Blood Bank Management System

Project Report

CSE 4508

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Project Overview

Blood Bank Management System (BBMS) is database system to link between the donors and blood banks and act as an interface for the patient to find his/her desired blood in a fast and efficient way. It will make the blood transfusion service and its management more reliable and efficient than the conventional system.

Transfusion of blood and blood components is an established standard way of treating patients who are deficient in one or more blood constituents and is therefore an essential part of health care. A blood transfusion service is a complex organization requiring careful design and management. Essential functions of a blood transfusion service are donor recruitment, blood collection, testing of donor blood, component preparation and supply of these components to the patients.

The organization of a blood transfusion service should receive utmost attention and care for smooth functioning of various components of the service. The goal of blood transfusion service is to provide effective blood and blood components which are as safe as possible and adequate to meet the patients' needs.

The main customers/audience for the system are the patients, donors and blood banks. A patient who need blood for him/herself can use to find his desired blood. A donor who is willing to donate blood can donate to any of the blood banks. A blood bank can use to collect blood from the donors and deliver it to the needy patients

Objectives of the project is to Improve operational & Streamlining operations, maintain all the project, employee, project database, maintain global standards of the project development, reduce Manpower and manual paper works for maintaining the records offline, main the accuracy, integrity and consistency of the data, providing such a mechanism to make the man power fast to maintain all the information about the project, improved management and control of the inventory, sales, stock.

Database Structure

The database consists of four tables. The main tables are the patient, donor and blood bank tables. The remaining table 'donate' is the relational table which links 'donor' and blood bank tables with its foreign keys.

Database Table	Description
Patient	Contains all of the patient's information
Donor	Contains all of the donor's information.
BloodBank	Contains all of the blood bank's information.
Donate	Serves as the main linking table for the 'donor' and 'blood bank' table by containing the foreign keys of them

Functionality

The database and web application allow technicians to complete the following functions:

- Insert a new patient's information.
- Insert a new donor's information.
- Insert a new blood's bank information.
- Update/modify any of these records.
- Find the desired blood from the database in different constraints.
- Find the quantity of available desired blood in different constraints.
- Find the desired blood bank in different constraints.
- Find the desired donor in different constraints.
- Check any updated information about any patient, donor or blood bank

Database Design Process

To build the database system we used the Oracle DBMS, Toad, basic SQL (structured query language) and PL/SQL (procedural language/ structured query language). Use of the PL/SQL alongside with basic SQL made the system more powerful and efficient. PL SQL consists of blocks of code, which can be nested within each other. Each block forms a unit of a task or a logical module. PL/SQL Blocks can be stored in the database and reused. PL SQL consists of procedural language constructs such as conditional statements (if else statements) and loops like (FOR loops). PL SQL engine processes multiple SQL statements simultaneously as a single block, thereby reducing network traffic. PL/SQL handles errors or exceptions effectively during the execution of a PL/SQL program. Once an exception is caught, specific actions can be taken depending upon the type of the exception or it can be displayed to the user with a message. First, we designed tables and relationship between them. We made a relation between 'BloodBank' and 'Donor' table using the 'Donate' table. Than we implemented some queries and views to show the desired results.