An Major-Project Report on

"AI & ML Based Ailment Divination"

A Dissertation submitted in the partial fulfillment of the requirement for the award of degree of

MASTER OF COMPUTER APPLICATIONS

of

Visvesvaraya Technological University

By

Manish M Maller

2KE19MCA68

Under the Guidance of

Internal Guide:	External Guide:
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Department of Master of Computer Applications,

K.L.E. Institute of Technology,

Hubballi –580027

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

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Department of Master of Computer Applications

This is to certify that the Manish M Maller (2KE19MCA68) has completed his final-Semester Project work entitled "AI & ML Based Ailment Divination" as a partial fulfilment for the award of Master of Computer Applications degree, during the academic year 2021 under our joint of supervision.

Signature of Internal Guide

Signature of External Guide

HOD
Dr. V. S. Madalli

PRINCIPAL
Dr. B S Anami

Declaration

I, Manish M Maller student of 6thSemester MCA, KLE Institute of Technology, Hubballi, bearing 2KE19MCA68 hereby declare that the project entitled AI & ML Based Ailment Divination has been carried out by me under the supervision of Dr Medha Kudari, Assistant Professor, KLEIT Hubballi and Ms. Rashmi Shindhe, Web Developer, Ultimez Technologies Ltd Hubballi submitted in partial fulfilment of the requirements for the award of the Degree of the Master of Computer Applications by the Visvesvaraya Technological University during the academic year 2021.

Name: Manish M Maller

Signature:

Acknowledgement

I have taken sincere efforts to complete the project **"**AI & ML Based Ailment Divination**".** However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to **Dr Medha Kudari and Ms. Rashmi Shindhe** for their Guidance and constant supervision as well as for providing necessary information regarding the project.

I am deeply grateful to our beloved HOD **Dr. V. S. Madalli** for having provided us the academic which natured our practical skills contributing to success of our project.

I would like to thank all the faculty members of MCA DEPARTMENT for adding value to our project. Last but not the least we would like to thank our parents and beloved friends for their moral support.

HEARTLY THANKS TO ALL

Manish M Maller

Abstract

A system that anticipates disease-related information or symptoms that it feeds into the system and gives correct findings based on that information is known as AI & ML Based Ailment Divination. It was over if the patient was not very ill and the user only needed to know the illness kind. It's an application that gives the user advice and methods for keeping their health plan in check, as well as a means to diagnose disease through divination. Nowadays, the healthcare industry plays an important role in treating patients' illnesses, so this is also a form of assistance in the healthcare industry to tell the user and also useful to the user in case he does not want to go to the hospital or other clinics, so by adding signs and all other useful information, they are already in control, and the healthcare industry can benefit from this programme by simply adding signs and all other useful information, they are already in control, and the healthcare industry can benefit from this programme by simply adding this programme.

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Chapter 1

Introduction

AI & ML Based Ailment Divination is a system that uses user information at the time of registration to forecast sickness. It also anticipates a patient's or user's disease based on the information or symptoms entered into the system and returns suitable findings. It was over if the patient was not very ill and the user only needed to know the illness kind. It's a tool that gives users advice and methods for keeping their health plan in check, as well as a means to get sick utilizing Divination..

This is a valuable tool in the healthcare business to inform the user, and it also helps the user if they do not want to travel to the hospital or any other clinic, since that the healthcare industry has played such an essential part in treating patients' ailments. Many other organisations have worked on this DPUML before us, but we want to improve it. This approach is beneficial to those who apply it. With the aid of Learning Machines and Python Programming Languages with Flask Interface, as well as previously available datasets in hospitals, which we utilised to forecast sickness, this Classification of Illness Using a Learning Machine is totally removed.

Doctors nowadays utilise a variety of scientific technologies and methods to diagnose and treat not only common but also deadly disorders. Accurate and precise diagnosis is always required for effective therapy. Physicians sometimes make mistakes while diagnosing patients, therefore Ailment Divination systems that employ machine learning approaches can assist achieve the proper findings in these instances.

According to study, the AI & ML Based Ailment Divination project was created to combat common illnesses in their early phases. As we all know, mankind has been so engrossed in the competitive arena of economic development that we have forgotten about our health. The primary reason for not knowing about the laziness of visiting a doctor and the worry of the time people are involved is that they do not have time to schedule an appointment and see a doctor, which ultimately leads to a deadly disease.

According to a research, 70 percent of Indians suffer from chronic diseases, while 25 percent die prematurely. The user interface is built in such a way that anyone can simply use and test it.

1.1 Problem Description

Now a day's there are a variety of issues in the health industry that are connected to the equipment or gadgets that you will supply wrong or unaccepted results, so to avoid those results and get the correctand desired results we are building a program or project which will give the accurate Divinations based on information provided by the user and also based on the datasets that are available in that machine. The health industry in information yet and knowledgepoor and this industry is very vast industry which has lot of work to be done. So, with the help of all those algorithms, techniques and methodologies we have done this project which will help the peoples who are in the need. So the problem here is that many people goes to hospitals or clinic to know how is their health and how much they are improving in the upcoming days, but they need to travel to get to know there responses and sometimes patients may or may not get the results based on various factors such as doctor mightbe on leave or some whether problem so he might not have come to the hospital and many more reasons will be there so to avoid all those reasons and confusion we are making a project which will help all those person's and all the patients who are in need toknow the condition of their health, and at sometimes if the person has been observing few symptoms and he/she is not sure about the Ailment he/she is encountered with so this will lead to various Ailments in future. So, to avoid that and get to know the Ailment in early stages of the symptoms this Ailment Divination will help a lot to the various people's ranging from children to teenagers to adults and also the senior citizens.

1.1.1 Project Purpose

The purpose of making this project called "AI & ML Based Ailment Divination" is to predict the accurate Ailment of the patient using all their general information's and also the symptoms. Using this information, there we will compare with our previous datasets of the patients and predicts the Ailment of the patient he/she is been through. If this Divination is done at the early stages of the Ailment with the help of this project and all other necessary measure the Ailment can be cured and in general this Divination system can also be very useful in health industry. If the healthcare sector approves this initiative, doctors' workload will be decreased, and they will be able to anticipate a patient's condition more readily. The basic goal of this illness categorization is to offer diagnosis

for numerous and recurrent disorders that, if left untreated or neglected, can develop into a lethal condition that causes tremendous harm to the patient and their family members. This system will predict the most possible Ailment based on the symptoms. The health industry in information yet and knowledge poor and this industry is very vast industry which has lot of work to be done. So, with the help of all those algorithms, techniques and methodologies we have done this project which will help the peoples who are in the need.

1.1.2 Project Features

The features of AI & ML Based Ailment Divination Using Machine Learning are as follows.

This Project will predict the Ailments of the patients based on the symptoms and other general information using the datasets.

This is done based on the previous datasets of the hospitals so after comparing it can provide up to 80% of accurate results, and the project is still developing further to get the 100% accurate results.

With the help of Ailment Divination, it can predict the Ailment of the patient and can solve various problems and prevents from various aspects.

It provides security for the system so that no one can break into that and no one can make any changes in the system.

The Ailment is predicted using the algorithms and the user has to enter the symptoms from the given drop-down menu, in order to get correct accuracy, the user has to enter all the symptoms.

Here we can easily prepare the data and transform that data into algorithm, which will reduce the overall work of the project.

It provides the necessary options to choose from the types and attributes.

Here the user has to register first, in order to use the Divination and then login to the system using the credentials such as username and password.

After opening the programme to login, the user must first register by selecting the register / register button.

The user must then enter basic registration information, which is saved in the system.

1.2 Ultimez Technology - Web Design Company profile

Ultimez Technology is a prominent IT company situated in Hubballi, India. Ultimez Technology offers website design and development, software solutions, application development, digital marketing, video creation, and internship and project training.

Ultimez Technology is the place to go if you want complete peace of mind and to provide maximum value to our potential clientele. We are currently the top agency for developing client projects in order to ensure that they continue to grow and thrive in this sustainable business trend. We think that our success is based on the success of our clients.

Ultimez Technology is available to help with any type of web development project. Our highly skilled staff creates utilizing current technology and market trends to boost our customers' businesses, whether it's web design, complicated website development, bespoke programming, or dynamic website development.

1.2.1 Vision and Mission of Ultimez Technology

Ultimez Technology is available to assist with any web development project. Our highly skilled staff creates utilizing current technology and market trends to boost our customers' businesses, whether it's web design, complicated website development, bespoke programming, or dynamic website design.

Ultimez Technology is committed to providing high-quality services: We provide web solutions that are focused on high performance to meet corporate demands. We never compromise on quality, especially when it comes to our clients' projects. In each every web development element, you can discover a great blend of quality communication and quality technique approach.

1.2.2 Ultimez Technology Company Products/Services

Ultimez Technology develops a technique that improves as a consequence, communicates in advance, and ensures in the form of assurances for customer satisfaction service, as it pertains to cost, quality, and strategic objectives, without making any concessions on anything else. Web Design and Development, Mobile App Development.

Mentorship for students

Career Guidance.

Learning Management System development

UI/UX design

1.3 Organization of Report

Chapter 1, Contains the Introduction, Problem statement, scope, Objectives of the System or Project, and Company Profile.

Chapter 2, the literature survey discusses abstract survey of the published papers and if any disadvantages identified in paper.

Chapter 3 discusses the detailed requirement of problem identified for the major project.

Chapter 4 discusses the System Architecture and Context Design of the Project or System.

Chapter 5 discusses the design associated with the project.

The Core Implementation of Logic Code with Explanation and The Screen Shots related to Usability of it in the Execution is discussed in the chapter 6.

Chapter 7 Includes the Testing Carried Out for the Input Output and to the Core Functionalities of the System.

The Report concludes with Future Enhancements and Bibliography is handled in Chapter 8.

Chapter 2

Literature Survey

Machine learning, according to Tom Mitchell, is “a computer program that is claimed to learn from experience and other actions and to perform anything that builds knowledge as measured” [1]. Many existing machine learning algorithms are focused on identifying and/or exploiting links across databases, as machine learning involves a combination of interaction and relationships. When Machine Learning Algorithms discover a particular combination, the model might utilize this connection to forecast future observations or data performance, resulting in intriguing patterns. In Machine Learning there are a variety of algorithms such as Regression, Linear Regression, Logistic Regression, Naive Bayes Classifier, Bayes theorem, KNN (K-Nearest Neighbour Classifier) [2], Decision Tress, Entropy, ID3, SVM (Support Vector Machines), says Algorithm, Random Forest [3] and so on, Regression, Linear Regression, Logistic Regression, Naive Bayes Classifier, Bayes theorem, KNN (K-Nearest Neighbour Classifier) [2], Decision Tress, Entropy, ID3, SVM (Support Vector Machines), says Algorithm, Random Forest [3], and so on are some of the algorithms used in Machine Learning.

In 1959, Arthur Samuel [4] created the phrase "learning machine." The study and development of algorithms that can interpret and separate data is what machine learning is all about. It has a strong connection to mathematical brilliance, which brings to the field methodologies, teaching, and application backgrounds. Machine learning is frequently confused with data mining, a subset of data mining that focuses on analytical data analysis and is referred to as uncontrolled reading.

Machine learning is a method used to create complicated models and algorithms that borrow from Bulela in the field of data mathematics; these are known as prediction predictions in commercial application. By learning from past correlations and data styles, researchers, data scientists, engineers, and analysts may "create dependable, repeated judgments and outcomes" and discover "hidden insights" [3].

2.1 Existing and Proposed System

2.1.1 Existing System

Traditional divination methods and models incorporate a number of risk variables, as well as a number of algorithms, such as databases, programmes, and many more. High-risk and Low-risk patient classification is done on the basis of the tests that are done in group. But these models are only valuable in clinical situations and not in big industry sector. So, to include the Ailment Divinations in various health related industries, we have used the concepts of machine learning and supervised learning methods to build the Divinations system.

After researching and comparing all algorithms and machine learning theorems, we have come to the conclusion that all algorithms such as Decision Tree, KNN, Nave Bayes, Regression, and Random Forest Algorithm are important in building a system of - Ailment Divination that predicts patients' sickness, and to do so, we use certain operating methods such as ROC, KAPPA Statistics, RMSE, and MEA. After doing research and confirming findings, we came to the conclusion that it can predict an accuracy level of up to 90% after employing various approaches such as neural networks to diagnose disease. Patient statistical data, outcomes, and disease history are all stored in HER [4], allowing us to find a data solution that lowers the cost of medical case studies. The current method can forecast the disease but not the subtype of the disease, and it can't predict the human state. The disease's diagnosis is unclear and unexplained.

2.1.2 Proposed System

The proposed AI & ML Based Ailment Divination system would employ a variety of methodologies, algorithms, and other tools to develop a patient-centered diagnostic system based on symptoms and comparing those symptoms to previously existing system data. We can estimate the correct percentage of the patient's sickness by combining those data sets and comparing them to the patient's condition. The divination model of a system in which the data is pre-processed for future reference and the user selects the feature where he will put the different symbols includes a database [5] and symbols. Following that, the data was separated using different algorithms and techniques such as Decision Tree, KNN, Nave Bayes, Random Forest, and others. The data is then sent to the

recommendation model, which displays the system's risk analysis and also provides possible systemic estimates in such a way that it reflects various possibilities, such as how the system behaves when a large number of divorces are filed and makes patient recommendations based on the final outcome. For the entire risk analysis necessary to execute Disease Prediction, we have integrated the whole structure and informal data form here. We can detect chronic illnesses in a certain location and community through systematic analysis. With the aid of algorithms and methods, we pick characteristics automatically in informal analysis. This system recognises the user's symptoms and predicts the disease based on the symptoms and previous databases, assisting in ongoing diagnostic tests for viral infections, heart rate, blood pressure, diabetes, and a variety of other internal and external symptoms, predicting appropriate and specific illnesses.

2.2 Feasibility Study

An key step in the software development process has been acquired. Allows developers to receive a working product that has been tested. Refers to product research that might be done in terms of product outcomes, application performance, and technical assistance needed to use it. A possible investigation should be carried out based on a variety of circumstances and conditions.

2.2.1 Economic Feasibility

Economic recovery is the difference between the advantages or results we get from a product and the overall cost we spend to enhance it.

The creation of a new product enhances system correctness and speeds up application and reporting processing in the present system.

2.2.2 Probability Feasibility

The performance of a product to make it work is referred to as availability. Some items may perform admirably during manufacture and usage, yet they may malfunction in real life. It entails researching the needed personalities as well as their technical knowledge.

The contained data, update information, and reports for generations are accurate and quick in the present system.

2.2.3 Technical Feasibility

The term "technical performance" relates to whether or not the software currently available on the market is capable of completely supporting the present system.

It investigates the benefits and drawbacks of utilising specific development software, as well as its viability. It also learns how much more time customers will need to make the app function. The user interface of the present system is usable and does not need a great deal of knowledge or training.

It just takes a few mouse clicks to complete activities and generate reports. Because consumers want rapid access to web sites with a high level of security, the software used to upgrade is best suited for current applications. This is accomplished by combining a web server and a data server in the same physical location.

2.3 Tools and Technologies Used

2.3.1 Python

Python is a robust programming language with a wide range of capabilities. Its broad features make working with targeted programmes (including meta-programming and meta-objects) simple, and it fully supports object-oriented programmes and programmes. Many additional paradigms, such as contract generation and logic programming, are supported through extensions. Python makes advantage of power typing as well as the integration of reference computation and waste management waste collecting. It also supports advanced word processing (late binding), which binds the way the words change during the process.

Patches to less essential sections of CPython that can give a minor improvement in performance at an obvious price are rejected by Python developers who try to prevent premature execution. When speed is crucial, the Python programme developer can use mod-written modules in C-languages or PyPy, a timely compiler, to submit time-sensitive jobs. Cython is a Python interpreter that converts Python scripts to C and invokes the Python interpreter directly from the C-level API. Python developers strive to make the language enjoyable to use. Python's architecture supports Lisp culture in terms of functionality. Filters, maps, and job reduction, as well as list comprehension, dictionaries, sets, and generator expressions are all included.

Two modules (itertools and functools) in the standard library use realistic Haskell and Standard ML tools.

PYTHON'S BENEFITS

Modules from third parties are available.
Large-scale assistance Libraries
Community Development and Open Source
Learning is simple, and help is readily accessible.
Data structures that are simple to utilise
Productivity and quickness are important factors.

2.3.1.1 Django

Django is a sophisticated Python web framework that encourages quick development and ease of use. It was built by professional developers to handle a variety of Web development issues, allowing you to focus on building your app instead of reinventing the wheel. It's a free and open source project.

Django is designed to make it easier for developers to move projects from concept to completion.
Django takes security very seriously and assists developers in avoiding many typical security blunders.
Django's ability to grow rapidly and consistently is used by some of the busiest websites on the internet.

2.3.1.2 Joblib

In Python, Joblib is a set of utilities for delivering lightweight pipelines. Disk caching for visual tasks and slow re-testing (memo mime pattern) are the main features of this basic computing system. Using joblib, create a file with a model submerged in salt water:

Joblib is a cake substitute because it performs well on things with a huge numpy list. Instead of file names, these functions accept anything like a file.

Joblib is a Python operations pipeline resource that is part of the SciPy environment system. Well, for Python objects that employ NumPy data

structures, it provides storing and loading services. Everyone uses tasks because they are the simplest extraction method. In Joblib, pipeline works (or works) are done with decorated works. The data model must be specified in order to specify logical compliance parameters. Joblib foregoes this and instead use hashing to work longer and harder.

2.3.1.3. Scikit-learn

Skikit-learn is perhaps Python's most helpful machine learning package. The sklearn libr ary includes several useful machine learning and mathematical modelling techniques, such as division, slowing, merging, and size reduction.

It's one of Scikit-most learn's popular APIs. The Estimator API is used with all of Scikit-machine Learn's learning algorithms because it provides a uniform interface for a wide range of ML applications. The scale is the object read by the data (which contains data).

TensorFlow is a more advanced version of the standard library. Scikit-Learn is a cutting-edge package that allows you to create learning algorithms for a variety of machines thus you may construct an object in one or a few lines of code and use it to measure a group of points or forecast a result

2.3.4 Psycopg2

Psycopg is a widely used PostgreSQL data adaptor for Python programming. The comprehensive usage of Python DB API 2.0 data and cable security are two of its key characteristics (several threads can share the same connections). It's made for multi-threaded programmes that create and deploy many directories and a high number of INSERTs or UPDATEs.

Psycopg 2 is extensively used as a libpq wrapper in C, resulting in improved speed and security. Because of the system's versatility, several Python types are supported out of the box and are meant to match PostgreSQL data types; familiarity may be expanded and modified. Unicode and Python 3 are both supported by Psycopg 2. Psycopg2 is a PostgreSQL driver with DB API 2.0 that has been painstakingly built. It is built with multi-thread applications in mind and has its own connection pool to manage.

2.3.2 HTML:

Hypertext Markup Language (Html) stands for Hypertext Markup Language. HTML is a markup language used to specify the format of a document that will be displayed on a computer screen. HTML pages may contain audio, moving graphics, lists, genuine data, and java documents and can be generated as basic text or sophisticated multimedia. Web browsers, programmes that may go across the network and show a range of information, display HTML pages. HTML is the most widely used web publication format. Allows the author to insert not just text but also text titles, lists, and tables, as well as still pictures, video, and audio in the text. Details can be retrieved from the student's own computer. HTML sites may also be used to enter data and as a business transaction's front end.

Features of HTML:

HTML is not programing language.
It is easy to understand.
It is easy to implement.
HTML not a data description language.
HTML construct a very easy to comprehend, and it can be used effectively by anybody.

2.3.3 CSS:

HTML is used to show a document produced in the tag language. Cascading style sheets save time and effort by allowing you to change the appearance of numerous web pages at once. External style sheets are stacked one on top of the other. CSS style sheet files are used to specify the layouts, textures, and differences in presentation of different devices and screen sizes on web sites. External.css files are generally used to hold the style description. CSS is divided into three categories:
Inline CSS is a type of CSS that is used in the body section and is related to an element called inline CSS. A style property is used to provide this sort of style within the HTML tag.

Internal CSS (also known as featured CSS) is used when a single HTML document requires a unique style. The CSS rules must be given in the header section of the HTML file, which is CSS embedded within the HTML page.

CSS External CSS: Contains a separate CSS file that solely uses tag symbols to hold style assets. With the, CSS assets are written in a separate file. A link tag must be used to link a CSS extension to an HTML text It indicates that the style may only be specified once for each item, and that it will be applied to web pages.

2.3.4 JavaScript:

JavaScript is a portable scripting language. JavaScript is a scripting language for building in-app apps. JavaScript is a platform that is open source. A tiny server connection is JavaScript. Because no such functionality is available, JavaScript cannot be utilised for communication. When the user submits the form, the JavaScript HTML code integration is completed, and all entries are enabled, they are posted to the Webserver. Curly-bracket syntax, strong typing, and object-oriented orientation are all features. The web application's language is JavaScript. JavaScript is the most widely used programming language on the planet. Event-driven, functional, and essential programming paradigms are used in JavaScript.

2.3.5 NODE.JS:

The term "Node.js" does not relate to a specific file in this context; it refers to the.js extension of the normal JavaScript code file extension. Node.js is a cross-platform, open-source JavaScript environment that runs behind the V8 engine, allowing you to use JavaScript code without having to use a web browser. Node.js allows programmers to use JavaScript to construct command-line tools and server-side scripts that generate dynamic web page content before sending it to a user's browser. Node.js allows programmers to use JavaScript to construct command-line tools and server-side scripts that generate dynamic web page content before sending it to a user's browser. Node.js allows programmers to use JavaScript to construct command-line tools and server-side scripts that generate dynamic web page content before sending it to a user's browser. As a result, Node.js represents the "JavaScript Everywhere" paradigm, which encompasses web application

development using a single programming language, multiple server-side languages, and client-side text using a non-blocking I/O model model, making it an excellent choice for developing real-time data storage applications. Node.js is a fast and powerful programming language. It's an excellent choice for creating messaging or chat apps. It also aids in the development of large apps and e-commerce sites that rely on processing speed. Node.js is better suited for non-restrictive, event-driven servers due to its single-threaded nature. Node.js is a programming language that is used for standard web pages and background API services. It is built for real-time, Push-based thinking. As a result, it's critical to communicate with members of the development team as well as stakeholders. In general, operational requirements describe how effectively a system performs under specific situations. Node.js is best for non-restrictive, event-driven servers due to its single-threaded nature. Traditional web pages and background API services utilise Node.js, which is built for real-time, Push-based thinking.

2.4 Requirements for Hardware and Software

2.4.1 Requirements for Hardware

Pentium 4, Intel Core i3, 5, i7, and 2 GHz processor RAM must be at least 512MB.

Hard disc with a capacity of at least 10 GB

Input Keyboard and Mouse are the devices that are used.

Monitor or PC as an output device

2.4.2 Requirements for Software

Versions of Windows 7, 10, and above are supported.

Jupiter Notebook as a platform

Python Django (previous)

Python, PostgreSQL, and Files as a Background

Python is the programming language.

Summary

Chapter 2, the literature survey discusses abstract survey of the published papers and if any disadvantages identified in paper.

Chapter 3

Software Requirement Specification

Most software programmes still have their roots in the client's desire for automation using an existing manual method or a new software programme. The developer creates the software programme in order to maintain the finished system for end-user use. As a result, the new system has three primary groups of people interested in it: are the Users of this Project such as Patients, Engineers etc. The developer should be informed of any system requirements that will meet customer needs and user concerns

The issue is that the client frequently does not comprehend the programme or the software development process, and the developer frequently does not comprehend the customer's problem or application domain. This creates a communication chasm between the development project's stakeholders. The software requirement's main goal is to bridge this communication gap. SRS is a process that requires precision from the client and user; in fact, SRS is the foundation for software development. Trading and persuasion are two areas where a successful SRS should please both parties, which is extremely difficult to do.

3.1 Users

The stakeholders of the system are identified and their requirements are listed in the following section.

3.1.1 Admin

An Admin(Administration) who manages and monitors the System Workflow. Admin is the one who actual Monitors and Manages the Website and Schedules the Appointments for the User to their respective doctors or specialists:

Admin can view and modify (delete, update and Insert) all the Users or Patients who had their appointments with their respective doctors.

Admin can view the names of the doctors of their respective fields and can search for the specialists of the particular field.

Admin will approve the registration of the doctors based on their experience and knowledge by conducting the offline/Online Consultations.

Admin can approve/reject or delete the account of doctor request for the registration on the website.

Admin can view the schedules and appointments of doctors with their patients.

3.1.2 Doctor

Doctor Module who take care of their patients. Doctors can schedule the appointments to their patients ad can update their profile ad also they can consult to their Patients regarding health issues in emergency cases.

Doctors can view and edit their profile.

Doctors can view and Update the Schedules and Consulting hours to their patients.

Doctors can Approve or cancel the requests of the Booking or appointments.

Doctors will be notified on the arrival of the requests.

Doctors will receive the messages and chats from their patients and admins.

3.1.3 Patient

Patient which is the core module of the project. The major scope of this project is to automate the health services, consult and book appointments.

Patients can view and edit their profile.

Patients Or Users can divinate their ailment by inputting their symptoms occurred.

Patients can view the suggested doctors to their repective symptoms like Fever, Cough, Headache, Abdominal pain, Yellow-eye, Vomiting, Constipation, Loose-motion, Burning chest, Itching and so on.

Patients can view the suggested specialists, surgeons and doctors in the respective fields like Cardilogist, Gynocologist. Orthopedic, Dentist and so on.

Patients can book their appointments and view the status of their appointments.

Patients can consult to their doctors via message in the consultation hours.

Patients can view the profile and details of their doctors suggested.

3.2 Functional Requirements

3.2.1 Operating requirements are the features or services that product developers should employ to enable users to accomplish their jobs. As a result, it's critical to communicate with members of the development team as well as stakeholders. In general, operational requirements describe how effectively a system performs under specific situations.

3.2.2 Login Functionality:

The sign-in page allows registered users to log in to the site and have access to all of the capabilities that their account grants them. Users' information are validated when they put in their username and password and then click to submit, and they are logged in when they log in. If they are incorrect, an error notice will appear. If a user forgets his password, he or she should click "Forgot Password?" to get to the password recovery page. If the user does not already have an account, click the register button to take them to the checkout.

The Procedure for Registration

3.2.2.1 Adding Patients & Doctors: With the consent of the hospital manager, the front desk personnel can add new patients to the system.

3.2.2.2 Providing medical IDs to patients: HMS allows front desk personnel to provide each patient a unique ID and upload it to a patient record page. Patients can use an ID during their stay in the hospital.

3.2.3 Double-check

3.2.3.1 When a patient departs the hospital, ward personnel can delete the patient's ID from the system.

3.2.3.2 Add an empty bed to the available bed list: Ward personnel can add an empty bed to the available bed list.

3.2.4 Generating reports

3.2.4.1 Patient and Physician Information: The Hospital Management System provides a report to each patient with information such as the patient's name, phone number, bed number, doctor's name, ward name, and other pertinent information.

3.2.4.2 Availability of a bed: The Hospital Management System also aids in the compilation of reports on the availability of a bed based on data such as an empty or residential bed number, ward name, and other factors..

3.2.5 Database

3.2.5.1 Authorized Patient and Physician Data: Each patient must provide specific information, including his or her phone number, surname and surname, personal health number, postal code, nation, address, city, patient and medical ID number, and so on.

3.2.5.2 Update Patient and Physician Information: The hospital management system allows users to update patient information in accordance with mandatory criteria, such as.

3.3 User Interface Functionalities Requirements

A user interface specification (UI specification) is a document that details the user interface. There is generally some basic software that requires ui when it comes to case design and case management. The goal of developing use cases is for the designer UI to have a better knowledge of product features.

3.3.1 Login page

The Login Page is a page that will be accessed by everyone who uses the site, including administrators, patients, and doctors. The sign-in page allows registered users to log in and use all of the services that their account entitles them to. If they enter their username and password and click to submit the verified users' information, they will be logged in. If they are incorrect, an error notice will appear.

3.3.2 Divinating Ailment

By inputting their signals, patients or users can diagnose their disease. Here is the source of the information gathered from the Internet to identify the disease. Patients with their own symptoms (132 categories of different symptoms) and their related sickness are referred to as disease symptoms (section 40 of the common disease). There are no dummy values for Kaggle linked websites, thus the other three lines of disease obtained from kaggle.com and the real Health symptoms of the condition are broken.

	Disease	Symptoms
0	Malaria	[chills, vomiting, high_fever, sweating, heada...
1	Allergy	[continuous_sneezing, shivering, chills, water...
2	Fungal infection	[skin_rash, nodal_skin_eruptions, dischromic _...
3	Gastroenteritis	[vomiting, sunken_eyes, dehydration, diarrhoea]
4	arthritis	[muscle_weakness, stiff_neck, swelling_joints,...
5	Typhoid	[chills, vomiting, fatigue, high_fever, headac...
6	Hypertension	[muscle_weakness, stiff_neck, swelling_joints,...

3.3.3 Consult to Doctor

Patients or Users can interact with their doctors via messaging them in the respective consultation hours and clarify their doubts and questions regarding their Ailment. Doctors will be notified when the Patients tries to communicate the doctors in the respective consultation hours. Doctors can view the reply to the Patients with respect to their medicines, daily routines based on the symptoms like Fever, Cough, Headache, Abdominal pain, Yellow-eye, Vomiting, Constipation, Loose-motion, Burning chest, Itching and so on.

3.4 Non-Functional Requirements

Inaccurate requirements refer to system flaws or limits. They can be linked to new system structures like dependability, reaction time, and storage stay, as well as platform, implementation techniques, and tools.

Non-Functional requirements might be determined on a variety of factors, including user demands, financial constraints, and corporate regulations.

3.4.1 Economic Requirements

It refers to the advantages or outcomes we obtain from a product against the expenditures we invest to enhance it.

The creation of a new product enhances system correctness and speeds up application and reporting processing in the present system. Because the database utilised is a web-approved database, there is no need to spend money on a care client.

3.4.2 Operational Requirements

It denotes that the thing is capable of functioning. Some items may perform admirably during manufacture and usage, yet they may malfunction in real life. It entails researching the needed personalities as well as their technical knowledge.

The contained data, update information, and reports for generations are accurate and quick in the present system.

3.4.3 Technical Requirements

It refers to whether the present system is completely supported by the software available on the market.

It investigates the benefits and drawbacks of utilising certain development tools, as well as if it is even viable. The user interface of the present system is usable and does not need a great deal of knowledge or training. Because consumers want rapid access to web sites with a high level of security, the software used to upgrade is best suited for current applications. This is accomplished by combining a web server and a data server in the same physical location.

Summary

Chapter 3 discusses the detailed requirement of problem identified for the Major project.

Chapter 4

System Design

The process of system design entails both planning and programming, as well as the generation of needed reports and input.

4.1 System Perspective

Ailment Divination Using AI and Machine Learning Divination determines the presence of a user's condition based on the symptoms and information provided by the user, such as diabetes, hemoglobin level, and other symptoms-related information. The illness system divination utilizing machine learning is made up of several data sets in which we compare user features and make educated guesses, after which the data sets are divided into smaller sets and categorized over time using class methods. Enters the ill divination model with all of the above-mentioned user inputs After the user has input the aforementioned data as well as the processed data, they are combined and compared to the system divination model, which then predicts the disease. A clear depiction of a group of ideas that are part of a construction, such as objectives, objects, and objects, is an architectural diagram.

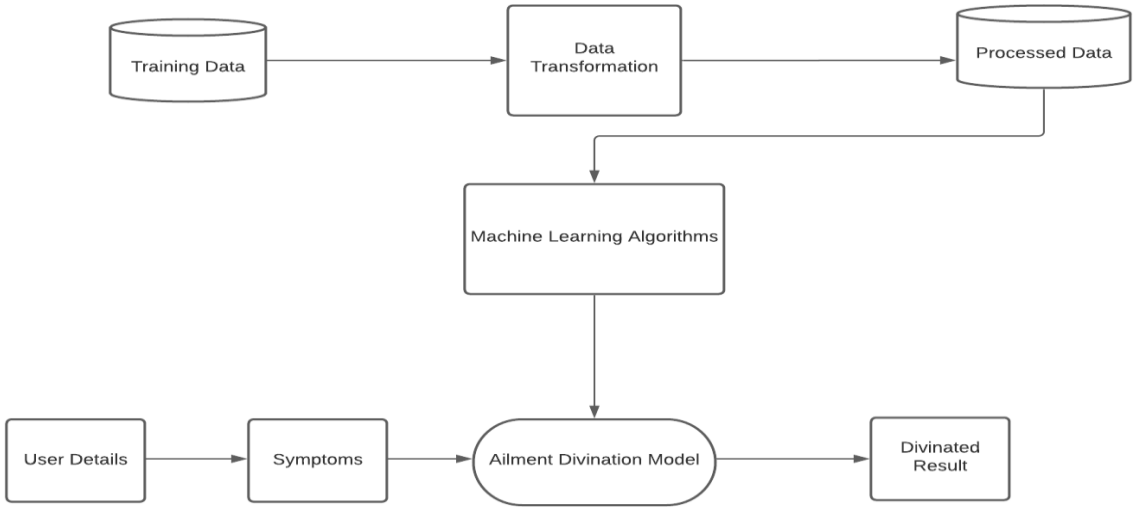


Fig 4.1 : Architecture Diagram of Ailment Divination Model

The diagram describes the software for the programme by viewing the entire system view of Training, Data transformation, Data processing with ML Algorithms to detect the Disease or Ailment.

4.2 Entity Representation Diagram

The Enterprise Relationship Diagram (ERD) depicts the relationships between business sets in the database. The ER diagram depicts the logical structure of data by defining the organisations, their properties, and the interactions between them. Database structure is depicted using ER diagrams.

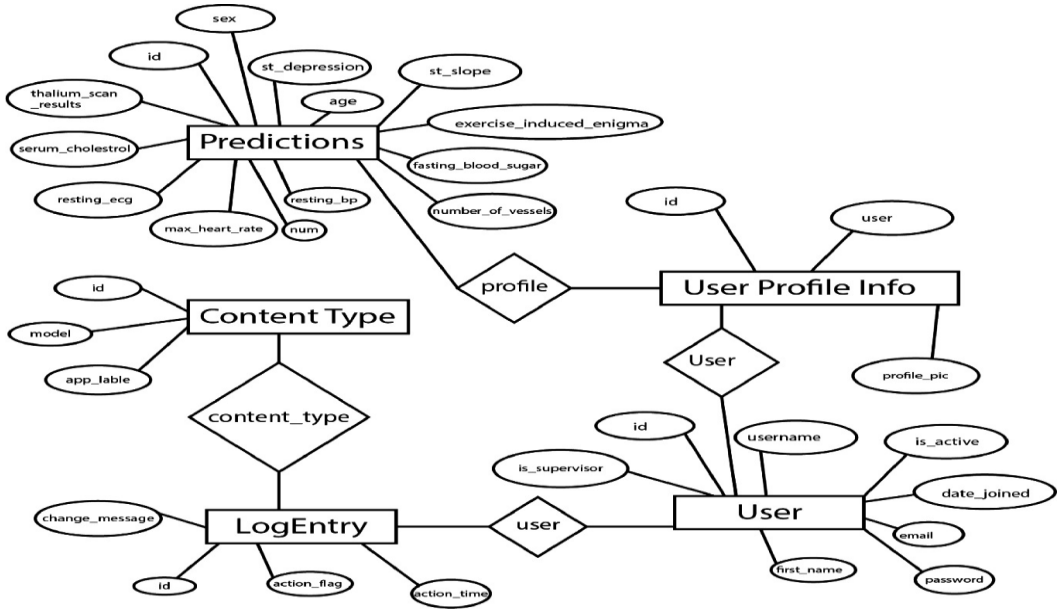


Fig 4.2 : Entity Representational Diagram for Ailment Divination Model

All of the graphics on this page are represented as drawings by rational business in Fig 4.2. An ER diagram frequently has a mix of logical and physical parts, implying that the demonstration includes both logical and physical aspects. Admin is in charge of patients and doctors. The Administrator is in charge of delivering patient consultation services to their Recommended Physicians and displaying the learned data utilising the Multi-Machine Learning Algorithm according to its Symbols.

4.3 Dataflow Diagram

Flowchart of the Project A disease project employing machine learning has all of the components necessary for a flow diagram. This dataflow diagram illustrates how to transfer a model from one stage to the next, such as signing in and filling out all of the required information, as well as any other common features and symbols in the system. It's compared to a divination model, and if it's correct, it forecasts important outcomes; if not, it displays where the user went during data entering.

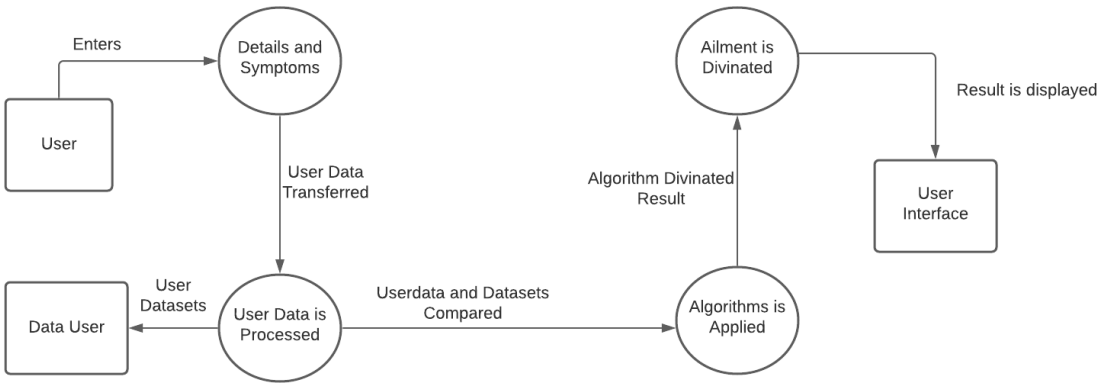


Fig 4.3 : Dataflow Diagram of Ailment Divination Model

The Fig 4.3 illustrates the Dataflow diagram between the User to the Ailment divination model Initially User enters to the System by Signup and Signing in and Inputs the Symptoms occurring so that they can predict the ailment. This Data is Stored in the database and processed for the applied algorithms of Machine Learning Such as KNN, Naïve-Bayes, Decision Tree, CNN etc.. And Applying these algorithms ailment is divinated and shown through the Django Interface using Flask.

Summary

Chapter 4 discusses the System Architecture and Context Design of the Project or System.

Chapter 5

Detailed Design

The Design Objectives include a number of different designs that we've used in our disease divination programme using learning equipment. Data flow diagrams, sequence diagrams, class diagrams, case diagrams, object diagrams, task diagrams, status chart diagrams, and deployment diagrams are all part of the software. We completed our assignment after creating these varied drawings and basing them on these designs.

We designed our system such that every time a user logs in, he or she must register, and a new user cannot use the system without first registering. After registering, the user will need to provide basic information such as their username, age, email address, phone number, and password. After that, the user must use the same username and password to log in to the system. Here are some of the capabilities of this system.

Entering Symptoms: Once user successfully logged in to the system then he/she has to select the symptoms from the given drop-down menu.

Ailment Divination: The predictive model predicts the Ailment of a person he might have,based on the user entered symptoms

5.1 Use case Diagram

The project Sickness study utilising machine reading's Use Case diagram has all of the components that a case study diagram need.In comparison to the divination model, this usage case diagram shows that the model flows from one step to the next, similar to entering a system and entering all the details and all other common details and symbols into the system. If True, the model predicts the relevant results otherwise error while entering data and also indicates the correct monitoring method the user will follow. All organisations' usage diagrams are connected together here, and the user begins with the application.

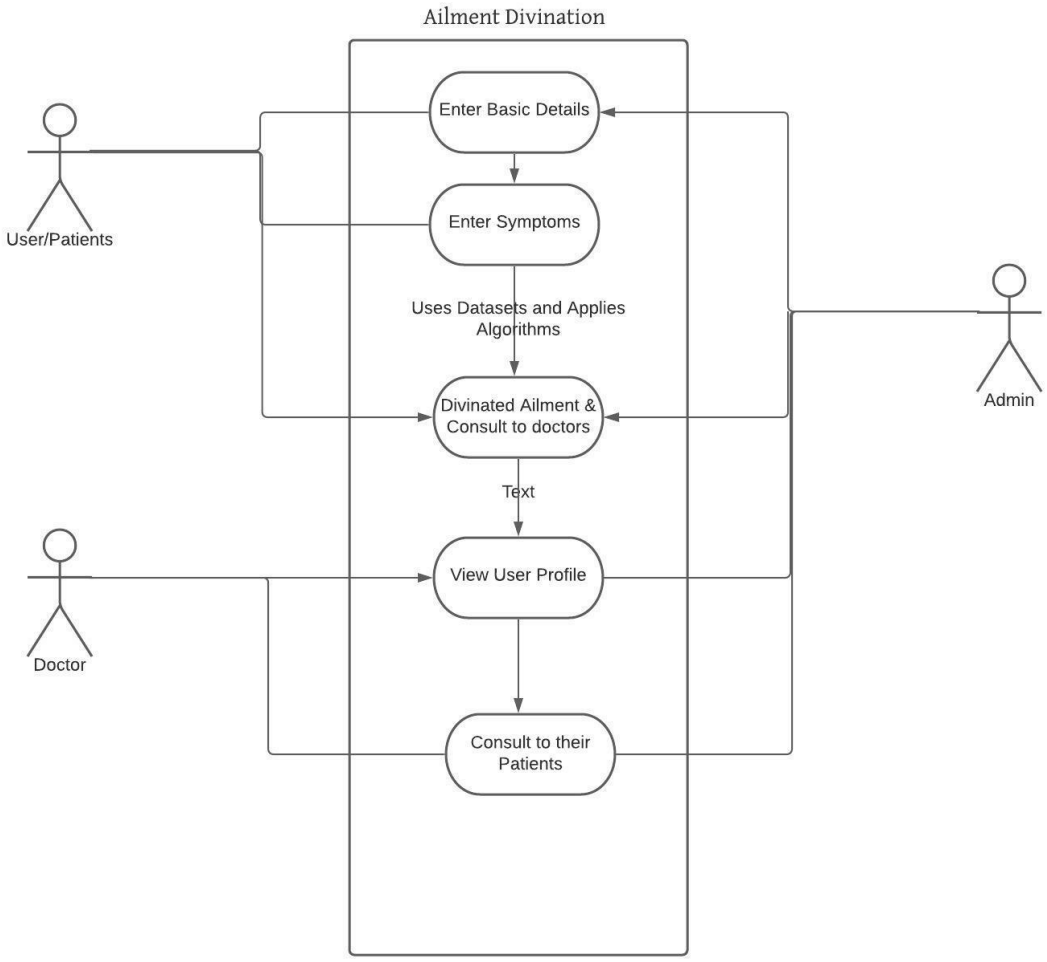


Fig 5.1: Use Case Diagram of User Model in Ailment Divination Model

The Fig 5.1 illustrates the UseCase diagram between the User to the Ailment divination model Initially User enters to the System by Signup and Signing in and Inputs the Symptoms occurring so that they can predict the ailment. This Data is Stored in the database and processed for the applied algorithms of Machine Learning Such as KNN, Naïve-Bayes, Decision Tree, CNN etc.. And Applying these algorithms ailment is divinated and shown through the Django Interface using.

5.2 Sequence Diagram

A Ailment divination project utilizing machine learning contains a sequence diagram with all of the elements anticipated in a typical sequence diagram. This sequence diagram depicts how the model progresses from one stage to the next, similar to how you would build a system and include all the details, other details, and common symbols. Unlike a divination model, this sequence diagram reveals where the user made a mistake when entering the information and displays the correct monogram. The chronology of all the organizations is linked to where the user opens the program..

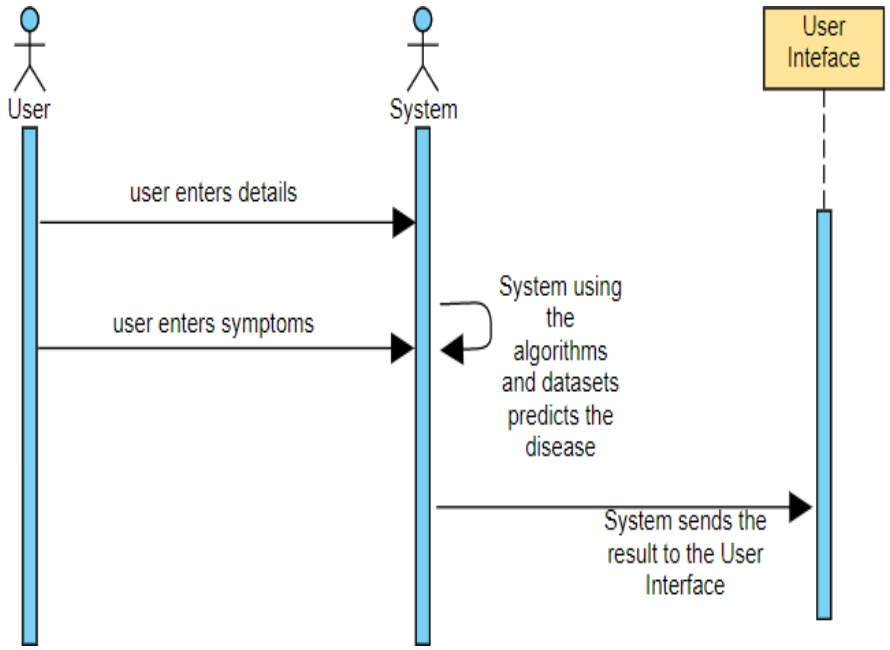


Fig 5.2: Sequence Diagram of Ailment Divination Model

The Fig 5.2 illustrates the Sequence diagram between the User to the Ailment divination model(System) Initially User enters to the System by Signup and Signing in and Inputs the Symptoms occurring so that they can predict the ailment. Divination Model analyses these Inputs and Uses Algorithms and Implies Dataset for the Symptoms and Send the Results to the Django interface.

5.3 Collaboration Diagram

A collaboration drawing, also known as a communication diagram in Integrated Language Modeling, illustrates the relationship and interaction between components of software (UML). These diagrams may be used to define the operation of each item and to show how a certain use case works dynamically. The diagram depicts how all of the models are linked to display relevant results from the user, such as opening the application and using the programme, registering, and storing the registration data in the file system, and then using that user information to log into the system and provide all of the required information.

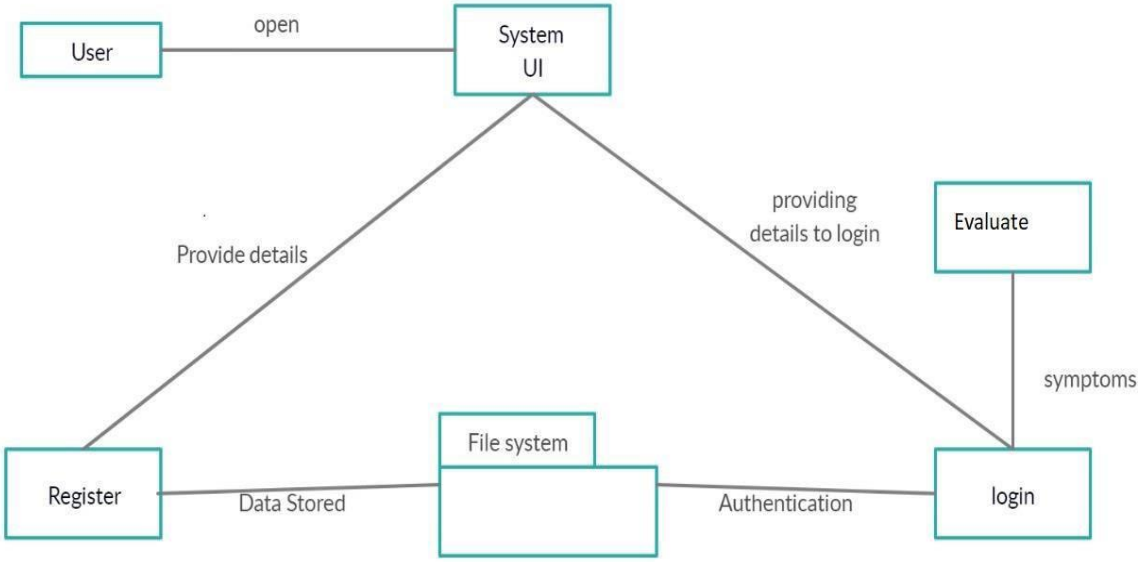


Fig 5.3 Collaboration Diagram of Ailment Divination Model

The Fig 5.3 illustrates the Collaboration diagram between the User(Admin, Patient and Doctor) to the Ailment divination model. All the User Such as Admin, Patient and Doctor Initially must register their information to the database and Proceed for the Stability login the Authentication will be Provided by the Login and Evaluated in the Database. The Dataset and Algorithms are implied for incoming inputs which will be stored in the Database i.e., PostgreSQL.

5.4 Activity Diagram

A job drawing is another essential diagram in the UML for describing a program's dynamic characteristics. A work diagram is a flowchart that depicts the progression of work from one task to the next. A type of function is a system function. A control flow is shown from one action to the next. The user in this picture begins the process by registering with the system and logging in with their credentials. The symbols are compared to the system, and if they match, the user advances to the divination phase, where divination takes place. Only once the data from the data sets has been processed will the analysis begin, and only then will the appropriate findings be shown without selection.

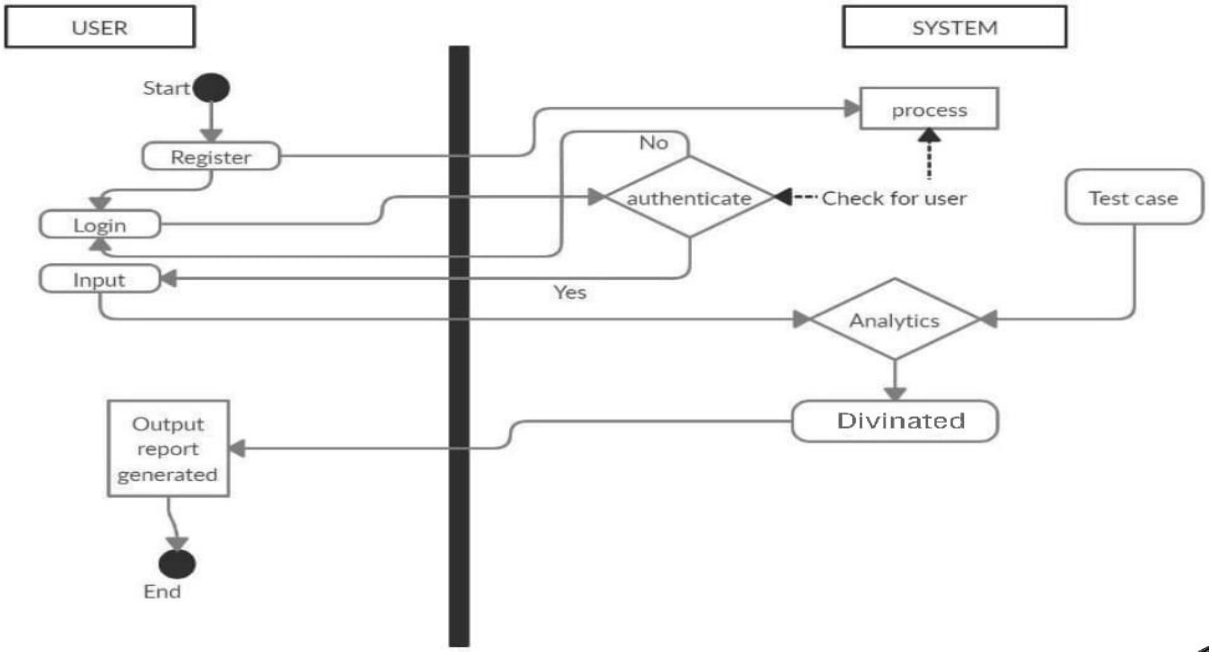


Fig 5.4 Activity Diagram of Ailment Divination Model

The Fig 5.4 illustrates the Activity diagram between the User(Admin, Patient and Doctor) to the Ailment divination model. All the User Such as Admin, Patient and Doctor Initially must register their information to the database and Proceed for the Stability. The Registration Process of all the User has been undergone Testcases for authentication purpose and Inputs analysis and Test cases for the Divinating the ailment and the Output report is generated which is visible to the User.

5.5 Class Diagram

Class drawing is the fundamental business required to continue the work in machine learning diagnosis. Every other software has basic classroom drawing, and class drawing is the basic business needed to continue the work in machine learning diagnosis. The class diagram contains information on all applicable categories and related data sets, as well as all other necessary attributes and relationships with other organisations, all of which is required for the use of divination, in which the user will enter all required information such as username, email, phone number, and many other attributes required to sign in to the system and use the concept of divination, in which the user will enter all required information such as username, email, phone number, and many other attributes required to sign in to the system and use the concept of divination.

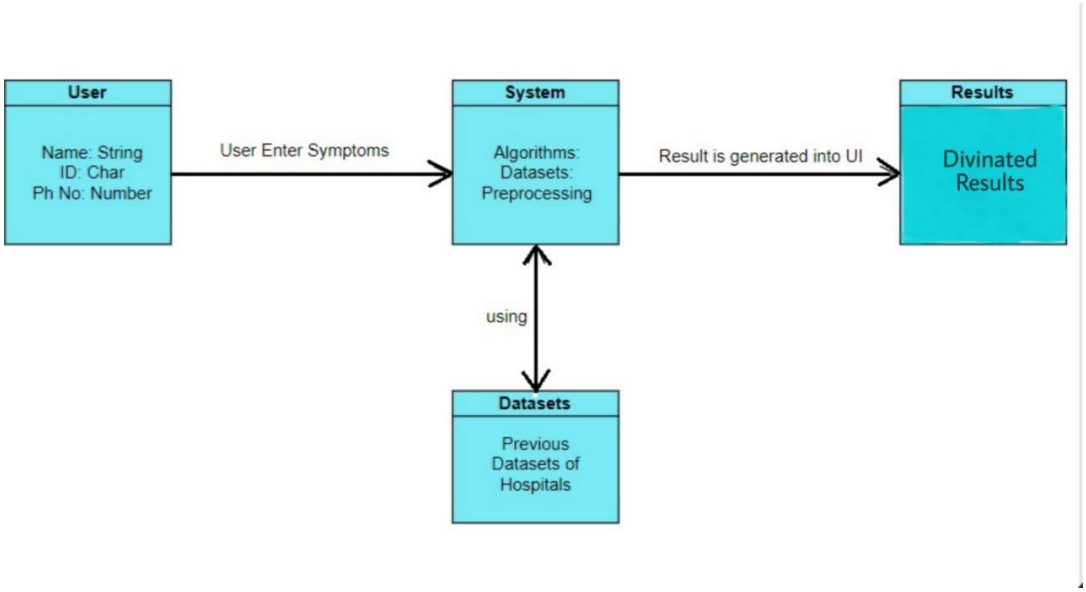


Fig 5.5 Class Diagram of Ailment Divination Model

The Fig 5.5 illustrates the Class diagram between the User(Admin, Patient and Doctor) to the Ailment divination model. All the User Such as Admin, Patient and Doctor Initially must register their information to the database and Proceed for the Stability login the Authentication will be Provided by the Login and Evaluated in the Database. The Dataset and Algorithms are implied for incoming inputs which will be stored in the Database i.e., PostgreSQL.. Algorithms are applied and Processed by comparing the previous datasets or similar corresponding datasets and divinated result.

5.6 Component Diagram

The arrangement and connections of the material components of a system are described in an object diagram, also known as a UML object diagram. Component drawings are frequently used to help the data implementation model and double-check that the planned development covers all areas of the needed system function. The object diagram depicts all of the major components that make up the system. Design, Algorithm, File System, and Datasets are all linked in this way. The algorithm is used to process the results and offer accurate accuracy, while the UI is used to show the results appropriately in the system and the file system is used to store user data. Therefore, as all components are connected.

.

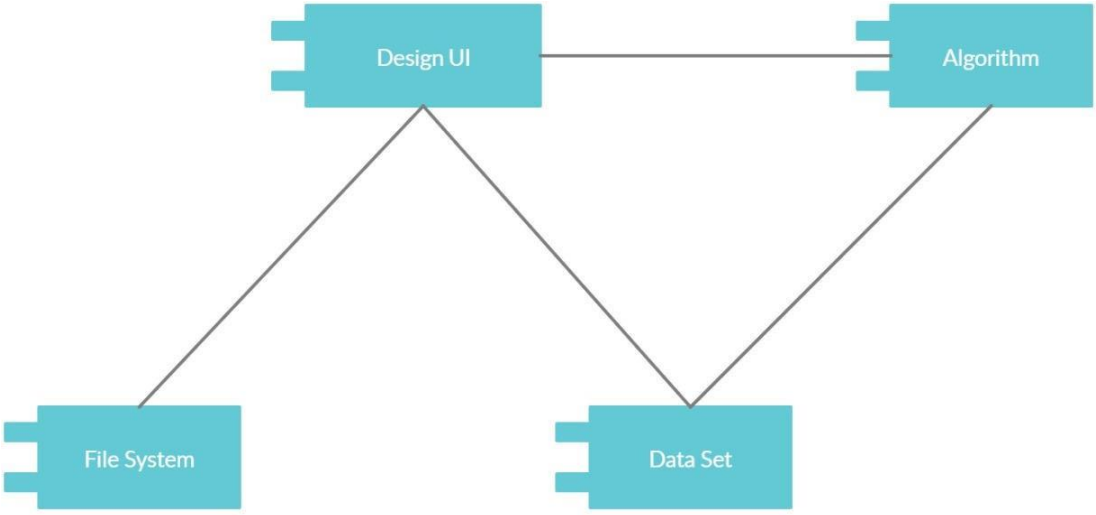


Fig 5.6 Component Diagram of Ailment Divination Model

The Fig 5.6 illustrates the Component diagram Which consists of the Design UI, Algorithms, File System and Data Set. Design UI is a Interface for the All the Users such as Admin, Patients and Doctors which is built on Django Environment using the flask technology. Algorithms are Referred for Training the data some of the algorithms used for the Project to train the data were KNN, CNN. Naïve Bayes Classifier, and Decision Tree. Data Set are collected from the Health Websites and the Datasets stored in the kaggle.com. The User's authentications are stored in the File System which also consists of Dataset and Machine learning Algorithms.

5.7 State Diagram

The efficacy of one object in responding to a sequence of events in a system is depicted in a diagram of the Government chart. Harel's status chart or state machine diagram are other names for it. The dynamic flow of control is moved from the status quo to the state of something within the system in this UML diagram. It is similar to the job diagram, but there are a few more rules, such as how to begin and terminate the programme. The programme begins with registration and login, and if login is successful, it will go to the next phase and. The user must then enter the symbols and hit the divination button after successfully logging in. Simultaneously, the retrieval process will complete its task and anticipate the relevant outcomes.

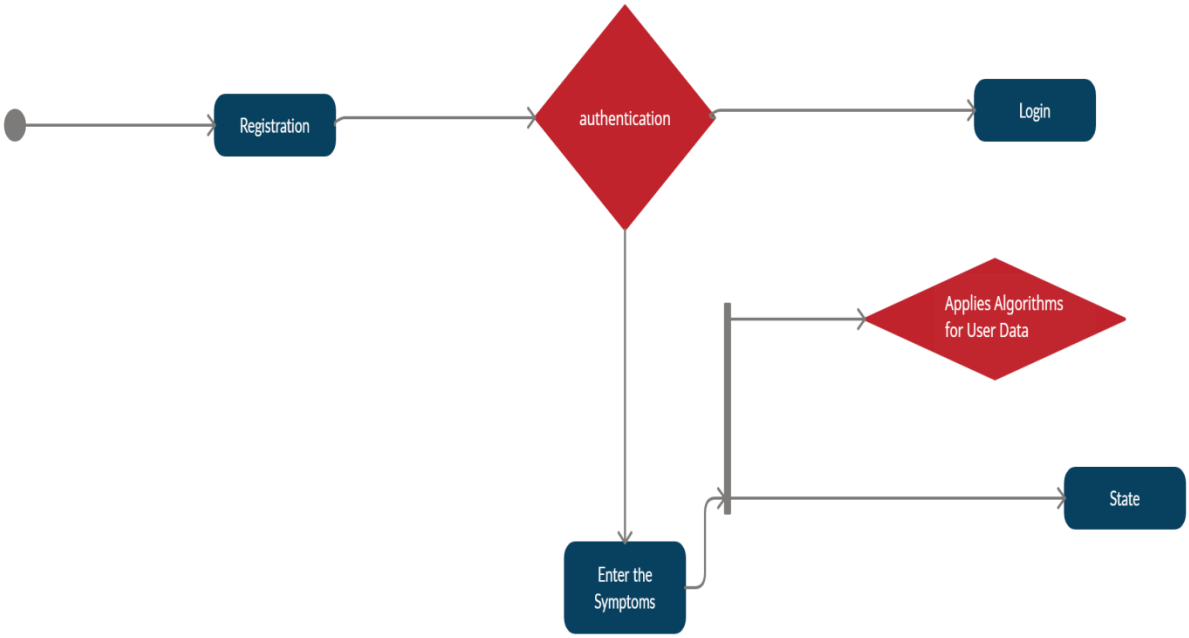


Fig 5.7 State Chart Diagram of Ailment Divination Model

The Fig 5.7 illustrates the State diagram between the User(Admin, Patient and Doctor) to the Ailment divination model. Initially User enters to the System by Signup and Signing in and Inputs the Symptoms occurring so that they can predict the ailment. Divination Model analyses these Inputs and Uses Algorithms and Implies Dataset for the Symptoms and Send the Results to the Django interface.

5.8 Deployment Diagram

The delivery diagram depicts the processing time period as well as the parts that make up the time frame. Display diagrams are a sort of construction diagram that are used to represent the material of a target item. The deployment diagram depicts the project's final step as well as the model's appearance after all of the procedures have been completed and the machine has been installed. Begin by observing how the system handles user input data and comparing it to that.

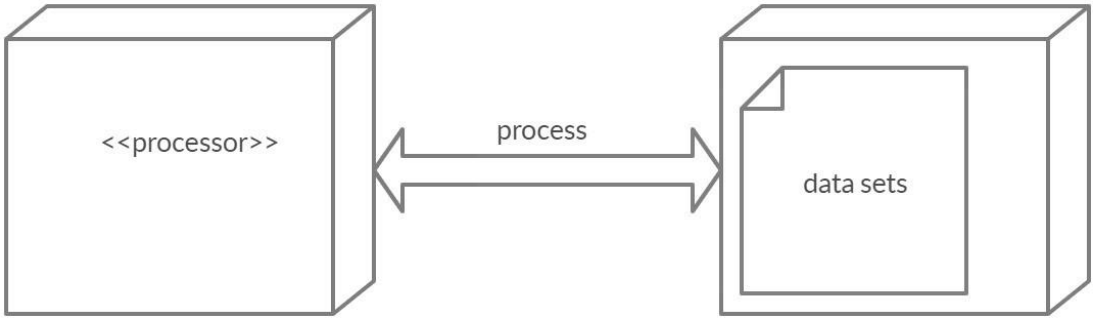


Fig 5.8 Deployment Diagram for Ailment Divination Model

The Fig 5.8 illustrates the Deployment diagram which refers the Datasets Processing Technique. The Datasets for the Ailment Divination Model is referred from the Health Websites Health Department Officials and the corresponding Data's in the kaggle.com. These datasets are stored in the database and the symptoms inputs from the Patients are trained together by applying several Machine learning algorithms which includes several techniques referred as naïve bayes classifier algorithms, KNN for predicting the nearest value, and Decision Tree algorithms for substituting the values according the Values that matches with the stored dataset in the Model.

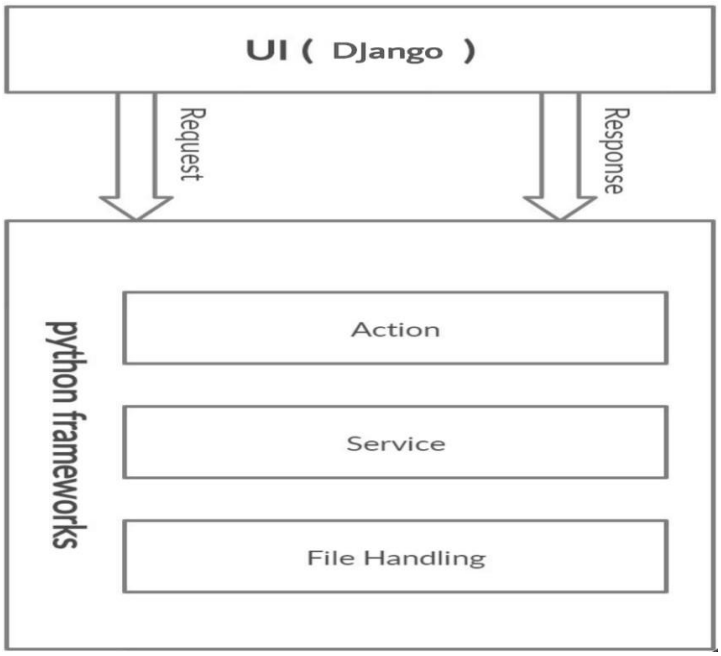
5.9 Interface and Framework Diagram

The Figure 5.9 is the structure which we will use in our project Ailment divination usingMachine learning.

- The User Interface of this system consists of Python's library interface called tkinter.
- Then it goes into the framework model where all the actions and services are

combined and then the result is processed.

- It also consists of file system where all the user related information is stored such as username, password, age, phone, email.
- Below is the structure of the User Interface along with necessary implementations.



- After the User Interface it consist of the framework in which the system works accordingly using all the technologies, algorithms and various tools in which the project works accordingly.
- The framework consists of all the modules starting from the data preparation, data building and assessment stage.
- All these three factors are then going into the data collection phase, where the data is classified accordingly using the appropriate models and algorithms such as decision tree, naïve bayes, random forest.
- Then all those algorithms use the datasets and it forms the sets where all the previous data is stored, then using that data it compares with the new data and result is generated.

Summary

Chapter 5 discusses the design associated with the project which includes use case, Collaboration, Activity, State, Interface, Deployment and Class Diagrams on the Project Flow and working of the Models among their relations in the way of their interactions with their users.

Chapter 6

Implementation

The AI & ML Based Ailment Divination is written in Python, with Django for the front end and Python packages for the backend.

6.1 Implemented Code

We have shown code snippets for Url linking, managing the Django environment and modeling of data for the Project

6.1.1 Manage.py

```
#!/usr/bin/env python
"""Django's command-line utility for administrative tasks."""
import os
import sys


def main():
    os.environ.setdefault('DJANGO_SETTINGS_MODULE', 'disease_prediction.settings')
    try:
        from django.core.management import execute_from_command_line
    except ImportError as exc:
        raise ImportError(
            "Couldn't import Django. Are you sure it's installed and "
            "available on your PYTHONPATH environment variable? Did you "
            "forget to activate a virtual environmen3t?"
        ) from exc
    execute_from_command_line(sys.argv)


if __name__ == '__main__':
    main()
```

The manage.py code illustrates on creating Django environment for the execution of the project. For Creating the Django Environment the following commands need to be executed one by one in the command prompt:

- python –version
- pip –version
- pip install virtualenvwrapper-win
- mkvirtualenv test or mkvirtualenv ailment

6.1.2 urls.py

```
from django.urls import path , re_path
from . import views

urlpatterns = [
    path("", views.home, name="home"),

    path('admin_ui', views.admin_ui , name='admin_ui'),

    path('patient_ui', views.patient_ui , name='patient_ui'),
    path('checkdisease', views.checkdisease, name="checkdisease"),
    path('pviewprofile/<str:patientusername>', views.pviewprofile , name='pviewprofile'),
    path('pconsultation_history', views.pconsultation_history , name='pconsultation_history'),
    path('consult_a_doctor', views.consult_a_doctor , name='consult_a_doctor'),
    path('make_consultation/<str:doctorusername>', views.make_consultation , name='make_consultation'),
    path('rate_review/<int:consultation_id>', views.rate_review , name='rate_review'),


    path('dconsultation_history', views.dconsultation_history , name='dconsultation_history'),
    path('dviewprofile/<str:doctorusername>', views.dviewprofile , name='dviewprofile'),
    path('doctor_ui', views.doctor_ui , name='doctor_ui'),
```

```
    path('consultationview/<int:consultation_id>', views.consultationview , name='consultationview'),
    path('close_consultation/<int:consultation_id>', views.close_consultation , name='close_consultation'),


    path('post', views.post, name='post'),
    path('chat_messages', views.chat_messages, name='chat_messages'),




]
```

The urls.py Code illustrates the specification of the URL's in the Webpages to fetch the according pages paths are need to be located exactly at the same location prescribed in this code. The urls.py will fetch the upcoming or ongoing webpages of the Ailment.

6.1.3 Models.py

```
from django.db import models
from django.contrib.auth.models import User
from django.contrib.postgres.fields import ArrayField
from datetime import date
# Create your models here.
#user = models.OneToOneField(settings.AUTH_USER_MODEL)
class patient(models.Model):
    user = models.OneToOneField(User, on_delete=models.CASCADE, primary_key=True)
    is_patient = models.BooleanField(default=True)
    is_doctor = models.BooleanField(default=False)
    name = models.CharField(max_length = 50)
    dob = models.DateField()
    address = models.CharField(max_length = 100)
    mobile_no = models.CharField(max_length = 15)
    gender = models.CharField(max_length = 10)
    @property
    def age(self):
        today = date.today()
        db = self.dob
        age = today.year - db.year
        if today.month < db.month or today.month == db.month and today.day < db.day:
            age -= 1
        return age
class doctor(models.Model):
    user = models.OneToOneField(User, on_delete=models.CASCADE, primary_key=True)
    is_patient = models.BooleanField(default=False)
    is_doctor = models.BooleanField(default=True)
    name = models.CharField(max_length = 50)
    dob = models.DateField()
    address = models.CharField(max_length = 100)
    mobile_no = models.CharField(max_length = 15)
    gender = models.CharField(max_length = 10)
    registration_no = models.CharField(max_length = 20)
```

```
    year_of_registration = models.DateField()
    qualification = models.CharField(max_length = 20)
    State_Medical_Council = models.CharField(max_length = 30)
    specialization = models.CharField(max_length = 30)
    rating = models.IntegerField(default=0)
class diseaseinfo(models.Model):
    patient = models.ForeignKey(patient , null=True, on_delete=models.SET_NULL)
    diseasename = models.CharField(max_length = 200)
    no_of_symp = models.IntegerField()
    symptomsname = ArrayField(models.CharField(max_length=200))
    confidence = models.DecimalField(max_digits=5, decimal_places=2)
    consultdoctor = models.CharField(max_length = 200)
class consultation(models.Model):
    patient = models.ForeignKey(patient ,null=True, on_delete=models.SET_NULL)
    doctor = models.ForeignKey(doctor ,null=True, on_delete=models.SET_NULL)
    diseaseinfo = models.OneToOneField(diseaseinfo, null=True, on_delete=models.SET_NULL)
    consultation_date = models.DateField()
    status = models.CharField(max_length = 20)
class rating_review(models.Model):
    patient = models.ForeignKey(patient ,null=True, on_delete=models.SET_NULL)
    doctor = models.ForeignKey(doctor ,null=True, on_delete=models.SET_NULL)
    rating = models.IntegerField(default=0)
    review = models.TextField( blank=True )
    @property
    def rating_is(self):
        new_rating = 0
        rating_obj = rating_review.objects.filter(doctor=self.doctor)
        for i in rating_obj:
            new_rating += i.rating
        new_rating = new_rating/len(rating_obj)
        new_rating = int(new_rating)
        return new_rating
```

The Model.py illustrates the model classification and creating own model and providing the authentications.

In this Model the doctor and patient model are created by intaking several information and ailment model by referring several datasets and data information's So that ailment information can be divinated by the patients.

The consulation model is also created based on the ailment information of the patients and the Specialization of the Doctors so that it can suggest the doctor for the divinated ailment. Consultation Model helps Patients to Interact with their Doctors via messaging and taking medicare regarding their Ailment. The rating and review model is created for both the user and the doctors so that they can give their genuine feedbacks on the ailment divination Model or System. The Feedback is stored in the database by referring the doctor and patient models information of the Database.

6.2 Screenshots

AI & ML Based Ailment Divination involve serveral Screens for the implementation of project

6.2.1 Patient UI

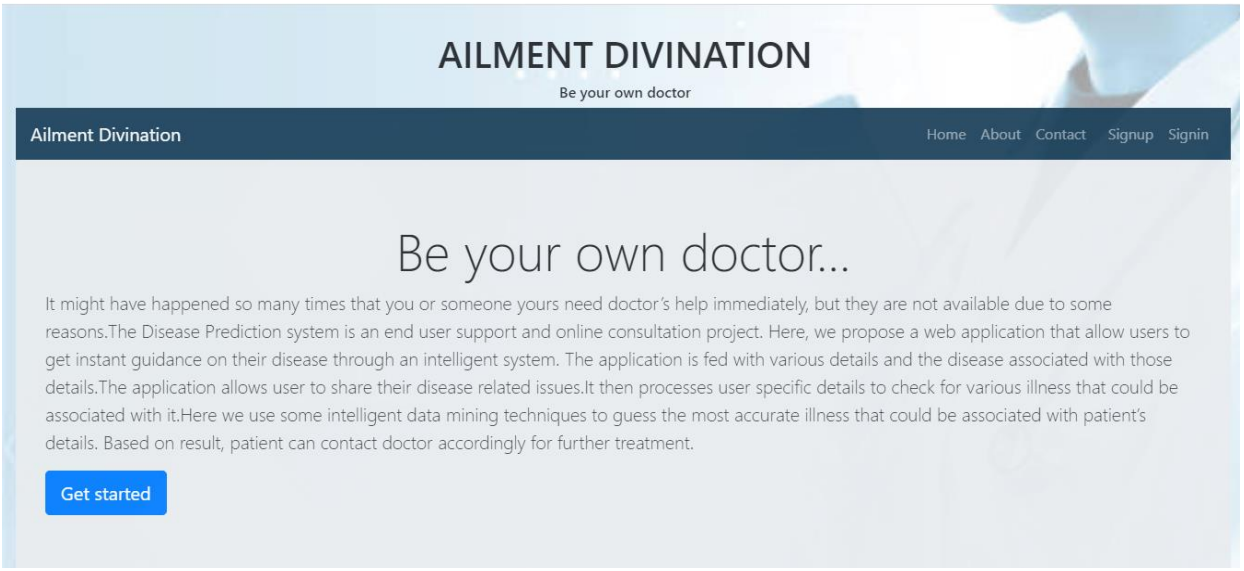


Fig 6.1 Homepage

The Figure 6.1 is the User Interface of the Index page of the Ailment Divination for all the Users.

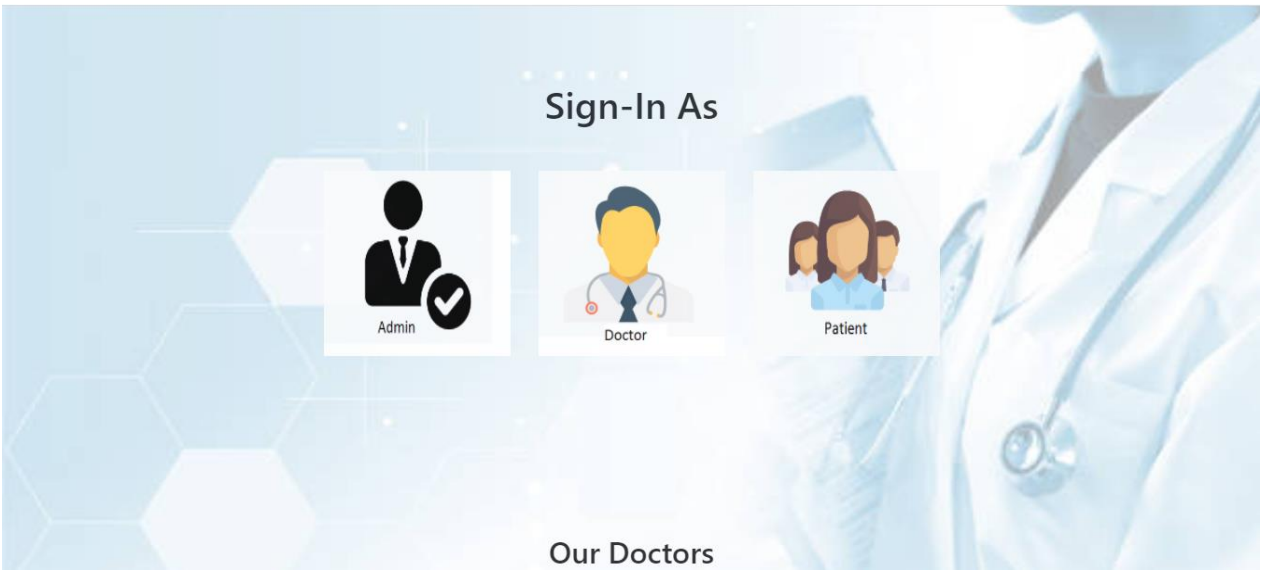


Fig 6.2 Sign-in Page for All Users

The Figure 6.2 is the Sign-in Interface for Admin, Patients and Doctors

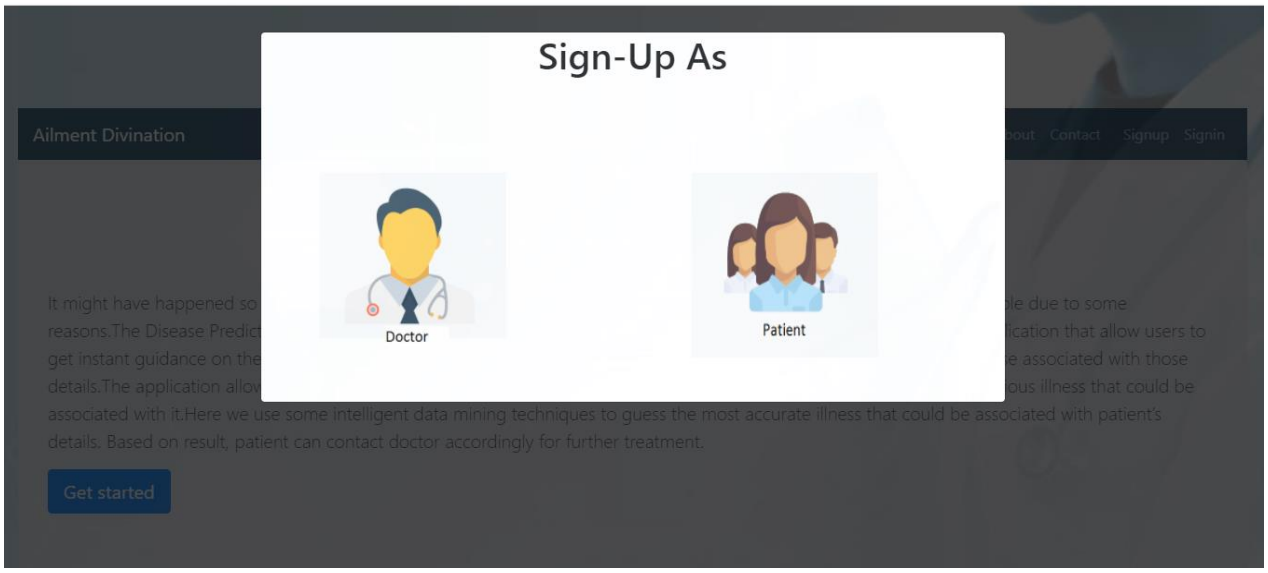


Fig 6.3: Sign-up page for Doctor and Admin

The Figure 6.3 is the Signup Interface for the Admin and Patients.

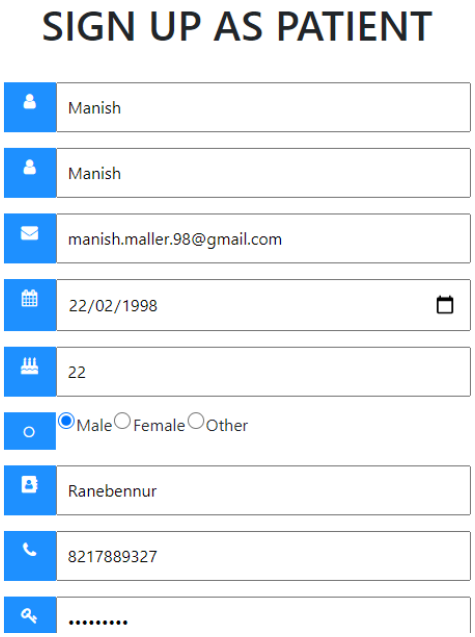


Fig 6.4 Signup Page for Patient

The Figure 6.4 is the Signup Page for the Patients Which consists of the Form to fill their Personal details and provide Username and Password for the authentication into the System.

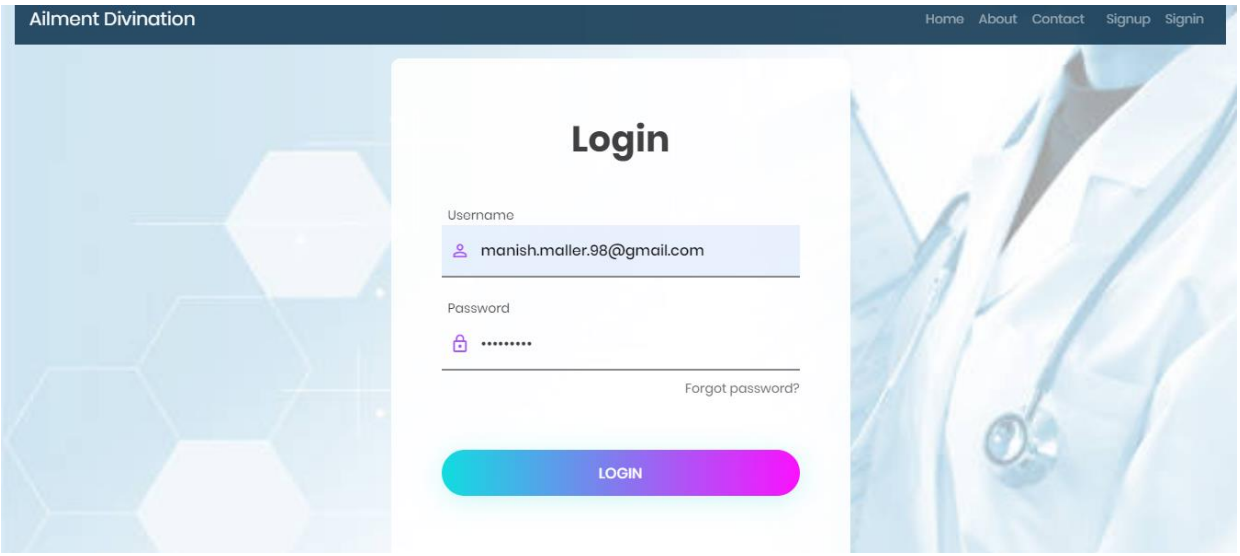


Fig 6.5 Sign-in page for Patient

The Figure 6.5 is the Login Page for the Patients So that they can login to the System or Model by entering correct authentications.

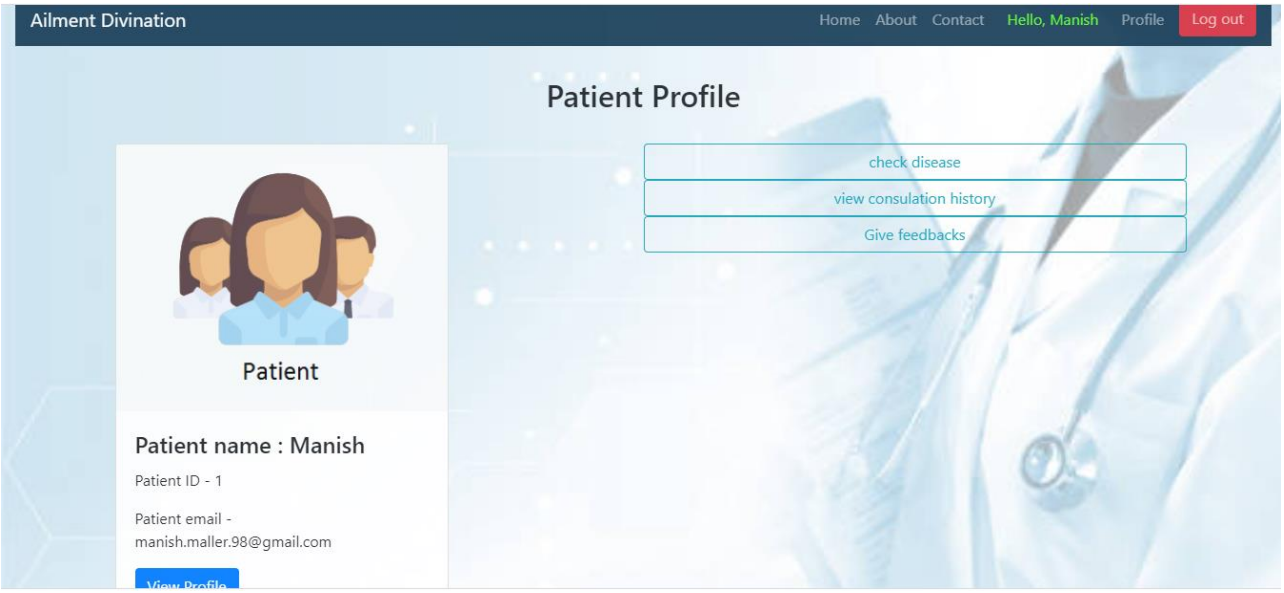


Fig 6.6: Home Page for Patient

The Figure 6.6 is the Homepage for the patients Where they can go further for Check Ailment, Give Feedback and Go for consultation to their doctors.

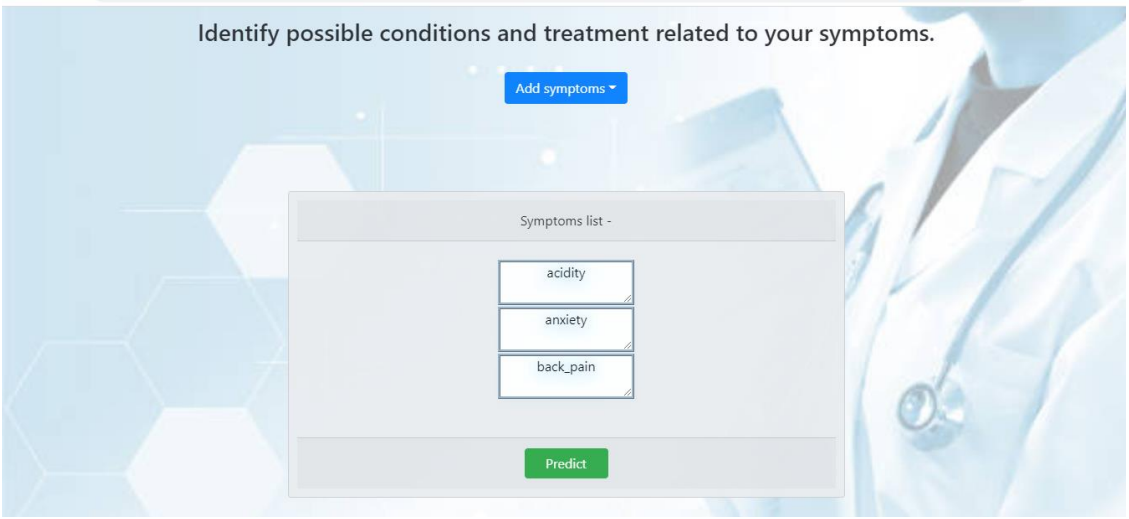


Fig 6.7 Inputting Symptoms of Patients for Predicting Ailment

The Figure 6.7 is the Divination Interface for the Patients where they can divinate Ailment by Entering the Symptoms

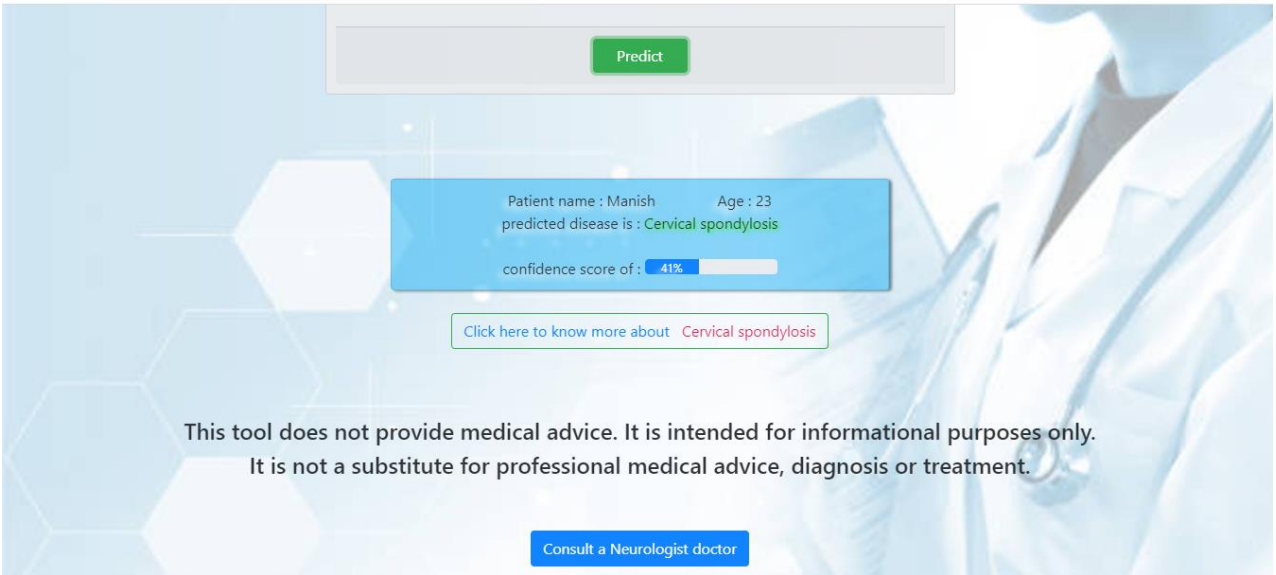


Fig: 6.8 Divinated Ailment of the Patients

The Figure 6.8 is the Interface for the Divinated Ailment Result Where they can see the Ailment they are going through and Consult to a doctor

Fig 6.9 Suggesting Doctor based on the Divinated Ailment

The Figure 6.9 is the Interface of the Doctor profile to the patients on their Ailment

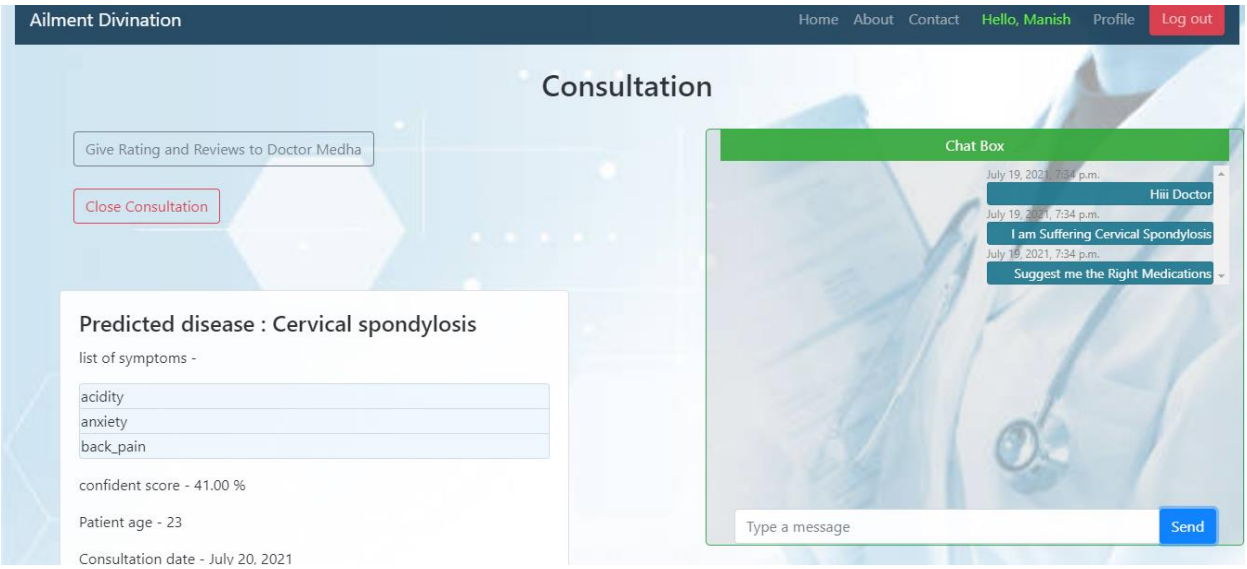


Fig 6.10 Consultation to the Doctors

The Figure 6.10 is the Consultation interface for the patients to their Doctors where they can View their

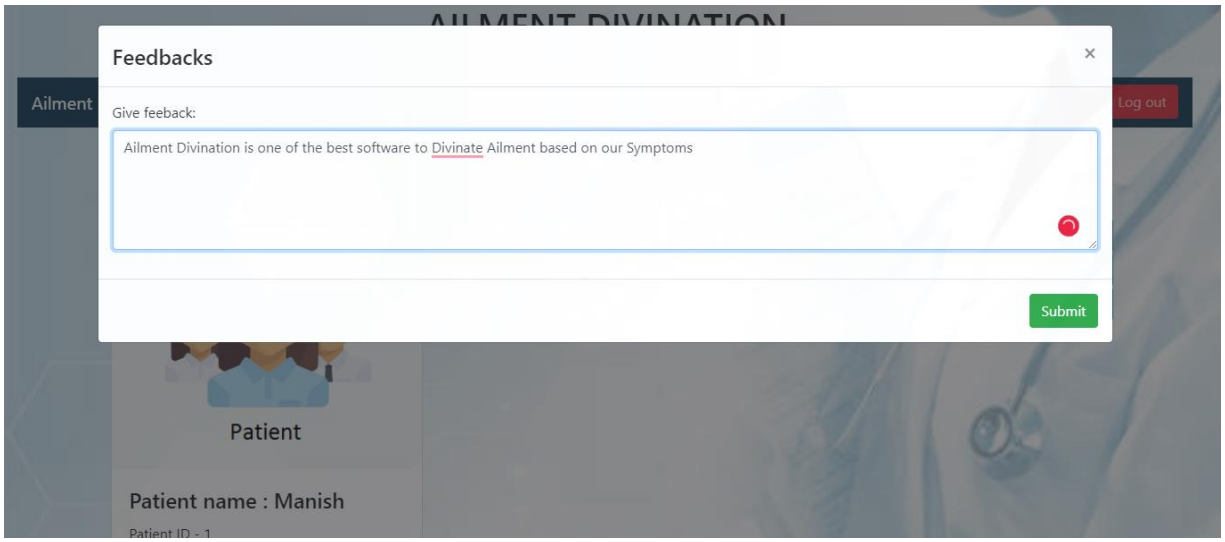
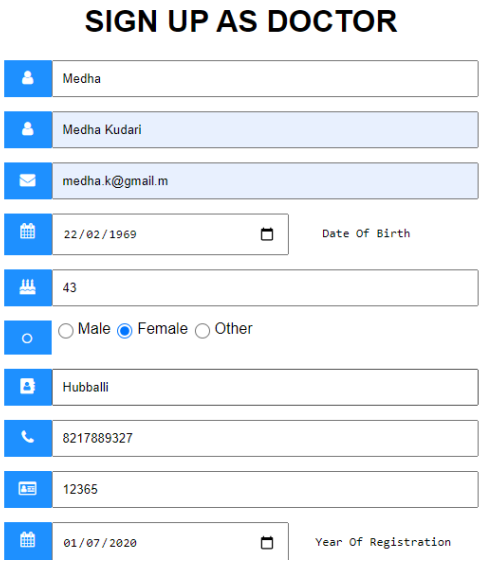


Fig 6.11 Feedback Interface for Patients

The Figure 6.11 is the Feedback Interface Where User can provide the feedback on the Ailment Divination. And View others feedback on Ailment Divination.

6.2.2 Doctor UI



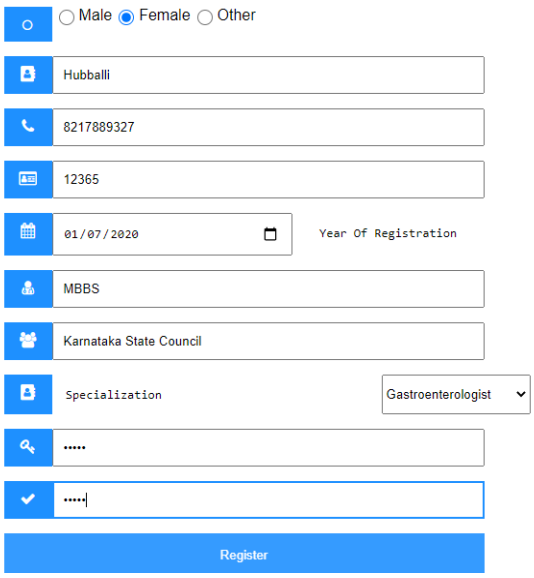


Fig 6.12 Signup Page for Doctors

The Fig 6.12 is the Signup Interface for the Doctors Where they can provide their Personal information including their Academic information's such as Council and specialization. And Also they can provide the Username and password for their Profile registration which will be used for the authentications.

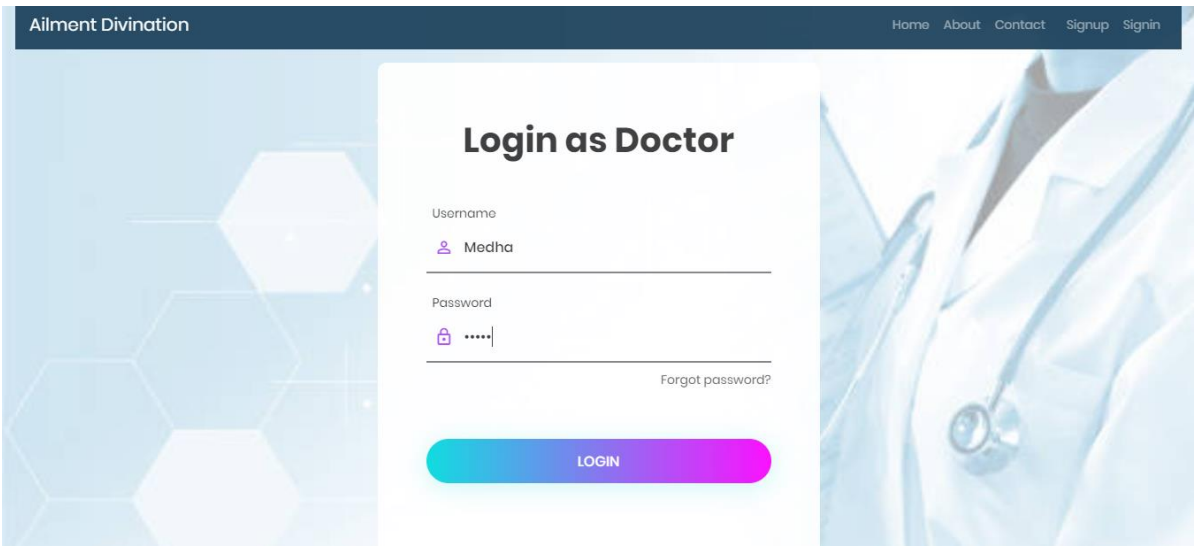


Fig 6.13 : Sign-in Page for Doctor

The Figure 6.13 is the Login Page for the Doctors So that they can login to the System or Model by entering correct authentications

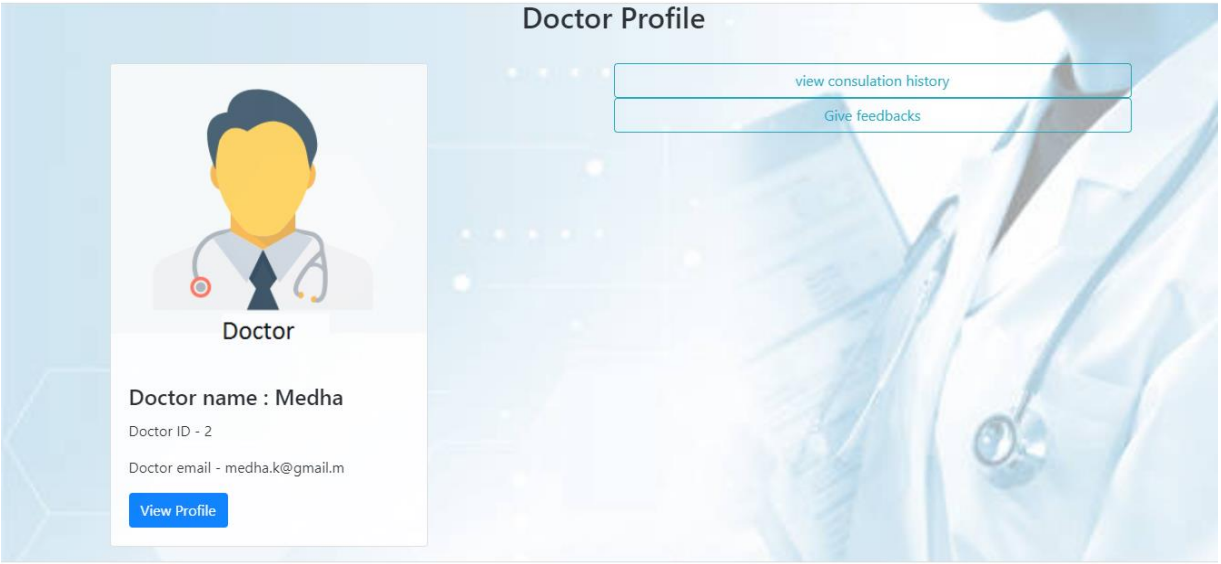


Fig 6.14. Homepage for Doctors

The Figure 6.14 is the Homepage for the Doctors Where they can Go for consultation to their Patients requests and Give feedback.

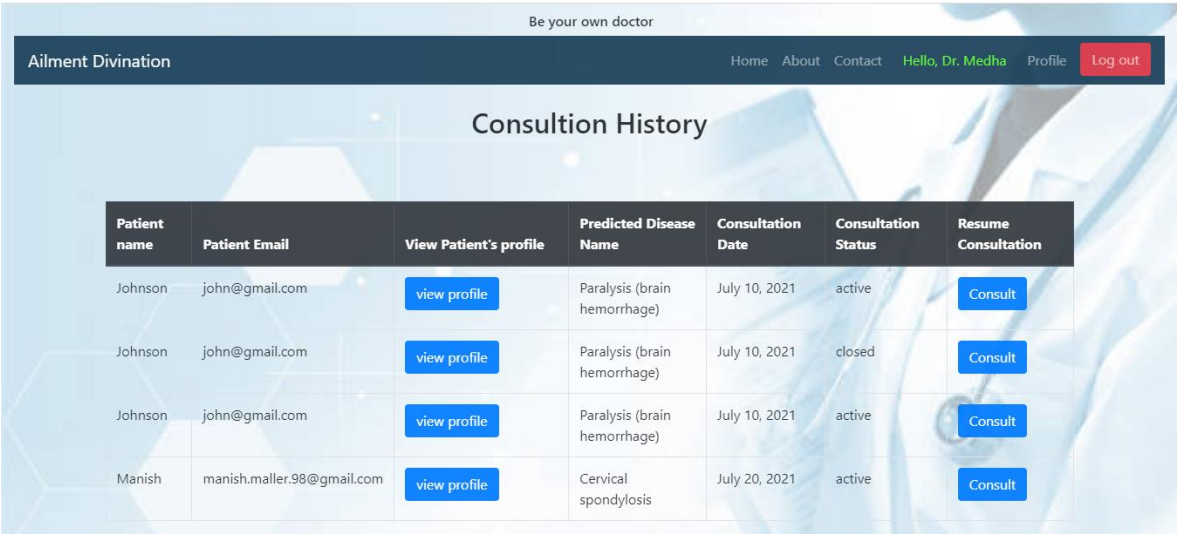


Fig 6.15. Consultation History of the Doctors

The Figure 6.15 is the Consultation Interface for the Doctors Where they can view the Profile and consultation requests of their patients.

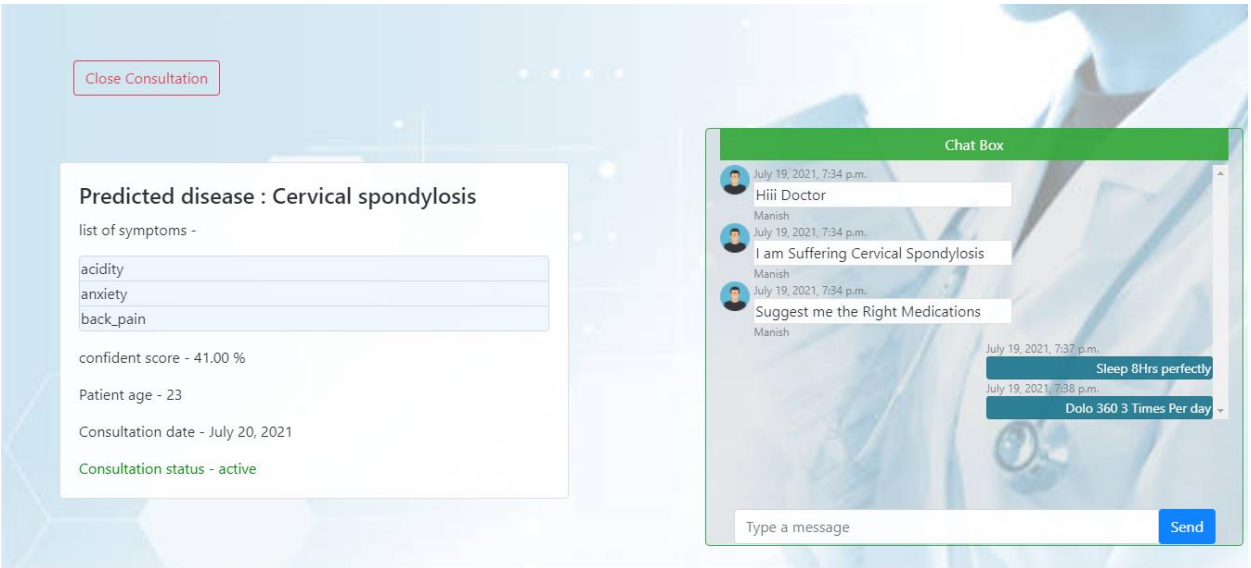


Fig 6.16 Doctor's Consultation to the Patients

The Figure 6.16 is the Consultation Interaction Interface for the doctors to their patients where they can consult regarding the health condition and ailment medications.

6.2.3 Admin UI

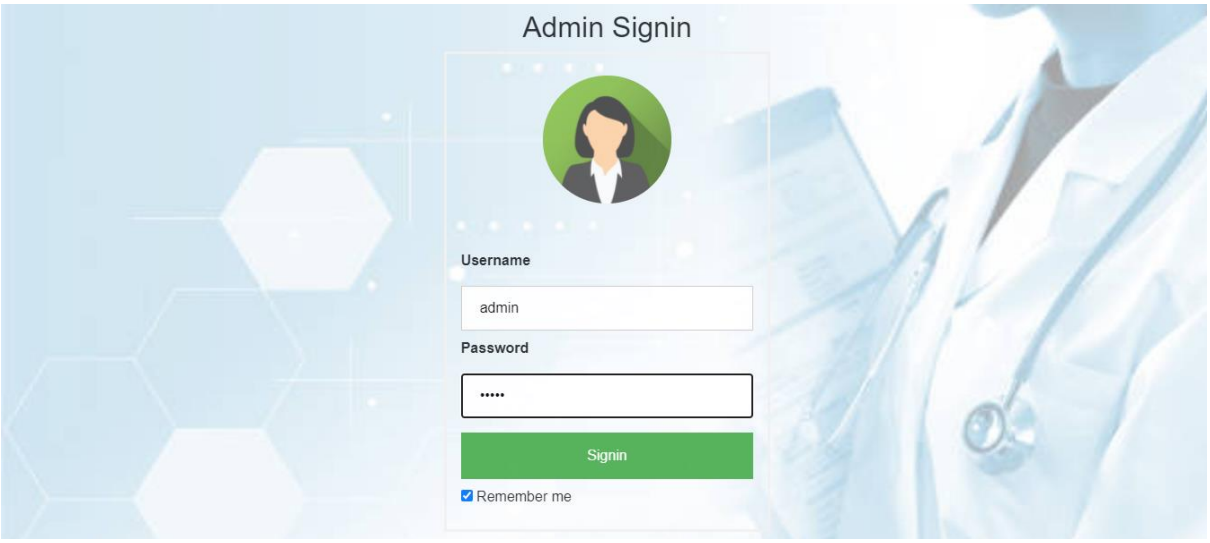


Fig 6.17 Sign-in Page for Admin

The Figure 6.17 is the Login Page for the Admin So that they can login to the System or Model by entering correct authentications. In the Django Environment the Admin are created as a superadmin by using the

py manage.py superadmin command

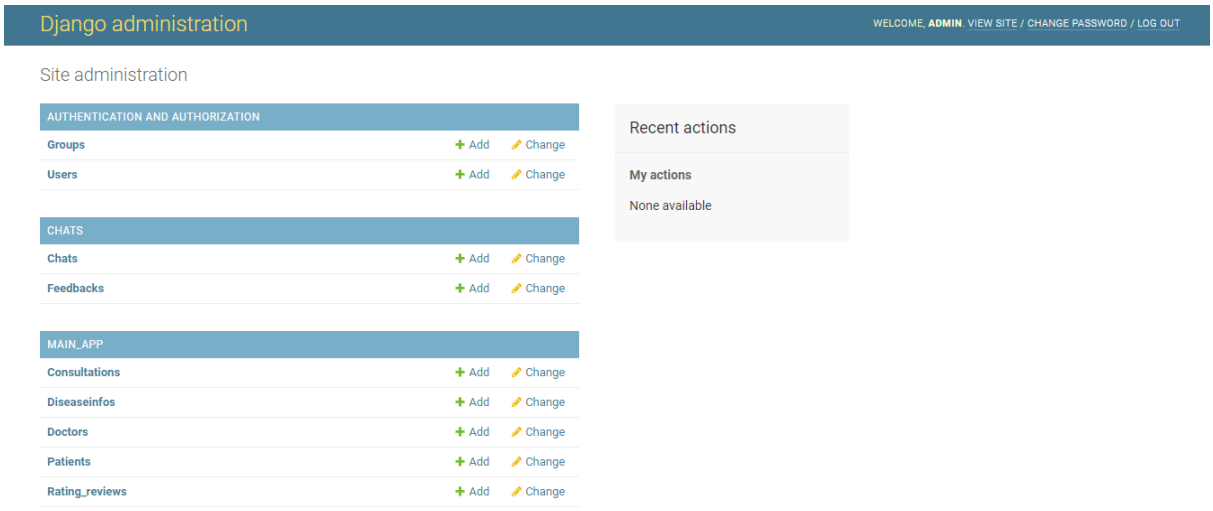


Fig 6.18 Admin Managing User data

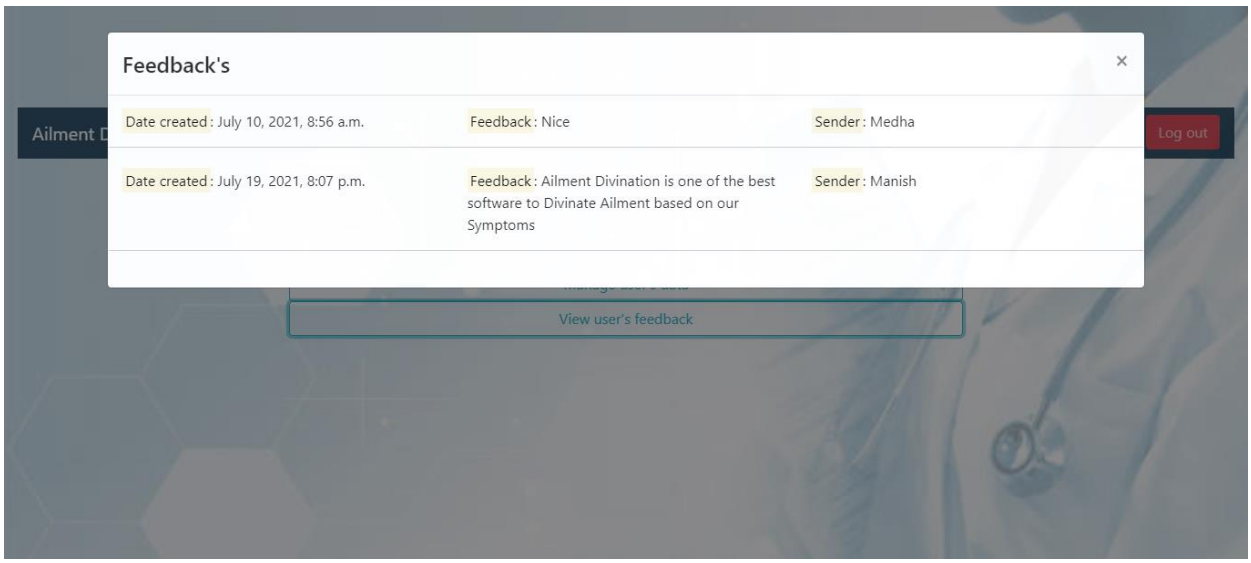


Fig 6.19 Admin's Feedback Interface

The Figure 6.19 is the Feedback Interface for the Admin Where Admin can view the feedback given by the Patients and Doctors and can respond to those feedback by improvising the functionalities of the Model.

Summary

The Core Implementation of Logic Code with Explanation and The Screen Shots related to Usability of it in the Execution is discussed in the chapter 6.

Chapter 7

Software testing

The reason behind testing was to find errors. Every program or software has errors in it, against the common view that there are no errors in it if the program or software is working. Executing the programs with the intention of finding the errors in it is therefore testing; hence a successful test is one which finds errors. Testing is an activity, however, it is restricted to being performed after the development phase is complete, but is carried parallel with all stages of system development, starting with requirement specification.

Test cases were devised with a purpose in mind. A test case is a set of data that a system will process as normal input. The software units developed in the system are modules and routines that are assembled and integrated to perform the required function of the system. Test results once gathered and evaluated, provide a qualitative indication of the software quality and reliability and serve as the basis for design modification if required. In this phase, testing is done at different levels. Actually testing phase of the implementations works accurately and efficiently before live operation commences.

7.1 Testing of Initialization and UI-components

7.1.1 Test Case for User registration

Serial Number of Test Case	**Module Under Test**	**Description**	**Input**	**Output**	**Remarks**
Test Case 01	User Registration	A user enters their details for registering themselves to the System	Details of Users such as username, email, phone, age, password.	If the user's details are correct, user is registered. If the user's details are incorrect, Displays error message. If the user is already registered, Displays error message.	Test Successful.

Table 7.1 Test Case for User Registration

7.1.2 Test Case for User Login

Serial Number of Test Case	Module Under Test	Description	Input	Output	Remarks
Test Case 02	User Login	When the user tries to log in, details of user are verified in the system	Username and Password.	If the login details are correct, the user is logged in and user page is displayed. If the login details are incorrect, Displays error message.	Test Successful.

Table 7.2 Test Case for User Login

7.1.3 Test Case for Divination Result

Serial Number of Test Case	Module Under Test	Description	Input	Output	Remarks
Test Case 03	Divination Result	User needs to enter the name and symptoms to get the divination result.	Name and Symptoms	If user enters all 5 correct symptoms then the accuracy will be high. If user enters only few symptoms then accuracy will be low.	Test Successful.

Table 7.3 Test Case for Divination Result

7.1.4 Test Case for Consultation

Serial Number of Test Case	Module Under Test	Description	Input	Output	Remarks
Test Case 04	Consultation	User must divinate their Ailment and Go for the consultation for their Suggested Doctors	Divinated Ailment	If user consults the suggested doctor's based on Ailment then the accuracy will be high. If user consults other specialist doctor's then accuracy will be low.	Test Successful.

Table 7.4 Test Case for Consultation Result11

Summary

Chapter 7 Includes the Testing Carried Out for the Input Output and to the Core Functionalities of the System.

Chapter 8
Conclusion

Finally, we will remark that this project Diagnostics is extremely useful in everyday life and is very essential in the field of health care, because health care professionals are the ones who utilise these programmes on a regular basis to forecast patient diseases based on their general data and symptoms. Nowadays, the healthcare industry plays an important role in treating patient's illnesses, so this is also a form of assistance in the healthcare industry to inform the user and also useful to the user in case he does not want to go to the hospital or other clinics, so by adding signs and other useful information, they are already in control, and the healthcare industry can benefit from the programme by simply implementing it. By just asking the user for symptoms and entering into the system, they may determine directly and to a degree accurately what diseases they have in just a few seconds. If the healthcare sector adopts this initiative, doctors will have less work to perform and will be able to anticipate a patient's condition more readily. Divination is used to treat a variety of common diseases that, if left untreated, can develop into a fatal condition that can affect the sufferer and his or her family.

Chapter 9

Future Enhancement

Today, the majority of data in the digital world is disseminated and misused. We can apply the existing data to unknown patterns by studying it. The primary goal of this research is to develop a method for accurately predicting cardiac disease. A logistic regression technique, Navie-bayes, and sklearn in machine learning can be used to predict cardiac disease. Paperwork for the detection of heart disease utilising improved procedures and algorithms for short-term difficulties is the scope of the future.

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