

**International School of Informatics & Management  
Jaipur**



Project on

**Disease Diagnosis**

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# **CERTIFICATE**

This is to certify that this report embodies the original work done by **Vishal Saxena, Atin Varshneya and Priyanka Srivastava** during the project submission as a partial fulfillment of the requirement for the **System Design Project** of Masters of computer Application IV semester, of the Rajasthan Technical University, Kota.

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# **ACKNOWLEDGEMENT**

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of people whose ceaseless cooperation made it possible, whose constant guidance and encouragement crown all efforts with success.

We are grateful to our project guide Mrs. Kapila Pareek mam for the guidance, inspiration and constructive suggestions that helpful us in the preparation and execution of this project.

We would also express our thanks to our Friend Yogesh Jain and people who have helped in successful completion of the project.

**Vishal Saxena  
Atin Varshneya  
Priyanka Srivastava**

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# SYNOPSIS

## **PURPOSE:-**

- To assist the doctor.
- It reminds the possible diseases to the doctor on the basis of symptoms (to overcome human errors like diligence, versatile, tiredness)
- Enable a patient to find out the diseases, when no other help is possible.

## **INTRODUCTION :-**

It is an expert system which is use for simplifying the task of doctors. It is a system that checks a patient at initial level and suggests the possible diseases. It starts with asking about symptoms to the patient, if the system is able to name the disease then it provide the name and the corresponding medicines, If the system is not sure enough, It ask some queries to the patients, still of the system is not sure then it will display some test to the patient. On the basis of available cumulative information, the system will display the name and the prescribed medicines of the disease. This system not only simplifies task of the doctors but also helps the patients by providing initial medicines for small diseases in emergency.

### Software Requirements

#### Front-end

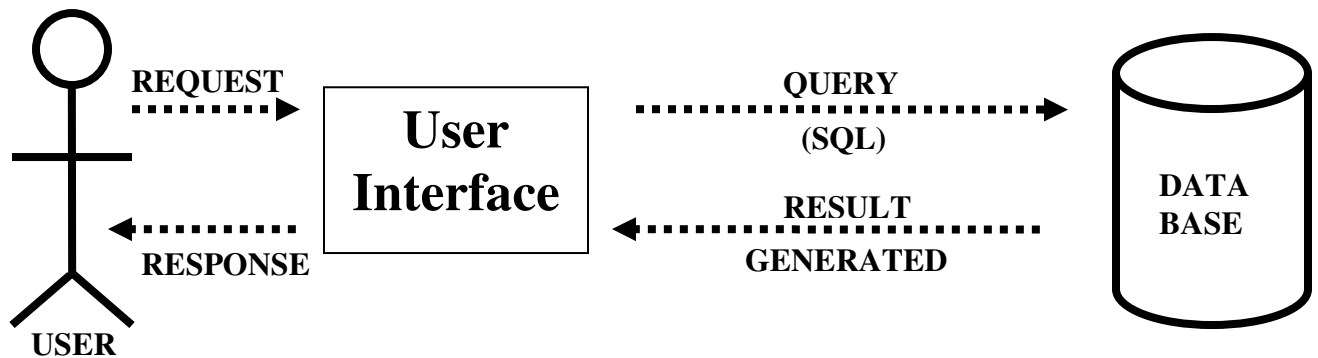
(For Coding) VB. Net  
(For Designing) VB. Net

#### Back-end

Structured Query Language (SQL)  
Oracle

## Working of the system

**Description :-**



**Fig. :- Working of the System**

According to the diagrams, it is a two tier architecture. We provide a form that shows a list of symptoms. From the listed symptoms, user have to select those that he/she have. On the basis of selected symptoms the system will generate related disease. If the information for the disease is not enough the system will show another form that contain some queries. On the basis of the information a query is generated and the data base responses to that query.

### **Assumptions:-**

- The user is assumed to have basic knowledge of computers.
- The program will feature a simple point and click graphical Interfaces.
- The user is assumed to give the system right information regarding the disease.
- The user is assumed to use this system for the initial level of the disease but also go to the doctor.

### **Constraints:-**

- Information's are available for limited disease.
- This system is not appropriate for complex diseases.
- This is not appropriate for research work.

# FEASIBILITY STUDY

## **FEASIBILITY REPORT**

### **Description of Existing System :-**

- Our Existing system is a human being (Doctor himself). Who knows large number of diseases and their solutions. It takes decisions at the very same time when he identifies the disease.

### **Disadvantages of Existing System :-**

- as our existing system is a human being he can suffering from following human errors :-
  1. Tiredness
  2. Memory limitations
  3. Both the doctor and the patient should be present.

### **Input for the New System :-**

- It requires information only about the symptoms.
- If required then also, the report of any test is given as an input.
- Requires answers of some queries that the system ask.

### **Output of the System :-**

- It gives us information about diseases.
- If these is a possibility that a group of symptoms produce more than one disease then the system will display the name of all diseases, regarding to the symptoms.
- It also give us the of possible medicines.

Feasibility study is a system proposal according to the work ability, impact on the organization, ability to meet users need and efficient use of resources. Three key considerations are involved in feasibility analysis, economical, technical & behavioral.

### **Economical Feasibility:-**

The economical analysis of the present proposed system is necessary to evaluate if high investment of the system is beneficial. Actually the implementing changes for “Disease Diagnosis” are very minimal. It only needs window platform to run the program. The software is also not at all resource hungry.

### **Technical Feasibility:-**

It is must that the proposed system is technically feasible in the organization. The existing system is manual and hence it is necessary to bring around awareness of the computer but this may not require an in-depth technical knowledge as the system developed is simple and easy to understand. The result obtain should be true in real time conditions. Then only the software can be used in Hospitals for checking purpose.

### **Behavioral Feasibility:-**

Behavioral feasibility deals with the runtime performance of the software. The proposed system must score higher than the present in the behavioral study. The software should have end user in mind when the system is design. While designing software the programmer should be aware of the conditions, users knowledge, input, output, calculation etc. The software contains only a minimum number of bugs. Care should be also taken to avoid non working menus and buttons.

## **Benefits of Computerization**

A Comprehensive computer based system is proposed for IT application identified at various branches of the office. The summary of the new computerized system is as:

- 1) **Transparency**:-The new online system will provide transparency in the system. All requisite details would be readily available on computer.
- 2) **Integration**:- The important function of the office would be integrated through information interchange. The integration would lead to effective policy making planning and control.
- 3) **Better monitoring and control**:- The staff would be able to devote more time in planning, monitoring and control. This would lead to better follow up and disposal of cases since required information would be available online and on time.
- 4) **Improved Efficiency**:- Another important intangible benefit of computerization would be improved efficiency by way of systematic record keeping and timely generation of information and analysis.
- 5) **Optimum Utilization of Resources**:- Manpower would now be utilized optimally and in the right direction. Other resources of the corporation would also be utilized in better way.

## Goals of the proposed systems

- 1. Planned approach towards working:-** The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in retrieval of information as well as its storage.
- 2. Accuracy:-** The level of accuracy in the proposed system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the center is accurate.
- 3. Reliability:-** The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.
- 4. No redundancy:-** In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would assure economic use of storage space and consistency in the data stored.
- 5. Immediate Retrieval of Information:-** The main objective of proposed system is to provide for a quick and efficient retrieval of information. Any type of information would be available whenever the user requires.
- 6. Immediate Storage of Information:-** In manual system there are many problems to store the largest amount of information.
- 7. The system should be easy to operate** and should be such that it can be developed within a short period of time and fit in the limited budget of the user.

## **Alternative Solution**

### **Online Disease Diagnosis System:-**

This system provides alternative solution for our System. It provides online storage/ updation and retrieval facilities (In context with diseases and medicines). This system promises very less or no paper work and also provide users the comfort of home.

In this system every information stored and retrieve electronically that makes it effective and provide easy retrieval of medicine information with out searching here and there. The patient can take use of online DDS sitting at home and find medicines at the very same level.

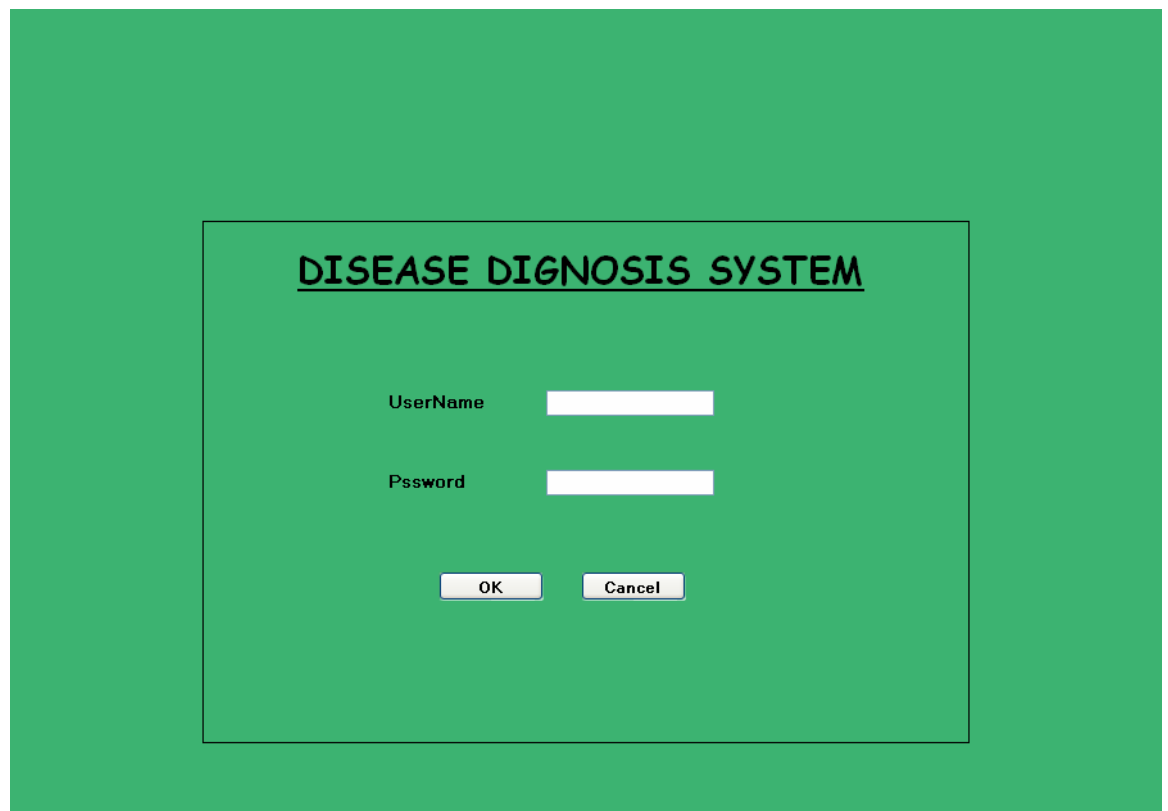
Online DDS is very useful for the patients as well as doctors because both are able to receive and provide information about diseases and medicines from a single place.

# Brief Description of Disease Diagnosis System

## Brief Description of Disease Diagnosis System

This system will provide all the information about diseases and medicines with the help of symptoms.

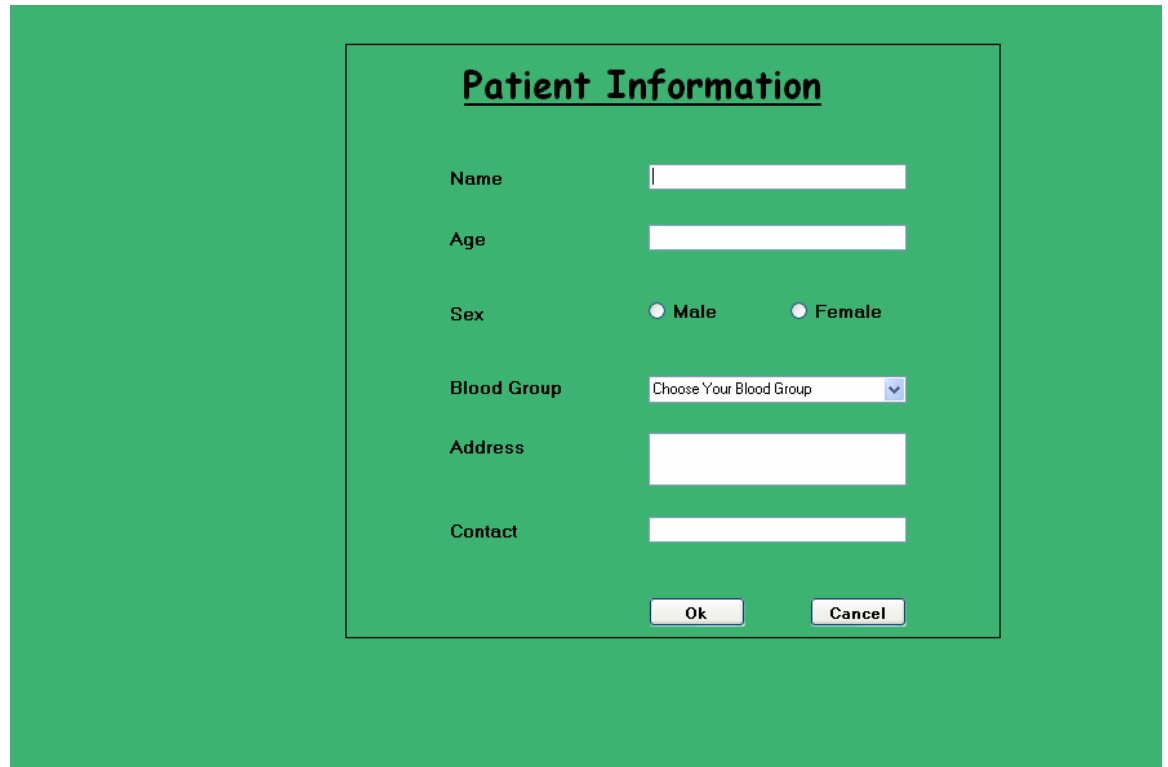
### Login form:-



The image shows a login form for the 'DISEASE DIGNOSIS SYSTEM'. The form is centered on a green background. It features a title 'DISEASE DIGNOSIS SYSTEM' at the top, followed by two input fields: 'UserName' and 'Pssword'. Below these fields are two buttons: 'OK' and 'Cancel'.

This Login form asks for the user name and password from the user at the first time when it starts. After giving correct user name and password, user will be able to enter in the system. Multiple users are possible.

## Patient Information Form:-



The image shows a screenshot of a 'Patient Information' form. The form is titled 'Patient Information' and is set against a green background. It contains the following fields and controls:

- Name:** A text input field.
- Age:** A text input field.
- Sex:** Two radio buttons labeled 'Male' and 'Female'.
- Blood Group:** A dropdown menu with the text 'Choose Your Blood Group' and a downward arrow.
- Address:** A text input field.
- Contact:** A text input field.
- Buttons:** Two buttons labeled 'Ok' and 'Cancel' at the bottom right.

After LogIn, Patient Information is the second form to which user interact .This form basically ask for the user/patient details. The concept for using this form is to provide right medicine to the patient and to remember the blood group so that in near future if there any requirement of blood the hospital that having this software can call that person.

## Symptoms Form:-

**DISEASE DIGNOSIS SYSTEM**

**Symptoms**  
SKINBURN  
COUGH  
WEAKNESS  
BODYPAIN

**Selected Symptoms**  
HEADACHE  
COLD

>>  
<<

OK Cancel

This form is basically for patient who select the symptoms that he or she have on the basis of which the doctors take decisions that what disease is suspected. Facility is provided to select the symptoms as well as to deselect the symptoms at the very same time in case if the patient selects any wrong symptom.

## Disease And Medicines Description Form:-

**Disease And Medicines Description**

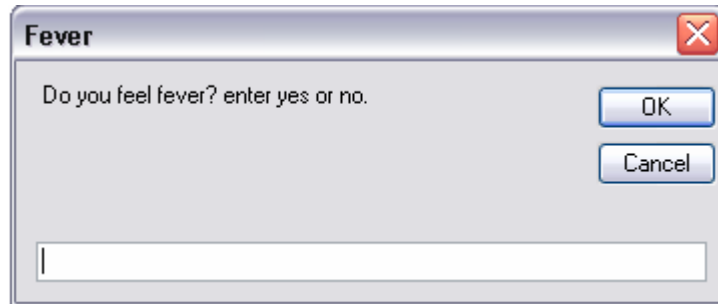
**Name of the disease** MALARIA

**Medicines**  
Disprin  
Cetirizine  
Ciprofloxacin(antibiotic)  
Chloroquin

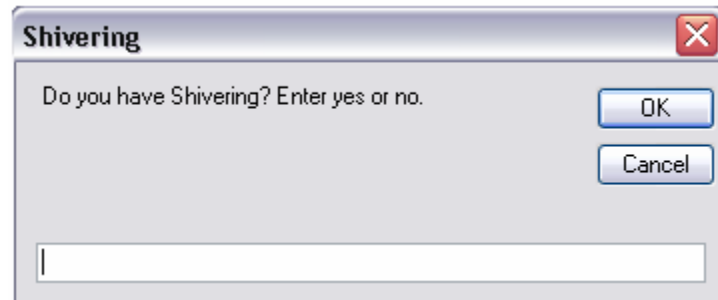
Ok

This form is use to show the name of the disease and the name of the medicines regarding to that disease. After receiving the name of the medicines the user have to click Ok button that takes the user to the “symptoms” form. Take an example that if a patient has malaria then this form provides the name of the disease as well as the name of the medicines according to the given form.

**Quote By The Doctor:-**



A screenshot of a software dialog box titled "Fever". The dialog box has a standard Windows-style title bar with a close button (red X) in the top right corner. The main content area contains the text "Do you feel fever? enter yes or no." followed by two buttons: "OK" and "Cancel". Below the text and buttons is a single-line text input field.



A screenshot of a software dialog box titled "Shivering". The dialog box has a standard Windows-style title bar with a close button (red X) in the top right corner. The main content area contains the text "Do you have Shivering? Enter yes or no." followed by two buttons: "OK" and "Cancel". Below the text and buttons is a single-line text input field.

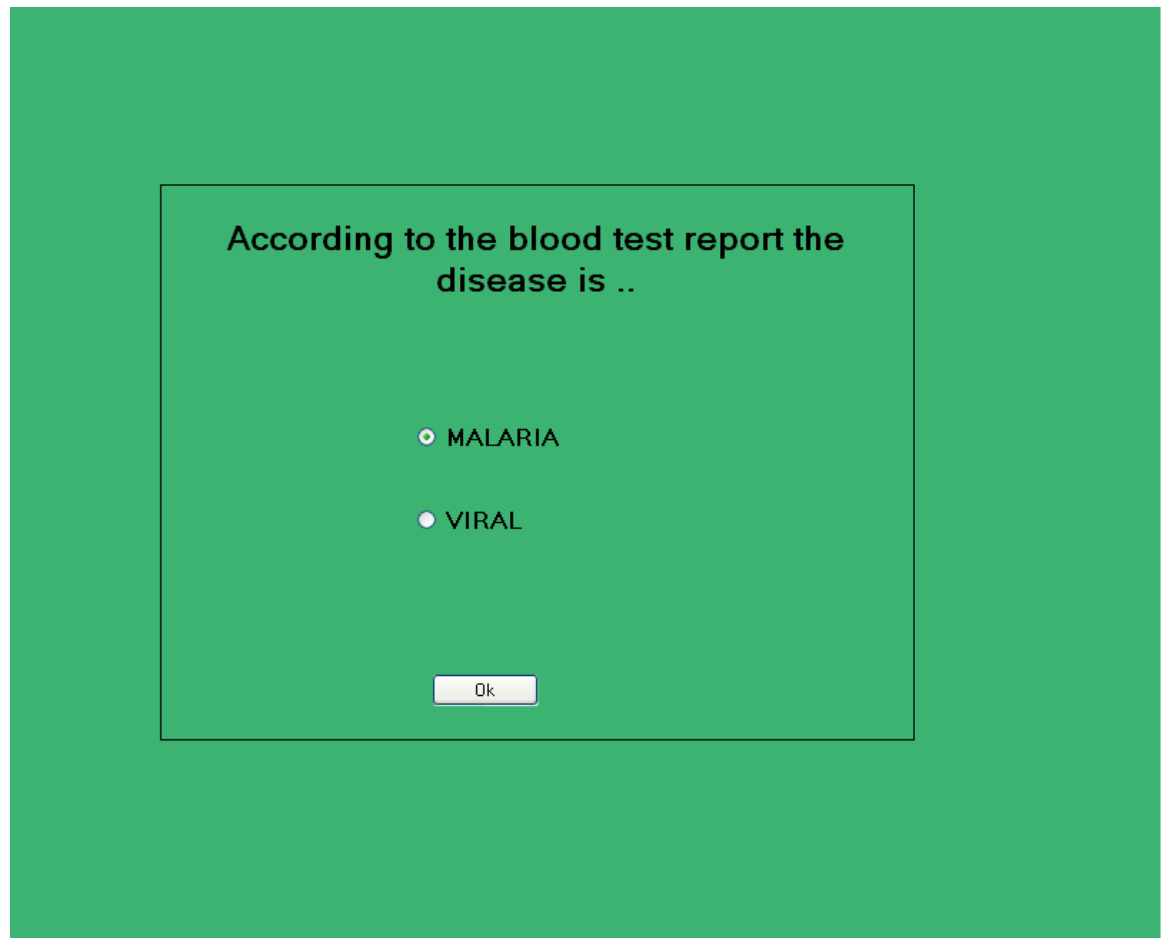
Some time diseases are too complicated. In such case doctor has to ask some other question to the patients that helps the doctor to find out the diseases that are not clear. This system provides facilities for that, many input boxes are given to solve this purpose. The questions are simple that have “yes/no” type answers.

**Warning Form:-**



This form is used in such cases when the doctor required any blood test report to detect some disease. This form gives warning about the suspected disease to the patient and asks for blood test report. This blood test report is then tested by the doctor and after clicking on the ok button the list of suspected diseases is shown.

**Form For Diseases That Required Blood Test:-**



According to the blood test report the disease is ..

MALARIA

VIRAL

Ok

After the blood test report the suspected disease is selected from this form by selecting any of the option button and when we click ok button then it display the name of the disease as well as the list of the medicines for the given disease.

**Blood Test Based Diseases and medicine information:-**

The image shows a software window with a green background and a black border. The title bar at the top reads "Disease And Medicines Description". Below the title, there are two labels: "Name of the disease" and "Medicines". The "Name of the disease" field contains the text "VIRAL". The "Medicines" field contains a list of four items: "Disprin", "Bicosule", "Crocin", and "Ciprofloxacin". At the bottom center of the window, there is a button labeled "Ok".

|                            |  |
|----------------------------|--|
| <b>Name of the disease</b> | VIRAL  |
| <b>Medicines</b>           | Disprin<br>Bicosule<br>Crocin<br>Ciprofloxacin |

This again the same form that gives us the information about the disease as well as the medicines for the diseases. For an example, in the blood test report if the doctor found that the patient has viral then this form gives the name of the disease as well as the medicines not only for viral as well as all other minor diseases like cold, weakness etc..

### **Details of Hardware & Software used:-**

Hardware and Software used while developing this project are:

|                                 |   |   |
|---------------------------------|---|---|
| Hardware                        | : | Windows XP  |
| Software for Front End          | : | VB.Net, HTML  |
| Software used for Documentation | : | Microsoft World 2003  |
| RDBMS                           | : | MS Access   |
| Minimum Hardware Configuration  | : | Intel Pentium<br>Processor 256 MB<br>RAM Intel 810 chipset<br>Colored Monitor<br>Resolution 800 x 600 |

## System Maintenance

Maintenance is an enigma of the system development analysts and programmers spend far more time maintaining programs and packages than writing them. Maintenance accounts for 60-80% of the total system development cost incurred. The problem in maintenance occurs largely because software is a handmade product designed in an ad hoc fashion with new standards. Poor documentation makes maintenance of the programs even more difficult. The more careful the system is thought out and developed, with attention paid to external influences over its reasonable lifetime, the less maintenance is required.

Maintenance has been classified as:

- Corrective maintenance
- Adaptive maintenance
- Perfective maintenance

### **Corrective maintenance**

This means repairing the processing and performance failures or making changes because of previously uncorrected problems or false assumptions.

### **Adaptive maintenance**

This means changing the program functions as and when required.

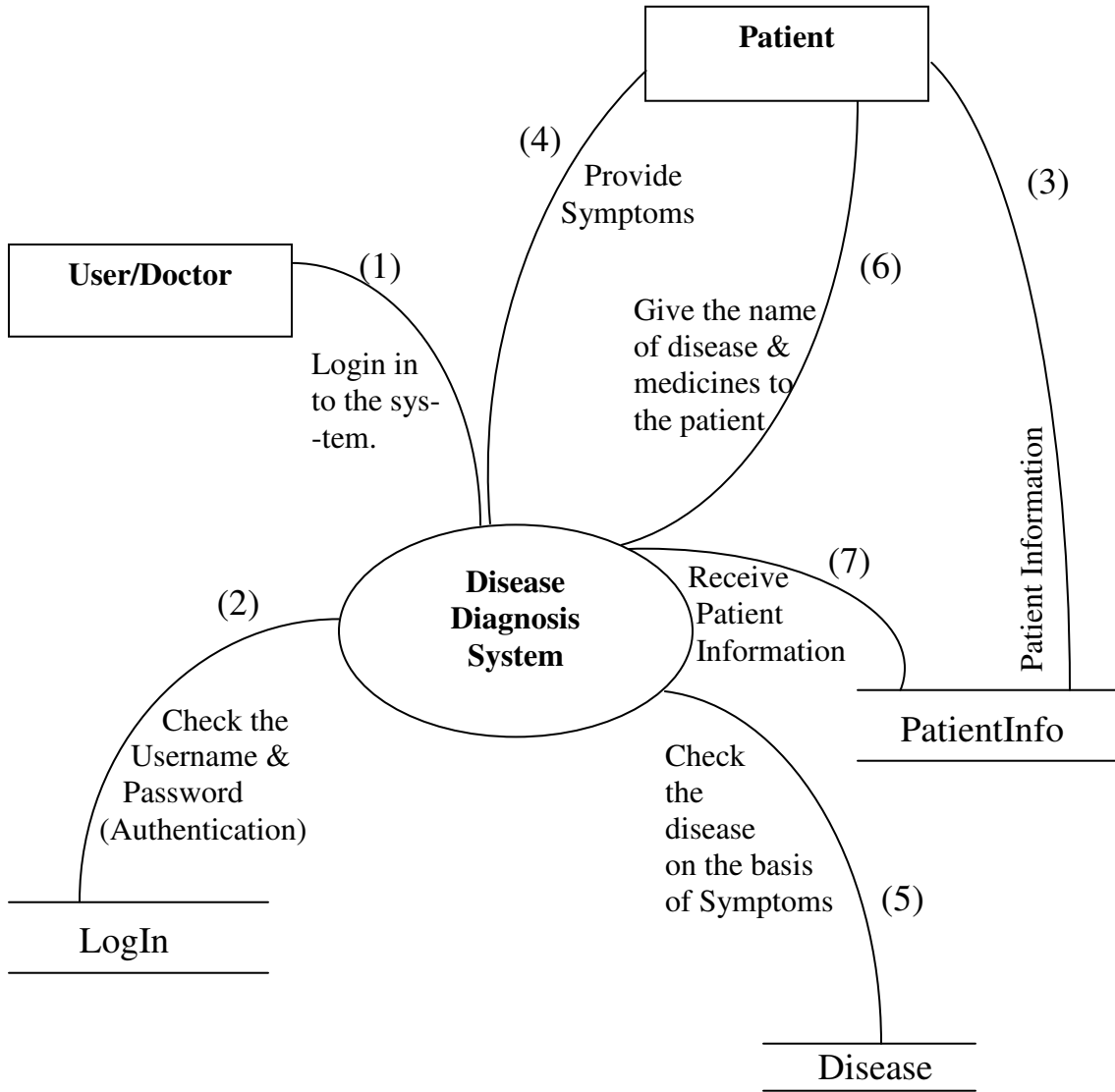
### **Perfective maintenance**

This means enhancing the performance or modifying the programs to respond to the user's additional or time-to-time changing needs.

# Data Flow Diagram (DFD)

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**Data Flow Diagram (DFD):-**



# DATABASE DESIGN

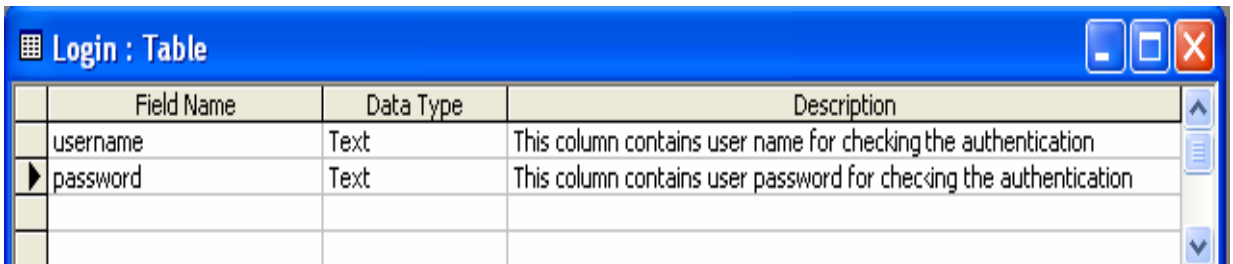
## Data Dictionary

Database Design:- In DDS we Design data with the help of three tables:

- Login
- Disease
- PatientInfo

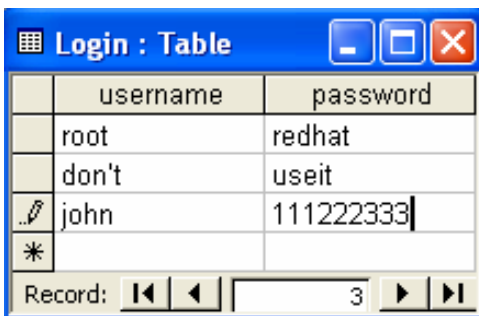
Login Table:- It stores information about the user name and password . More than one user is possible. The design of the table and view of the table of as follows-

### Design:-



| Field Name | Data Type | Description  |
|------------|-----------|--|
| username   | Text      | This column contains user name for checking the authentication     |
| password   | Text      | This column contains user password for checking the authentication |
|            |           |  |
|            |           |  |

### View:-

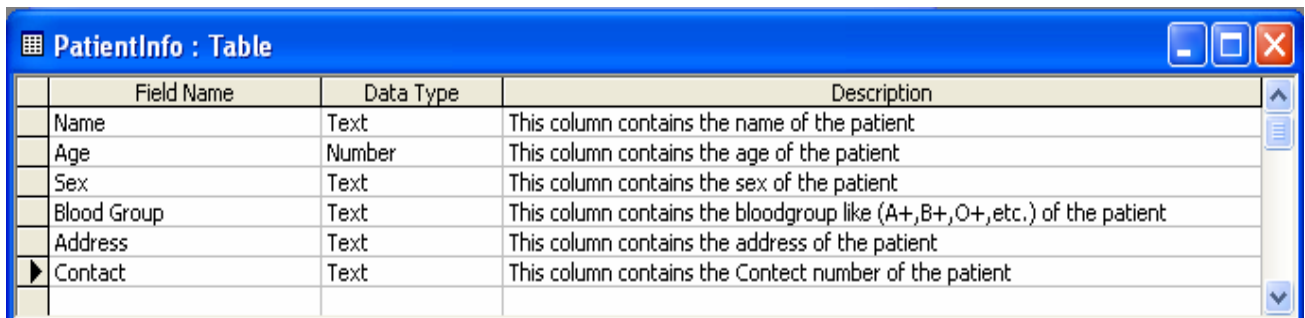


| username | password  |
|----------|-----------|
| root     | redhat    |
| don't    | useit     |
| john     | 111222333 |
| *        |           |

Record: 3

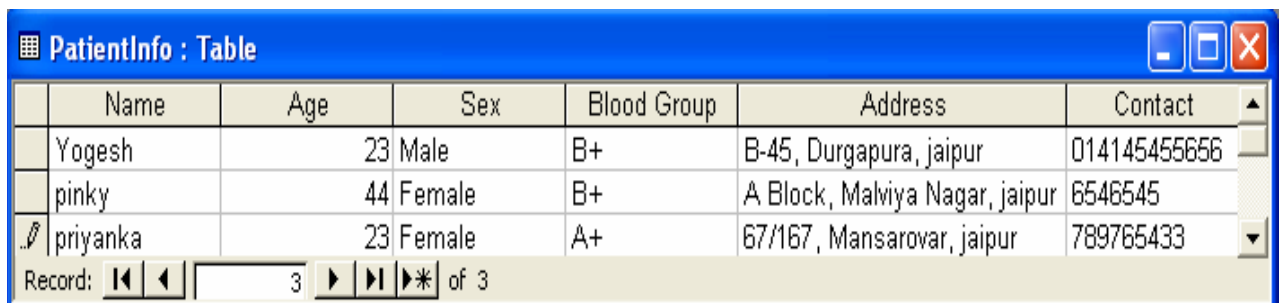
**PatientInfo**:- This table stores all information about a patient that come for check up. The Design and View of the table are as follows-

**Design**:-



| Field Name  | Data Type | Description   |
|-------------|-----------|---|
| Name        | Text      | This column contains the name of the patient                            |
| Age         | Number    | This column contains the age of the patient                             |
| Sex         | Text      | This column contains the sex of the patient                             |
| Blood Group | Text      | This column contains the bloodgroup like (A+,B+,O+,etc.) of the patient |
| Address     | Text      | This column contains the address of the patient                         |
| Contact     | Text      | This column contains the Contact number of the patient                  |

**View**:-



| Name     | Age | Sex    | Blood Group | Address                        | Contact      |
|----------|-----|--------|-------------|--------------------------------|--------------|
| Yogesh   | 23  | Male   | B+          | B-45, Durgapura, jaipur        | 014145455656 |
| pinky    | 44  | Female | B+          | A Block, Malviya Nagar, jaipur | 6546545      |
| priyanka | 23  | Female | A+          | 67/167, Mansarovar, jaipur     | 789765433    |

Record: 3 of 3

**Disease**:- This table is used to store information about the diseases that a patient have (on the basis of symptoms) as well as name of the medicines for the diseases. The design and view of the table is given as-

**Design**:-

| Field Name | Data Type | Description  |
|------------|-----------|--|
| DID        | Number    | This column contains disease Id number that is unique for each disease                 |
| Disease    | Text      | This column contains names of the diseases   |
| MD1        | Text      | This column contains the name of the medicines for diseases                            |
| MD2        | Text      | This column also contains the name of further medicines for diseases (like antibiotic) |
| MD3        | Text      | This column contains the name of diseases  |

**View**:-

| DID | Disease  | MD1             | MD2              | MD3 |
|-----|----------|-----------------|------------------|-----|
| 1   | COLD     | Cetizine        | Ciprofloxocin(an |     |
| 2   | COUGH    | glycodin        | Ciprofloxocin(Ar |     |
| 3   | MALARIA  | Chloroquin      |                  |     |
| 4   | HEADACHE | Disprin         |                  |     |
| 5   | SKINBURN | Silver Sulfadex | Tetrabetax(Injec |     |
| 6   | VIRAL    | Crocin          | Ciprofloxocin    |     |
| 7   | WEAKNESS | Bicosule        |                  |     |
| 8   | BODYPAIN | Combiflame      |                  |     |
| *   | 0        |                 |                  |     |

Record: 7 of 9

## **SCOPE OF FUTURE APPLICATION**

This application can be easily implemented under various situations. We can add new features as and when we require. Reusability is possible as and when require in this application. There is flexibility in all the modules.

### **SOFTWARE SCOPE:**

- **Extensibility:** This software is extendable in ways that its original developers may not expect. The following principles enhance extensibility like hide data structure, avoid traversing multiple links or methods, avoid case statements on object type and distinguish public and private operations.
- **Reusability:** Reusability is possible as and when require in this application. We can update it next version. Reusable software reduces design, coding and testing cost by amortizing effort over several designs. Reducing the amount of code also simplifies understanding, which increases the likelihood that the code is correct. We follow up both types of reusability: Sharing of newly written code within a project and reuse of previously written code on new projects.
- **Understandability:** A method is understandable if someone other than the creator of the method can understand the code (as well as the creator after a time lapse). We use the method, which small and coherent helps to accomplish this.
- **Cost-effectiveness:** Its cost is under the budget and make within given time period. It is desirable to aim for a system with a minimum cost subject to the condition that it must satisfy the entire requirement.

Scope of this document is to put down the requirements, clearly identifying the information needed by the user, the source of the information and outputs expected from the system.