TOPIC: BLOOD DONATION MANAGEMENT SYSTEM

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ABSTRACT:

It can be hard to find blood donors all in one place due to multiple different organizations that host donation events. We want to be able to create a database that maintains this information on one database. Donors can enter their information along with blood type to make it easier for those that need blood donations or an easy look up can find the donor and their information that matches. This will serve as a communication tool between the receiver and the donor. We want to create a database that contains information of those that donated blood at different blood donation events in a state and contain that info all in one place for convenience. MySQL is used as the primary database management system for the records of the donors. The database application system will use a variety of scripting languages to simplify the querying of data for the hospitals, as well as create a user-friendly environment on the client side of the database. Our end goal of this project is to create a clearly structured database with a simple, easily operable database application program which can be used on hospitals across a particular state. In addition to this we will create an easy access web form for donors to enter information that can then be accessed by the appropriate facilities.

BACKGROUND:

- Current problems for the project topics

The blood bank database management system has become progressively large and extensive with the growth in the number of hospitals and organizations. Most of the blood bank databases are transactional databases and this is not very user friendly and does not assist in assigning significance on the blood type needs and donor availability for the particular area. Also, multiple hospitals and organizations have an independant database management system which provides a lot of hassle to transfer information between them. The record of when and where an individual has donated blood is also not being monitored by the current standard database management systems and thereby endangering the donor's condition if the donor attempts to donate blood before the

accepted 56 days limit. Some donors would like to donate blood as a safekeeping for themselves or their beloved ones might request special services which are not common in the current database management system.To protect and enhance the blood donors rights and to ease the process for the blood banks, the following database management system has been designed accordingly

- What have been done in the project topics

This Blood donation management system is helping the organisations and used as a web application which supports mobile application (1). To become a member of that forum they have to register and sign up first by providing the information like blood group type, email address, location of the donor. It can be a public account for donors, so those that need donations can contact the donor easily. An appointment will be created only whenever a donor confirms that he/she will donate blood and it can alert the donor. Blood donors can also be searched from the mobile application, but this is only accessible for registered members. The goal is to reduce the complexity of the system to find blood donors in an emergency situation.

One of the websites which is being used is waterfall methodology, the traditional version, is being used to develop and build web based blood banks. The main objectives for developing the website is to educate the community on the benefits of blood donation, develop a Web- Based Blood Bank System to manage the records of donors and recipients, and encourage voluntary blood donation, easily accessing any information about blood type and the distribution of the blood in various hospitals in Jeddah, based on the hospital needs(3). It encourages voluntary blood donation, reducing the human error when employees keep the records.

Collaboration between physicians, nurses, and allied health professionals is important for continued encouragement toward blood donation and educating others in both formal and informal settings regarding the benefits of blood donation and transfusion(7). During the blood donation process, it is important to prevent donor dropout and encourage retention and recruitment. And in order to boost the donors health professionals will have to educate and initiate blood donations campaigns as necessary(8). Used frozen blood to test for research labs for testing infectious diseases, new ways to store, collect, and process blood (9).

- The gaps our project will fill:

With this Blood Donation Management System we are wanting to eliminate the disconnect between state hospitals and individuals who need a certain type of blood with state blood donation organizations and donors. We want to make finding certain blood

types that match those in need easier by finding the closest donor to the hospital and/or recipient in need. Thus creating a reduction in the complexity of the system to find blood donors in emergency situations. As a result, the system provides a simple and quicker interaction among various groups connected with a blood bank.

- Contributions of our project:

The blood management system unlocks the potential that allows related people/organizations to quickly access blood donation information. Moreover, since it is connected, it is easy to access life-saving information with other hospitals. For physicians and nurses with admin permissions they can access patient/donor profiles. As for donors, they can create an account that can log their blood type, check blood donation events, and donation locations, while at the same time possibly giving them alerts for when they can next donate. After they created the account, each account will be assigned to a unique ID so that their information can be easily located either for physicians/nurses, or those that are working the blood donation events. Another possible contribution that we can make is to make the system have an easy workflow that can be understood by those that are new to online record keeping systems. We want to overall make the system less complex, and provide simple and quicker interactions with it, as well as interactions with those who will use the system.

METHODS:

- The tools that we have decided to use are Python, Django, and MySQL.
- The reason why we've decided to use this is that Group members feel comfortable using Python and we have been using Django and MySQL in class. The advantages that this offers is that each team member will be able to equally contribute to the project, and if there are any issues they can be resolved within the group. With Python everyone has taken a course with the programming language so this will allow better workflow, and use of Django allows for flexible table design and interactive interfaces for the data. MySQL we've all had some experience with, and it is easy to use, powerful and ideal for websites because of its speed.

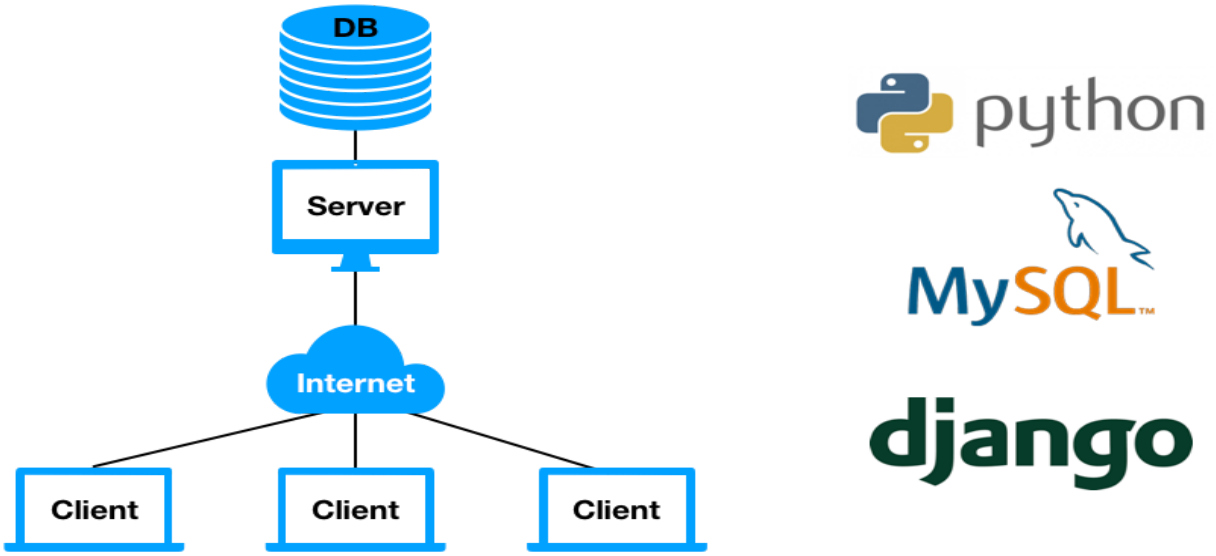

Figure 1: Shows how the systems are connected

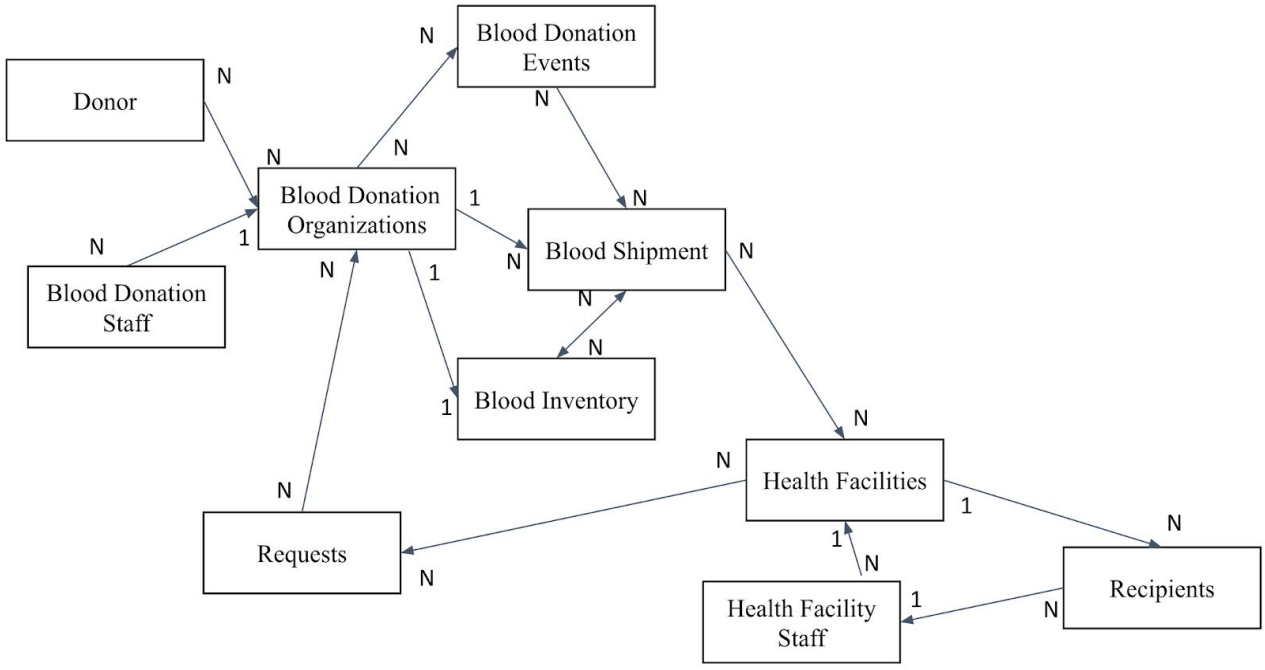

Figure 2: ERD of data

RELATIONSHIPS:
Donor REGISTERS TO Blood Donation Organizations
Blood Donation Staff WORKS FOR Blood Donation Organizations

Blood Donation Organizations MANAGE Blood Donation Events
Blood Donation Organizations RECEIVE Requests
Blood Donation Organizations SEND OUT Blood Shipment
Blood Donation Organizations MAINTAIN Blood Inventory
Blood Donation Events DELIVER Blood Shipment
Blood Shipment DELIVER Blood Inventory
Blood Shipment SHIP TO Health Facilities
Health Facility Staff HELP Recipients
Health Facility Staff INPUTS REQUEST TO Health Facilities
Health Facilities SEND OUT Requests

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