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Covid 19 Hospital Management System

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Abstract: ***This research work is on design and construction of Covid-19 hospital management system. The system uses html and css as frontend and Django as frontend and has an connection with the backend. Covid-19 Hospital Management System is an integrated hospital management system which address all the major functional areas of the multi- speciality hospitals. This hospital system management enables better patient care and prevents the confusion and misleading of information at the time of need.***
Keywords: Pandemic, integrity, sustainability

I. INTRODUCTION

This project will automate the daily operations of covid patients in the hospital. The project keeps track of the member of hospital and patient (inpatient, outpatient) details. It also takes care of the ward, medical and the doctor's appointment details. The system generates the daily ward availability, the status of patients and beds.
Covid-19 HOSPITAL MANAGEMENT SYSTEM is an integrated Hospital Information System, which addresses all the major functional areas of covid related problems in the hospitals. The HOSPITAL MANAGEMENT enables good patient care, patient safety, their confidentiality, efficiency, reduced costs and better management information system [1]. It helps in giving accurate idea of data thus helps in easy process with less possibility of errors . This project deals with processing of covid department in the hospital with ease. It helps in reducing the manual process of the current system. The Scope of the project takes care of the details of covid department. These details gives the doctor, staffs, and patient details . The details of doctors and staff help the hospital to maintain the record of every person.

II. HOW CHMS WORKS?

The technique of working of CHMS is that it stores all the information regarding user at the backend using sqlite which is by default used by Django.
It saves the login id and password at the backend and then confirms it at the time of login. It can accept the id of staff and doctor. It allows us to give permissions to every user and restrict them too. It stores the information of the patient and saves it and allot the bed and doctor. It shows how many beds are empty in red colour and occupied in red colour.

III. TECHNICAL COMPONENTS of CHMS

A. Visual Studio

It is a platform which is very useful in coding for most of the languages which makes it a very powerful tool. This supports inheritance ,overloading, and also suggests further extension version of the code that we are writing for the code file which reduces our work time and helps in reducing the errors to as minimum as possible thus enhancing the quality of the code and syntax of the code.

B. J Script

JScript has been updated to be a class-based, object-oriented scripting language that maintains full backwards compatibility with previous versions of JScript. JScript now provides class-based objects, typed variables, true compiled code, and cross-language support through Common Language Specification (CLS) compliance. The main role of this is to make a framework which can be aligned to html body and development of website easily and not in a complex way. Web forms are a way to create websites so that it can be compatible to the browser . *It works as a platform which allows any browser to view the web pages without any error or difficulty*. Using this we can make better and efficient web pages and then inserting the code in it just like we do in visual basic forms

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C. Django Web Framework

In this chapter, we will discuss about Django Framework in detail.

Django is an MVT web framework that is used to build web applications. The huge Django web-framework comes with so many "batteries included" that developers often get amazed as to how everything manages to work together [2]. The motive behind adding them is to have a same productive goal to work so that maximum output can be extracted in a minimum time thus increasing our work capacity and efficiency.

One of the main reasons behind the popularity of Django framework is the huge Django community. The community is so huge that a separate website was devoted to it where developers from all corners can build a website without needing any other server to check whether it is working or not . There is a high probability that what you are trying to develop is already developed by somebody and you just need to pull that into your project.

D. Jquery

jQuery is an addition to JavaScript, that adds a framework that enables the code to perform in such a way that it does not need a large piece of code written to perform any task rather a small piece of code will do the work in this language. Jquery helps in giving the compact variant of an extensible code with same functioning [3]. Javascript won't get affected or replaced by jquery. It enables the client's browser to accept code and pass any query . The code snippet will remain javascript.

IV. NEED OF CHMS

1) Whilst some changes have been brought, COVID-19 is also a pushing force to improve the skills of workers who work hard to bring a positive change around them and can always do better. [4]
2) The world's response to COVID-19 has resulted in the most rapid transformation of the workplace. Working from home has become the new normal, and we've gone from digitizing the relationship between firm and customer to digitizing the relationship between employer and employee and in this case patient and hospitals. [5]

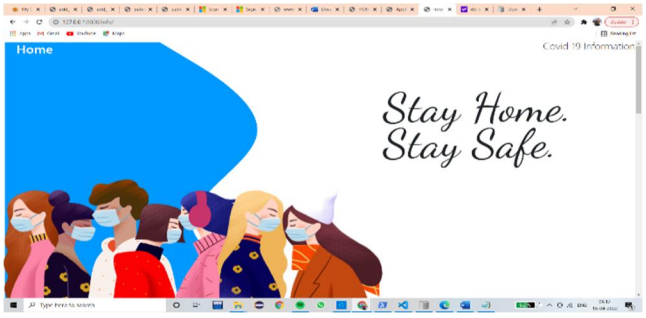


Fig. 1 homepage of CHMS

The surge in Covid patients and less availability of infrastructure has given a boost to these type of management systems all over the world. It is visible what kind of mess and inconsistency has been created by misinformation and lack of availability of faculty at the time of critical need. This system tells the viewers all the information regarding availability of everything thus saving their time .All the systems that are already deployed in other hospitals use sqlyog or any other database software for managing the data but this system uses Django and by default it has sqlite as its database handling entity which helps in reducing the overall cost spent on the product thus building it in a cost effective way. In case we want to change or edit it's tables or information stored in it ,it can be done easily since it is easy to grasp once explained.

V. STORAGE SYSTEM OF DATA

A view function, or view for short, is a Python function that takes a web request and returns our web response. This can be any response either from a web page, any error can be there , any logic can be put in a wrong manner or a response .This algorithm helps in creation of better action reaction mechanism which helps in better working or commands given in this package by the user. [6]

For convenience, and because it's a good idea to have a consistent 404 error across your site, it provides an Http404 exception.When we make a site that allows different creative oppurtunities for growth and development . However, there are certain costs that need to be considered in the day today running of a site. Content on a web page takes up hosting disk space, add factors into the cost of hosting a site.

A typical page is 2MB , but site owners also need to consider advertisement, graphics,videos, add photos which can all add up and take up more space. By looking at typical websites and analysing some of the service is available, this article can guide new website owners in their decision making when it comes to deciding how much space they need. Site owners consider how much hosting storage space their site is going to use.

Django is most widely used for the backend purpose nowadays, since it uses sqlite by default and stores and modify and store tables using view and models. It takes input using POST method and then stores it in tables formed via backend using sqlite. It works only in the field of framework so apache should be used in case we want to deploy the server across the internet. But using it's web utility we can deploy it to check whether our website is working or not.

VI. CHMS PROPERTIES

Because CHMS systems are fundamentally decentralised applications, they benefit from the features of their underlying hospital ledgers. The following is a list of the most important properties.

A. Verifiability

The CHMS, together with its security key and ownership, may be confirmed publicly.

B. Transparent Execution

The actions of CHMS, including as registration, allocation of beds and doctors are open to the public.

C. Availability

The CHM system never fails. Alternatively, all doctors and unoccupied beds are always for use.

D. Tamper-resistance:

Once the beds are allocated ,the data cannot be changed until discharged unless someone from user's side changes it.

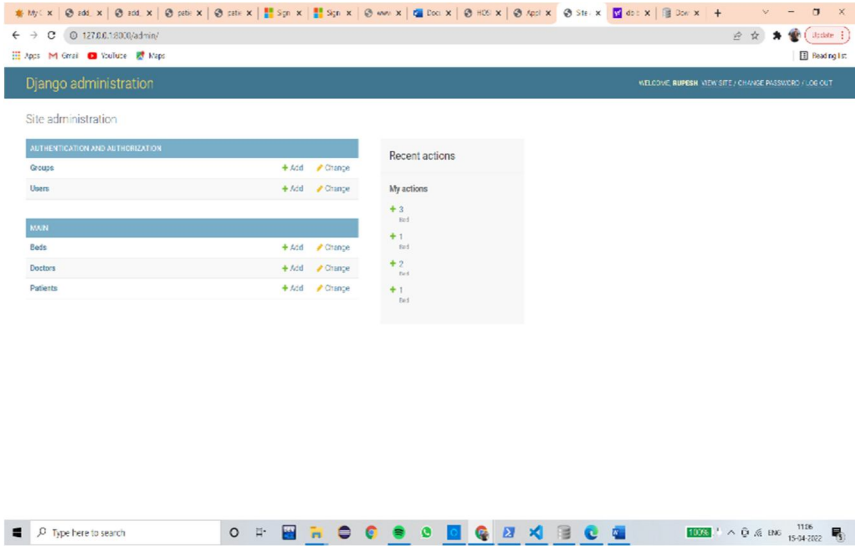
E. Usability

Every CHMS has the most up-to-date ownership data, which is both user-friendly and information rich.

F. Atomicity

A single atomic, consistent, isolated, and durable (ACID) transaction can be used to allocate beds and doctors. The beds can all be in the same execution state at the same time unless occupied.

VII. ARE CHMSs REALLY MANAGABLE



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The Covid -19 Hospital Management System is different than others because of the web framework used in it i.e. Django not only helps in better conversation of frontend and backend but also helps in establishing database with the help of sqlite which is setup by default [7]. It allows user to create number of beds and doctors and also to authorize them with different permissions which can be differently assigned using admin panel. We can also see the recent activities done on the admin panel because a recent tab is available which stores the recent commands given to the system. It has a security key which can be used to keep it safe and because of it we can be assured that it cannot be used other than the particular authorisation and in case of cyber-crime or any error ,it can be recovered using that security key .

A. Problems Focused Upon

We all have been affected by the current COVID-19 pandemic. However, the impact of the pandemic and its consequences are felt differently depending on the status as individuals and as a member of society. While some try to avoid pandemic by working online and be at home while some have to wander so that they can work and feed their family [8]. Our different societies and standard of living defines and impact the vulnerabilities that we have towards this pandemic.

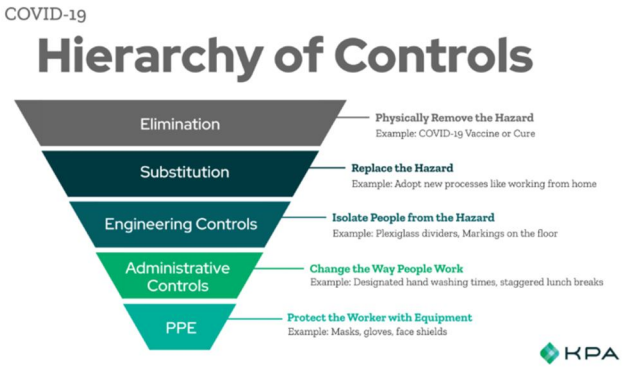
COVID-19 is killing Google on a large scale. As of October 10 2021 , more than 7.7 million people across every state in the world has been tested positive for covid. According to the various newspaper many people have died on an year basis and many are on the beds waiting for their turn . However, alarming numbers give us only half of the picture ; closer look at the data by different social identities shows that have been disproportionally affected by the pandemic [9]. These minorities are not having their right to health fulfilled.

The prevailing problem of covid and the joint degradation of economy and health tells us that we all are together in this and it will affect us equally. A renewed and healthy society is possible only if government and public authorities commit to reduce world liability and the impact of ill health by taking steps to respect, protect, add fulfill the right to health. It requires that government and non government actors establish policies and programs that promote the right to health in practice [10]. It tells us to equally get the benefit of health system of the nation.

We need to build stronger partnerships among the healthcare sector and other social and economic sectors. Working collaboratively address the many interconnected issues that have emerged or become visible during this pandemic particularly as they affect marginalised and vulnerable populations offers are more effective strategy.

The population which is in direct contact with the pandemic like street hawkers, salesperson who go door to door to sell their things and increase their sales are more likely to get affected by the pandemic which will drastically improvise their family conditions .

Health system should be able to cover these type of velnerable people from our society too who also deserves the right to treatment.



The DHCNI partnership sets the vision and strategy for digital transformation in health and social care, directs and overseas the central budget for digital investments and work in partnership with, and commissions projects and services from the business service . It the vision and strategy for digital transformation facilitating shared leadership and decision making ; setting policies and standards and providing services . This resulted in the formation of the digital health partnership. It is led by the Department of Health and brought together by the health and social care board's e-health and care directorate and the public health agency's Center for connected health and social care [11].

The purpose is to coordinate the assist and enablement of the response to prepare for other work related to storage , work, man power and stabilization of the system in terms of better work and results . There were also many different systems that required updation and wide range for it's impact on the people and services that were being provided by them [12].

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To identify duplication in the activities being undertaken or requested, bringing together the different communities that are willing to contribute to the same cause.

Given that the COVID 19 pandemic was a rapidly developing and thinking situation, groups tried to identify things that can be useful for their recovery of people in their day to day life [13]. As situation evolved and it became clear that future rapid improvement and innovative interventions would be needed to help lessen the impact of the virus, the group identified and commenced the development of a number of other initiatives such as COVID 19 hospital management system [14].

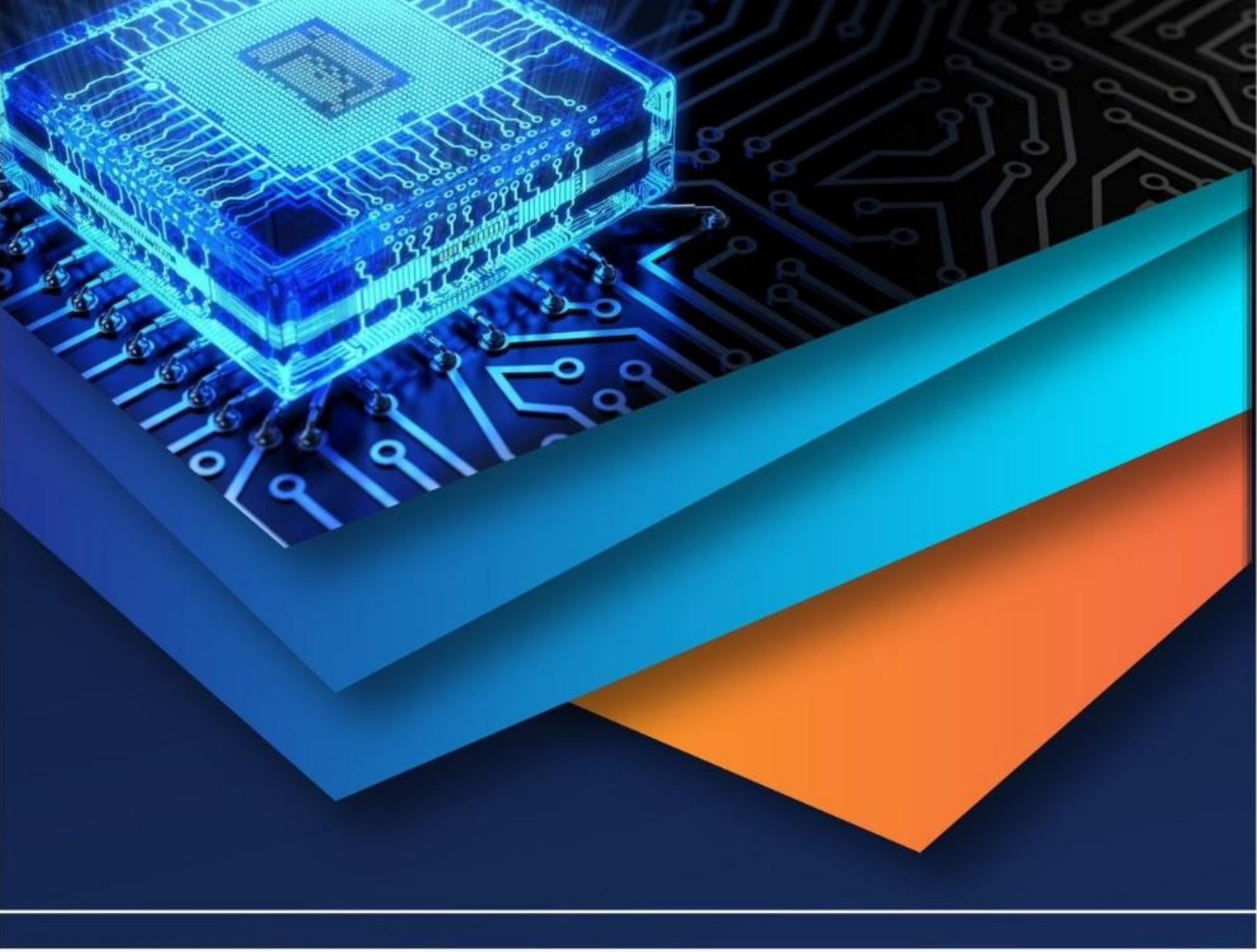
VIII. CONCLUSION

CHMSs are the need of the hour in the hospitals in these times. In this report we explored the management and solutions which may re-design the way of registering without getting into hectic and long lines . We initially talked about how CHMSs works like addition of sources like beds , doctors etc then uploading it on the hospital sever. Also, how the ownership works in case of CHMSs. Then we talked about the technical components like how the distribution of the CHMSs do is done on the backend and how smart contracts will help us in secure environment. Then we learn why the concept of CHMS is so much hyped in the market. Like why many hospitals are moving towards the CHMSs instead of working and managing everything manually and offline. Then we discussed about the packages like models and view , the main component than helps the CHMSs to be unique among others.

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