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COVID-19 HOSPITAL MANAGEMENT SYSTEM USING DJANGO FRAMEWORK

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Abstract: As we are aware of Covid-19 pandemic situations, we have seen that there were many difficulties in treatment of patients so we have an idea of automating the functionality of hospitals like fixing an appointment , adding doctor details , adding patient details. Our project follows the guidelines approved by the government like maintaining social distancing and there would be no physical contact between doctor, patients and hospital staff thus decreasing the chances of outbreak.

Index Terms **– Python, HTML5, CSS, DJANGO, SQLITE3.**

• INTRODUCTION

COVID-2019 was first appeared in the city of Wuhan China in December 2020 and then spread into whole world. The China has applied methodology for its control and within two month controlled the trend of corona virus in China[2]. India also managed the outbreak very efficiently and set up an example for other countries. Lockdown in India was imposed on 24th March 2020 which helped to control the outbreak of virus upto some extent. Strict guidelines were imposed by government of India to maintain the protocols like wearing masks, maintaining social distancing, imposing lockdown in states. The main objective of "Covid-19 Hospital Management System" is to automate the daily operations of hospitals. Specially in the disastrous situations such as pandemics like Covid-19. During the outbreak of Covid-19 many powerful and well-developed countries like USA, Russia, France also faced many problems in terms of management of patients and their needs. Covid-19 Hospital Management System is an integrated hospital information system, which addresses all the major functional areas of multi-speciality hospitals. The Covid-19 Hospital Management enables better patient , patient safety, patient confidentiality, efficiency, reduced costs and better management information system.

• WHAT IS PANDEMIC?

A Pandemic is the worldwide spread of a new and deadly disease. Viral respiratory diseases , such as those caused by a new influence virus or the coronavirus COVID-19 , are the most likely to turn into a pandemic. A pandemic is a disease that spreads across countries or continents. It affects more people and takes more lives. The World Health Organization(WHO) declared COVID-19 to be a pandemic when it became clear that the illness was severe and that it was spreading quickly over a wide area.[1]

The WHO's pandemic alert system ranges from Phase 1(a low risk) to Phase 6(a full pandemic):

- **Phase 1:** A virus in animals has caused no known infections in humans.[1]
- **Phase 2:** An animal virus has caused infection in humans.[1]
- **Phase 3:** There are scattered cases of disease in humans. If the illness is spreading from human to human, it's not broad enough to cause community-level outbreaks.[1]
- **Phase 4:** The disease is spreading from person to person with confirmed outbreaks at the community level.[1]

- **Phase 5:** The disease is spreading between humans in more than one country of one of the WHO regions.[1]

- **Phase 6:** At least one more country, in a different region from Phase 5, has community-level outbreaks.[1]

A pandemic is not the same as an the epidemic . In an epidemic, many more cases of a health condition occur than would normally develop in a community or region , but the condition , but the condition does not spread further.[1]

Pandemic influenzas often have their origin in animal influenza viruses and are not the same as seasonal influenza virus - even if they have has seasonal flu or a seasonal flu vaccination.[1]

- # TECHNOLOGY USED

  - **HTML :** HTML stands for Hyper Text Markup Language. HTML is used for designing the structure of a Web page. HTML consists of a series of elements called as tags. HTML elements tell the browser how to display the content.[3]HTML defines the structure of a web page and it is the first thing that a user interacts with. HTML has many components which we called as tags like heading tag from h1 to h6, paragraph tag(paragraph), image tag, anchor tag etc.

  - **CSS :** CSS stands for Cascading Style Sheets. It is a simple design language intended to simplify the process of making web pages presentable. It is used to make our webpage more attractive and user friendly

  Some of the key advantages of learning CSS:

  I. **Create Stunning Web site -** CSS handles the look and feel part of a web page. Using CSS, you can design the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.[4]

  II. **Control web -** CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.[4]

  III. **Learn other languages -** Once you understands the basic of HTML and CSS then other related technologies like javascript, php, or angular are become easier to understand.[4]

  - **PYTHON : Python** is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.[5] Python is also one of the most trending language. It has a vast library of modules to support integration of complex solutions from pre-built components. Python is an open-source project, supported by many individuals. It is a platform-independent, scripted language, with complete access to operating system APIs. This allows user to integrate applications seamlessly to create high-powered, highly-focused applications.

  Some of the key advantages of learning Python:

  I. **Python is Interpreted** − Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.[5]

  II. **Python is Object-Oriented** − Python supports Object-Oriented style or technique of programming that encapsulates code within objects.[5]

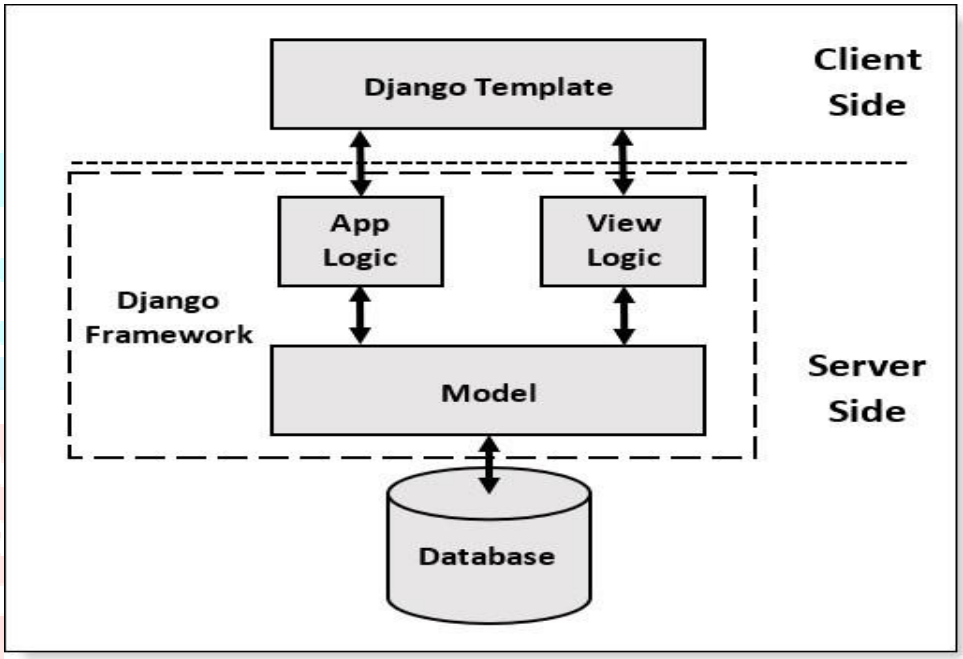
  III. **Python is a Beginner's Language** − Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.[5]

- **DJANGO :** Django is a python supporting web development framework that assists in building and maintaining quality web applications.[6] Django has MVT architecture which means Models, Views, Templates. When we use Django framework our project is divided into MVT structure where Models holds our database code, Templates store the HTML, CSS, Javasript code and Views is used to establish a connection between Models and Templates.

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Django makes it easier to build better web apps quickly and with less code.

Django comes with the following design philosophies −

- **Loosely Coupled** − Django aims to make each element of its stack independent of the others.[6]
- **Don't Repeat Yourself (DRY)** − Everything should be developed only in exactly one place instead of repeating it again and again.[6]
- **Fast Development** − Django's philosophy is to do all it can to facilitate hyper-fast development.[6]
- **Clean Design** − Django strictly maintains a clean design throughout its own code and makes it easy to follow best web-development practices.[6]



(Fig 1: Django architecture)

• PROPOSED WORK

We have proposed a management model having three main roles-:

1. ADMIN
2. DOCTOR
3. PATIENT

All the three modules have various sub-modules defining their functionalities:

- **ADMIN**

Admin have sub-modules defining its functionality like first page of admin has options of signup and login and then after logging in , the admin can manage doctor and patient details , approve doctor and patient appointment. Admin plays the main role in this project and manages the whole functionality of hospital.

- **DOCTOR**

Doctor have sub-modules defining its functionality like first page of doctor has options of signup and login and then after logging in , the doctor can view and delete patient appointment, can view patient details, can view appointments ,patient under him or her.

- **PATIENT**

Patient have sub-modules defining its functionality like first page of patient has options of signup and login and then after logging in , the patient can view and book appointment, can view doctor's details.

RESULTS AND DISCUSSION

As a result of this project we can see that the patient affected with COVID-19 virus can easily book appointment with doctor and will also be available to get treatment on time without any delay. This will help in decreasing the death rate caused by not getting medical attention at the right time.

CONCLUSION

Hence, it has been of extreme importance to maintain social distancing in COVID-19 pandemic thus this website would help in maintaining this protocol and also patient would be able to get proper and on time treatment thus saving many lives. Also doctor's would be able to know that the patient is COVID positive before hand and would be able to work in right way providing proper treatment on time.

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