GRAPHIC ERA HILL UNIVERSITY

DEHRADUN

MINI PROJECT REPORT

ON

DISEASE PREDICTION SYSTEM BASED ON SYMPTOMS

Submitted in partial fulfillment of the requirement for the 6th semester

Bachelor of Technology(CSE)

By

Maninder singh

UNIVERSITY ROLL NO– **2018464**

SECTION-- **A**

DECLARATION

I, **Maninder singh** student of **B-tech, Semester 6 ,** Department of Computer Science and Engineering, Graphic Era Hill University, Dehradun, declare that the technical project work entitled "**Disease prediction system based on symptoms**" has been carried out by me and submitted in partial fulfillment of the course requirements for the award of degree in B-Tech of **Graphic Era Hill University** during the academic year **2022-2023**. The matter embodied in this synopsis has not been submitted to any other university or institution for the award of any other degree or diploma.

ACKNOWLEDGEMENT

Here by I am submitting the project report on **"Disease prediction system based on symptom"** as per the scheme of Graphic Era Hill University, Dehradun.

I would like to express our sincere gratitude to **Mr.Aniruddha prabhu,** (Mentor of this mini project) for providing a congenial environment to work in and carry out our project.

I would like to also thanks code_with_harry and amigo creations for helping me in better understanding each component of topic in an interesting way.

Finally I am very much thankful to all the faculty members of the Department of Computer Science and Technology, friends and my parents for their constant encouragement, support and help throughout the period of project conduction.

Maninder singh
University Roll no.= 2018464

INTRODUCTION

- The disease prediction system predicts the probable disease based on symptoms given as input in the algorithm . I try to develop this system so that we donot have to visit to doctors for regular checkups .This system will help the users to save their money and as well as their precious time rapid .The proliferation of Internet technology and handled devices has opened up new avenues for an online healthcare system.

- There are instances where online medical help or healthcare advice is easier and faster to grasp than real-world help. People often feel reluctant to go to hospital or physician or minor symptoms. However, in many cases, these minor symptoms may trigger major health hazards. As online health advice is easily reachable, it can be a great head start for users. Moreover, existing online health care systems suffer from a lack of reliability and accuracy.

- This system analyzes the symptoms provided by the user as input and gives the disease as an output. Prediction is done by implementing the machine learning algorithm {Naive Bayes Classifier algorithm} .Hence this project is a great example of the future technology and it's application.

PROBLEM STATEMENT

- The classical diagnosis method is a process where the patient has to visit a doctor, undergo various medical tests, and then come to a conclusion. This process is very time-consuming. To save time required for the initial process of diagnosis symptoms, this project proposes an automated disease prediction system that relies on user input. The system takes input from the user and provides a list of probable diseases.

Tools And Software Used

- In order to accomplish this project following tools were used :

1. Pycharm (community edition)
2. Python
3. Browser
4. Github
5. Machine Learning

- For coding purpose , Pycharm and python Idle was used and The code was written in Python.

- The algorithm used was naïve bayes algorithm which works on probabilistic approach.

MOTIVATION

=> **What motivate me to choose this project is that**.....This is an era of digitalization where everything is represented with the help of technology .In old classical diagnosis method is a process where the patient has to visit a doctor, undergo various medical tests, and then come to a conclusion. This process is very time-consuming. To save time required for the initial process of diagnosis symptoms, this project proposes an automated disease prediction system that relies on user input.

Now-a-days, making an prediction application (or any other application) is becoming an business and the company may charge some fees and can also steal your information. For earning money they always try to give advertisement on their applications which is really irritating. So , I decided to make an prediction system where we can predict disease seamlessly without any advertisement . we are the students of computer science so it is our responsibility to learn and develop the new technologies . So it clicks in my mind to develop an prediction system using machine learning. That's why I choose this project.

Methodology

->Building up a project on disease prediction system was a great piece of experience, it not only help me in gathering information about newtechnologies but also made me realize the use of programming in reallife.

A disease prediction system has a number of requirements and steps .Now Discussing about how this learning process started and journey goes up to building up this project . The disease prediction system consists of major three steps. These are as follows:-

1. **Installing Pycharm and its libraries-**

- Pycharm is an free and open-source code Editor, commonly used to develop software. This technology eliminates the need of the wholescreen and also avoids processing every single line of code. We have imported Scikit to learn the library for its implementation.

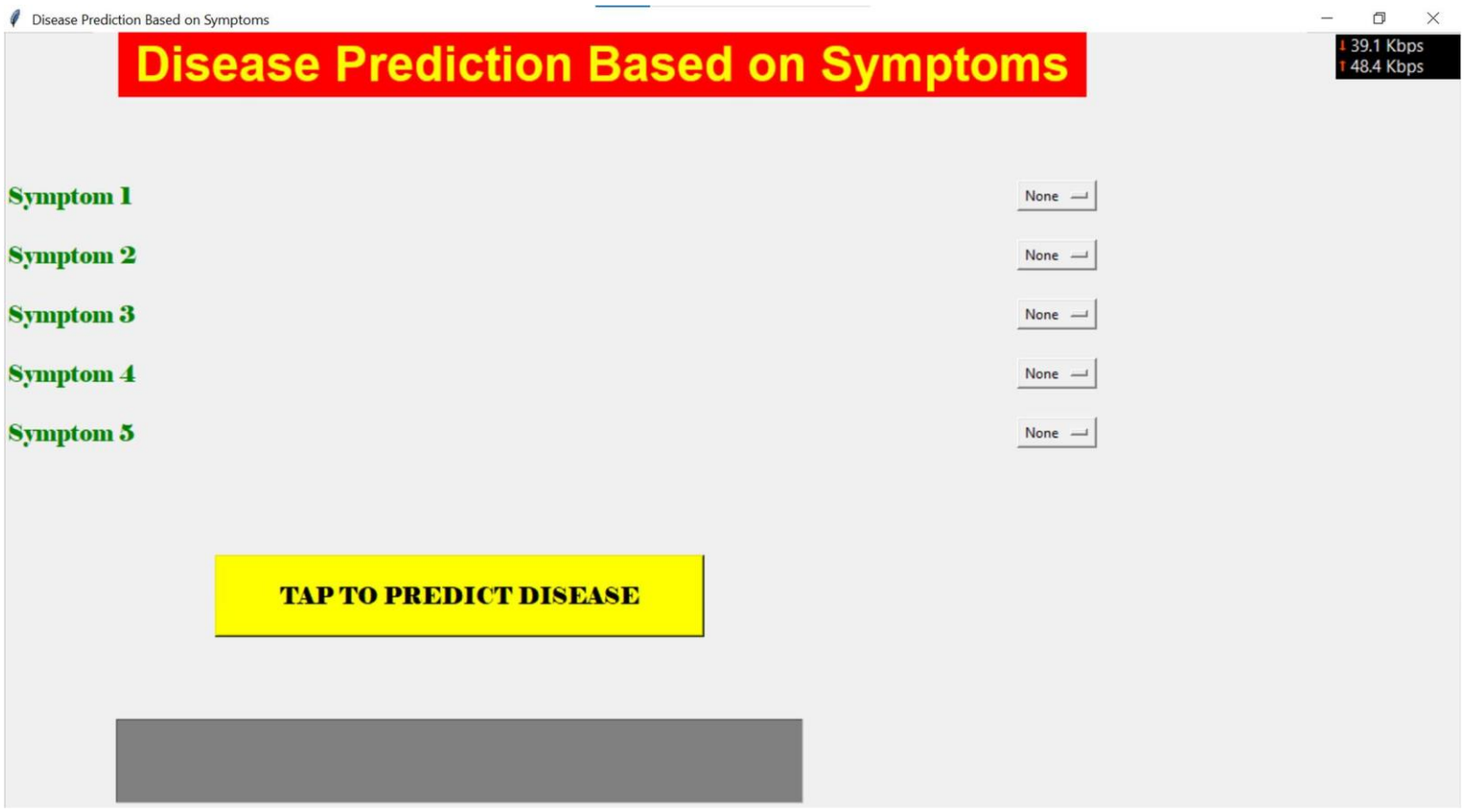
2. **Choose the datasets(training and testing datasets)-**

The dataset was taken from a study conducted at Colombia University. It consists of 150 diseases and each disease consist of an average of 8-10 symptoms. 70% of the dataset used for training was made considering all combinational inputs. The symptoms present for the corresponding disease were marked as 1 and remaining as 0.

It consists of 5 drop-down options where we have passed a list of symptoms. The user can select any five symptoms and clicking the predict button the disease predicted will be displayed in the text-box.

3. Choose the best suitable machine learning algorithm

So I choose naïve bayes algorithm which work on prediction approach.This system accepts the input from the user and predicts the most probable disease. This is achieved with the help of the dataset and the machine learning algorithm. The algorithm here is Naive Bayesian which works on a probabilistic approach. We have imported Scikit to learn the library for its implementation. For this, we have used multinomial NB since multiple variants i.e. multiple symptoms are taken.



Conclusion

- The completion of the project went quiet well, I learned much new things while I was building up it, and I get up to know various platforms which help us to learn all this stuff. I was able to learn the practical use of Python. The practical helped me to learn the debugging of code and development tools of this Project. The project is designed in such a way that the system takes symptoms from the user as input and produces output i.e., predict disease. The user can select minimum of one to a maximum of five symptoms. Less accuracy will be attained if only one symptom is entered. More the number of symptoms, the greater is the accuracy.

Overall working on this project was great fun as I came up with great piece of knowledge and understanding of the topic . And also learned some new concepts which will further help me in my future.

REFERENCE

->YouTube
->Google
->GEHU faculties
->kaggle