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Helping Hand for Covid-19 by Using 3-Tier Architecture

Abhishek Ingle

Department of Information Technology Engineering, Karmavir Dadasaheb Kannamwar College of Engineering, Nagpur – 440009, India

Email id: Abhishek03ingle@gmail.com

Ankit Anand Sarojkar

Department of Information Technology Engineering, Karmavir Dadasaheb Kannamwar College of Engineering, Nagpur – 440009, India

Email id: ankitsarojkar123@gmail.com

Akash Kishor Rawle

Department of Information Technology Engineering, Karmavir Dadasaheb Kannamwar College of Engineering, Nagpur – 440009, India

Email id: rawleakash7@gmail.com

Vaibhav Jumde

Department of Information Technology Engineering, Karmavir Dadasaheb Kannamwar College of Engineering, Nagpur – 440009, India

Email id: vaibhavjumde06@gmail.com

Yogeshri Choudhary

Assistant Professor in Department of Information Technology Engineering, Karamveer Dadasaheb Kannamwar College of Engineering, Nagpur

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Abstract- It was first discovered that COVID-19 was spreading worldwide on March 11, 2020 originating in China. A pandemic has been declared by the World Health Organization over Covid-19. As a result of the disease disrupting global trade employment and travel, many countries have taken strict measures to reduce the spread of the virus and the burden of morbidity and mortality on the health care system. In many countries around the world, citizens have been advised to stay at home and practice social distancing for as long as possible to prevent the spread of COVID-19.

This is the name of the project helpdesk for COVID-19. The COVID-19 pandemic is getting worse every day, as we are all aware. Although our doctors and helpline staff are doing everything they can to save everyone, they still cannot handle the situation. It includes everything bad for Corona positive patients such as blood and plasma as well as anger and other things that are needed for our patients.

Introduction

In the past year there has been a large increase in number of patients as we see the demand of beds oxygen cylinder and plasma increase day by day but has peoples stays inside their homes so they don't have a proper ideas about the availability of these essentials but when they need all these things people generally get panicked and hyper during such situations.

So here we are with some solutions for them to help them in such a conditions for finding **out** available beds oxygen cylinder blood and plasma availability it is web based application it provides better and efficient services efficient way to get information about availability of oxygen beds oxygen cylinders blood and plasma donor available etc.

Tkinter

The tkinter package provides access to the Tcl/Tk GUI toolkit for Python. It is available on most Unix platforms, including macOS, as well as on Windows.

Using python -m tkinter from the command line will show you the Tk interface, letting you know that it is properly installed, and also showing the Tcl/Tk version you have installed, so you can read the Tcl/Tk documentation for the version you have installed.

Depending on the Tcl/Tk version, Tkinter builds with or without thread support. The official Python binary package bundles Tcl/Tk 8.6 threaded.

Unlike a thin wrapper, Tkinter adds a significant amount of its own logic to make the experience more pythonic. This documentation will focus on the additions and changes, and refer to the official Tcl/Tk documentation for details that remain unchanged.

Pycharm

Python ARM is an Integrated Development Environment (IDE) for Python developers that comes with an integrated setup tool. Tools are tightly integrated so that working in Python, western web and data science is convenient. Programming in Python is made easier with PyCharm, an integrated development environment. It is developed by JetBrains (Formal IntelliJ). The product offers code analysis, a graphical debugger, an integrated unit tester, support for web development and data science, as well as integration with version control systems.

SQLite

DirectIn-process library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine. SQLite's code, which is public domain, can be used without charge or restriction. SQLite is widely used around the world, including in several high-profile projects.

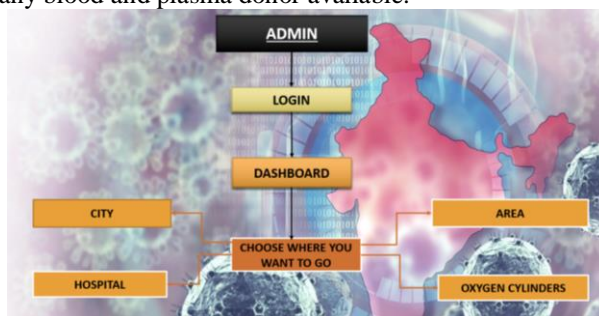
SQLite is an embedded SQL database engine. SQLite does not have a separate server process, like most other SQL databases. SQLite works directly with ordinary disk files, reading and writing all tables, indexes, triggers, and views directly to one file. Data files can be copied between 32-bit and 64-bit systems, or between big-endian and little-endian architectures, thanks to the cross-platform nature of the database file format. Due to these features, SQLite is a popular application file format. For storing information, the US Library of Congress recommends SQLite database files. Think of SQLite as an alternative to fopen(), not Oracle.

Module

1. Admin module:

Admin has the access to store the information of availability of oxygen bed with the details of hospital name area and city they are responsible for managing the entire web application.

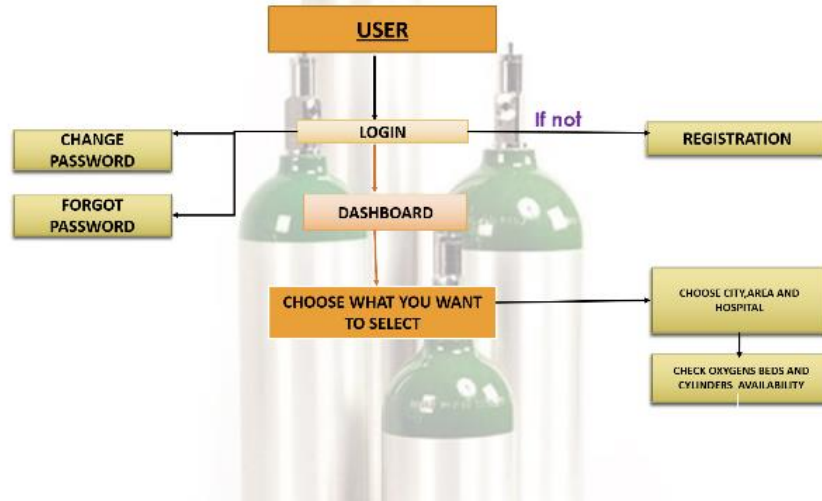
- Admin put all the data of all covid-19 hospitals.
- Where and how many beds are available.
- Where and how many blood and plasma donor available.



2. User module:

User has to register himself after that he will able to check the availability of his requirement in particular hospital, area and city.

- User has to register himself.
- After that he will able to check the availability of his requirement in particular hospital, area and city.
- They will find hospital according to their need.



3. Software and hardware requirement:

1. Pycharm
2. Sqlite
3. Laptop/desktop
4. Windows 7 or later

3-Tier Architecture:

Three tier architecture is well-established software application architecture that organize applications into three logical and physical computing tiers.

1. Presentation tier:

The presentation tier consists of the user interface and the communication layer of an application. Contains information about services commonly available through a web browser or web-based application in the form of a graphical user interface (GUI).

This element is the front-end layer of the application and the interface with which end users will interact directly. Usually, this tier is built on top of web development frameworks, such as CSS or JavaScript.

2. Application tier

This tier is also known as the middle tier, logical tier, business logic tier or logic tier. It is pulled from the presentation tier. Additionally, the application tier can add, delete, or modify data.

3. Data Tier

Information is stored and retrieved from database servers. This tier of data is kept independent of application servers or business logic, and is managed and accessed using programs such as MongoDB, Oracle, MySQL, and Microsoft SQL Server.

Conclusion

- Conclusion on overall, the project has achieved its objectives. The project has provided a client/server application of helpdesk for covid-19 system and was successfully built using visual basic software.
- Provides easy, accurate and faster data access.
- Hence using methodology, the goal to make a web application of helpdesk for covid-19 is achieved.

References

- [1]. Apart from this, there are some cities in Maharashtra that are maintaining a dedicated website for the availability of beds which are as follows:
- [2]. **Mumbai:** <https://nmmhealthfacilities.com/HospitalInfo/showhospitalist>
- [3]. **Pune:** <https://www.divcommpunecovid.com/cesbeddashboard/hsr>
- [4]. **Thane:** <https://covidthane.org/availabiltyOfHospitalBeds.html>
- [5]. **Nagpur:** <http://nsscdcl.org/covidbeds/AvailableHospitals.jsp>
- [6]. Becker's Health Information Technology Swedish health services tap Microsoft to build app that tracks COVID-19 patients and hospital capacity. <https://www.beckershospitalreview.com/healthcare-information-technology/>