



**Proposal
For
Second Year Project
Bachelor of Science in Information Technology**

B Blood

Submitted by
Tshewang Dendup(12190100)

...

...

Gyalpozhing College of Information Technology

Read carefully before filling the form.

1. Please do not alter the layout of the application form. Information must be filled in the spaces provided, under set format.
2. Guidance notes in various fields should not be deleted.
3. Required information should be duly filled in the specified fields.
4. Required heads/fields which are not relevant to the project should be marked **N/A** (Not Applicable) or left blank and should not be deleted.

Guidelines and Forms

Submission Procedure

Duly filled proposal forms completed in all respects should be submitted in form of soft copy and a hard copy to project guide and project coordinator. On receipt of the applications the proposals will be evaluated by reviewer panel and proposal would then be defended by student groups. The project group may need to revise the proposal in light of the evaluator's recommendations.

For further information, please contact:

Project Coordinator

Sonam Wangmo

Table of Contents

Description	Page #
1. Project Identification.....	1
2. Scope, Introduction and Background of the Project	3
3. Aim and Objectives of the Project	7
4. Methodology	8
5. Benefits of the Project (Expected output/outcomes):	15
6. Risk Analysis/Feasibility	15
7. Project Approval Certificate	16
8. Reviewers Panel Comments	17
10. Project Schedule / Milestone Chart /Work plan	18
13. Report Writing Guidelines	19
Bibliography	20

Note: To update the table of contents, right click in the table and select '*update field*' and then select 'Update Entire Table'.

Application for Final Year Project

1. Project Identification

A. Reference Number:	
(for office use only)	
B. Project Title: B Blood	
C. Project Internal Guide:	
Name:	
Designation:	
Organization:	
Mobile # :	Tel. # :
Email:	
C1. Project External Guide:	
Name:	NA
Designation:	
Organization:	
Mobile # :	Tel. # :
Email:	
C2. Student Group Lead:	
Name:	
Roll No:	
Department:	
Mobile # :	Tel. # :
Email:	

D. Organizations Involved in the Project:

(Please identify all affiliated organizations collaborating in the project, and describe their role/contribution to the project.)

D1. Industrial Organizations:

#	Organization Name	Role / Contribution
	NA	

D2. Academic Organizations:

#	Organization Name	Role / Contribution

D3. Funding Organizations:

#	Organization Name	Role / Contribution
	NA	

E. Key Words:

(Please provide a maximum of 5 key words that describe the project. The key words will be incorporated in our database.)

Blood, Android application, Blood group, Blood Bank

F. Research and Development Theme:

Our health is one of the most important thing that needs to be given first preference in our daily life. In order to carry out any kinds of activity it is a necessary condition one should be healthy and mentally fit. Bhutan being on the verge of developing stage requires a lot of attention towards the medical services. The medial features that exists in Bhutan for now does not guarantee an effective service to the citizens. As of now the doctors has been facing various problems in collecting blood from the society. Due to this reason there are uncountable number of incidents where many patients has died because of limited blood. Even if there are people willing to donate the blood, they are left unknown as there is no good platform for them to fulfill their purpose of donating the blood.

Therefore, this project aims to develop the Bblood application to provide a platform for the people who are willing to donate their blood to the respective BHU or hospital.

G. Project Status:(Please mark ☒)

- ☐ New ☒ Modification to previous Project
☒ Extension of existing project

H. Project Duration:

Expected Starting Date:

Planned Duration in
months:**2. Scope, Introduction and Background of the Project****A. Scope of the Project:****User Scope**

The scope of this project targets the citizens residing inside the Bhutan as it is more easy and reliable to collect blood form the people who are authorized and true people of Bhutan.

The project focuses within the boundary of Bhutan due to the fact that it will be faster and efficient to collect the Blood from the donor who lives inside the country. Moreover, the hospital and BHU of Bhutan are the prime focus that the app targets to provide services.

System Scope

- 1) Login: User can pass through the application after filling the login page.
- 2) Register: The new user can create an account.
- 3) Search: The user can get the know about the Blood donor who will be listed in the app.
- 4) Post: The user who are in need of blood can seek donor form the society.
- 5) Update: The user can change the information about them.
- 6) Logout: Enable the user to exit the app.

B. Introduction (Project Background and Literature Review, Current State of the Art):

(Detailed summary of what all has been done internationally in the proposed area quoting references and bibliography. Please note that this section demonstrates the depth of knowledge of the project team and builds the confidence of the evaluators about capability of the team in achieving the stated objectives.)

(Please describe the current state of the art specific to this research topic.)

Blood is the most precious thing, is the savior of all mortal life, blood donation is thing a person can make as an important contribution to the society. Every day in a country, there is immediate requirement of different blood group. During emergencies like accidents, surgeries and delivery an extensive amount of blood is required, but shortage of supplies in particular hospital seems to be an issue. Majority of the people collect blood from their friends, relatives and strangers, but when rare group of blood is in need, people encounter with problems and cannot get the blood they need in the hospital. In developing countries such as Bhutan, there is few specialized organizations that can manage the blood donation process. Because humans are usually driven by certain values and moral, there is large number of voluntary donors but the problem is to find a ready donor within a significant amount of time because of lack of proper media. There is a need for mobile application that can be directly accessible to willing donors and recipients. There are various mobile applications based on blood banks and donations, but they are not applicable to Bhutan as we do not have separate blood banks. Mobile has become a part of life. In order to know the possibility of mobile application development and to have direct contact with voluntary donors. It provides an opportunity for donor to donate blood for good deeds. The main purpose of this project is to interconnect all the blood donors and keep record in the database and where by people who are in need of blood can ask the donor for donation through there contact number in emergency cases

The app has a login page where in the user required to register and search for a willing donor. Login allows only the registered user to login and thereby preventing authorized access. This app required internet access and thus there is disadvantage of internet failure. If user is registered login, he or she can view the blood request and he or she can also update their details and post for blood donation. If the blood donor members are will to donate the blood he or she should call to the recipient. Thus, this application helps to select the right donor online instantly using their details and blood group. The main aim of developing this application is to reduce the time and resources to a great extent that is spent in searching for the right donor. Moreover, with the help of this application, the users will be provided with the platform for direct interconnection between the willing donor and the blood finder with the help of direct calling facilities.

Literature Review:

In “Android blood Bank” the author has proposed a medium for finding a blood donor and storing the blood in the blood bank for emergency. The author has rightly stated that “The problem is not insufficient number of donor but finding a willing donor at the right time”. Author also talks about how that proposed medium will function and create networks between the donor and receiver. It also talks about how the information related to blood can be manage using a system instead of doing everything manually. Since with the development of technology, everyone is using a smart phone so therefore, its shows the feasibility of development and the usage of Android App. The author has clearly mentioned the architecture and methodology of Android Blood Bank. The article can help in developing a better medium for finding a donor. Since people use both IOS and Android phones, it could be better if this proposed medium supports both IOS and Android.

In the author has proposed an idea to develop an improve system for finding a right donor. The author presents and compare between the existing system and the improved system. The article talks on some of the drawbacks on existing system and how this drawback is overcome with the help of improved system. The author presents an idea of interconnecting all the blood banks in a single zone and availability of blood at the right time. The author also talks on the GPS technology in the improved system to locate the nearer blood bank and blood donor.

In the author talks about the difficulty of finding a blood donor in India during emergency situation with only 5% willing donor of the total population. The author proposed an improved system based on cloud base, which is much more efficient, time saving and usability. The article also talks about addition of extra feature such as GPS for donor location. This article also tests for the feasibility of improve system with design of algorithm and framework of the system.

According to this paper, it states that in most of developing countries finding a blood donor with specific blood group has become a serious issue, due which people lives are in danger. The program such as blood donation campaign are conducted to collect the blood from the willing donors. Though such programs are safe but it is wastage of time and long process. It also states that the blood receiver, those who are willing donor and who wanted to donate blood in near future are facing problems in communicating. So, in such cases mobile application can play vital role to eliminate such gaps and problems. In developed countries such as U.S department of defense, have effective blood donor management system which uses Management software to collect, test and transfuse and also gives information to people through web portal. Information are recorded safely through data mining technique called Novel Techniques where information of donor and receiver are seen. Since smart phones are used worldwide, so they developed Emergency Panic Button option to help those who suffers from the accident. And GPS and GSM application to tracked the donor.

C. Challenges:

(Please describe the challenges, specific to this research topic, currently being faced internationally.)

1) Completing the task as per the schedule.

It will be difficult for the team to develop the app according to the plan due to the limited time.

2) Security

When authentication and authorization are made based on the type of inputs, there is high chance that attackers can bypass our security.

3) Interactive User Interface

The accessibility, simplicity and usability of the app enhances satisfactory user experience but it also consumes a lot of time and knowledge to make the app lively and interactive.

4) Management of the database

The app that relies on databases for persistent data storage is a complex and consuming task.

D. Motivation and Need:

(Please describe the motivation and need for this work.)

The main motivation for developing this application is keeping in mind the experiences of how Bhutanese are finding it difficult to look for blood in emergencies. At present, people usually panic when immediate blood is required where they call each and every relative and friends asking them to be a donor. The frequent email sent to organizations like colleges and schools in search for blood donors and posts on social media about the need for blood donors has been the motivation behind the creation of this application. The application intends to introduce a new medium to search for blood donors. Modernization has led more and more people to use smart phones and it has become part of people's lives. Since majority of the Bhutanese people own a smart phone, there is feasibility in implementing such an application.

3. Aim and Objectives of the Project

(Please write the actual aim of your project. Also, describe the measurable objectives of the project and define the expected results. Use results-oriented wording with verbs such as 'to develop..', 'to implement..', 'to research..', 'to determine..', 'to identify..' The objectives should not be statements and should not include explanations and benefits. The objective should actually specify in simple words what the project team intends to achieve (something concrete and measurable/ deliverable). Fill only those objectives that are applicable to the proposed project.)

AIM:

To develop blood donation android application that will provide appropriate and efficient platform for the people to donate and request blood.

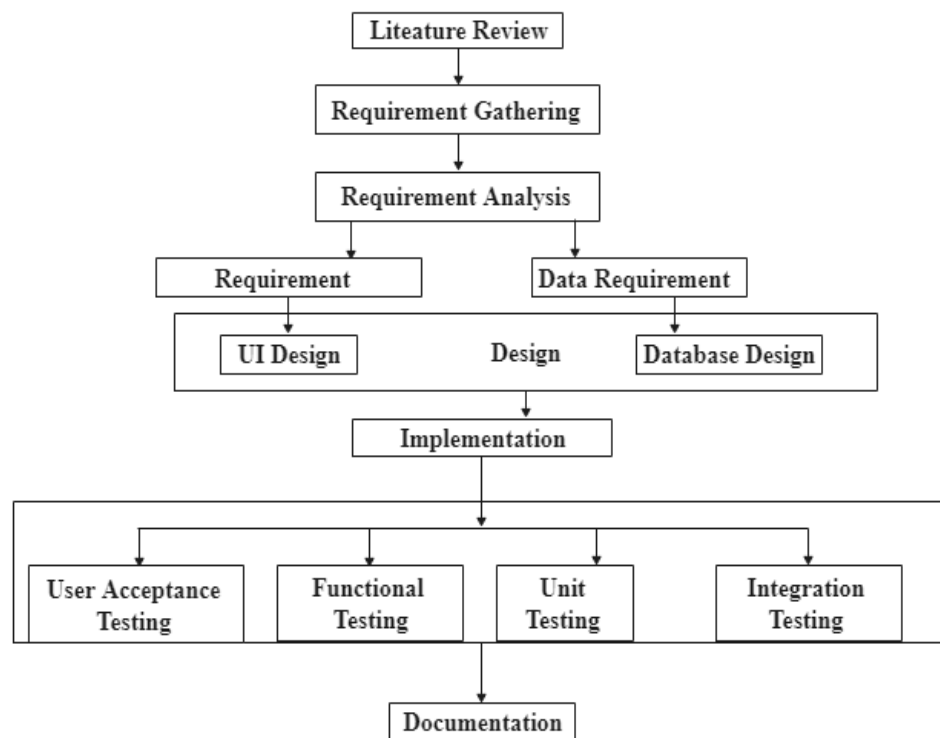
OBJECTIVES:

1. To allow the probable recipients to search and match the volunteer donors, and make request for the blood.
2. To provide immediate storage and retrieval of data and information related to the blood donors and seeker.
3. To fulfill the aim of one people one nation.
4. Acts as interface between the blood Donors and recipients.
5. To reduce time in searching blood donors during emergencies.

4. Methodology

A. Development / Research / Test Methodology:

(Please describe the technical details and justification of your development and research plan and test plan and testing strategies. Identify specialized equipment, facilities and infrastructure which are required for the project and their utilization plan. The block diagrams, system flow charts, high level algorithm details etc. have to be provided in this section. Also, describe the overall methodology to be used for the particular research topic)



Literature review

In this phase I had did comprehensive summary of research papers on related topic which includes articles, books, and other sources relevant to topic.

Requirement gathering and analysis

In this phase I will work on understanding the problem in detail by brain storming, discussion and survey related to topic. This phase i will also prepare the SRS document that will be input for next phase

Design

This phase takes input from requirement gathering and analysis phase and design is produced. This phase will help specify hardware and system requirement.

Implementation

After completing design phase, the project will be divided into units and actual coding starts.

Testing

After implementation phase, units are tested to make sure the product fulfills all the requirements stated in requirement phase.

Functionality Testing

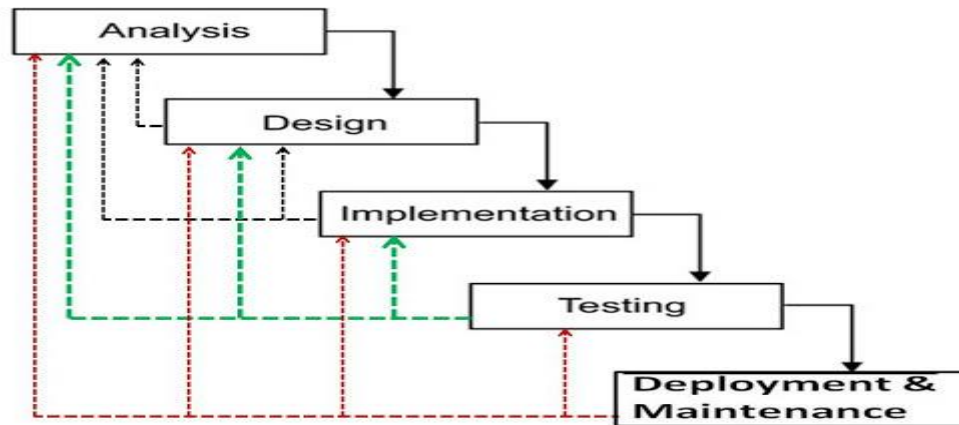
User Acceptance Testing

Unit testing

Integration Testing

Documentation

Project documents is created after completing all the coding and requirements are met.



Planning Phase: This is the first stage of the iterative model, where proper planning is done by the team, which helps them in mapping out the specifications documents, establish software or hardware requirements and generally prepare for the upcoming stages of the cycle.

Analysis and Design Phase: Once the planning is complete for the cycle, an analysis is performed to point out the appropriate business logic, database models and to know any other requirements of this particular stage. Moreover, the design stage also occurs in this phase of iterative model, where the technical requirements are established that will be utilized in order to meet the need of analysis stage.

Implementation Phase: This is the third and the most important phase of the iterative model. Here, the actual implementation and coding process is executed. All planning, specification, and design documents up to this point are coded and implemented into this initial iteration of the project.

Testing Phase: After the current build iteration is coded and implemented, testing is initiated in the cycle to identify and locate any potential bugs or issues that may have been in the software.

Evaluation Phase: The final phase of the Iterative life cycle is the evaluation phase, where the entire team along with the client, examine the status of the project and validate whether it is as per the suggested requirements.

B. Project Team:	
<i>Title / Position</i>	<i>Number</i>
Project Internal Guide	
Project External Guide	
Student Team Members	
Others (please specify)	
Add more rows if required	

C. Project Activities:

(Please list and describe the main project activities, including those associated with the transfer of the research results to customers/beneficiaries. The timing and duration of research activities are to be shown in the Gantt chart in Section 8.)

1. Software Installation

The required software needs to be installed on our system.

Some of the software required for our project are:

Android Studio.

JDK (Java Development Kit).

Flutter Framework

2. Resource Gathering

The resources will be gathered using online tutorial videos and books.

3. Design Phase

The user interface (UI) of the application will be designed in this phase. It also includes designing of the database and understanding the functionalities.

4. Development phase

The development of the application will begin in this phase. It includes coding of the application using Android studio.

5. Testing Phase

Each unit will be tested for its functionality and integration testing will also be done in this phase.

6. Final Documentation.

The final documentation will contain the detailed report of the project.

D. Key Milestones and Deliverables:

(Please list and describe the principal milestones and associated deliverables of the project. A key milestone is reached when a significant phase in the project is concluded, e.g. selection and simulation of algorithms, completion of architectural design and design documents, commissioning of equipment, completion of test, etc.) The timing of milestones is also to be shown in the Gantt chart in Section 8.

No.	Elapsed time from start (in months) of the project	Milestone	Deliverables
	14/2/2021-11/3/2021	Topic selection	Selection of individual android app developing topic
	3/3/2021-14/3/2021	Proposal Report	Individual proposal submission
	15/3/2021-21/3/2021	Requirement Gathering and Specification	Requirements should be gathered
	22/3/2021/-28/3/2021	Requirement Analysis	Analysis should be done
	29/3/2021-31/3/2021	Design UI	UI design
	1/4/2021-15/4/2021	Features Development: User Registration	Second prototype
	16/4/2021-30/4/2021	Features Development: Home and profile	Third prototype
	1/5/2021-3/5/2021	Features Development: Post and Update	Forth prototype
	7/5/2021-12/5/2021	Features Development: Details and views	Fifth prototype
	13/5/2021-15/5/2021	Final Testing	Sixth prototype
	16/5/2021-22/5/2021	Documentation	Final documentation
	23/5/2021-27/5/2021	Project Report Writing	Final project report submission
(Please add more rows if required.)			

5. Benefits of the Project (Expected output/outcomes):

Some of the benefits of project is to find the donor in easy way and gives a direct contact between the donors and recipients. Donating of blood can help people with many health condition such as those who have internal and external bleeding due to injury and those who are undergoing cancer treatment and those who undergoing cancer treatment. This project will help Bhutanese people to find donors who are willing to donate blood during their need. Through this project donated blood can save the lives of people in need and moreover according to some medical professionals, it may also benefit the donors. the main outcome will be reduce the time in searching blood donor during emergencies.

6. Risk Analysis/Feasibility**A. Risks of the Project:**

(Please describe the factors that may cause delays in, or prevent implementation of, the project as proposed above; estimate the degree of risk.)

(Please mark ☒ where applicable)

Low Medium High

Technical risk

Timing risk

Budget risk

A1. Comments(Describe the risk):

(Approval of Project Proposal by the Competent Authority (Department Chairman) and Project Review Team is mandatory before the start of project execution.)

SI #	Name	Signature
------	------	-----------

Project Coordinator

Signature:

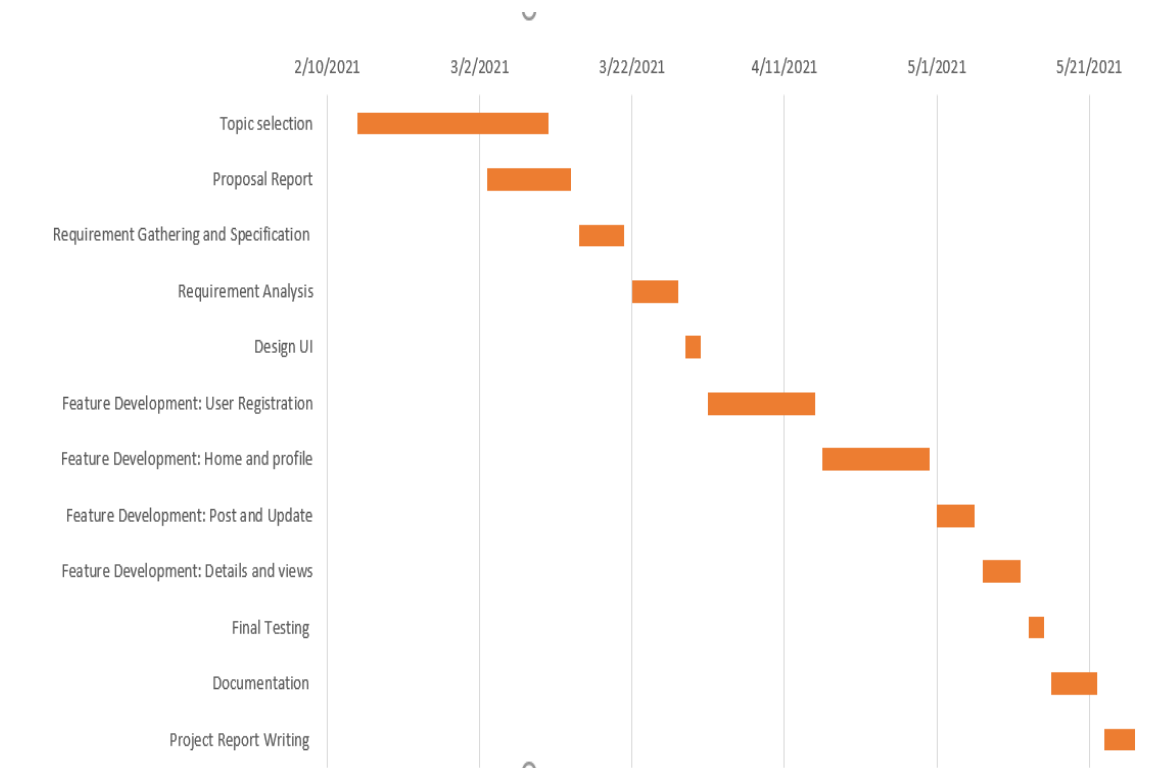
& stamp:

8. Reviewers Panel Comments

10. Project Schedule / Milestone Chart /Work plan

(Project schedule using MS-Project (or similar tools) with all tasks, deliverables, milestones, clearly indicated are preferred. Task should be measured in terms of hours)

ID	Task Name	Start Date	Finished Date	Days To Complete
1	Topic selection	2/14/2021	3/11/2021	25
2	Proposal Report	3/3/2021	3/14/2021	11
4	Requirement Gathering and Specification	3/15/2021	3/21/2021	6
5	Requirement Analysis	3/22/2021	3/28/2021	6
6	Design UI	3/29/2021	3/31/2021	2
7	Feature Development: User Registration	4/1/2021	4/15/2021	14
8	Feature Development: Home and profile	4/16/2021	4/30/2021	14
9	Feature Development: Post and Update	5/1/2021	5/6/2021	5
10	Feature Development: Details and views	5/7/2021	5/12/2021	5
11	Final Testing	5/13/2021	5/15/2021	2
12	Documentation	5/16/2021	5/22/2021	6
13	Project Report Writing	5/23/2021	5/27/2021	4



13. Report Writing Guidelines

(Project report will be written under the specified guidelines.)

Bibliography

- A Bhowmik, N A Nabila, M A Imran, M A U Rahman, D Karmaker, "An Extended Research on the Blood Donor Community as a Mobile Application," *I.J. Wireless and Microwave Technologies*, no. 6, pp. 26-34, November 2015.
- Snigdha, Varsha Anabhavane , Pratiksha lokhande, Siddhi Kasar, Pranita, "Android BloodBank," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 4, no. 11, pp. 86-88, November 2015.
- T.Hilda Jenipha, R.Backiyalakshmi, "Android Blood Donor Life Saving Application in Cloud Computing," *American Journal of Engineering Research*, vol. 3, no. 2, pp. 105-108, 2014.
- Tushar Pandit, Satish Niloor, A.S. Shinde, "A Survey Paper on E-Blood Bank and an Idea to use on Smartphone," *International Journal of Computer Applications*, vol. 113, no. 6, pp. 48- 50, March 2015.
- Wangchuk, T., Wangmo, K., Wangchuk, U., Gyem, P., & Dhungyel, P. R. (2018). Need of Medium for Finding Blood Donor in Bhutan. *Asian Journal For Convergence In). Technology (AJCT*