A WEB- BASED HEALTHCARE MANAGEMENT SYSTEM

HARDWARE AND SOFTWARE COMPONENTS REQUIRED.

Software development life cycle processes includes

1. Conceptualization
2. Specification
3. Design
4. Implementation
5. Testing and Debugging
6. Release and Update

Conceptualization

The main concept for LMR system is a web based health care management system. For effective COVID19 healthcare, a network system monitoring one's vital signs and evaluating one's health conditions is highly desirable. In our laboratory, we have developed a vital sensing system for home healthcare. The purpose of this study is to design and implement a prototype web-based healthcare management system (WBHMS) to make effective use of the data that are measured by the vital sensing system.

Specification

In system design, we adopted a platform-independent web based system for its easy use. Then we considered security and privacy because the personal data were handled via the Internet. Moreover, we considered that the users were able to check not only the data from the vital sensing system but also the analyzed report as feedback

Hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatibility and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements. These include, Intel dual Core, i3 as the processor of the Os, Internet connection for the health center, clinical thermometer.

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These includes

- Video recording, so patients can describe their body status, their triggers and what happened afterward
- Two-way video connection so patients can see the doctors they communicate with.

- E-prescribing allows medical providers to send prescriptions directly to pharmacies electronically. This type of healthcare software avoids handwritten notes and instead sends accurate and understandable prescriptions, considerably improving the quality of patient care.

- **Data management** allows medical practitioners to add and store covid patient information electronically and allows physicians to view it.

- **Patient history** stores information about existing problems, allergies, current symptoms exhibited medications, etc.

- **Financial reporting** provides COVID19 healthcare organizations with deep insights into which areas of their practices are influencing financial performance and helps them make decisions

Design

A well- defined algorithm for a web-based COVID19 Healthcare Management System

STEP1: Start

2: Body status to the virus=0

3: Add the COVID19 symptoms in the system

4: Put the software involved

5: Create a questionnaire

6: Collect qualitative data

7: Analyze Data

8: Body Status positive to the virus

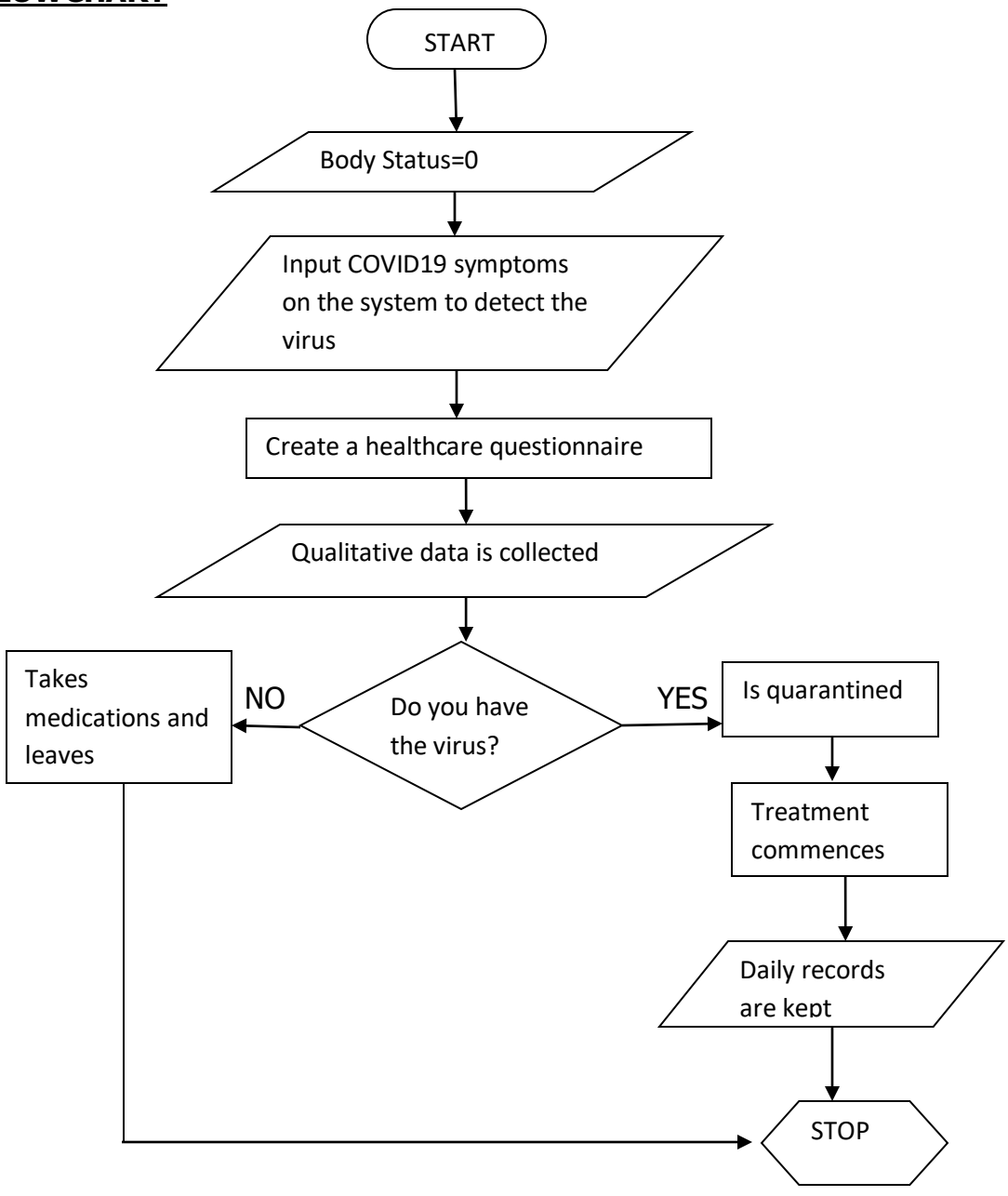
9: Else

10: Body Status negative to the virus

11: Display feedback

12: Stop

FLOWCHART



Implementation

From the above design specifications, we implement a prototype WBHMS. This WBHMS consists of

- web server with Apache,
- application server with Tomcat
- database server with PostgreSQL, and
- web application with JAVA technologies, This web application has a data viewer function, an analysis function, and a feedback function which are the modules of the application software

The data viewer function provided graphs of physiological data, which are body temperature, blood pressure, pulse wave (PW), and electrocardiograph (ECG), measured by the vital sensing system.

The analysis function estimated parts of the users' health conditions by two indexes. One a pulse wave velocity reflecting arteriosclerosis and a calculated from both PW at the tips of one's finger and ECG. The other is an index reflecting autonomic nervous activity and is estimated based on power spectrum analysis of RR interval of ECG. The feedback function provided advice based on both the measurement data and the results of the analysis function.

Through performance tests, we have confirmed that the prototype WBHMS has the ability to make effective use of the measurement physiological data for COVID19 healthcare.

Testing and Debugging

The COVID19 Healthcare web apps need to be fool-proof, which is why testing the apps and their functionalities become so important. Right from testing the security and compliances to the workability and the integration of the app, testing can also be done with different operating systems, internet connections and hardware.

Release and Update

This application is being released to detect, display the rate of virus, store, transmit and access data through the web together and its updated when necessary based on the health center feedback

TOP- DOWN DESIGN APPROACH OF THE APPLICATION