

A Minor Project-I Report on

Blood Bank Management System

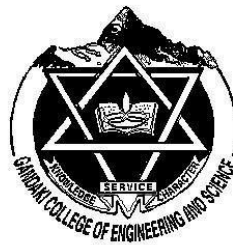
Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Engineering in Computer Engineering at Pokhara University

By

BIMAL SHRESTHA

KIRAN DHAKAL

SURAJ KANDEL



Department of Research and Development

GANDAKI COLLEGE OF ENGINEERING AND SCIENCE

Lamachaur, Kaski, Nepal

(OCT, 2023)

A Minor Project –I Report on
BLOOD BANK MANAGEMENT SYSTEM

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Engineering in Computer Engineering at Pokhara University

By

BIMAL SHRESTHA

KIRAN DHAKAL

SURAJ KANDEL

Supervisor

Er. RAJENDRA BAHADUR THAPA



Department of Research and Development

GANDAKI COLLEGE OF ENGINEERING AND SCIENCE

Lamachaur, Kaski, Nepal
(OCT, 2023)

APPROVAL CERTIFICATE

This project entitled "BLOOD BANK MANAGEMENT SYSTEM " prepared and submitted by " **Bimal Shrestha, Kiran Dhakal and Suraj Kandel** " under the supervision of **Er. Rajendra Bahadur Thapa** in partial fulfillment of the requirements for the Degree of Bachelor of Engineering in Computer Engineering has been examined and is recommended for approval and acceptance.

Date of Evaluation: October 11, 2023

.....

Er. Rajendra Bahadur Thapa

(Project Supervisor)

.....

Er. Rajendra Bahadur Thapa

(Acting Coordinator)

Research Management Committee

Gandaki College of Engineering and Science

BONAFIDE CERTIFICATE

This is to certify that this project titled **BLOOD BANK MANAGEMENT SYSTEM** in partial fulfillment of the requirements for the degree of BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING is a bona fide work of **Bimal Shrestha, Kiran Dhakal and Suraj Kandel** under the supervision of **Er. Rajendra Bahadur Thapa**. It is further certified that this work doesn't form part of any other project work based on which a degree or award was conferred on any earlier occasion on this by any other candidate.

Date of Evaluation: October 11, 2023

.....

Er.

External Examiner

Post

Institute Name:

.....

Er. Rajendra Bahadur Thapa

Supervisor

.....

Er. Rajendra Bahadur Thapa

Project Head

Research Management Cell

ACKNOWLEDGMENT

We want to offer our sincere gratitude to everyone who gave us the chance to finish this project. A special gratitude to our project supervisor, **Er. Rajendra Bahadur Thapa** who supported us to do this project by giving valuable suggestions and guidelines throughout the project. We sincerely appreciate the inspiration and support we received from the principal, **Mr. Birendra Khadka**, and the vice principal, **Mr. Ashok Raj Parajuli**, throughout the course of the project. We must be grateful for the direction other supervisors provided for our project, as their comments and suggestions allowed us to develop our skills.

Additionally, we would like to convey our sincere gratitude to our families, parents, and friends, who have consistently been the greatest source of inspiration for all of our endeavors.

Bimal Shrestha

Kiran Dhakal

Suraj Kandel

Gandaki College of Engineering and Science

ABSTRACT

Many blood banks and hospitals are still using paper-based systems for recording and updating donor information and patient information. This manual process is time consuming and leads to delays, errors, and a potential risk to patient safety.

“Blood Bank Management System” is a Web App solution designed to efficiently manage the operations of a blood bank. It aims to organize the process of blood donation, storage, and distribution while ensuring optimal record management and improved accessibility for patients in need. The system incorporates features such as donor registration, blood typing, screening for blood requests, and expiration dates. With its user-friendly interface, the Blood Bank Management System provides an effective tool for enhancing the overall efficiency and effectiveness of blood bank operations.

TABLE OF CONTENTS

APPROVAL CERTIFICATE	iii
BONAFIDE CERTIFICATE	iv
ACKNOWLEDGMENT	v
ABSTRACT.....	vi
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
Chapter 1	1
INTRODUCTION	1
1.1. Background.....	1
1.2. Problem statement.....	1
1.3. Objective	1
1.4. Implication	2
Chapter 2.....	3
LITERATURE REVIEW.....	3
2.1Hamro lifeBank.....	3
2.2Nepali Blood Donor.....	3
2.3 Nepal Blood	3
2.4Blood for Nepal	3
Chapter 3	4
TOOLS AND METHODOLOGY	4
3.1 REQUIRED TOOLS	4
3.2 APPROACH USED	4

3.3 USECASE DIAGRAMS	6
3.5 ENTITY RELATIONSHIP DIAGRAM.....	8
Chapter 4.....	9
FINDINGS, RESULTS AND ANALYSIS	9
4.1 Test Case Report/ Result.....	9
4.2 ANALYSIS	10
CHAPTER 5	11
CONCLUSION AND RECOMMENDATION	11
5.1 CONCLUSION.....	11
5.2 RECOMMENDATION	11
Bibliography	12
APPENDICES	13

LIST OF FIGURES

Figure 3.1: Waterfall model

Figure 3.2: Use case Diagram Blood Bank Management System

Figure 3.3: SSD for Blood Bank Management System

Figure 3.4: ERD Blood Bank Management System

LIST OF ABBREVIATIONS

ERD: Entity Relationship Diagram

SSD: System Sequence Diagram

SQL: Structured Query Language

Chapter 1

INTRODUCTION

1.1. Background

When a person needs a certain type of blood and this type is not available in the hospital, family members send messages through social media to those who can donate to them, and this process takes longer than the life of the patient, making it the most dangerous. In addition, it seems that there is a lack of proper documentation about blood donors and their medical histories. This may lead to blood bag contamination and affect the safety of blood transfusions. The Blood Bank Management System Project Report aims to provide complete information on how the project handles blood management. This includes the application of storing, processing, and analyzing data in the blood banks. It contains the fundamental contents of creating the documentation for blood bank system development.

1.2. Problem statement

The current problem is that the management of blood bank operations faces challenges in maintaining accurate inventory, managing donor information, and fulfilling blood requests efficiently, leading to delays, errors, and potential risks to patient safety.

1.3. Objective

The main objectives of the system records and manages the specifics of blood donors, patients, and blood groups. Users can easily request or donate blood through this convenient method.

1.4. Implication

The implications of implementing a Blood Management System include improved inventory management, enhanced donor screening and tracking, streamlined blood requests, and overall efficiency, leading to timely availability of safe blood units and improved patient care.

Chapter 2

LITERATURE REVIEW

2.1 Hamro lifeBank

The existing blood management system in Nepal is manual, cumbersome, and inefficient. When it comes to blood, the right information at the right time can be the answer to a life or-death situation. A computerized system records the information about the supply and collection of blood (Hamro LifeBank -Digital Blood system, 2019).

2.2 Nepali Blood Donor

The blood bank management system application is an online system that allows checking whether required blood groups are available or not. Moreover, the system has added features such as patient names and contacts, blood groups, and donor information (Nepali Blood Donor, 2022).

2.3 Nepal Blood

The need is constant, and your contribution is important for a healthy and reliable blood supply. Online blood data storage system is an online blood bank service that works to encourage and inspire people to donate blood and provide fresh blood to needy ones to save their life (Nepal Blood, 2015).

2.4 Blood for Nepal

The Blood management system should solve the issue of demand and wastage and lead to self-sufficiency in blood requirement. This should encourage new donors and retain old donors to donate blood (Yadav, 2014).

The software plays an important role in the management of blood, so the team should educate people and provide ideas on how to manage the blood (Blood for Nepal, 2015).

Chapter 3

TOOLS AND METHODOLOGY

3.1 REQUIRED TOOLS

MySQL, HTML, CSS, PHP, and JavaScript: for coding and implementation

GitHub: For version Control

Apache: For Server

Visual Studio code: for code editing

3.2 APPROACH USED

In the development of computer software, a variety of approaches are utilized. The waterfall model has been the most appropriate technique because our “Blood Bank Management System” is a simple application with no certain requirements. The Waterfall model was the first process model to be introduced. It is also referred to as a liner-sequential life cycle model. It is very simple to understand and use. In waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases.

The advantages of waterfall model are:

- It is simple to understand and implement.
- In each phase of the lifecycle, there are specific deliverables.
- All the tasks to be performed in each phase are clearly defined.
- It is for short projects where all requirements are pre-defined and well understood.

The disadvantages of waterfall model are:

- Any correction or update in the previous phase is not possible.
- It is not possible to keep track of the progress or stage of the development within stages
-

Waterfall model

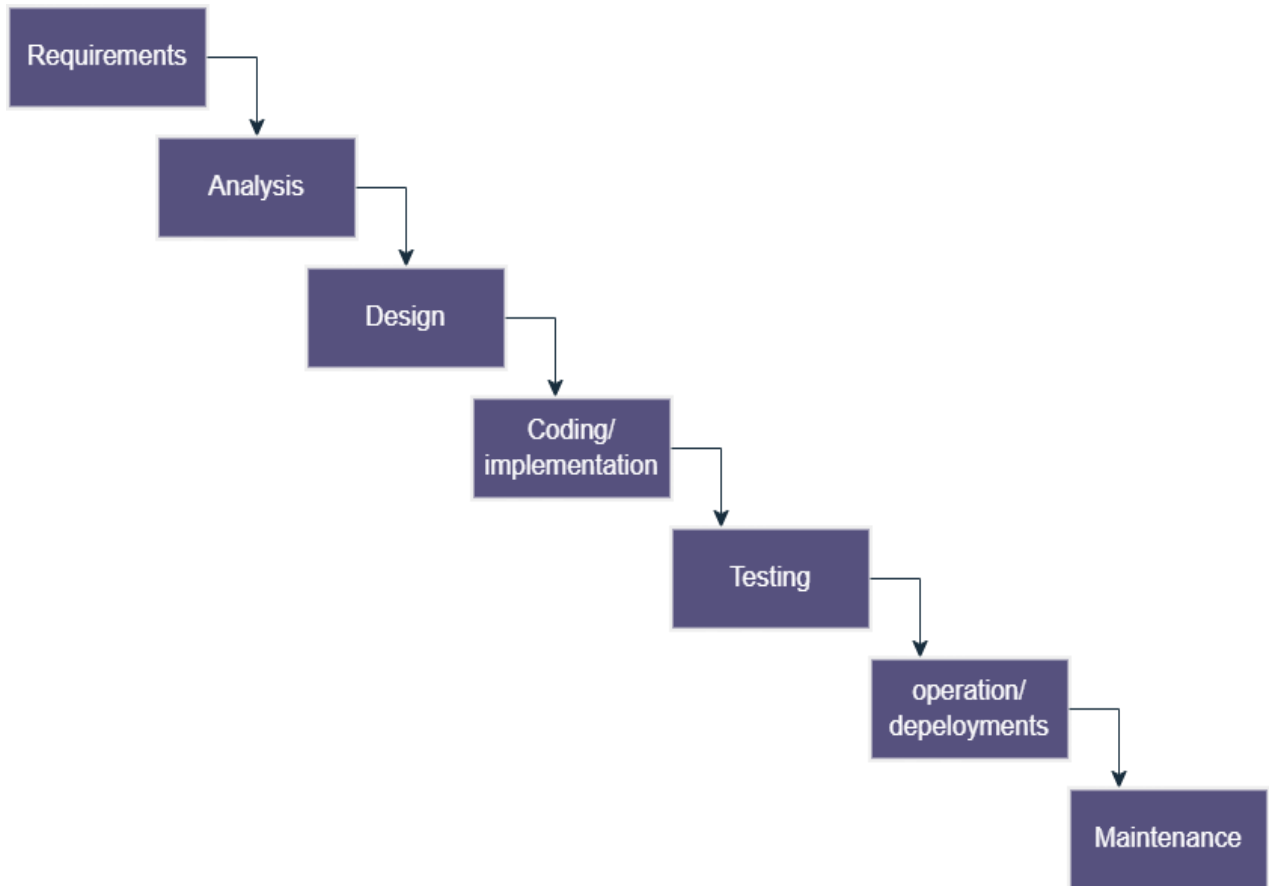


Figure 3.1: Waterfall model

3.3 USECASE DIAGRAMS

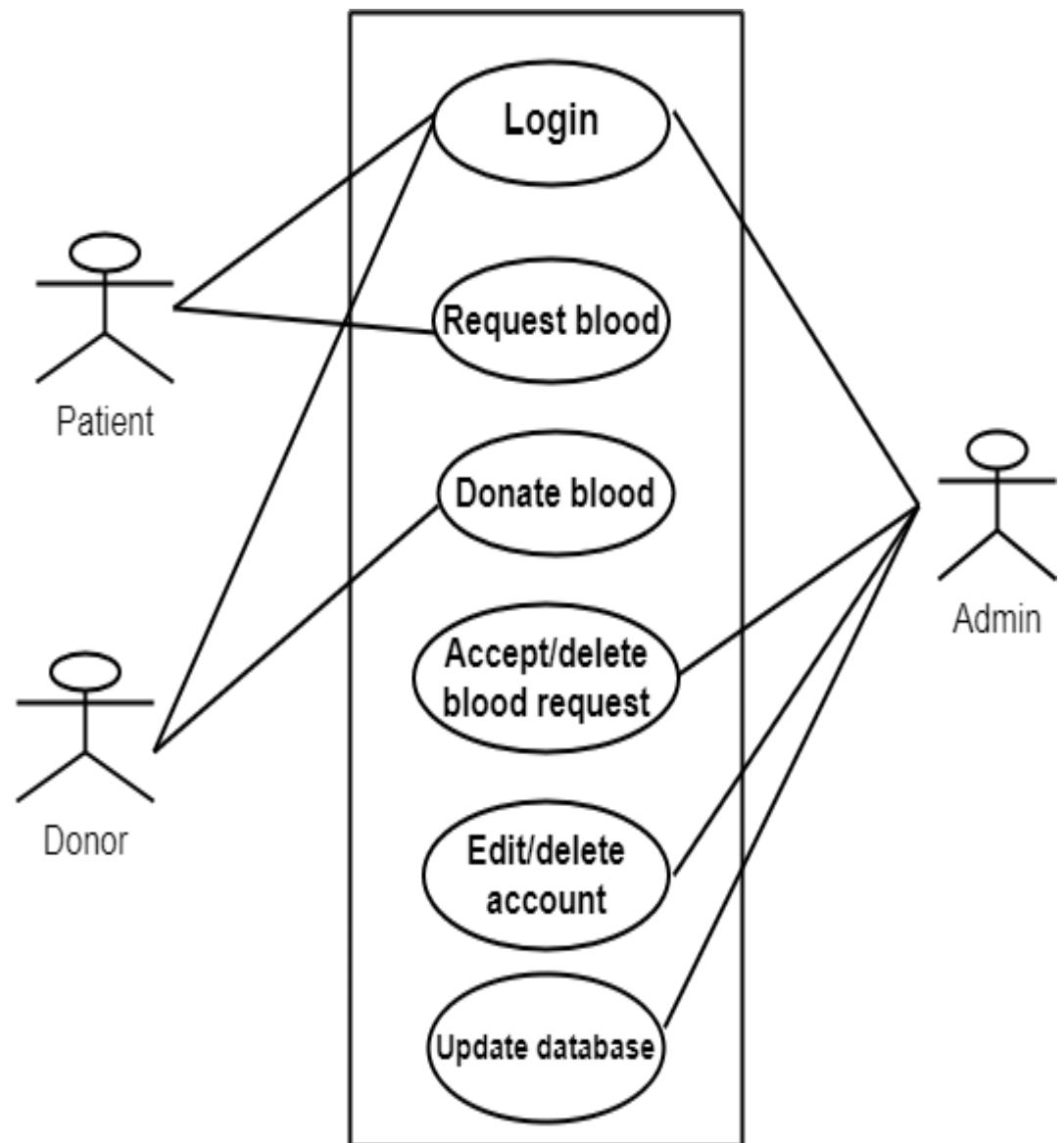


Figure 3.2: Use case diagram

As shown in above Use case diagram, admin can login into the system. Admin can add and delete the information of Blood donor and patient, Blood group and Blood request. Patient can login and request for blood and donor can login and donate blood through this system.

3.4 SYSTEM SEQUENCE DIAGRAM

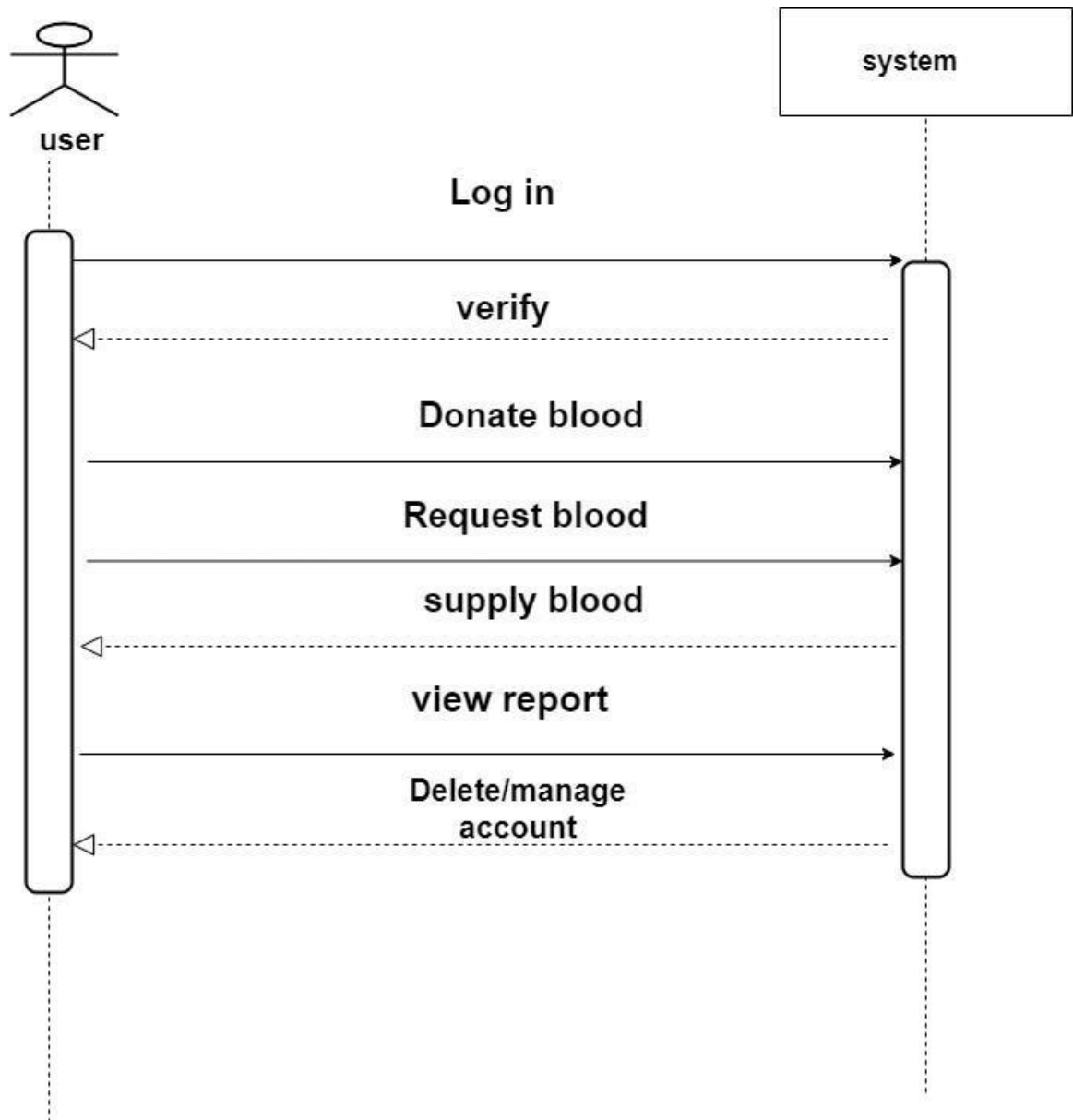


Figure 3.3: SSD

3.5 ENTITY RELATIONSHIP DIAGRAM

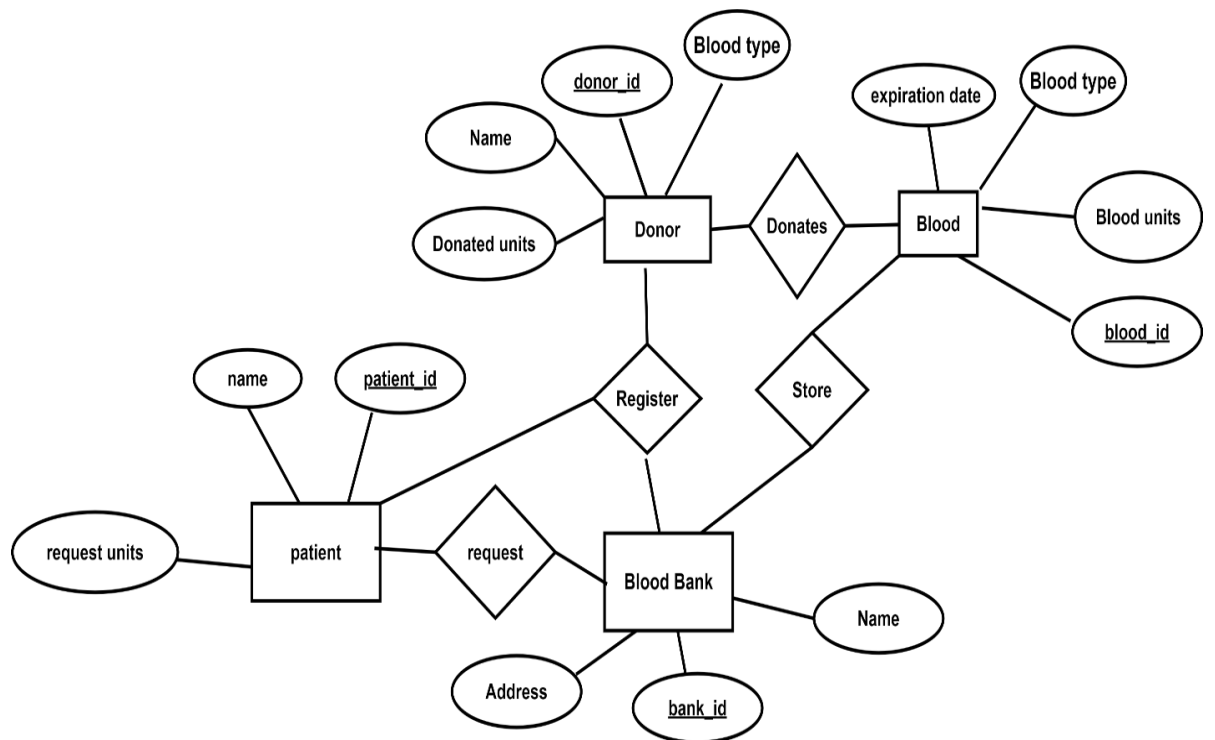


Figure 3.4: ERD

Chapter 4

FINDINGS, RESULTS AND ANALYSI

4.1 Test Case Report/ Result

1. Authentication for user Objective/ Expected: User with correct email and password can login.

Observed: Only specific emails with its respective correct password were logged in.

Result: Verified

2. Invalid Email

Objective/ Expected: Email should be in any format.

Observed: No other email was accepted other than the @gmail.com form.

Result: Verified

3. UX Issues

Objective/ Expected: Simple and Userfriendly interface

Result: Verified

4.Request for blood

Objective/ Expected: The patient can request blood through this web app.

Observed: Using this web app, the patient can easily request the blood

5. Request for donation

Objective/ Expected: This web app allows the donor to request donations.

Observed: Using this web app, the doner can easily .

4.2 ANALYSIS

The blood bank management system is a software that is designed for non-profit purposes and is efficient. It allows to patients can request the blood. The donor can easily Donates the blood using through this web app. By using this tool, organizations or hospitals can record all the details of donors, blood units, and blood groups.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

A blood bank management system plays a crucial role in efficient management of blood donations. The overall blood donation can be improved by using this system. It allows for effective donor registration login and sign up. It also records all the details of collected blood unit, blood group. This web app can be used by patients in need of blood. In addition, it improves transparency, decreases waste, and improves the efficiency of blood banks, ultimately resulting in the saving of lives and a significant contribution to healthcare services.

5.2 RECOMMENDATION

The Blood Bank Management System was designed and developed to help maintain an up-to-date record of available blood units, donor registers, and blood types. Using this application, patients can quickly check the availability of specific blood types through the system and request to the system for need of blood, saving crucial time during emergencies. The risk of human errors in data entry and blood matching can be reduced by system, which enhances overall patient safety. However, there were some limitations:

- Internet access is required.
- Digital devices are required for accessing the web app.

The Blood bank management system project we worked on provided valuable insights into web application development and various web technologies. The management of donor information, including blood type, donation history, and contact details, is made easier by it. Our supervisor and team members worked together to complete the project within the estimated time frame.

The following are some of the improvements that can be implemented in the future:

- Increasing the system's efficiency.
- Introducing Emergency Response System.

Bibliography

(2018, April 26). Retrieved from Hamro LifeBank -Digital Blood system:

<https://hamrolifebank.com/>

(2019). Retrieved from Blood Donation System:

<https://creately.com/diagram/example/iamtz98g/blood-donation-system-classic>

(2022, September). Retrieved from Nepali Blood Donor:

<https://www.nepaliblooddonors.com/>

Blood for Nepal. (2015, may). Retrieved from <https://bloodfornepal.org/>

Entity-Relationship Diagram. (2016). Retrieved from Techopedia:

<https://www.techopedia.com/definition/1200/entity-relationship-diagram-erd>

Gurung, S. (2019). *Blood Bank* - Database sharing system for Nepal.

Nepal Blood. (2015, November). Retrieved from Online blood bank:

<https://nepalblood.com/>

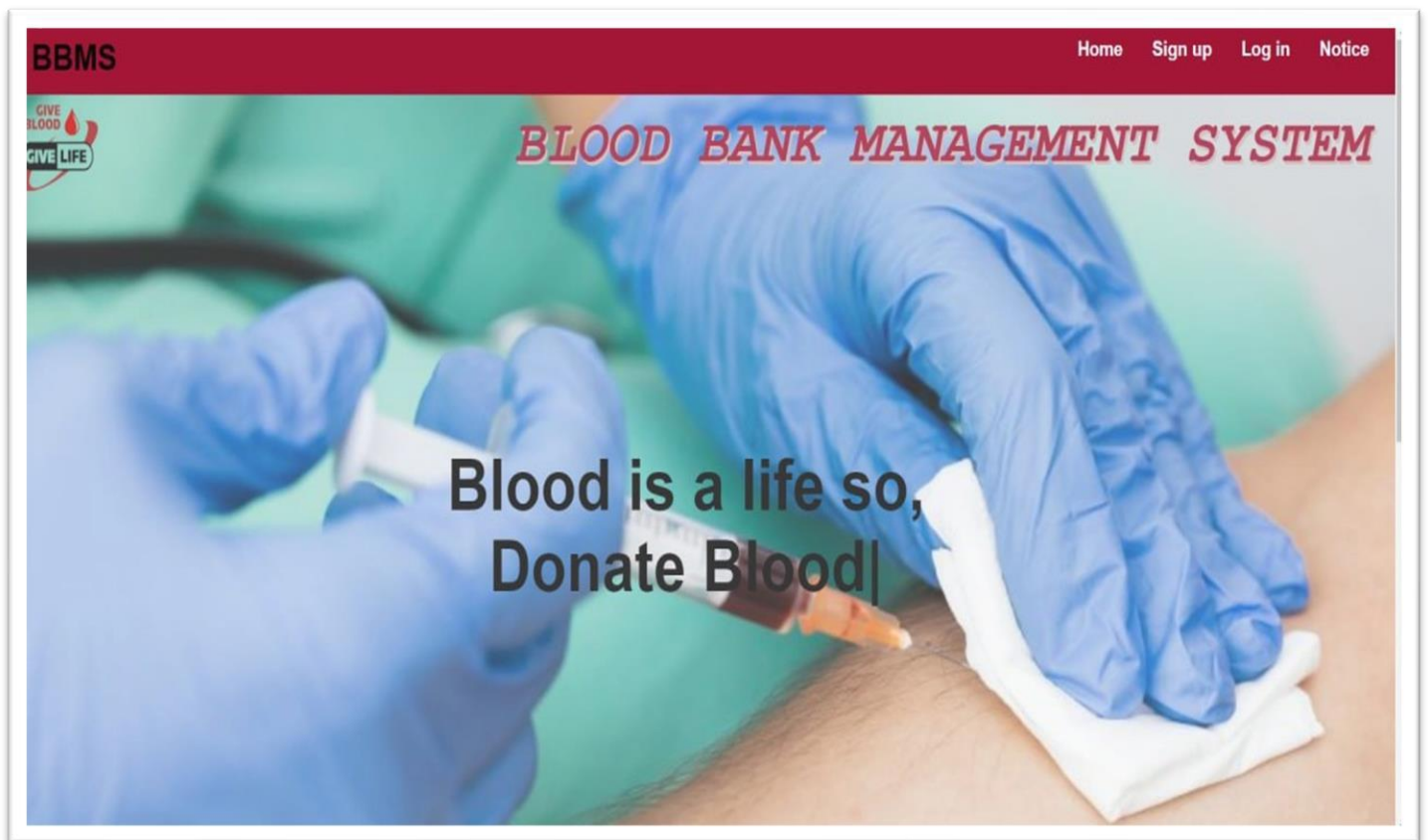
Waterfall model. (2014). Retrieved from tutorials point:

https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm

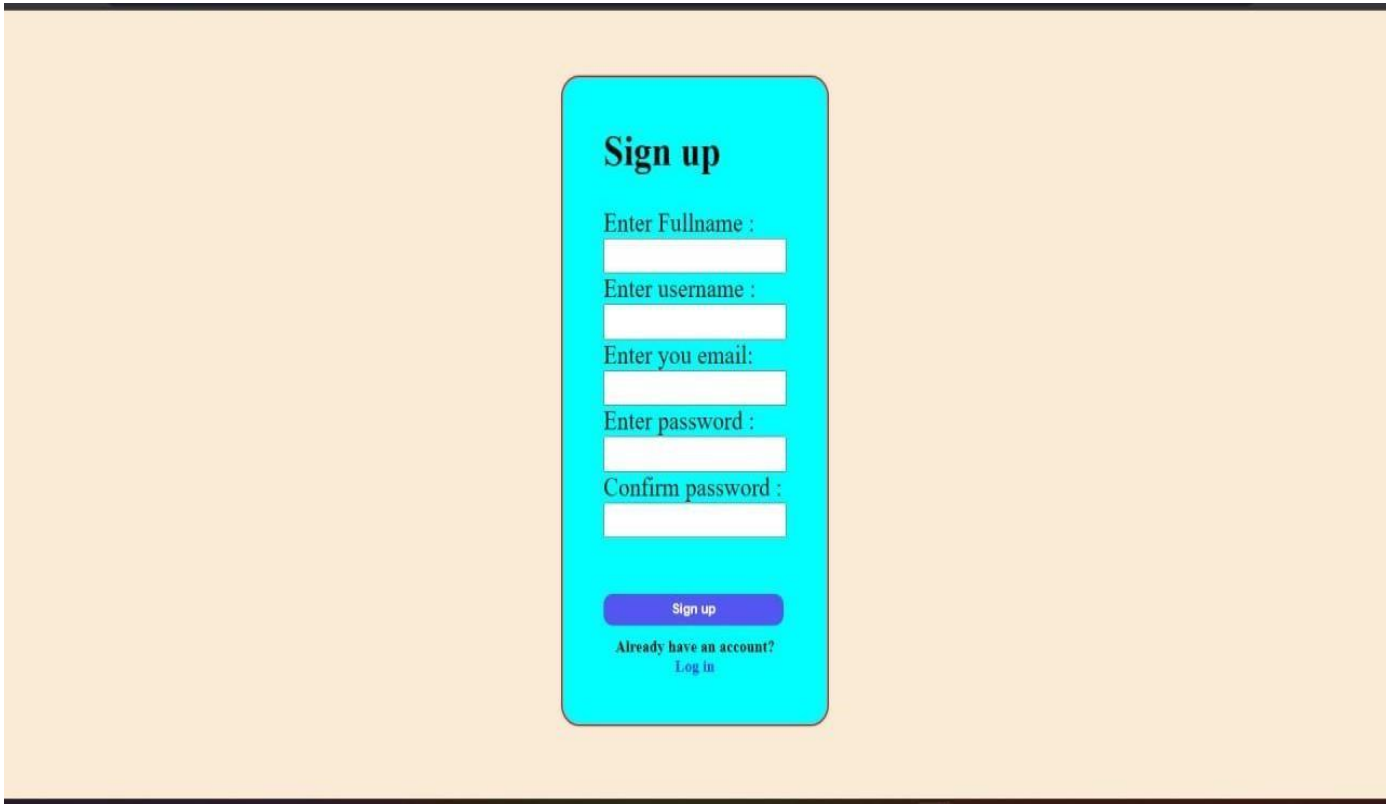
Yadav, S. K. (2014). *Management of Project - Blood Information Management System*.

Kathmandu.

APPENDICES



Appendix 1:Home Page



The image shows a sign-up form centered on a light orange background. The form is contained within a light blue rounded rectangle. It features a title 'Sign up' in bold black text. Below the title are five input fields, each preceded by a label: 'Enter Fullname :', 'Enter username :', 'Enter you email:', 'Enter password :', and 'Confirm password :'. The third label contains a typo. At the bottom of the form is a purple 'Sign up' button. Below the button, the text 'Already have an account?' is followed by a 'Log in' link.

Sign up

Enter Fullname :

Enter username :

Enter you email:

Enter password :

Confirm password :

[Sign up](#)

Already have an account?
[Log in](#)

Appendix 2: Sign up Page

Log in

Enter username :

Enter password :

Log in

Don't have and account?
[sign up](#)

Appendix 3: Login Page

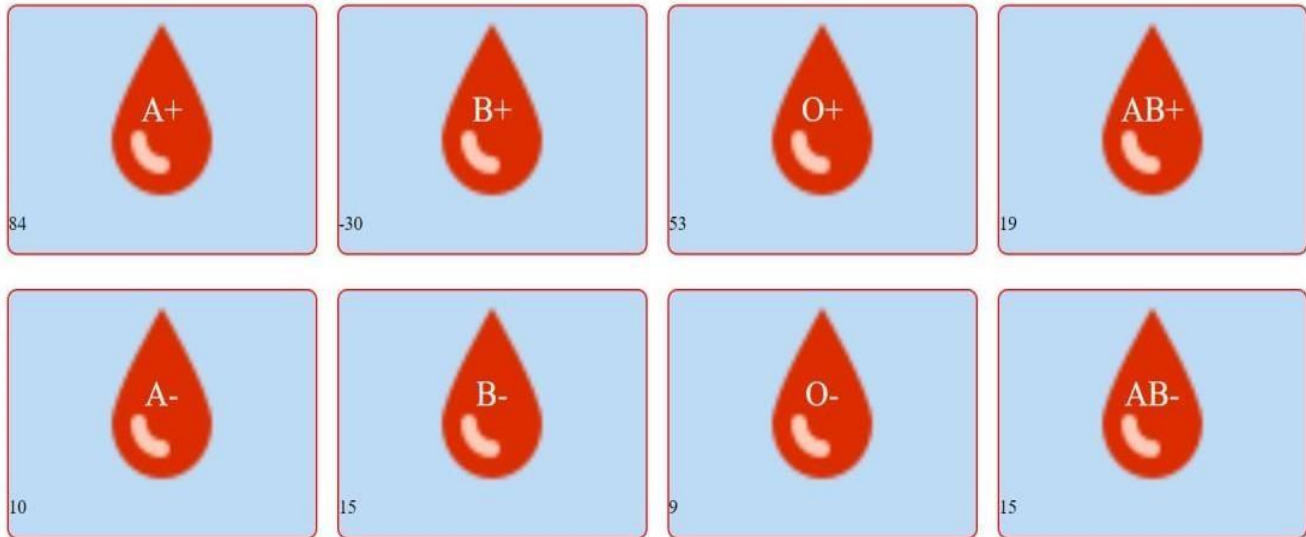
THIS IS Admin PAGE

Add Admin

S.N	Full Name	Email	User Name	Password	action
1	Administor	admin@gmail.com	admin	12345	Change Password Update Admin Delete Admin
2	Camden Stanton	senijiky@mailinator.com	binety	Pa\$\$w0rd!	Change Password Update Admin Delete Admin

Appendix 4: Admin Page

THIS IS HOME PAGE



Appendix 5: Home Page After login

THIS IS client PAGE

S.N	I.D	Full Name	User Name	Email	Password
1	11	suraj kandel	suraj123	suraj@gmail.com	321
2	13	Hoyt Brooks	xehihu	qohedifim@mailinator.com	Pa\$\$w0rd!
3	14	Ray Wagner	vahaneryta	bobudegype@mailinator.com	Pa\$\$w0rd!
4	15	Zahir Jackson	hajyberony	nawidusim@mailinator.com	Pa\$\$w0rd!
5	16	sk	ss	s@gmial.com	1
6	17	bimal shrestha	bimal123	bimal@gmail.com	678
7	18	kiran	kiran	kiran@gmailaa.com	123
8	19	sdedaf	vdfvf	pp@gmail.com	123
9	21	kamala dhakal	dncksdl	kamaladhakal234@gmailaasss.com	123
10	22	kamala dhakal	bimal shretsakkkkkk	kamaladhakal234@gppppmail.coom	123
11	23	kamala dhakal	bimal shretsakkkkkkl	kamaladhakal234@gpp78123ppmail.co888oom	789
12	24	kirandhakal		pp@gmail.com	123
13	25	bimal shrestha	ram123	sanoou@gmail.com	444

Appendix 5: Clients Page

PATIENT HISTORY

S.N	ID	Phone Number	Age	Blood Type	Required unit	Prescription	Action	Remarks/Reason
1	17	9826114231	23	A-	5	Prescription_17_408.jpg	Accepted	sadfa
2	16	1	21	O+	77	Prescription_16_475.jpg	Deleted	
3	16	134323423	83	AB+	62	Prescription_16_301.jpg	Deleted	abc
4	11	9823145673	45	O-	5	Prescription_11_972.jpg	Accepted	
5	11	7251491501	15	O-	1	Prescription_11_403.jpg	Accepted	
6	25	9827591616	44	B+	60	Prescription_25_995.jpg	Accepted	

DONER HISTORY

S.N	ID	Phone Number	Age	Blood Type	Disease	Action	Reason	Unit
1	11	2147483647	36	O+		Deleted	abc	0
2	11	9813245623	36	O+		Deleted	abc	0
3	11	1	61	O-	Duis aut et in sed u	Deleted	abc	0
4	11	9813245623	36	O+		Accepted	5	0
5	0	987462542	15	A+		Accepted	15	0
6	11	7251491501	15	B+	Enim enim neque nihi	Accepted	-	15

Appendix 6: Patient History Page

DONOR HISTORY

S.N	ID	Phone Number	Age	Blood Type	Disease	Action	Reason	Unit
1	11	2147483647	36	O+		Deleted	abc	0
2	11	9813245623	36	O+		Deleted	abc	0
3	11	1	61	O-	Duis aut et in sed u	Deleted	abc	0
4	11	9813245623	36	O+		Accepted	5	0
5	0	987462542	15	A+		Accepted	15	0
6	11	7251491501	15	B+	Enim enim neque nihi	Accepted	-	15
7	0	830	99	A+	Et tempora do tempor	Accepted	-	15
8	11	350	55	A-	Necessitatibus nisi	Accepted	-	15
9	11	620	59	B+	Harum voluptatem du	Accepted	-	15
10	11	973	100	B-	Quisquam velit offic	Accepted	-	15
11	11	452	24	O+	Quod ad nisi sapient	Accepted	-	15
12	11	314	74	O+	Magnam cillum velit	Accepted	-	15
13	11	212	52	O-	Ea maiores veniam l	Accepted	-	15
14	11	790	86	AB+	Est consequat Qui	Accepted	-	15
15	11	69	68	AB-	Tempora quas qui eli	Accepted	-	15
16	18	9827591616	56	A+	nojhvgvh	Accepted	-	69
17	11	9811937111	20	O+		Accepted	-	100
18	11	9811937111	20	AB+		Accepted	-	66

Appendix 7: Donor History Page

NOTICE

Add Notice

S.N	Title	Image	action
1	notice for blood donation camp		Update Notice Delete Notice
2	rfqerfq		Update Notice Delete Notice
3	yueme		Update Notice Delete Notice

Appendix 8: Notice Page

[Home](#) [Admin](#) [Clients](#) [Donor](#) [Patient](#) [History](#) [Notice](#) [Log out](#)

ACCEPT DONATION REQUEST

Collected Unit:

Accept

2023 © ALL RIGHT RESERVED

Appendix 9: Accept Donation Request

