine. Dieticians are available anytime so there's no need of visiting clinics and hospitals .This system provides full details of the nutrient constitution in body and if required more or not together with the plan by just answering to some queries. Saves money and extremely effective and provides accurate results because it is coded with keeping diet chart in mind .There are alternative diet chart provided by the system if the user do not like any.Web based chat bot that may be accessed anytime and from anywhere. AI domain gives a fringe of generating a correct diet plan which lacks in other system because the domain isn't the identical.

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