

Proposal on

BLOOD BANK MANAGEMENT SYSTEM

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I. Purpose

The purpose of the blood bank management system is to simplify and automate the process of searching for blood in case of emergency and maintain the records of blood donors, recipients, blood donation programs and blood stocks in the bank.

II. Background

A) Problem Statement

At present, the public can only know about the blood donation events through conventional media means such as radio, news paper or television advertisements. There is no information regarding the blood donation programs available on any of the portal.

The current system that is using by the blood bank is manual system. With the manual system, there are problems in managing the donors' records. The records of the donor might not be kept safely and there might be missing of donor's records due to human error or disasters. Besides that, errors might occur when the staff keeps more than one record for the same donor.

There is no centralized database of volunteer donors. So, it becomes really tedious for a person to search blood in case of emergency. The only option is to manually search and match donors and then make phone calls to every donor.

There is also no centralized database used to keep the donors' records. Each bank is having their own records of donors. If a donor makes donation in different hospital, no previous records can be traced except if the donor brings along the donation certificate. Hence, the donor is considered to be a first-timer if they make blood donation in a new place.

Without an automated management system, there are also problems in keeping track of the actual amount of each and every blood type in the blood bank. In addition, there is also no alert available when the blood quantity is below its par level or when the blood in the bank has expired.

B) Project Goals and Objectives

The goals and objectives of the Blood Bank Management System are as follows:

1. To provide a means for the blood bank to publicize and advertise blood donation programs.
2. To allow the probable recipients to make search and match the volunteer donors, and make request for the blood.
3. To provide an efficient donor and blood stock management functions to the blood bank by recording the donor and blood details.
4. To improve the efficiency of blood stock management by alerting the blood bank staffs when the blood quantity is below its par level or when the blood stock has expired.
5. To provide synchronized and centralized donor and blood stock database.
6. To provide immediate storage and retrieval of data and information.

C) Product Description

The system that is going to be developed is Blood Bank Management System (BBMS). This is a web-based database application system that is to be used by the blood banks or blood centers as a means to advertise the nation wide blood donation events to the public and at the same time allow the public to make online reservation and request for the blood.

The system keeps the record of all the donors, recipients, blood donation programs, rejected bloods. For internal works and activities intranet is used and for interaction with public internet is used.

This system also has the ability to keep track of the donor's donation records and the blood stock in the blood bank. This project intends to computerize the blood and donor management system in a blood bank in order to improve the record management efficiency due to the grown size of records of data.

III. Scope

The system is used for maintaining all the process and activities of blood bank management system.

The system can be extended to be used for maintaining records of hospital, organ donation and other similar sectors. While developing the system, there shall be space for further modification. There shall be a proper documentation so that further enhancement becomes easy.

As a whole the system is focused to work with blood bank management system and on additional modification it can be also used as management systems of similar organizations.

A) Stakeholders

1) System Owner: The Blood Bank

2) System Users:

- Administrators: has full privilege on the system's functions
- Staffs of Blood Bank: has privilege on the system's functions as assigned by the administrator
- Public: can view the blood donation events and donate or can make requests for donation (Donor and Recipients fall under this category)

B) Data

1. Data about Donor and recipients

- Donor/ Recipient Id
- Name
- Date of Birth
- Sex
- Blood Group
- Address
- Contact Number
- Email Address
- Diseases (if any)
- Blood Id
- Event Id

2. Donation program

- Organizer
- Event Id
- Date of Donation
- Venue
- Volunteers
- Amount of blood collected

3. Blood

- Blood Id
- Blood Group
- Date of collection
- Expiry date

4. Staff

- Staff Id
- Name
- User Name
- Password

C) Processes

- **Login**
The system provides security features through username-password matching where only authorized user can access the system with different authorization level.
- **Advertisements of blood donation event**
This function allows the blood bank staff to publicize the blood donation events online. The public can view the venue and time of the blood donation programs to be held.
- **Donor Profile Registration**
This allows healthy public to register as volunteer donor.
- **Online Request for fresh blood**
This allows the probable recipients to make online request to the donor. After the request has been filed donors are matched and the request is sent via SMS with necessary details.
- **Blood Stock Management**
The blood bank staffs can manage the blood stock starting from the blood collection, to blood screening, processing, storage, transference and transfusion through this system. Each process or work-flow can be traced from the database. The system will also raise alert to the staff whenever the blood quantity is below its par level or when the blood in stock has expired.
- **Donor/Recipient Management**
The records of all donors/recipient and their history are kept in one centralized database and thus reducing duplicate data in the database. The record of donation is maintained by the system.
- **Reporting**
The system is able to generate pre-defined reports such as the list of donors, recipients, staffs, the blood quantity in the bank and charts.

Project Approach

Route:

- Problem Identification
- System Design
- System Building
- Testing and Implementation

Deliverables:

The main deliverables of the projects are as follows:

- Requirement Specification
 - Use-Case Model
- Analysis Model will be used to show the realization of all use-cases conceptually
- Design specification will be used to specify the design for the realization of all use-cases including class diagrams
- Implementation model
 - Code and System
- Documentation and Manual

Managerial Approach

- Team Building Consideration:
 - Each of the team member will be given a job
 - The work division shall be on the basis of expertise
 - The progress shall be synchronized on weekly basis

- Training requirements:
 - Python programming
 - Django Framework
 - Sqlite 3

Meeting Schedules

The meeting of the working team members shall be done on weekly basis. This shall follow an objective of synchronized working and progress description.

Reporting Methods

Every one should prepare a report on the module upon which he is working. This report shall be used for documentation and manual preparation.

Constraints:

- GUI will be only in English

Budget:

- Server Npr:10,000
- Domain name Npr:8000/year
- WLAN Npr:10,000
- sms gateway Npr:50,000
- Research Budget Npr:20,000
- Coding Budget Npr:100,000
- Miscellaneous Npr:2000
- Total-----:Npr:200,000

Technology

The technologies used for the development of the system are as follows:

1. Operating System: GNU/Linux
2. Database Management System: Sqlite 3
3. Programming Language: Python
4. Web-framework: Django
5. Browser: Mozilla Firefox, Chromium

Bibliography

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