The Reviver

A cloud based Web Application for finding Doctors in critical situations.

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1 Introduction

1.1 What is The Reviver!

By the grace of God, a doctor can save a person's life who is in danger. Doctors' dedication has been evident throughout the pandemic. Most people would perish if they did not receive good medical care from doctors. Regrettably, the majority of people in Covid-19 did not have access to appropriate healthcare at some point [5]. Because doctors have been scarce, and people have died on the road because of this. Most people were unable to reach doctors because they did not know where to look for one, and also the majority of doctors were not present at the hospital because of quarantine. As a result, people would fail to contact doctors in an emergency. Generally, there are some specific times when doctors are unavailable at the hospital or clinic. We do, however, require medical attention at that time. But, it became impossible because neither the patient nor the doctor was aware of each other's presence. For an instance, Some doctors are willing to provide service to patients even late at night. However, the majority of individuals are ignorant of which doctors are available at night and which are not. If we could manage to see a doctor at emergency the time, maybe more than one life could be spared. As a result, we require a system that can supply us with information regarding doctors that provide emergency healthcare.

1.2 Aims and Objectives

The aim of this project is to be able to connect with the doctors in an emergency especially when doctors are not often available. So one can search for doctors who are available at that particular moment. They can also contact doctors who are willing to provide services to patients in critical situations. My objective for this project is to reduce the harassment of normal people. Because it is a common scenario in our country that most people don't get immediate treatment from doctors at night or when a doctor is not available. But there are some doctors who are so dedicated to their profession. So We want to develop a system where general people will be able to know and contact the doctors in their emergency.

1.3 Requirements

A basic user requires a platform to receive emergency medical care from doctors as soon as possible. So they demand an application that allows them to find doctors at night, on vacation, or in the event of a pandemic, such as Covid 19. Because it is extremely difficult to find a doctor late at night. Finding doctors while on vacation is also uncommon. As we can see at covid-19, we have seen a shortage of doctors and patients dying for lack of proper care, so they demand a platform through which they can find or contact doctors at a critical time. They also want an application that is simple to use and allows them to find and contact doctors. All the requirements listed together are :

- User-friendly interface.
- Simpler and more secure method of creating an account.

- Doctors can be found by degree, symptoms, location, or department.
- Patient and relatives will have an easier way of interacting with the doctor.
- User can know how many doctors are available at a particular location.
- Emergency response option for critical situation.
- User Can contact with doctors whom are available.
- Doctors can set active status on/off.
- Doctors can select active hours.

2 Motivation

2.1 Pandemic Issues

The COVID-19 pandemic has had a devastating global impact. Developed countries, such as the United States, the United Kingdom, Italy, and Spain, experienced high death tolls despite their highly efficient medical infrastructure. Similarly, Bangladesh, a poor South Asian country, almost lost its fight against the pandemic, owing primarily to an ineffective healthcare system.
Although social isolation was the most effective method of containing the virus's spread, it was difficult to implement for healthcare professionals who needed direct contact with COVID-19 patients and were at high risk of becoming infected themselves. Because of their dedication to containing the disease, front-line healthcare professionals were particularly vulnerable during this pandemic.
As a result, the general public had a difficult time contacting doctors because doctors were unavailable. However, some of the doctors were still available and treating patients. However, they were out of reach for the general public. Some of the doctors and nurses volunteered to assist the general public. I've witnessed relatives of dying patients cry. Simply because they did not receive proper care in a timely manner. If they had known where to find a doctor who could help them, perhaps millions of lives could have been saved.
We also don't know when this pandemic will end or if another one will occur. But one thing is certain: the population is rapidly increasing. However, in comparison to the population, the number of doctors is very low. So, with this small number of doctors, We just want to make sure that everyone can contact the doctors in an emergency.

2.2 Late Night Doctor Crisis

Any patient may require emergency care late at night. Someone could have a car accident at night and lose a lot of blood, or someone could have a heart attack at night. They require immediate medical attention. Unfortunately, most of the doctors went back to bed after a long day of work. So getting healthcare was difficult at the time. This precious life could have been saved if they had known where and which doctors were available late at night, which could be easily found by my application.

Furthermore, it is a corrupted industry with brokers everywhere. Brokers are constantly attempting to extort money from the patients' families. They pretend to be acquainted with doctors. They demand a large sum of money for a doctor's appointment. To keep them away from brokers this application will help a lot.

2.3 Social and Economic Impact

In Bangladesh with a population of 166 million[3], almost every day, every night there is an accident on the road. The current doctor-patient ratio in Bangladesh is only 5.26 per 10,000 population [4], which places the country at the second position from the bottom, among the South Asian countries, according to the WHO. This ratio is even poorer at nightfall. Hence a lot of premature death occurs due to less ratio. Which affects our society badly. So, if We could pave the way for communication and early responses between doctors and patients, then it might change someone's life positively.

3 Background Study

3.1 Related Work

There are currently some related systems available, but not many, and none are completely similar. In fact, they are diametrically opposed. In comparison to them, our concept is quite unique. We looked at a variety of medical health-related websites and apps. Here are a few examples.

3.1.1 Medulance [1]

Medulance is India's first, GPS based technology platform for fast and reliable first point medical attention. With an increasing emphasis on promoting independent living today, having access to the nearest ambulance to you can provide much needed peace of mind in a worst case scenario. It has following features:

1. On the go convenience
    - One touch access to medical emergency services.
2. Advance Booking
    - Book ambulances in advance for hassle-free hospital visits.
3. Transparent pricing
    - Convenient mechanism, with online and cash payment mode.
4. Advance Booking
    - Book ambulances in advance for hassle-free hospital visits.
5. Emergency contact
    - Keep your dear ones close with emergency contact option.

6. Tips and First aid information
    - Arm yourself with relevant information during any emergency scenario.
7. Easy communication
    - Seamless communication with ambulance drivers.

3.1.2 DocTime [2]

DocTime is an online medical service application where patients can get 24/7 video consultation from doctors. DocTime uses 256 bit encryption to secure the video consultation. Patient can keep their previous consultation history and view online prescriptions. Doctor can join the platform using DocTime's simple on boarding process. They verify every doctor to make sure only BMDC authorised doctors are providing consultation using latest technologies.It has following features:

1. Search your Doctor!
    - Search your doctor by specialty or doctor name.
    - Choose the right doctor for you by viewing their profile, rating and experience.
2. Consult live on Video Call
    - Once you pay the required doctor fee, you will be joined to the queue.
    - Doctor will make a secured video call to do the consultation.
3. Instant Prescription
    - Once the video consultation is complete, the doctor will upload the prescription.
    - You can download the prescription immediately or later.
4. Verified doctors
    - Every doctors on DocTime platform are BMDC certified.
    - We verify relevant information before the doctor can consult any patient.
5. Instant electronics prescription
    - As soon as the consultation is complete, doctor will provide the electronic prescription for the patient to download instantly or later.
6. Easy payment options
    - Patient can make payment online using our secured payment gateway partner by bKash, Rocket, Nagad, debit card, credit cards and many more.

Medulance provides medical care by sending an ambulance remotely, while DocTime offers online health care. However, none of them provide services to patients in critical situations. None of them provide a way to interact with doctors when the majority of the doctors are unavailable. None of them keep track of the doctors who are available late at night, during a crisis, or when the majority of the doctors are unavailable. As we can see, patients may die if they do not receive proper healthcare in a timely manner, so we decided to find a solution for this which our The Reviver application provides. The Reviver is the solution to the problem of finding a doctor in an emergency.

4 Proposed Methodology

- HTML: HTML stands for Hyper Text Markup Language. HTML is the standard markup language for creating Web pages. HTML describes the structure of a Web page. HTML elements tell the browser how to display the content.
- CSS: In order to layout the papers and background images. border. line advanced places. tallness. breadth. founts. coloring material of the web site.
- Bootstrap: Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.
- JavaScript: JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications. JavaScript is very easy to implement because it is integrated with HTML. It is open and cross-platform.
- Python: Python is a popular programming language. It was created by Guido van Rossum, and released in 1991. It is used for:
  - web development (server-side)
  - software development
  - mathematics
  - system scripting.
- Django: Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support.
- Visual studio code: Visual Studio Code is a code editor redefined and optimized for building and debugging modern web and cloud applications.
- PyCharm is the most popular IDE used for Python scripting language. This chapter will give you an introduction to PyCharm and explains its features. PyCharm offers some of the best features to its users and developers in the following aspects

- Code completion and inspection
- Advanced debugging
- Support for web programming and frameworks such as Django and Flask

5 Feasibility Study with Timeline

A feasibility study is a preliminary investigation of a proposed system to determine whether the system can run smoothly with the organization, whether the organization will realize the expected benefits, and whether the organization will go ahead with it. Users will enjoy using this application because it will make their lives easier and save them a lot of time. There are three types of feasibility studies: operational feasibility, technical feasibility, and economic feasibility.

- The Unified Modeling Language can be used to assess operational feasibility (UML).
- This project is also technically feasible, as the proposed system is more beneficial and can run on any machine that supports Windows and Internet services, and it works on the best software and hardware that was used while designing the system, so it is feasible in all technical terms.
- Economic feasibility determines whether there are enough benefits to justify the cost of creation. As a result, this represents a cost-benefit analysis and savings. According to the cost-benefit analysis, the proposed system is feasible and economical in terms of its assumed cost.

There are quite similar in structure project available and active. Our project is also possible to make live within 3-6 months of work. Here we are selecting.

1. Critical analysis of the System using available resources and available websites will take 1 week.
2. Designing project plan will take two weeks.
3. Designing Database will take two weeks.
4. Analyzing design and database will take one week.
5. Front end designing will take one month.
6. Back end designing and implementing will take 1 month.
7. Combining front end, back end, database will take two weeks.
8. Testing the project will take 1 month
9. Bug fixing and finalizing project will take two weeks.

6 Rationale of the Project

Bangladesh is a densely populated country. The doctor-to-patient ratio is lower than what is recommended. People die every day as a result of a lack of emergency care. The vast majority of these deaths occur when doctors are unable to reach the destination for whatever reason. For example, during Covid-19, doctors were severely impacted, severely limiting the number of available doctors. Our application has the potential to significantly reduce the number of deaths. The people of Bangladesh will greatly benefit from this application.
Furthermore, the pandemic is far from over. If another pandemic occurs, this application will be extremely useful to the general public. They will be able to find doctors from home and will be able to move to the desired doctors without interference. So it will also be possible to maintain social distancing as there is no need to go out for searching for the doctors.

7 Conclusion

Developing a system for finding doctors in critical situations is a very exciting task to work. After reviewing the project's roadmap, we realized that this project has many difficult tasks. As our country's population grows at a rapid pace, healthcare is becoming an increasingly important component of our efforts to build a Digital Bangladesh. We researched numerous systems that demonstrated how to develop this system. We interact with my honorable supervisor, a classmate, a few of my medical school classmates, and a senior. After all, it's an online web-based system, so in real life, both the doctor and the patient must follow the rules in order for the system to function properly. This system will be simple enough for a college student to understand.

8 Scope of Further Development

In the future, We want to introduce nurses to our system. We also want to use Google Maps via which a user will be able to see the real-time location of a doctor. A user will also be able to see the active doctors at a given location. In the future, we are also planning to add nearby available ambulances. We also plan to add a recommendation system based on machine learning in the future.

References

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