
TERM PAPER

Organ donation sytem using DBMS

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1 Abstract

Organ Transplantation is a medical procedure in which an organ is removed one body and placed in the body of a recipient, to replace a damaged or missing organ. The donor and recipient may be at same location or another location.

A database management system (or DBMS) is essentially nothing more than a computerized data-keeping system. Users of the system are given facilities to perform several kinds of operations on such a system for either manipulation of the data in the database or the management of the database structure itself. Using MySQL

his Application acts as an essential role in saving the lives of human beings and which is also its main aim to help the user to get the required blood and organs at the correct time. And it is a mobile-based Application developed in the android platform. This Android application provides an easy and fast way to search for blood and organs. This app enables users to find blood and organs in emergency situations. Users need to register with the Application which is available on the app. And also, they can get brief information on the donor's contact details includes their location. The user can Contact them By making a call or message directly by using this BIO-Donation Application. The Objective of this Mobile Application is to design an Android Application to maintain necessary information of the Patients, Donors, and report details for any bio-related organization. Project Android Blood Bank Management system was developed so that users can view the information about registered Bio donors such as Name, Address, and other such personal details along with their details of blood group and other Medical Details of the donor. This Mobile Application also has a login page where the user is required to register and only then they can view the availability of blood and organ, and even register to donate blood if he/she wishes to. The main aim of developing this Android Application is to reduce the time to a great extent to avoid spending time in searching for the right donor and the availability of blood and organ required

2 Introduction

The real scenario is: When transplant hospitals accept patients onto the waiting list, the patients are registered in a centralized, national computer database, and introduced into the network that links all donors and transplant candidates. After removal, a donor organ has to be transplanted within a few hours. A smooth running organization is of life-saving importance. Therefore the central office is manned by specially trained staff, 24 hours a day, and 7 days a week, supported by the computer information system. In the area of health and medicine, a number of modern applications and databases can be found.

In the need of new, modern technologies introduction in Serbia, the professional team made the project and the final product. The idea for this computer information system is more than 5 years old. A completely new approach was introduced: The accent is on the security with modern methods applied according to the multi-decade experiences in various western countries and their automated and centralized computer information systems. Also, the idea was to prevent the potential of malpractice and misuse, the criminal activities, and implement modern electronic data security systems with exact human procedures in maintaining the whole system. There are several levels of security and cryptography applied. Strong mathematics together with a constant database backup and encryption are the basic principles of this new idea. As shown on the next page in Fig. 1, the key and encryption are in the center, the main waiting list in a database with a backup is always accessible from all over the world. Mobile devices, like PDAs and Android mobile phones are also supported in our system, following the technology development.

In this case also, electronic data security and valid patient and donor data are in the first place. Database table optimization was also an important segment regarding the number of records and their availability, all a part of the database design and planning. The modern computer information system, as a final product, consists of a well organized database, web application, and a special protection and security. Also, additional decision-making mathematics is added. The main task was that the process of registering and deciding, must be transparent and on a public world network, such as internet. The authentication of authorized personnel has to be very strong together with the encryption of communication and data transmitted. The exchanged data have to be protected because of the large number of persons involved in cybercrime on illegal organ market, and data altering and counterfeiting.

The benefit from this system is not only in the area of transplantation. There are long-term effects that are expected from developing and advancing the SETNET information system and that are contributing to the development of health care as well as of the whole society. They are:

System monitoring and regulation of the process of information exchange, to protect the rights and privacy of patients and increase the quality and the efficiency in the delivery of health services.

Potential for a secondary use of data in an aggregated form for decision-making, improved practice and scientific research, as well as ensuring the openness and transparency of derivative information related to the performance of the health care.

Meaningfulness, quality and usefulness of the information gathered, their storage, use and publication in a standardized way. This will provide continuity of care and improve the management of chronic health conditions, the outcome of hospital care, and pharmaceutical management.

Increasing the security of the patients data and organ matching process with decreasing the financial costs together with improving the cost objectivity.

ER Analysis: Identifying Entity Sets and Relationship Sets:

Entity Sets:

1. User
1. User ID
2. Name
3. Date of birth
4. Phone Number (multi-valued)
5. Medical Insurance
6. Medical History
7. Address
2. Patient
1. Patient_ID
2. Organ Required
3. Reason of procurement
4. User_ID(*foreignkey*)
3. Donor
1. Donor_ID
2. Organ Donated
3. Reason of donation
4. User_ID(*foreignkey*)
4. Organ Available
1. Organ_ID
2. Organ Name
3. Donor_ID(*foreignkey*)
5. Organization
1. Organization ID
2. Organization Name
3. Location
4. Government approved organization or not
5. Phone Number (multi-valued)
6. Doctor
1. Doctor ID
2. Doctor Name
3. Phone Number (multi-valued)
7. Organization Head
1. Head Name
2. Date of Joining

3. Term Length

Relationship Sets:

1. Donates – The act of donation of an organ from a donor
2. Procures - The act of procuring an organ by the patient
3. Transaction
 1. Date of transaction
 2. Status – whether the surgery was successful or not
 4. Organ Donated -The organ donated by an donor, which is then stored in *Organ_aavailabletable*.
 5. Attended By -The transplantation performed by doctor – procuring an organ from a donor and transplanting it to the patient by surgery.
6. Registers - Donor is registered in which organization
7. Works in – The organization where the doctor works.
8. Headed By – The organization is headed by which person

Figuur 1: ER