

**PROJECT REPORT ON
MEDICINE RECOMMANDATION
SYSTEM
SUBMITTED IN
PARTIAL FULFILLMENT
FOR THE AWARD OF THE DEGREE
OF
MASTER OF COMPUTER APPLICATION
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SUBMITTEDBY:

MRADUL PARMAR

ADITYA RUPENDRA SINGH

KAVITA CHAUDHARY

SUBMITTED TO:

MR. PRINCE ARORA

CERTIFICATE

I would like to express my gratitude and appreciation to all those who gave me the possibility to complete this report. Special thanks are due to my supervisor **Mr. Prince Arora** whose help, stimulating suggestions and encouragement helped me in all time of fabrication process and in authoring this report. I also thank for the time spent proofreading and correcting my mistakes.

SIGNATURE OF STUDENT:

MRADUL PARMAR

ADITYA RUPENDRA SINGH

KAVITA CHAUDHARY

Date: 08/12/2022

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Profile of the Problem

Hospitals have entry to considerable quantity of facts patients and their fitness parameters. Thus, there is a need for handy manner for clinical specialists to make use of this statistics effectively. An instance will be the get entry to aggregated statistics from present database on a specific trouble on the factor of care when it is far necessary. Moreover, there are greater drugs, tests, and remedy recommendations (e.g., evidence-primarily based totally remedy or scientific pathways) available for clinical body of workers each day. Thus, it will become increasingly hard for them to determine which remedy to offer to an affected person primarily based totally on her signs, check outcomes or preceding clinical history. On the opposite hand, some of these facts may be used to strive customized healthcare that is presently at the upward push and anticipated to get a first-rate disruptive fashion in healthcare in the upcoming years. Therefore, an advice engine for medical use could be hired to fill this hole and guide decision making throughout therapy. Based on an affected person's present day fitness status, prehistory, present day medications, signs and beyond treatments, the engine can search for people with comparable parameters in the database. At the end, the recommender system would recommend the medicine that had been maximum a success for comparable patients. With the assist of this kind of gadget, the medical doctor can be capable of make a better-knowledgeable selection on the way to deal with an affected person.

If you are facing with any kind of disease or infection and knowing about this disease on time will help you to get cure and take precautions on time. This process will also help to get over from these suffering in few days or in months. Among several diseases and sufferings, many peoples are suffering from diabetes. With this computer-based diabetes detection software, user will be able to do their self-checkup without taking help of a doctor. This system will keep records of patient or of any person and by using their general data collected during analysis process it will be able to tell you, whether you are suffering from diabetes or not. Apart from these, based on your collected data, it will also provide suggestion and general precautions which is to be taken by you to improve your health. This system having the ability to detect diabetes and categories as per the data which has been collected during questions answer section. Its user-friendly graphical mode will make its user to use this system in interactive manner. You will have to just answer few questions and these questions has been divided into two sections. Upon completion of these questions, you will be able to get your result and your health status regarding diabetes. To keep records, you will be required to ask your basic information and using this information, your final report will be prepared by keeping view of answer which has been provided by you. Number of options will be given in answer section, and you must select whatever suits you the best.

Existing System

Aaragya Setu (Discontinued)

The stated purpose of this app is to spread awareness of COVID-19 and to connect essential COVID-19-related health services to the people of India. This app augments the initiatives of the Department of Health to contain COVID-19 and shares best practices and advisories. It is a tracking app which uses the smartphone's GPS and Bluetooth features to track COVID-19 cases. The app is available for Android and iOS mobile operating systems. With Bluetooth, it tries to determine the risk if one has been near (within six feet of) a COVID-19-infected person, by scanning through a database of known cases across India. Using location information, it determines whether the location one is in belongs to one of the infected areas based on the data available.

Traditional Ways

As per the existing system, users must invest money before knowing their diagnosis report. They must visit diagnostic center, consult their doctor, and wait for a day to get their result. If someone has only doubt and want to have a checkup, then it will have their wastage of money and time for them. Each time you must provide your basic information and go through the same diagnosis process to get your diagnosis result which can be dangerous in some serious condition. Patients should go through the checkup process immediately before the diagnosis process if such condition arises. So, keeping customer records and searching their records manually sometimes not possible and sometimes it is a time taking process.

Introduction to existing system

Various measures were taken to halt the spread of the COVID-19 pandemic as it hit the world. The Indian government launched the "Aarogya Setu" contact tracing app. It is Indian COVID-19 tracking mobile application. It is developed by the National Informatics Centre which comes under the Ministry of Electronics and Information Technology. Purpose: To spread awareness of COVID-19 To connect essential COVID-19 – related health services to the people of India. It uses the smartphone's GPS and Bluetooth features to track the coronavirus infection. With Bluetooth, it determines the risk if one has been near (within six feet of) a COVID-19 – infected person, by scanning through a database of known cases across India. Using location information, one can determine whether a particular location is one of the infected areas. It is an updated version of an earlier app called Corona Kavach

Scope of existing system

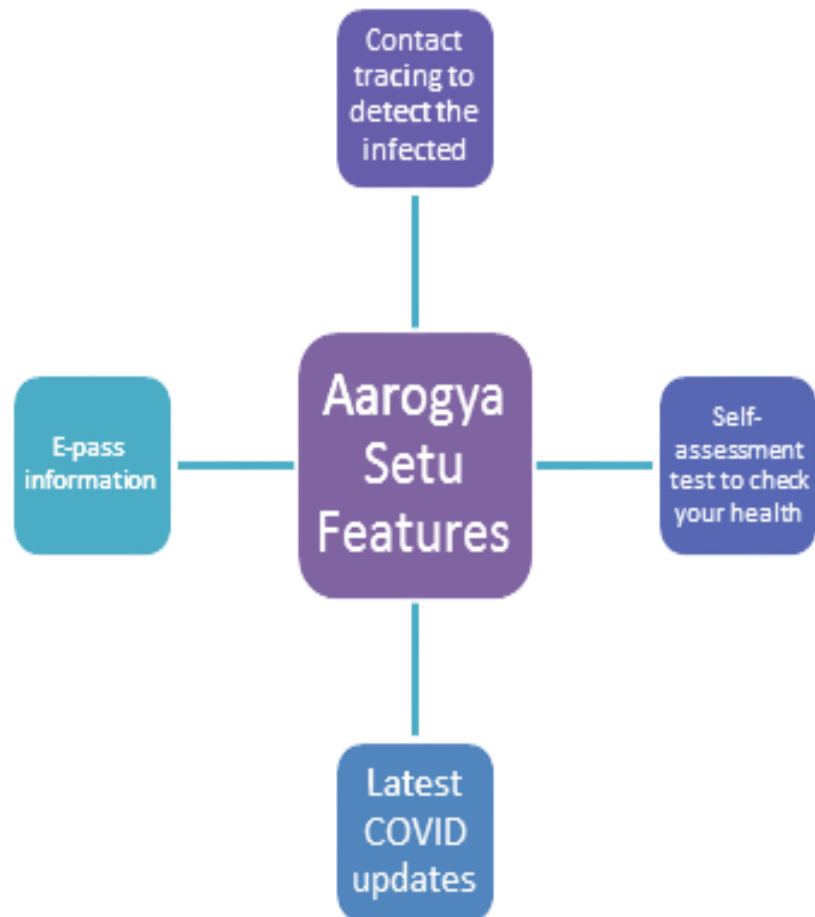
Pro's

- Individuals and authorities must stay informed if they encounter someone who has tested positive for coronavirus.
- It is powered by Bluetooth technology. The lack of internet access will not cause any issues.
- The software suggests numerous measurements, including the Self-Assessment Test, Social Distancing, and Do's and Don'ts.
- It describes the preventative precautions.
- According to the Prime Minister's Office, it may also be used as an e-pass for travel.
- If a user is at elevated risk, the app will encourage him or her to take a test at a nearby testing center and promptly contact the toll-free number 1075.
- There is also a hotline number for each state.

Con's

- It is enforced by executive order without any legal backing.
- It is thought to be a sophisticated surveillance system.
- Recently, Robert Baptiste stated that security flaws in Aarogya Setu allowed hackers to determine who is diseased or ill in his chosen location. He also revealed the number of persons who were ill or infected at the Prime Minister's Office, the Indian Parliament, and the Home Office.
- The Terms of Service (TOS) of the app imposes blanket limited responsibility on the government. As a result, there is no government responsibility in cases of user data theft.
- The software violates the basic right to privacy. There is no legal structure in place to demonstrate that the breach was justified.
- It is a full breach of users' rights to informational self-determination and the right to be forgotten if they have no control over their data.
- The app's closed source architecture breaches transparency standards.
- The government is required by the TOS to destroy some personal data after 30 days. However, there is no system in place to ensure compliance.
- The situation is exacerbated by constantly shifting rules. The app recently revised its privacy policy without informing users. Such behavior does not engender trust.
- There are no controls in place to prevent data theft and other breaches.
- It is unclear whether the government has undertaken scenario analysis to see how the app may be exploited or abused. Given the level of stigma in India, this is critical.

DFD for Present system



Future scope of the existing system

Aarogya Setu has four sections: User Status (tells the risk of getting COVID-19 for the user) Self Assess (helps the users identify COVID-19 symptoms and their risk profile) COVID-19 Updates (gives updates on local and national COVID-19 cases) E-pass integration (if applied for E-pass, it will be available) See Recent Contacts option (allows the users to assess the risk level of their Bluetooth contacts) It tells how many COVID-19 positive cases are likely in a radius of 500 m, 1 km, 2 km, 5 km and 10 km from the user. The software is developed on a platform that may give an application programming interface (API), allowing other computer programmers, mobile applications, and online services to access Aarogya Setu's features and data. The future scope of traditional disease system is to treat everyone with cure as living healthy is everyone right. But sometimes cost and time are at cost.

Problem analysis

Individual medical decisions have a massive impact on hospital administration and service quality. For example, each physician may choose treatments coded into specific keys (Treatment Keys, or TK) for disease management and treatment costs based on their experience; each of these treatments is then combined with a cost refund, which is encoded in specific keys in Electronic Health Records (EHR) and on medical bills. These keys would have an "economic impact" on the health-care system. In certain circumstances, the payment system's behavior permits what physicians could do to provide more health services to a patient, regardless of whether the additional treatment is economically optimal. A At the same time, physicians might disregard their colleagues' experiences by utilizing different treatments that may be better appropriate for treating an illness. Other shortcomings may result from clinicians being overburdened by a high number of patients and/or having multiple therapeutic choices to examine as part of a portfolio with more than one hundred distinct alternative therapies per patient. As a result, physicians seldom have the time or experience to analyses all the many alternative possibilities correctly and individually.

Product definition of new system

All your past and new entries will be saved utilizing the file and directory concepts. While searching your record, a binary search operation will be done, and you will also be able to access your earlier diagnosis report. This technology will be able to recognize your Disease symptoms like Diabetes or Cancer and save them in a file with your record id. Each patient will have a unique record id, and when searching, patients may differentiate their information from that of others by entering their date of birth and address. It is also used to recommend medicines according to sickness or disease.

Feasibility Analysis

A feasibility study assesses the project's likelihood of success; hence, perceived objectivity is a crucial aspect in the research's credibility for investors and financing institutions. It must thus be undertaken objectively and impartially to give information on which judgments may be made. Here, we discuss three major feasibility studies required for our project.

a) Operational Feasibility

Operational feasibility is the measure of how well a proposed system solves the problems with the users. Operational feasibility is based on the project's human resources and entails estimating whether the system will be used once it is built and deployed. The project is operationally feasible for the users as nowadays all people are familiar with digital technology.

b) Economic Feasibility

Economic feasibility defines whether the expected benefit equals or exceeds the expected costs. It is also commonly referred to as cost/benefit analysis. The approach is to calculate the predicted benefits and savings from the system and compare them to the expenses. A proposed system is expected to outweigh the costs. This is a small project with no cost for development. The system is easy to understand and use. Therefore, there is no need to spend on training to use the system. This system has the potential to grow by adding functionalities for people. This can Hence, the project could have economic benefits in the future.

c) Technical Feasibility

Technical feasibility is carried out to determine whether the project is feasible in terms of software, hardware, personnel, and expertise, to handle the completion of the project. It considers determining resources for the proposed system. As the system is developed using C++, even if it is platform dependent it is faster than most of the languages. Therefore, the users of the system can have fast processing capabilities, running on platform.

Project planning for new system

It is Fundamental step for developing the project. In this step developer will find what to do in this incremental model of project or find what to change and update from the existing project. In Project Planning developer will find the basic need of market, risk analysis, estimation of how much days it takes to complete, assigning the roles to teammates and cost of development of project. All these steps help us to find the basic approach of project. Project planning helps developer to save time, money, and resources

Software Requirement Analysis

This is one of the important parts of the SRS documents as it gives the overview of the functioning of the system

Functional Requirements

1.Admin Module

- It contains the features such as accessing the information for testing.
- It contains the feature for adding new data.
- It contains function of giving authorization to users.

2.Patient Module

- It contains the disease detection system.
- It contains registration system.
- It contains medicine recommendation system.

3.Pharmacist Module

- It contains functions for billing.
- It can access the patients medicine records for analysis purpose.

•

Non-Functional Requirements

Non-Functional Requirements are the characteristics or attributes of the system that are necessary for the smooth operation of the system. Those requirements are listed below.

- The system should perform the process accurately and precisely to avoid problems.
- The system should be easy to modify for any updates. Any errors or bugs that are identified should be easy to mend.
- The system should be secure and maintain the privacy of the students.
- The system should be easy to understand and use.
- Execution of the operation should be fast.

Introduction

Increasing health information needs and changes in information seeking behavior can be observed around the globe. According to recent studies 81% of adults use the Internet and 59% say they have looked online for health information regarding diseases, diagnoses, and different treatments. Such effects influence the patient-physician relationship as educated patients raise questions or discuss treatment options. Thus, patients tend to become active participants in the decision-making process. This change in the way of thinking is often referred to as patient empowerment. However, information overload and irrelevant information are major obstacles for drawing conclusions on the personal health status and taking adequate actions. Faced with a large amount of medical information on different channels (e.g., news sites, web forums, etc.) users often get lost or feel uncertain when investigating on their own. In addition, a manifold and heterogeneous medical vocabulary poses another barrier for nonprofessionals. Therefore, improved personalized delivery of medical content can support users in finding relevant information. Medical information available for patient-oriented decision making has increased drastically but is often scattered across different sites. As a solution, Medicine Recommendation systems are meant to centralize an individual's health data and to allow access for the owner as well as for authorized health professionals. Recommender systems (RS) suggest items of interest to users of information systems or e-business systems and have evolved in recent decades. A typical and well-known example is Amazon's suggest service for products. We believe the idea behind recommender systems can be adapted to cope with the unique requirements of the health domain.

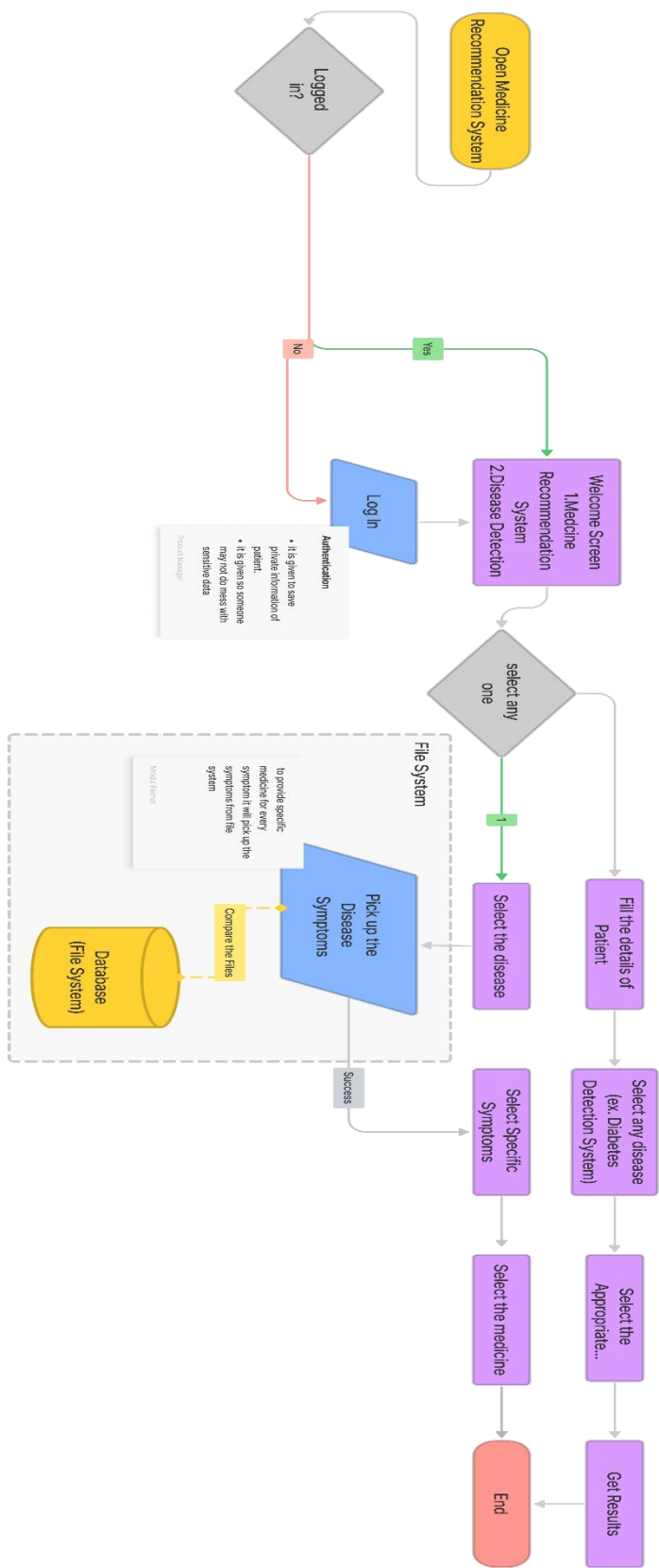
General Description

A medicine recommendation system is similar system that recommend the medicines for a particular disease based on patient reviews. This system is very essential in this fast-growing technological world, which can save lives by helping doctors.

Specific Requirements

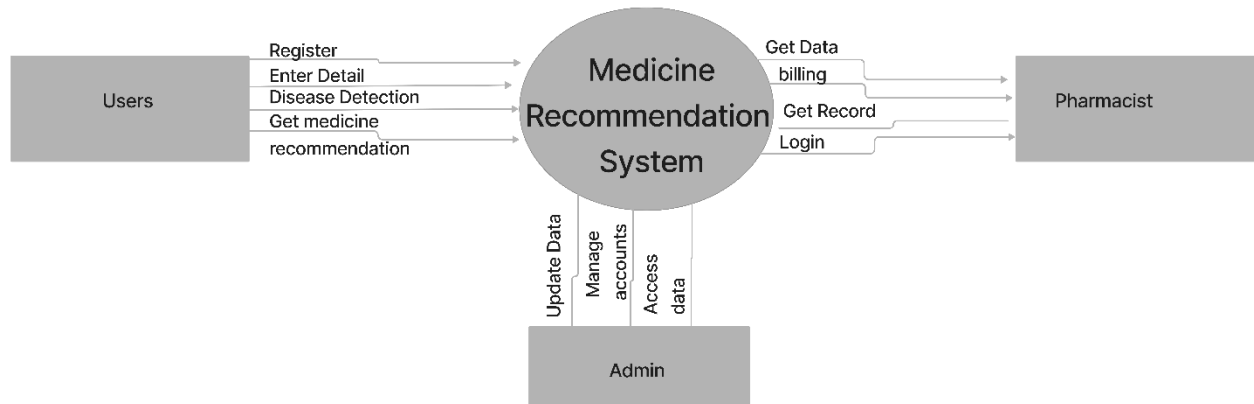
- User Login
- Patient Medical History
- Patient Report Data
- Patient Preferences
- Patient information
- Personal Details

Flow Charts for new system

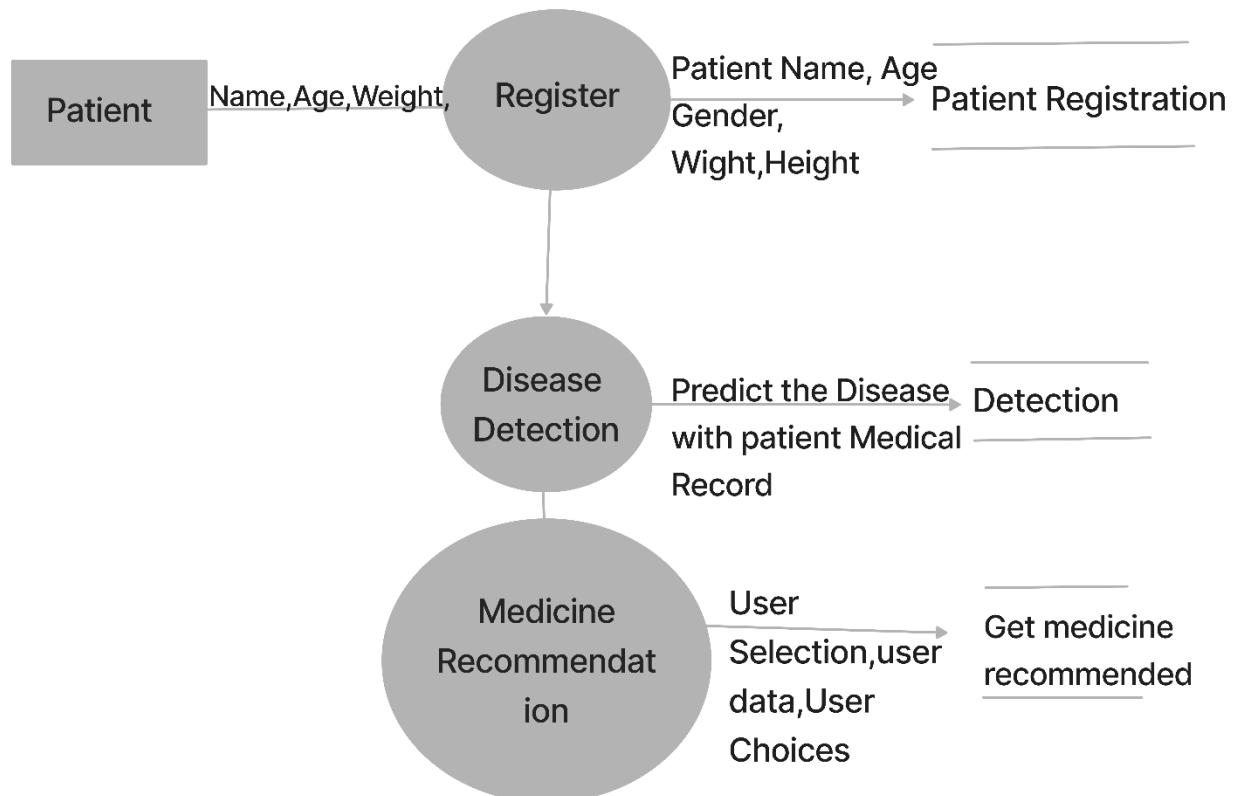


DFD for New system

Level 0 DFD



Level 1 DFD



User Interfaces used in system (CLI)

```
C:\Users\mradu\Document  x  +  v

*** DIABETES DIAGNOSIS FORM ***
Appetite (H(HIGH),/L(LOW),/N(NORMAL):
h
Thirst H(HIGH),/L(LOW)/N(NORMAL):
H
Frequency of urination H(HIGH),/L(LOW),/N(NORMAL):
H
Vision (I(IMPAIRED),/N(NORMAL)
I
Urine Sugar(P(PASSIVE)/A(ACTIVE)
;P
Ketonurea(P(PASSIVE)/A(ACTIVE)
P
Fasting of blood sugar(H(HIGH)/L(LOW)/N(NORMAL)
H
RBS(H(HIGH)/L(LOW)/N(NORMAL)
H
Family history of diabetes(P(PASSIVE)/A(ACTIVE)
P
OGTT(D(Diabetes)/N(Normal)
D
Diabetes Positive
Proceed (Y/N) ?
Y
Pancreatitis(P/A):
P
Carcinoma(P/A):
P
Cirrhosis(P/A):
P
HCTS (H/L/N):
H
Hepatitis(P/A):
P
Hormonal Disorder(P/A):
P
Pancreatectomy(P/A):
P
It is Secondary Diabetes.
Press key to quit

C:\Users\mradu\Documen  x  +  v

Please Select the type of Disease
1.Ance
2.Allergies
3.Dandruff
4.Fever
5.General Diseases
6.Disease Detection System
```

```
C:\Users\mradu\Document  X + v
***** Welcome to Medicine Recommendation system *****
1)(D) to Diabetes
2)(C) to Cancer
|
```

```
C:\Users\mradu\Document  X + v
***** Welcome to Medicine Recommendation system *****
1)(D) to Diabetes
2)(C) to Cancer
d
Welcome to Diabetes Detection system
Patient information
Name:
Age:
Weight:
Height:
Gender(M/F):
Mradul
21
56
142
H
*** DIABETES DIAGNOSIS FORM ***
Appetite (H(HIGH),/L(LOW),/N(NORMAL):
h
Thirst H(HIGH),/L(LOW)/N(NORMAL):
H
Frequency of urination H(HIGH),/L(LOW),/N(NORMAL):
H
Vision (I(IMPAIRED),/N(NORMAL)
I
Urine Sugar(P(PASSIVE)/A(ACTIVE)
;P
Ketonurea(P(PASSIVE)/A(ACTIVE)
P
Fasting of blood sugar(H(HIGH)/L(LOW)/N(NORMAL)
H
RBS(H(HIGH)/L(LOW)/N(NORMAL)
H
Family history of diabetes(P(PASSIVE)/A(ACTIVE)
P
OGTT(D(Diabetes)/N(Normal)
D
Diabetes Positive
Proceed (Y/N) ?
Y
```

Bibliography/References

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