A Minor Project Final Report on

“**Blood Management System**”

Submitted in Partial Fulfillment of the Requirements for the Degree of Software engineering

Under Pokhara University.

Submitted by:  
**Himshikha Rai(15756)**

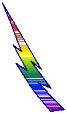
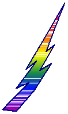
**Denis Gurung(15755)**

Under the Supervision of:

(**Prof. Dr. Roshan Chitrakar**)

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Date:  
(13th July 018)



**Department of Software Engineering**

**NEPAL COLLEGE OF INFORMATION TECHNOLOGY**

Balkumari, Lalitpur, Nepal

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# Abstract

Releasing the need of the management of bloods that are donated we have entitled the name "Blood Management System" for our sixth semester project. The blood received from the donation events needs a proper and systematic management. We are having a problem finding a matching blood whenever we need the blood. And it is quite troublesome to contact every hospitals checking for the blood. Thus, the Blood Management System will provide the details regarding the availability of blood in hospitals.

Blood Management System is an android application to maintain day to day transactions in a particular hospital. Blood Management System is a multidisciplinary, evidence-based approach to optimizing the care of patients who might need a blood transfusion. A blood bank is a place for stocking blood donations from donors. To provide web based communication there are numbers of online web based blood bank management systems that exists for communicating between department of blood centers and hospitals, to satisfy blood necessity, to buy, sale and stock the blood, to give information about this blood. Manual systems as compared to Computer Based Information Systems are time consuming, laborious, and costly.

Keywords: Management System, Blood Bank

# Introduction

"Blood Management System" is a mobile application that is developed for a specific hospital to manage the blood. This application contains two languages i.e. English and Nepali. The user can use any language based on their compatibility. User can register themselves whenever they want to donate a blood through the donor registration form provided and can search for the blood whenever needed. Manual systems as compared to Computer Based Information Systems are time consuming, laborious, and costly .Automation systems and information technology can greatly help medical facilities to improve their working efficiency and optimize the whole workflow.

The blood management information system offers functionalities to quick access to donor records collected from various parts of the country. It enables monitoring of the results and performance of the blood donation activity such that relevant and measurable objectives of the organization can be checked. It provides to management timely, confidential and secure medical reports that facilitates planning and decision making and hence improved medical service delivery. The reports generated by the system give answers to most of the challenges management faces as far as blood donor records are concerned.

# Problem Statement

Entering the details about the blood groups, members, addresses, etc. And tracking the databases is complicated when the details are maintained manually. This makes the maintenance of schedule erroneous.

There are various limitations of manual system listed below:-

* It is time consuming.
* It leads to error prone results.
* Reports take time to produce.

Thus to overcome this limitations the blood management system is needed whose main propose is to save user's time and to provide the user simplest and fastest application. To use the application the user does not have to remember or understand anything. The user can use the application easily.

# Project Objectives

The main aim and objectives of this project is to provide platform for the people to search the availability of blood whenever needed.

The goal of this project is to save users time for searching and contacting the entire hospital for availability of blood. It's objective is to maintain the Blood Bank Information System and to keep all information regarding the donors/users details, information who wants to donate the blood.

The following are the measure objective of this project:-

* To design an electronic blood donor management application.
* To develop the application through which we can reduce the human efforts.
* To record the information's such as blood request details, blood donor details, compatibility details.
* For management of returned and unused blood units.
* To make easier and faster application for the user.
* To create a bridge between the demand and supply of blood.
* To also bring the donor and the patient in a common platform.
* To provide immediate storage and retrieval of data and information.
* To provide a means for the blood bank to publicize and advertise blood donation programs.

## Significance of the study

Researcher has developed the management information system for blood bank at Jhalawar district Rajasthan. Unfortunately blood bank staff still using the old traditional method i.e. they are maintaining the data manually. This practice effect the retrieval of the information and staff is unable to maintain the inventory properly. During the development of the management information system for the blood bank researcher focused on two concepts which are inventory control and the information retrieval. By developing the information system inventory should be properly managed and the information retrieval can be precise.

This system will provide three beneficiaries i.e. the first benefit will be to the donor, second the seekers and the blood bank. Donors can view the blood donation camp organizing at the different places and can also get the notification when his blood gets used. Seeker can get the information of the particular blood group available in the particular hospital. Blood bank in charge is getting rid from manual procedure. Now they to do the entries in the information system. The probability of error should be minimal. Information retrieval should be precise and effective

## Project scope and Limitations

This section describes about the requirements of the project. The project should be developed in such a way that it meets all its objectives. The application should be built such a way that it should suits for all the types if blood bank and hospital in near future.

The main scopes of the project are: -

* Provide information of the blood donors, available blood in a particular hospital.
* A perfect platform to connect between the donor and the patients.
* To manage and control the sales, purchases and stocks of blood.
* Avoid accumulating blood from individuals who might also be unsuitable due to threat if health factors that might also harm the patients.
* In development of this application, there shall be space for future modifications.

Even though our system has lots of features to serve users, it also has limitations that users could feel limited.

* This system will require internet access to be used.
* Cannot upload or download the latest updates at right time.

## Literature review

This section includes the literature review of web-based navigation and connecting portal service.

* Review

As the increasing use of technology and advancement in the technology, nowadays everyone wants to complete their tasks using digital devices. Along with many people now uses virtual platform to be connected, share and get genuine information. Social media is what most applied to day to day life of every person. Even though the advancement of this much technology, there lacks some sorts of services that every people are unable to use and benefit. Hence, our project would provide a people the platform for a people.

* Study

This is a database android application system that is to be used by the blood banks or hospitals as a means to advertise the 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.

* Features not provided

Our project may not be a complete blood management system as it is only specific to particular hospital. It will not be able to give the details of all the hospitals.

## Methodology

Every project has methods or plan to implement the project. Thus our project methodology will be as follows:

A) Software Development Life Cycle:

The framework we will be using for developing this project is Increment model along with agile techniques. This model combines linear sequential model with iterative prototype along with user's story and prototype model. New functionalities will be added as each increment is developed. The phases of Linear sequential model are: Analysis, Design, Coding and Testing. The software repeatedly passes through these phase in iteration and an increment is delivered with progressive changes.

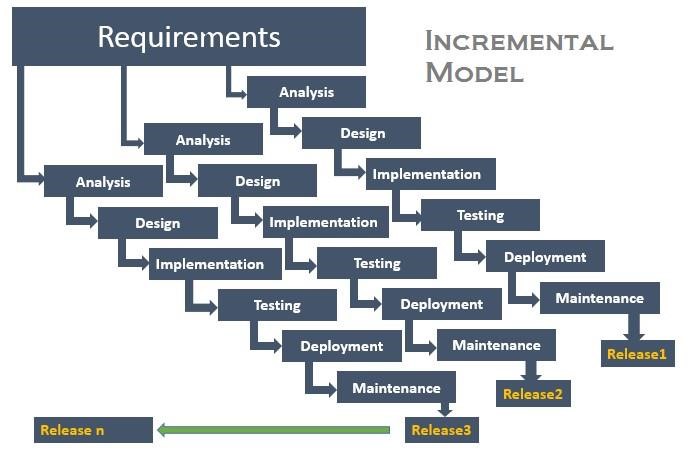


Fig 1: Incremental model.

I) Analysis phase:

In this phase, analysis will be performed in order to find out the requirements of the system. The outcome of this phase would be "System Requirement Specification".

II)Design phase :

In this phase, System Requirement Specification would be translated into system's design. Context Diagram, DFD, ER-Diagram, Use Case Diagram and Class Diagram will be developed.

III)Coding phase:

In this phase, coding will be done according to the design and working system will be developed by the end of this process. Implementation of project is done.

IV)Testing Phase :

In this phase, the system will be tested. With each testing a list of changes to the system developed, is suggested and the changes will be applied to the software and the software would be delivered as a successive increment until a satisfying system is achieved.

## Proposed Performance Analysis Methodology and Validation Scheme

## 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.

Managerial Approach

• **Team Building Consideration**:

¬ Each of the team members will be given a job.

¬ The work division shall be on the basis of expertise.

¬ The progress shall be synchronized on weekly basis.

## Technologies used

Following are the technologies used in our Project:

* Programming Language: Java
* Database Management System: MySQL
* Development Tool: Android Studio

Proposed Deliverables/Output

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

Project Task and Time Schedule

The project schedule has been designed as per requirements and constraints involved. This project is scheduled to be completed in about two months. Requirement analysis have been given more emphasis. Research and database management is to be done first and well documented. Debugging and Testing is to be done prior to the completion of the project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | First increment period | Second Increment period | Third increment period | APPROX Duration (in days) |
| Requirement analysis and Specification. | 6 | 5 | 3 | 14 |
| Analysis of the System | 7 | 6 | 5 | 18 |
| System design | 5 | 7 | 14 | 26 |
| Develop System | 10 | 12 | 20 | 32 |
| Testing and Debugging | 10 | 4 | 9 | 23 |
| Overall System Test | 4 | 3 | 6 | 13 |
| Develop Documentation | 25 | 15 | 20 | 60 |

Table 2: Project task and Schedule.

## Bibliography

[1]"en.wikipedia.org

[2]''https://www.google.com/

[3]" <https://www.sciencedirect.com/>