**IMS Project Documentation**

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**Batch:** EB08

**a. Title: *Blood and Plasma Donation Database***

**b. Introduction:**

Blood is a crucial part of the human body. Humans are incomplete without blood. According to scientists, blood is about 7% - 8% of the human body. A blood bank is a place where blood is collected from donors, categorized based on the blood type, separated into components, stored, and prepared for transfusion to those who need it. In India, many blood banks do not contain data on blood donors properly. A huge amount of blood is donated in India every year. In the year 2016, the Ministry of Health and Family Welfare reported donation of 10.6 million litres of blood.

During this covid pandemic, there is a lot of buzz about “Plasma therapy”. Just like blood, plasma is also a necessary part of our body. Plasma makes up the liquid portion of our blood. It is a straw-coloured liquid which remains after removing the cellular components. It consists mostly of water and a small number of antibodies and proteins.

 Plasma carries out a variety of functions in the body, including forming blood clots, fighting diseases and infections, and other critical functions. So, just like a Blood bank, a Plasma Bank functions as a blood bank. India got its first plasma bank this year because of this ongoing covid pandemic.

Considering the huge amount of blood and nowadays plasma being donated, there must be an efficient way to manage this data, which calls for the need of an online blood and plasma donation site. As the population increases, blood donors also increase, and in the case of plasma donation, as people recover from covid and are eligible to donate plasma, plasma donors also increase. Observing the past few years, in India, the system has changed, from manually updating the Blood donors’ fields and managing the whole system. Nowadays, most of the blood banks have moved to the digital way. But there is a possibility that the data may be obsolete and the process of retrieving the data is not efficient. Factors such as gender, age, last blood donation date, and other modern traditional methods, Blood donation frequency per year are not registered, which is of vital importance in this project and they are used as criteria for recruitment of blood donors. The same goes for the system of managing Plasma donors.

**c. Problem statement:**

There are many Blood bank databases out there and some of them are open source as well. But they lack the efficient management of the data, interactivity, etc. There were problems and issues with the donor records management in the manual system, which is somewhat solved due to the online websites, but it is not fully or efficiently solved.

In some cases, there are no centralized open databases. If a donor donates blood at a different blood bank and the blood bank database is not centralized or open, there are no previous records of donation of blood unless they carry the “Certificate of Donation”.

Due to the sudden rise of plasma donation during this pandemic, there is no efficient way of storing the data of plasma donors and blood donors at the same time.

**d. Objective:**

The main objective of our project is to solve the problems in the current blood bank donor management database system, lack of plasma donor’s database and plasma bank database, no link between blood and plasma database. Our project aims to provide an efficient solution to manage both blood and plasma donors' data at the same time, along with data on blood banks and the administration involved. Along with the efficient management of data, our project also aims to provide a good and comfortable UI for the website that the users can interact with.

**e. Software requirements:**

We will be developing the frontend of the website using HTML, CSS, and Javascript, and the backend i.e. the database will be developed using MySQL and PHP.

**f. Proposed system:**

To deal with the existing problems we will be developing a Blood and Plasma Donation website which will connect the donors and patients with the blood bank.

There will be admins who will manage the hospitals and the blood banks.

The Blood Bank will be collecting blood or plasma according to the donor’s wish and the donation date will be recorded. The blood bank id, name, location, and contact number will be made available to the donors, patients, and hospitals. Since a blood bank can be a separate clinic or under a hospital, the registered hospitals will be recorded as well. A blood bank is managed by one admin.

The Donor’s details like id, name, blood type, age, gender, phone number, email, address is recorded, and they have the freedom to choose which blood bank they wish to donate to. Donors can either donate blood or plasma, according to their wish. A donor can only donate plasma if they have recovered from coronavirus. Their donation date will be recorded, as donation of blood is only allowed once in three months.

The patients’ details like id, name, blood type, age, gender, phone number, address is recorded, and they can receive blood or plasma from the blood bank. The hospitals in which the patients are admitted to is also recorded.

The hospital details like id, name, location is recorded. The hospital is managed by one admin.

Since the blood bank database is centralized a donor need not carry a certification of donation. If they have donated blood or plasma, their details will be recorded immediately and saved in the database.

**g. Entity Relationship Diagram:**

**Diagram, engineering drawing, schematic

Description automatically generated**

**g. Relational Model:**

*Table Name:* **Admin**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | A-ID | Varchar(10) | Primary Key |  |
| 2 | Username | Varchar(20) | Not Null |  |
| 3 | Password | Varchar(20) | Not Null |  |

*Table Name:* **Hospital**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | H-ID | Varchar(10) | Primary Key |  |
| 2 | HName | Varchar(30) |  |  |
| 3 | Location | Varchar(50) |  |  |
| 4 | A-ID | Varchar(10) | Foreign Key | Admin |

*Table Name:* **BloodBank**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | B-ID | Varchar(10) | Primary Key |  |
| 2 | B\_Name | Varchar(30) |  |  |
| 3 | Contact\_no | Int |  |  |
| 4 | B\_location | Varchar(50) |  |  |
| 5 | A\_ID | Varchar(10) | Foreign Key | Admin |
| 6 | H\_ID | Varchar(10) | Foreign Key | Hospital |

*Table Name:* **Donor**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | D-ID | Varchar(10) | Primary Key |  |
| 2 | D\_firstname | Char(20) |  |  |
| 3 | D\_lastname | Char(20) |  |  |
| 4 | DBloodGroup | Varchar(4) | Not Null |  |
| 5 | DAge | Int |  |  |
| 6 | DGender | Char(12) |  |  |
| 7 | DPhoneNumber | Int |  |  |
| 8 | DEmail | Varchar(30) |  |  |
| 9 | DAddress | Varchar(50) |  |  |

*Table Name:* **Takes\_from**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | B-ID | Varchar(10) | Primary Key, Foreign Key | BloodBank |
| 2 | D-ID | Varchar(10) | Primary Key, Foreign Key | Donor |
| 3 | Donation | Char(10) | Not Null |  |
| 4 | DonationDate | Date | Not Null |  |

*Table Name:* **Patient**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | P-ID | Varchar(10) | Primary Key |  |
| 2 | P\_firstname | Char(20) |  |  |
| 3 | P\_lastname | Char(20) |  |  |
| 4 | PBloodGroup | Varchar(4) | Not Null |  |
| 5 | PAge | Int |  |  |
| 6 | PGender | Char(12) |  |  |
| 7 | PPhoneNumber | Int |  |  |
| 8 | PAddress | Varchar(50) |  |  |
| 9 | H-ID | Varchar(10) | Foreign Key | Hospital |

*Table Name:* **Gives-to**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | ColumnName | Datatype | Constraint | Reference |
| 1 | B-ID | Varchar(10) | Primary Key, Foreign Key | BloodBank |
| 2 | P-ID | Varchar(10) | Primary Key, Foreign Key | Patient |
| 3 | Gives | Char(10) | Not Null |  |