

# Automated Healthcare Visualization System

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**Abstract** - An automated healthcare visualization system is a project which aims at developing a health-oriented web-based application that proves useful for everybody equipped with an Android Device, IOS Device, or desktop. This project has included many features which are not available in usual health-centered applications like the facility of call The Visual Body Analyzer through which the user can find home remedies for trivial health issues in 3D image format. And BMI calculator and some data-oriented features. Overall this project of ours is being developed to help people maintain their health in a centralized manner.

**Key Words:** BMI calculator, 3D body visualizer, Search doctor, and blood.

## 1. INTRODUCTION

In day-to-day hectic schedules, we often don't pay attention to our health. Our project can highlight a Solution to our health care issues by providing solutions to all the people equipped with a smartphone or your desktop system. This highly portable solution is called an automated visualization healthcare system. As the name suggests users won't have to take efforts for maintaining their health. The project's only aspiration is to provide all its users easy, viable and highly accessible system which would save their pocket and minute by providing them health care solutions anywhere and anytime. Hence we provide two types of features user oriented and data-oriented. User-oriented features contain a BMI calculator and 3D body visualizer. And Data-oriented features contain to find a doctor according to your location. And find blood find blood according to any blood group and provide a facility to contact that doner through call.

### 1.1 AIM AND OBJECTIVE

The main aim of this project is to provide basic health assistance and prove to be a helping hand in their healthcare journey. Build a consumer-focused integrated primary health care system. Improve access and reduce inequity. Increase the focus on health promotion and prevention, screening, and early

intervention. And Improve quality, safety, performance, and accountability, etc.

### 1.2 LITERATURE SURVEY

In [1] this paper they focus on the development of a mobile application (app) to help to provide an effective health care system. Using this app people can get numerous benefits like finding hospital information in the city, information about the cabin, cabin booking with payment, intelligent suggestion on choosing a suitable hospital, finding a doctor, emergency service calling, first aid information, alarm system for medication, Body Mass Index(BMI) calculator, etc.

In [2] this paper they present the development of a web application for the general public of Bangladesh where they can store their medical data and access it anytime, from anywhere. In the Online Health Care (OHC) system, users can register as patients to store their medical data in the database. The system also consists of registered doctors under the enlisted hospitals, who can give free medical advice and prescribe necessary medications to the patients when requested for an appointment.

In [3] this paper they present a health mobile application developed to this end, providing architecture to support the integration and automation of long-term tasks carried out through different phases of the treatment, to help physicians before, during, and after home visits. It also supports treatment adherence, offering follow-up alerts and data to set up remainder medical applications.

### 1.3 ABOUT PROJECT

Many times we face very critical problems like the unavailability of doctors. For small issues, we need to consult a doctor or an expert for temporary relief. No system will recommend home remedies for menial issues. An emergency arises without prior notice, hence the need for a blood source can be vital during

accidents or critical mishaps. The existing system doesn't provide any support for finding blood sources during emergencies. Hence we are designing this application that is capable of working without an internet connection to provide basic functionalities. Further, the user's only job is to log in and provide mandatory details and use our services absolutely for free. We are providing services like:

1) BMI Calculator module: Body mass index (BMI) is a measure of body fat based on height and weight that applies to adult men and women. Depending on the BMI the user can maintain their health.

BMI Calculator where only 2 inputs can generate a Body Mass Index.

2) 3D body visualizer: Here user can explore human body parts in 3D image format. For a better way to understand health and the human body and also for user friendly. According to the user, the user can select any body part, and then the system shows various diseases related to that body part. After 3D body visualizer, users can find home remedies to related their health issues.

3) Find a Doctor: It provides an easy and fast way to search for a Doctor. This app enables users to find a doctor in emergencies. The user can search the details and find the details of the doctor. Users can get brief details about the doctor's contact details including their location. The user can make a call or message directly by using this application.

4) Find Blood: It provides an easy and fast way to search for blood. This app enables users to find blood in emergencies. Here Users can easily find the details of donors and receivers through their mobiles. The user can search the details and find the details of the blood donors. Users can get brief details about the donor's contact details. The user can make a call or message directly by using this application.

## 2. SCOPE OF RESEARCH

For any project to be successful, it must satisfy all the requirements of the user. The user must feel comfortable with the system when he/she is using it. To achieve this, the system describes the scope of the project which should be accomplished within the deadline. If it achieves all the requirements, then the system will be considered as successful. Scope for any project can be local or global.

### 2.1 LOCAL SCOPE

Our proposed system is based on basic Medical or health-related issues. For small issues, we need to consult a doctor or an expert for temporary relief. No system will recommend home remedies for menial issues. A visit to the doctor usually causes unwanted expenses. It would be better if a computerized system will recommend home remedies saving people's pocket and time. An emergency arises without prior notice, hence the need for a blood source can be vital during accidents or critical mishaps. The existing system does not provide any support for finding blood sources during emergencies. As compared to the other applications our application is simpler, centralized, and convenient for everyone equipped with an all smartphone. Our system is capable of working without an internet connection to provide basic functionalities. Users can check their Body Mass Index regularly and follow relevant diet charts. Further, the user's only job is to log in and fill in mandatory details and use our services absolutely for free. Features like Visual Body Analyzer will help people save their trips to the doctor and save their pocket. The system is more efficient, reliable, and fast as compared to the other system.

### 2.2 GLOBAL SCOPE

The global scope of the system will deal with newer modules and tasks to be integrated and implemented in nearby future of project development and maintenance cycles. As there are many applications on the play store which contain the same feature which we provide. But all those in a different application. Here our application provides all features in only one application. Hence users don't need to install multiple applications. The Medicare Application helps concentrate on the small details of daily healthcare through its simple but unique features. Medicare Application is supposed to reduce human effort through saving time visiting the pharmacy and visiting the doctor for small but important health issues.

### 3. SYSTEM OVERVIEW

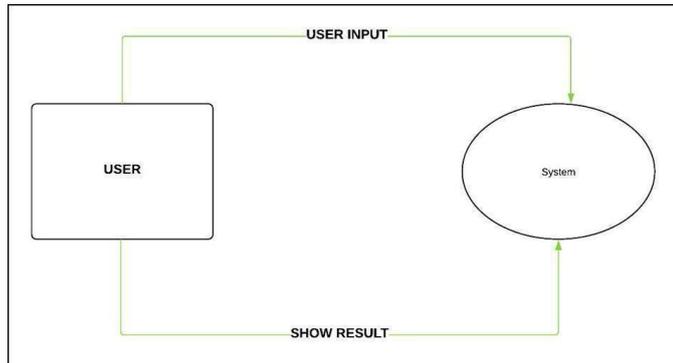


Figure 1: DFD 0

DFD Level 0 shows the interaction between the user and Android Application.

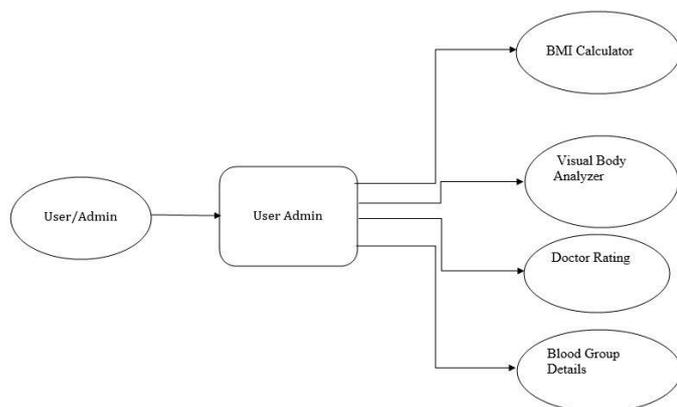


Figure 2: DFD 1

Level 2: DFD shows the admin login and the function of admin. User can be viewed and converted the image files into text files, also view uploaded images and converted images.

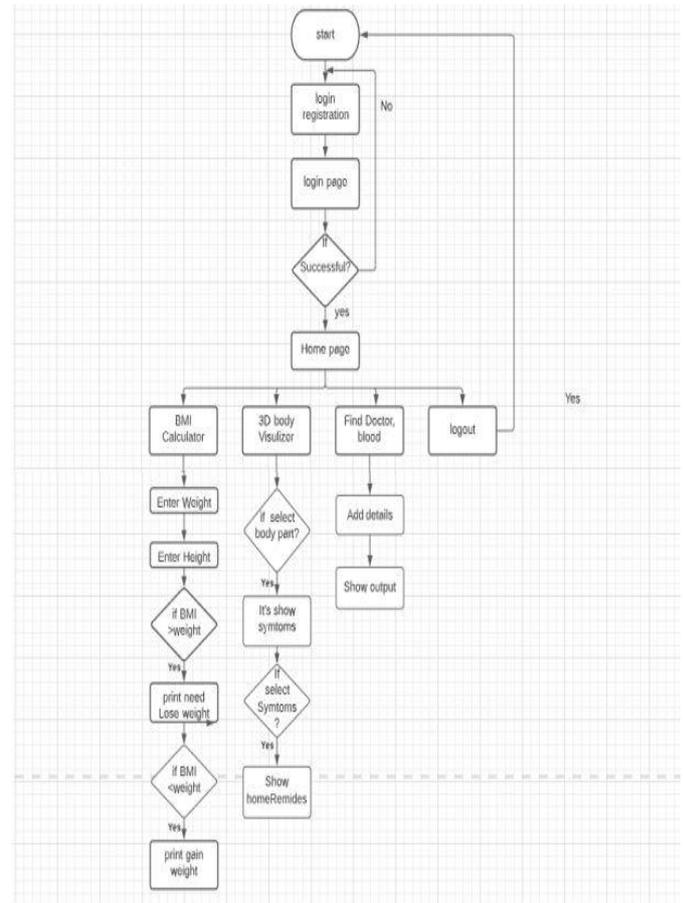


Figure 3: Flow Chart Diagram

### 4. METHODOLOGY:-

1) In the BMI calculator module, calculate the body mass index which is based on user height and weight. For calculating BMI we used the following formula:

$$BMI = \text{weight} / \text{Height}^2$$

Where weight is in kilograms and height is in meters.

If the BMI of any person is 25.0 or more is over weighted while the healthy range is 18.5 to 24.9.

2) In the 3D body visualize module, we have used a 3D gif Image for user efficiency. Where a user selects any body parts image and according to that system display all disease. From all diseases, users get the select particular disease. Where the system show symptoms, causes, and home remedies. When a doctor is not available at that time then this feature is useful to the user.

3) In the Find Doctor module, when a user does not know about that place and he/ she need a doctor, at

that time this module is useful. In that module, users search doctors according to their location and doctor specialization. And contact the doctor through phone calls. All doctor data is stored in one JSON file.

4) In the Find Blood module, the User search donor according to the blood group and contact them through phone calls. After registration users also add their details as donor details like name, contact number, and blood group.

## 5. CONCLUSIONS

Medicare Application is highly available software that very efficiently and reliably carries out multiple healthcare tasks. Medicare doesn't aim at any specific grade of users, anyone equipped with an Android smartphone can take advantage of Medicare and its very useful features. Medicare also aims at being an aid to the marketing personals working in the medical sector. Not only it aids the sale of medicines but also it helps Doctors and researchers to upgrade their services. Medicare also inculcates the ability to be useful during emergencies through its features such as "Find nearest hospital" and "Blood Group finder". It is the only application that provides home remedies for small health issues. Thus, we can surely say that Medicare has the potential to be the best Healthcare Application around.

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