# PROECT REPORT ON

# Disease Detection System

*Submitted in partial fulfillment of the requirements for the award of the degree of*

## BACHELOR OF COMPUTERAPPLICATIONS



**Batch: 2020 - 23**

***Under the Guidance of Submitted By***

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**Certificate**

This is to certify that this project entitled…………………………………………..is a qualify work done

by………………………………………….…………………………………………………………………………………., completed

under my supervision and guidance in partial fulfillment of the requirement for the award of degree of **Bachelor of Computer Application (BCA)** as a part of the curriculum bearing Course Code …………………………. in **Guru Gobind Singh Indraprastha University, New Delhi-110078.**

Name of Guide

**(Project Guide)** Countersigned by:

Director,

Place:

Date:

**Acknowledgement**

The note starts with thanks to Almighty who actually created this piece of work and helped us when things were not easy for us.

I am very grateful and indebted to my Guide Dr. Santosh Kumar who immensely helped and rendered their valuable advice, precious time, knowledge and relevant information regarding the collection of material. They had been a major source of inspiration throughout the project as they not only guided me throughout the Summer Project on Disease Detection System but also encouraged me to solve problems that arose during this project.

Their guidance and suggestions about this Summer Project have really enlightened me. It has been a great help to support to have them around.

And finally, I would like to mention appreciation to our parents and friends who have been instrumental throughout this period by providing unrelenting encouragement.

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**ABSTRACT**

Despite advances in modern medicine, diseases such as dengue, cancer, diabetes, and others continue to plague the human race. As we get older, our health becomes an important asset to us, and the decisions we make about it are usually expensive and risky. Health-related decisions are critical because they can cost a person his or her life. It happens all the time when we need doctors, but none are available, and the hospital's queuing system becomes chaotic. People nowadays do not have time to go to the doctor for a physical. The Disease Detection System is developed to analyze the symptoms and then give the conceivable diseases symptoms of the patient given just like the doctor does. The system should respond in the circumstance of a doctor.

When the symptoms can be updated using the SVC, NB, and Random Forest Classifier algorithms, the system will become more dynamic. As a result, all of these algorithms will be implemented in this system to assist users in detecting diseases associated with their symptoms. The Disease Detection System will be a method for people to recognise health problems and detect diseases in an efficient manner.

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**Chapter 1-INTRODUCTION**

A human being in this world is afflicted with numerous diseases. Diseases can have both physical and psychological effects on people.  Several diseases are cured after diagnosis and treatment, but chronic diseases are never cured regardless of treatment; however, treatment can prevent chronic diseases from worsening over time. As a result, it is extremely crucial to detect and treat a disease as soon as possible. So, we're looking at a scheme where a patient requirement to see a doctor for an urgent illness like fever, cold, malaria, etc., so the doctor may or may not be capable to see the patient at that time. It is said that prevention is better than cure, so this system is proposed to help patients.

A disease detection system has been proposed that detects the disease that gives the best possible prediction based on symptoms entered by the patient. The system contains various symptoms and their associated illnesses. The system allows users to share their symptoms and health complication.

**1.1 Purpose**

The main purpose is that when a patient visits a doctor for a viral illness such as dengue fever, fever, or malaria, the attending doctor may not be capable to criticize and demonstrate the patient at that time.

As we all know, social distancing was important in the Covid-19 pandemic, fevers, coughs and colds were all symptoms of Covid-19. So people were afraid that if they had a fever or a cold, they should not declare covid positive. For this reason all patients were afraid to go to the hospital. If the pandemic strikes again, patients will automatically be able to recognize the disease, which is very beneficial for us. This scenario can affect patients who may be in the worst desirable condition and have health implications. A scenario where a patient has to wait in line to be seen at a hospital, and the worst happens when the patient shows up at the hospital at the wrong time. These are called the worst times to visit a hospital because of the long average waiting time and the inability to find a applicable doctor.

**1.2 Scope**

Disease detection systems are used by three types of users: admin, patients, and doctors. Admin manage the system as administrators.

The scope of User

1. Admin

Administrators can log into the system to rejuvenate doctor details and add doctors. Admins can also manage doctors and patients.

2. Patient

Patients can access the system anytime, anywhere. Patients can manage their profile the way they like. When a patient logs into the system, they can access the disease diagnosis, select symptoms based on the symptom record, and get their own disease report. Patients can book appointments with doctors and manage their appointments.

3. Doctor

Doctors can also access the system anytime, anywhere. Doctors advise their patients about this if the pain does not cure the disease. Otherwise, the doctor can make an appointment with the patient.

**1.3 Objectives**

Disease detection systems have been anticipated to accomplish some of the following principles:

1. Analysis of complication with existing disease detection systems.

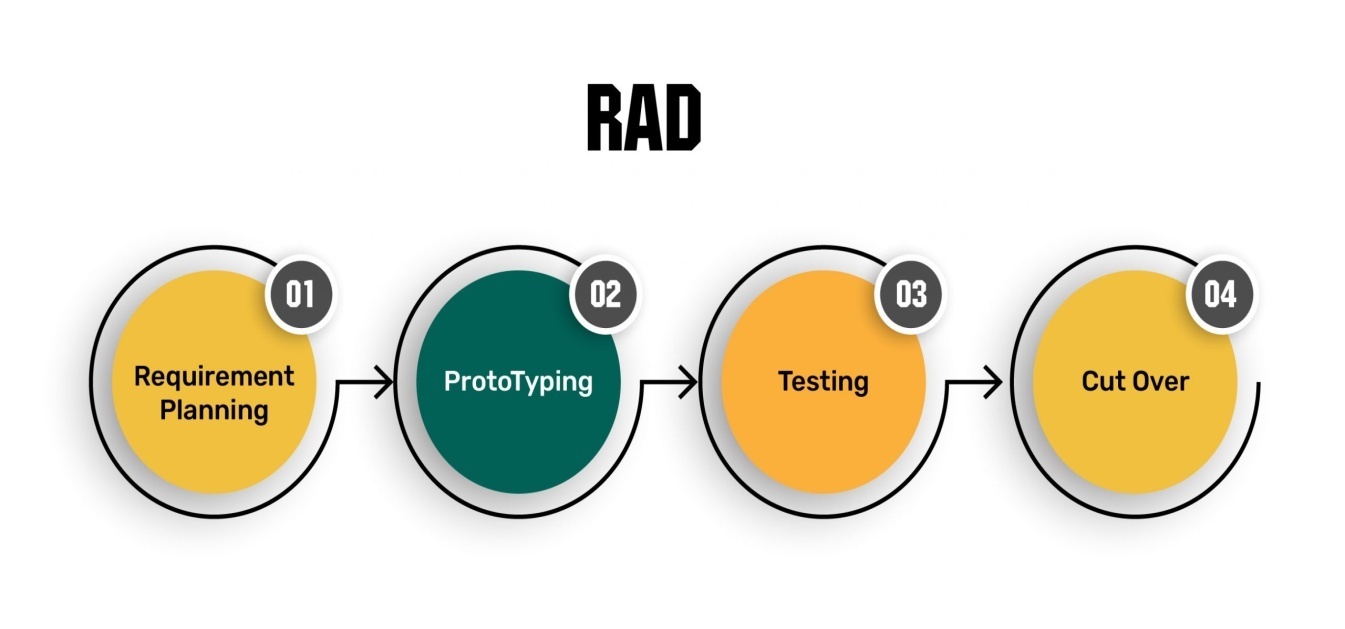
2. Designing disease detection systems applying SVC, NB and Random Forest Classifier algorithms.

3. Development of disease detection systems using SVC, NB and Random Forest Classifier algorithms.

**1.4 SDLC Methodologies**

The disease detection system was matured based on selected methodologies from the Software Development Life Cycle (SDLC). The evolution of the system used to develop the project is RAD model. This division details the phases that occur in this project development and the system requirements for developing the project.

The stages are not clearly defined. Because the approach is iterative, different stages of application development can be reviewed and repeated. It is not necessary to know all of the requirements ahead of time. Changes are easier to accommodate. It requires very little documentation. Generally preferred for projects with shorter time frames and large enough budgets to allow for the use of automated tools and techniques. The use of reusable components contributes to a shorter project cycle time.



**Chapter 2-SYSTEM ANALYSIS STUDY**

**2.1 Introduction**

System analysis is the process of gathering and exhibiting facts, diagnosing problems and information about disease detection systems, and recommending system improvements. It is a problem-solving activity that requires intensive communication between system users and system developers, and system analysis or research is an important stage of the system development process. Systems analysis is the process of recognizing a problem, identifying relevant decision-making variables, analyzing and summarizing various factors, and determining an optimal or at least satisfactory solution or plan of action.

**2.1.1 Project Overview**

When working with multiple data sources, there are many chances for data to be incorrect, duplicated, or mislabelled. If data is wrong, outcomes and algorithms are unreliable, even though they may look correct. Data cleaning is the process of changing or eliminating garbage, incorrect, duplicate, corrupted, or incomplete data in a dataset. The motive of data cleaning services is to construct uniform and standardized data sets that enable data analytical tools and business intelligence easy access and perceive accurate data for each problem.

**2.1.2 Existing System Study Report**

Diagnostic decisions are commonly made on the basis of the doctor's intuition and experience rather than the knowledge-rich data hidden in the database. This practise results in unintended biases, inconsistencies, and excessive medical costs, all of which have an impact on the quality of service provided to patients. A medical misdiagnosis can manifest itself in a variety of ways. A misdiagnosis of a serious illness, whether caused by a doctor or hospital staff, can have very severe and harmful consequences. Medical illnesses pose a significant threat to our healthcare profession. If they continue, people will be hesitant to go to the hospital for treatment. We can put an end to medical misdiagnosis by informing the public and filing claims and lawsuits against the negligent medical practitioners.

**2.2 SYSTEM REQUIREMENT GATHERING**

**2.2.1 Prepared Questionnaire/ Interview (with Filled Few Samples as Annexure)**

**2.2.2 Overview & Analysis of Data Gathered**

**2.3 FEASIBILITY STUDY**

The feasibility study is a measure of the software product in terms of how beneficial product development will be for the organisation from a practical viewpoint. A feasibility study is conducted for a variety of reasons, including determining whether a software product is appropriate for development, implantation, project contribution to the organisation, and so on.

**2.3.1 Technical Feasibility**

Technical feasibility focuses on existing computer systems and how well they can support proposed additions. For example, if your computer is currently at 80% utilization and you're hitting the limit, running another application might overload the system or require additional hardware. This includes financial considerations to account for technical improvements.

**2.3.2 Economic Feasibility**

Economic analysis is the most commonly used method for evaluating the effectiveness of candidate systems. Commonly known as cost-benefit analysis, this process consists of determining expected benefits and savings from a candidate system and comparing them to costs.

Otherwise, if the proposed system is likely to be approved, further justification or alternatives should be made in the proposed system. This is an ongoing effort to improve accuracy at every stage of the system lifecycle.

**2.3.3 Operation Feasibility**

The interface used in the above software is way to easy to understand. All the functionality in there is listed seaparately in order to provide easy access to the user. All the pages are linked with each other so that user can navigate to any page accordingly.

**2.4 SYSTEM REQUIREMENT STUDY REPORT**

The use of software and hardware tools is essential for the creation of this project. To complete the project, the hardware and software facilities must be used. The use of these establishments is determined by what is already available or what has previously been used. These are the specifications for the disease detection system.

**2.4.1 System Process Requirement**

Python is an object-oriented, high-level programming language with dynamic semantics that is interpreted. Its high-level built-in data structures, combined with dynamic typing and dynamic binding, make it very appealing for use as a scripting or glue language to connect existing components together. Python is frequently embraced by programmers due to the increased productivity it provides. The edit-test-debug cycle is extremely fast because there is no compilation step. Debugging Python programmes is simple: a bug or incorrect input will never result in a segmentation fault. Python's simple, easy-to-learn syntax emphasizes readability, lowering programme maintenance costs. Python provides support for modules and packages, which promotes programme modularity and code reuse.

Hardware Requirement:

|  |  |
| --- | --- |
| Name of the component | Specification |
| Processor | Minimum |
| RAM | Minimum 8GB |
| Hard Disk | Minimum 50GB |
| Monitor | 14 “color monitor” |
| Keyboard | 108 keys |

Software Requirement:

|  |  |
| --- | --- |
| Name of the component | Specification |
| Operating System | Windows 8,7,xp |
| Language | Python 3.11 |
| Database | Excel & Mysql |
|  |  |
|  |  |

**2.4.2 System Data Flow**

**2.4.3 Database Requirement**

**2.4.4 User Interface Requirement**

**Chapter 3-SYSTEM DESIGN**

**3.1 INTRODUCTION**

**3.2 PHYSICAL DESIGN:**

In current physical DFD process label include the name of people or their positions or the names of computer systems that might provide some of the overall system-processing labelincludes an identification of the technology used to process the data similarly data flows anddata stores are often labels with the names of the actual physical media on which data are stored such as file folders "computer files" business forms or computer tapes.

**3.2.1 System Flow Charts**

**3.2.3 Use Case Diagram**

**3.2.3 Data Flow Diagram ‟Upto Level 2”**

**User**

**Prediction**

**Model**

User information

Input Symptoms

Result

Symptom Report

**0-level DFD**

**3.2.4 Site Maps / APP Maps/Network Flow Charts etc.**

**3.2.5 Any Other Applicable Diagram**

**3.3 DATABASE DESIGN:**

**3.3.1 ER Diagram**

**3.3.2 Data Constraints applicable as per requirement**

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**4.1.1 System Coding Environment and Standards Followed**

**4.1.2Sample Code Layouts**

**4.2 TESTING**

**4.2.1 S Overview & Approach**

**4.3 TEST PLAN**

**4.3.1 Features to be tested & not to be tested**

**4.3 TEST CSES**

**Chapter 5-** **OUTPUT FORMS & REPORTS**

**5.1 Input / Output Forms Screen Shorts with Sample Data**

**5.2 Reports in print Format with actual Data**

**Chapter 6-** **CONCLUSION & FUTURE ENHANCEMEMNT(S)**

**6.1 Conclusion**

Ultimately, I would like to indicate that this project Disease detection system using Python with machine learning is very useful in everyone's day-to-day life, but it is incredibly significant for the healthcare sector, because they are the ones who use these systems on a daily basis to predict the diseases of the patients based on their general information and the symptoms that they have experienced.

Today's health industry plays an important role in curing the disease of the patient, so this is some kind of help for the help industry to tell the user, and it is also useful for the user if he/she does not want to go to the hospital or any other clinic, so simply through entering the symptoms.

All other valuable information the user can get to know the disease he/she is suffering from, and the entire health industry can benefit from the system by simply asking the user's symptoms and entering them into the system, and in just a few seconds, they can tell the exact and, to a certain extent, accurate disease.

**6.2 Future Scope**

In a summary, the project's future scope revolves around the preservation of information pertaining to:

We can provide more advanced software or disease detection systems, as well as additional facilities.

* To make the platform available globally, we will host it on online servers.
* Produce the master and slave database structures to reduce database query overload.
* Integrate a backup mechanism to take regular backups of the code base and database on different servers.

The above-mentioned improvements can be made to increase the applicability and usage of this project. Furthermore, as can be seen, today's players are versatile, implying that there is room for introducing a method to maintain the disease detection system.

We have left all options open so that if the user has any additional requirements for the system's enhancement, they can be implemented.