SMART WELLNESS PROGRAM

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ABSTRACT: Maintaining good health is the new emerging thing post covid. However, it is very difficult to maintain the record of the patient's history of the diseases and the process which they had followed for cure. It is very beneficial for the doctors to track the patient's history and consult according to his history of diseases. So, in order to put all the things in one place, we have created a work and named as 'Smart Wellness System' which mainly includes storing the details of the hospital employees (doctors and assistant doctors), registration of patients and storing their details into the system. The webpage has the facility to give unique ID for every patient and store the details of every patient and staff automatically in the databases. User (admin/receptionist in this case) can search availability of doctor and the details of the patient using patient ID.
The Smart Wellness System can be accessed by username and password. It is only accessible by admin/receptionist of the hospital. Operations such as add, view, modify and delete can be performed on the employee as well as patient database by the admin/receptionist. Data from the database can be retrieved easily.

Index Terms -: html, CSS, JS, Django, Python, PostgreSQL, Bootstrap, Data Analysis, Design, Modelling

AIM:

The "Smart Wellness Program" is intended to keep patient records, release patients, and maintain a list of specialists, among other things. It is intended to accomplish the following objectives:
1. To save all patient and doctor information.
2. Booking the arrangement of patient with specialists to make it advantageous for both.
3. Booking the administrations of specific specialists and crisis appropriately with the goal of better and efficient utilization of hospital facilities.
4. The data of the patients should be stayed up with the latest and their record should be kept in the framework for authentic purposes.

Introduction:

1. Existing System

Clinics right now utilize a manual situation for the administration and support of basic data. The current framework requires various paper structures, with information stores spread all through the clinic the executive's foundation. [1-7] Regularly data (on structures) is fragmented or doesn't observe the executive's guidelines. Structures are regularly lost on the way between offices requiring a thorough reviewing cycle to guarantee that no crucial data is lost. Numerous duplicates of a similar data exist in the emergency clinic and may prompt irregularities in information in different information stores.

2. Proposed System

The Smart Wellness Program is designed for any hospital to replace their existing manual, paper-based system The new framework is to control the accompanying data; tolerant data, room accessibility, staff and working room timetables, and patient solicitations. These administrations are to be given in a productive, practical way, with the objective of decreasing the time and assets right now needed for such tasks. Use of database system will help reducing data redundancy and data loss.
Electronics and Telecommunications is a field consisting of both software and hardware applications. In this work, we are focusing mainly on the software part. Here we are learning and applying the concepts of web development and data analytics which deals with front end, back end and databases. In 3rd year of engineering, we have learned about the databases and here we are able to use the concepts we have learned there. In addition, we have also learned the data modeling and handling which helped us to build this work.

Literature Survey:

In existing system [8-14], the mechanism of information flow is one-way, with the receptionist sending patients to the physicians and the doctors referring patients to the pharmacist. The hospital now operates on a completely manual method. All information is manually entered from the drug dispenser when a patient seeks medication from the personnel.

The hospital's present system has the following flaws as listed below:

1. When compiling patient data, medicine supplier, and staff payment receipts and voucher cards, the hospital staff finds it tedious and time-consuming. Medical reports are delayed as a result.

2. The hospital administration now stores patient and drug supplier information in health record files. This kind of information storing is vulnerable to security issues including unauthorized record updating and alteration.

3. When retrieving data, the staff frequently wastes a lot of time.

4. The system's efficiency is decreased by the paperwork.

5. A doctor cannot analyze patient data that spans several months.

Also, role of ML and ESPs [15-79] are becoming important in recent applications, recognition and control.

Technical Approach:

While approaching the work technically, we learned the basics of frontend technologies like HTML, CSS, and JavaScript. After that the basic layout of the web application is made. We made different pages using these technologies and linked them with each other. Then, we started focusing on the backend part of the website where database comes in picture. We learned the python as it is used in Django which we were going to use at the backend. We started learning Django and started to apply the concepts in the frontend layout we made. We made some good pages where users can send their feedback and queries directly to the admin which we can take into consideration. After that we did the user authentication part of the site where users can register as a patient. They have to fill the asked information before registering and after that user can log in into their account. Once users logged in as a patient, He would be able to see all the facilities provide by the hospital and can book the appointment with the doctor according to their need. Patient can also search for doctors who is specialist in treating disease. Admin can update the records of the hospital staff. In addition, he would be able to fill out the information about their doctors and they would be able to update the information about hospital facilities. They would be able to generate the bills of patients. We have also created some users under the type of assistant doctor where a doctor can appoint one assistant doctor to each patient for monitoring the progress of the patient. In the end we can generate the bill of the patient which covers all the compensation of the doctor, assistant doctor and the cost of medicines.
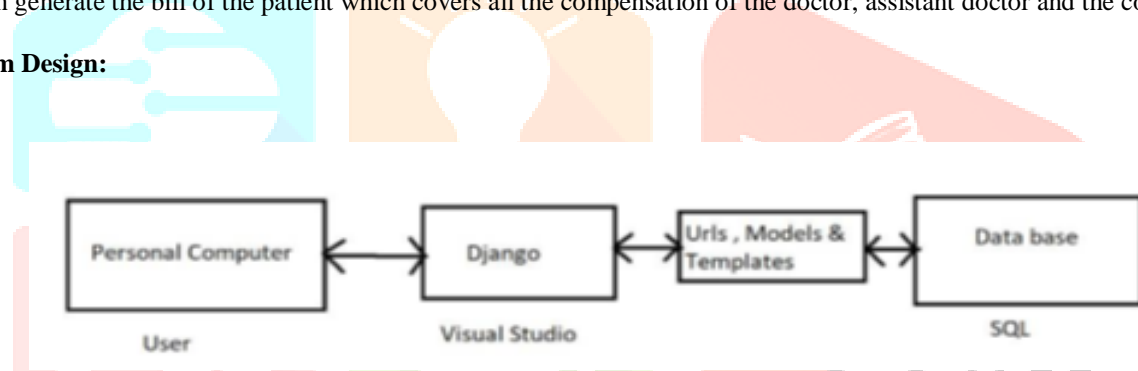
System Design:
HLD:

Fig.1. detail system design

This is the high-level design of our work explained here. Here we can see what different levels which are included in this work. We have used Django as a framework. We created different URLs for each user type. Every user type has their own template and data models which are connected to database. The templates are connected through URLs. The database connected to the frontend with the help of models which are used in Django framework.
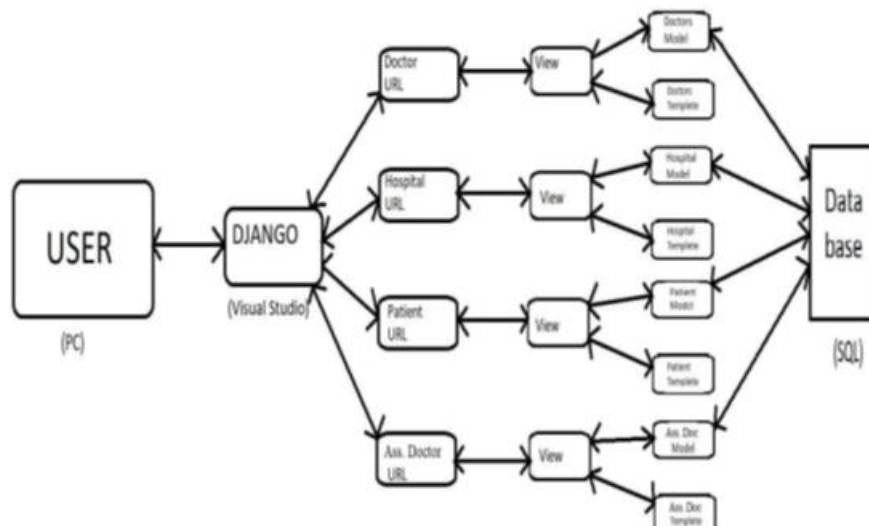
Block Diagram:
LLD:

Fig.2.: Block diagram of system working

This is the low-level design of proposed work. In this diagram, we can clearly see different templates and users which we have used in this work. We can also see the different models which we have used during the activity. From this diagram, we can see the working of the system step wise. Mainly we have four types of users which are Doctor, Patient, Assistant doctor, and Hospital admin. Hospital admin is the super user in this work. He has all the access. He can add/remove/modify any user.
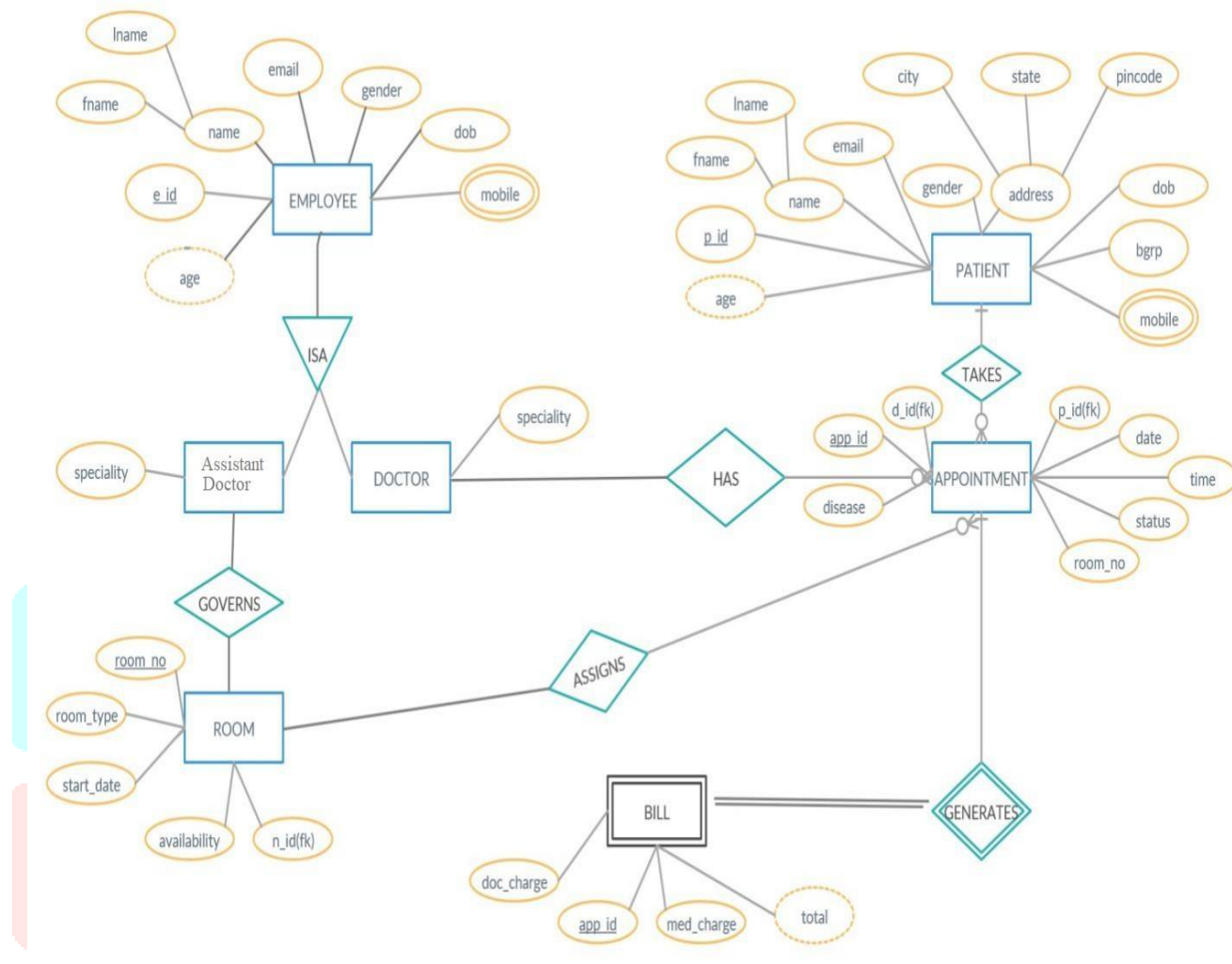
ER-Diagram:

Fig.3.: ER diagram Details

An ERD depicts the connections among database entities, such as people, things, or concepts. Additionally, an ERD will frequently depict the characteristics of these organizations. This is the E-R diagram that gives the idea of the proposed work. Here we can see different entity which we have used in in the work. We can observe the relation between entity from the figure.
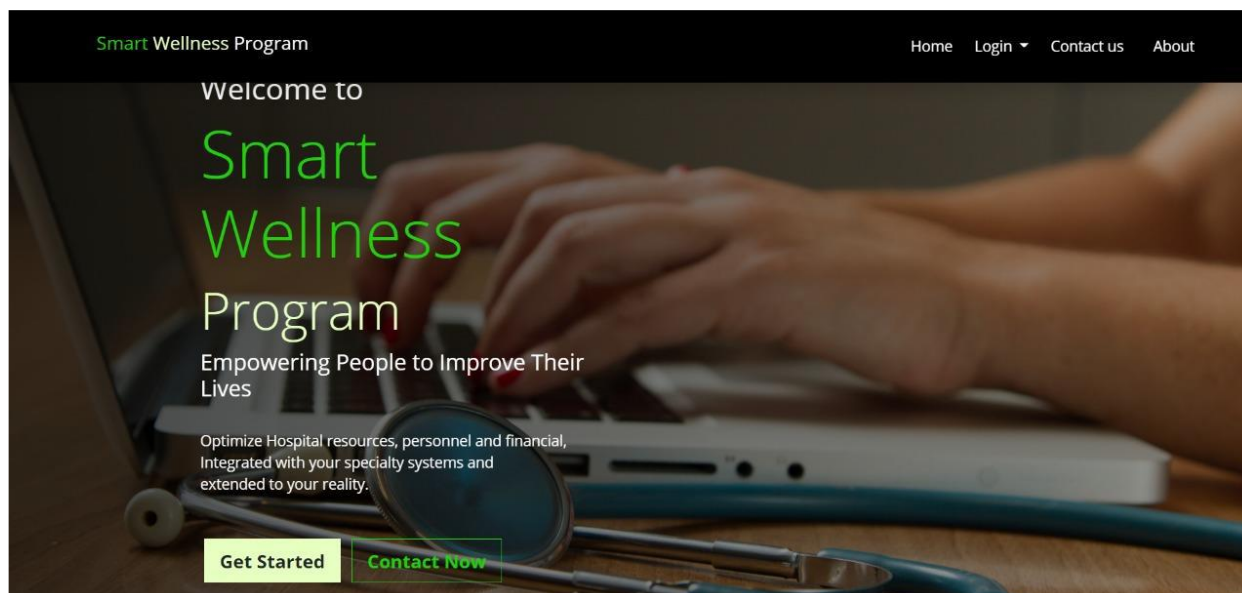
Result and Output:

Sample Webpages:

Home Page:

Fig.4.: **Sample Webpages and Home Page**

This is the homepage of our website. We can use login option to login with different user type. We have four types of user described as Doctor, Assistant doctor, Patient and Admin. Once we login we will get saperate homepage for each user type. The homepage of each user contains the relevant information which will simply the user experience.
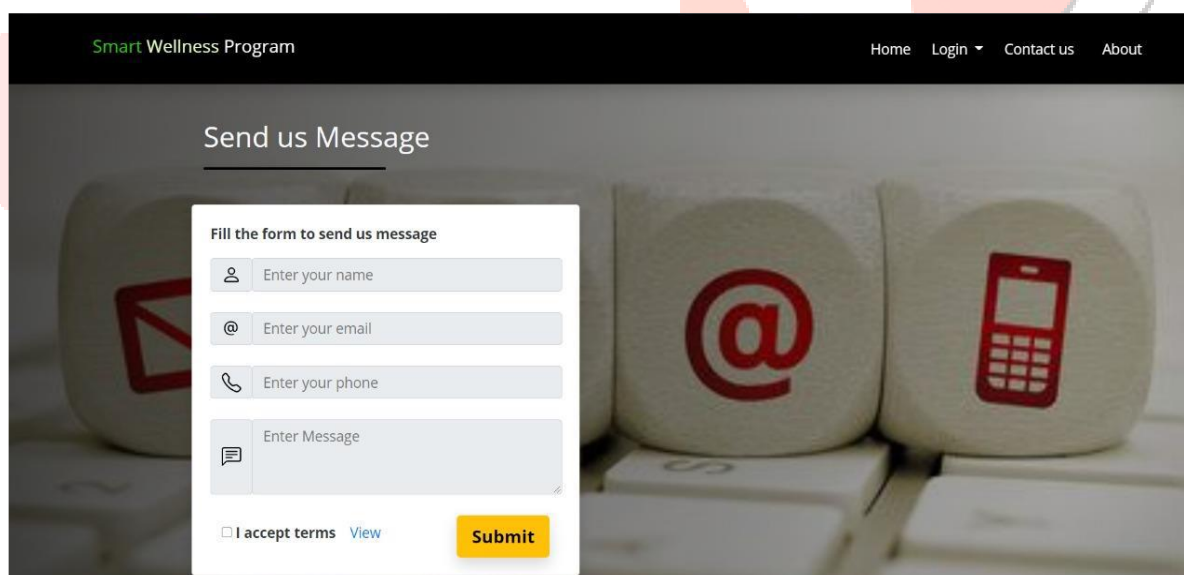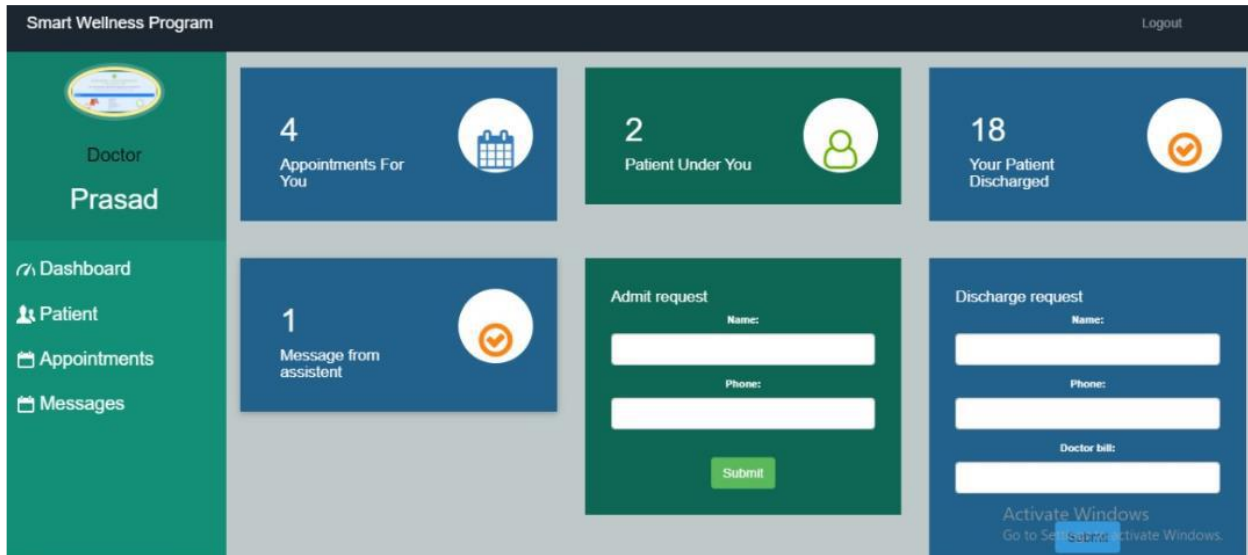

Fig.5.: **Queries/Doubt submisssion:**

This page mainly contains the queries and doubts raised by the user. Even visitor can raise a doubt to admin. The access to these queries and doubts is directly to the admin. Admin can check the queries raised by respective users and act accordingly.

Doctor Front page:

Fig.6.: **Doctor Front page:**

Once doctor logged in using his login credentials, he will be able to see interface like this. There are mainly four options that is Dashboard, Patient, Appointments, Messages. In the dashboard page, the doctor can see number of patients he is treating. In addition, he can also send the admit/discharge request of patients to admin. The messages which are sent by assistant doctor are also viewed by the doctor. Doctor can also check the upcoming appointments of the patients and manage his time accordingly.

Conclusion:

Smart Wellness Program is all about the modernizing a hospital through use of technology. Computers helps in it and take over the manual system for quick and easy functioning. This Smart Wellness Program is a quite the reliable and is proven on many stages. All the basic requirements of the hospital are provided in the hospital in order to manage it perfectly and large amount of data can also be stored. It gives many facilities like searching for the detail of patient, the patient's history, patient current condition, patient improvement through data analysis, billing facilities etc.

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