IJRT_COVID-19 PATIENT RECOMMENDATION FOR LEVEL OF TREATMENTS USING PYTHON, DJANGO & MACHINE LEARNING

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Abstract— **The multidisciplinary essence of the effort required for research in the COVID-19 pandemic has built new challenges for health professionals in the battle against the virus. They need to be implemented with novel tools, applications, and resources that have arisen during the pandemic-to gain access to breakthrough findings; know the latest developments; and address their specific requirements for rapid data acquisition, analysis, evaluation, and reporting. Because of the complex nature of the virus, healthcare systems worldwide are severely influenced as the treatment and the vaccine for COVID-19 disease are not yet determined. In this report, we confer our analysis of various novel and important web-based applications that have been specially developed during the COVID-19 pandemic and that can be used by the health professionals' community to help in promoting their analysis and research.**

These applications include search portals and their associated information repositories for literature and clinical analyses, data sources, tracking dashboards, and forecasting models. Also, the features used in our framework can be applied for future evaluations of similar applications and health professionals can accommodate them for evaluation of other applications not broadcasted in this analysis.

Keywords— **COVID-19, Machine Learning, Prediction, Data Dashboard.**

I. INTRODUCTION

The novel coronavirus COVID-19 originally recognized in December 2019 as a severe case of pneumonia in the Wuhan province of China and since that has become a global pandemic, affecting the greatest nations around the whole world. Following the few days after diagnosing the first case of this previously unknown pneumonia, a novel coronavirus and its contributing agents have been identified by several independent laboratories. For the time being, the virus has been named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the relevant infected disease has been named coronavirus disease 2019 (COVID-19) by the World Health Organization respectively. The COVID-19 pandemic has influenced hospitals around the world. Many hospitals have scaled back or suspended non-emergency care. This has medical consequences for the people served by the hospitals, and it has commercial consequences for the hospitals. Health and social systems across the globe are striving to cope. With so much happening in India right now, it becomes crucial that we analyze the current situation and influence of various such events in India through data analysis methods and come up with different plans for the future which can be helpful for the Indian ad-ministrations and medical professionals. The current study is separated into five segments. The first segment has laid the context of the research. The second segment discusses various literature reviews and analytical techniques. The third segment presents the methodology and research variables of the study. The fourth segment presents the results and conclusions of the research along with the discussion of the achievement of the various research problems explored in this research. And finally, segment five concludes this study and presents constraints and future directions for this report work.

II. LITERATURE REVIEW

A Literature Review on Serious Pandemic Disease:-COVID-19; Dr. Abhishek Sharma, Dr. Ramandeep Singh. The disease caused by coronavirus has come under the classification of sudden/acute infectious disease which is caused by SARS-CoV-2. At the time WHO declared that the disease of COVID-19 is a worldwide contagious illness. According to WHO, this contagious disease is a 3rd acute contagious disease that is affected by infection due to coronavirus in the current time after anticipated SARS. Till now the exact mechanism of COVID-19, how it produces its ill effects on the host body is still not dismissed.

This disease of COVID-19 shows moderate or negligible symptoms in most people, but usually, it progresses with people of old aged groups or patients having low immunity. In the cases, it started with dyspnoea, progress towards pneumonia, and might lead to multiple organ failure. Now a day's most people or patients show no symptoms or otherwise are asymptomatic. The final diagnosis of the virus is confirmed by the presence of the virus in the secretions of the respiratory tract with the help of molecular tests. First evidence of this pandemic was from city of Wuhan, from china on 7th January, 2020

A literature review of 2019 novel coronavirus(SARS-Cov2) infection in neonates and children; Matteo Di Nardo At the time of literature, there are already millions of documented infections worldwide by the novel coronavirus 2019 (2019-nCoV or critical vital respiratory syndrome coronavirus 2 (SARS-CoV2)), with hundreds of thousands of graves. The numerous majority of mortal events have been reported in adults older than 70 years; of them, a large dimension had comorbidities. Treatment of COVID-19 in neonates and children essentially relies on supportive care.4, 10 Home isolation is the first step to control children with mild symptoms and no underlying chronic diseases. Hospitalization

may be recognized if the rapid deterioration is anticipated or if the patient is not able to urgently return to the hospital when signs and symptoms of the complicated disease occur.

III. PROPOSED SYSTEM

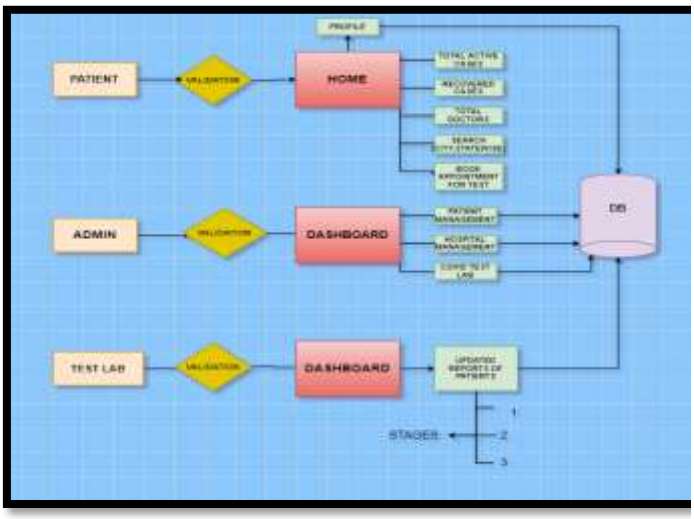

Fig.1. Block Diagram

The system is a software-based web application followed by some technologies python, Django, and machine learning. This technology has played a vital role in developing a web application in different ways. A web application is made of several layers- from HTTP level request handling to form validation and processing. With Django's test execution, we can simulate requests, insert test data, analyze the output of your application and generally verify the code is doing what it should be doing.

This software-based web application consists of:

A. Admin Panel
B. User
C. Test labs

All of these have their unique id and password which use for the authentication of a valid user. All the data is saved in the database.

A. ADMIN PANEL

Admin will play the role of maintaining the data of hospitals, doctors where the proper treatment will be provided according to the requirement.
Admin will cross the validation then all the details related to patient's management, doctors, and staff, hospital management and lab report will be shown on the dashboard.
Validation will access the dashboard only when the entity will enter the given user name and id and then the data will be access to the admin.

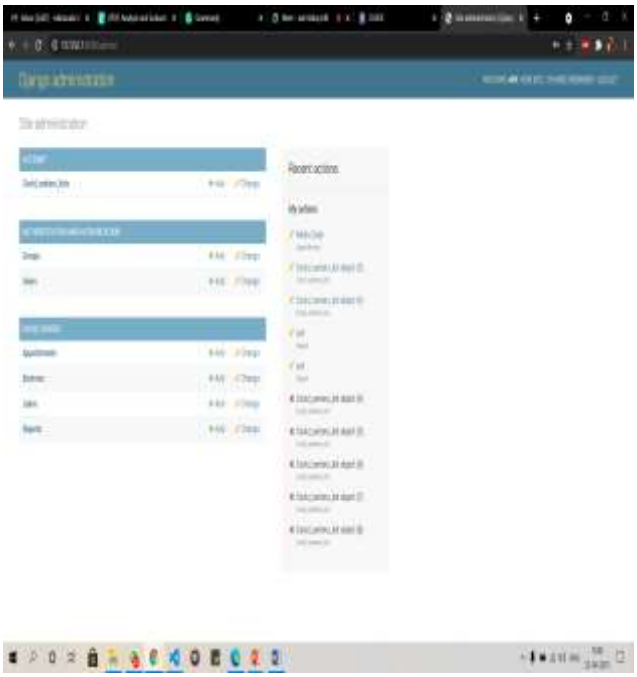

Fig.2. Admin Panel

Authentication by admin:

- Admin has to check whether the registration user/ person are valid or not.
- Users are usually identified with a user id, and authentication is accomplished when the user provides a credential, for example, a password that matches with the user ID.

B. USER

Fig.3. User Panel Sign-In

Fig.4. User Panel Sign-Up

The user will contain information regarding covid centers, doctors, and the data of registered patients.

i. Covid centers/ Doctors

The registration form of covid centers includes Hospital name, Address, Location, available beds, ventilation capacity, etc.
The above information will be filled by the covid centers or doctors so that the patient could see its requirements according to the information filled.

ii. Patients

If the patient is new, the patient will have to register themselves by creating a new account and filling in the mandatory details. If the patient has already registered themselves then they can directly log in by the username and password provided. According to their need, the patient can check the availability of beds, and other essentials by login into the login portal. Also, the Patients can schedule an appointment from the 'Book an appointment, column. After that, System will navigate to book an appointment, and the following details will be asked. The following information will be verified and then the booking will be confirmed. After the confirmation of the booking, the following message will be sent to the respected hospital. If the appointment is scheduled online then the doctor will advise based on symptoms and should be tested for covid, the labs will provide the test report on the patient's profile.

iii. Doctor

The web application will also contain some information about certified doctors with their specialization. The doctor has to register themselves on the portal. After registration, the following data will be check by the admin and then the profile will be created. Doctors will be in touch with the patient as well as test labs Doctors will be able to check the patient's profile his symptoms and then will be able to provide him with the level of treatment.

C. TEST LABS

Test labs play a vital role to keep the data regarding the updated reports of patients to the dashboard. The test lab will show the final result of the test whether it is positive or negative.

- If the patient tests positive: The patient should consult the doctor and the Doctor will advise the further steps to be taken.
- If the patient tests negative: the patient probably was not infected at the time your sample was collected. The test result only means that you did not have covid at the time of testing. Continue to take the next step to protect yourself.

CONCLUSION

On-going advancement in modern technology has granted to enhancing people's lives and hence there is a solid opinion that validated research plans including artificial intelligence, which will be of significant advantage in helping people to battle this virus.
The system which has been developed by using state-of-the-art technique talks about the problems while using these algorithms in real-world clinical applications. Furthermore, there is a benefit for future work on building up a benchmark framework to assess and look at the current techniques. The existing models acquired extraordinary accuracy in identifying COVID-19 symptoms with different kinds of viral pneumonia utilizing radiology pictures but lack transparency and interpretability. It can be concluded that there is a wide scope of potential utilization of modern technologies covering clinical difficulties made by the coronavirus pandemic, but not many of them are right now develop enough to show operational consequence.

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