**PURBANCHAL UNIVERSITY**

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**DEPARTMENT OF COMPUTER ENGINEERING**

**KHWOPA ENGINEERING COLLEGE  
LIBALI-8, BHAKTAPUR**

**A PROJECT PROPOSAL**

**ON**

**“E-Blood Bank”**

A project proposal submitted for the partial fulfillment of requirements for the degree of Bachelor of Engineering in Computer Engineering (Eighth Semester)

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**Table of Contents**

|  |  |  |  |
| --- | --- | --- | --- |
| **Chapter** | | **Title** | **Page** |
|  | |  | **i** |
|  | | Title Page | ii |
|  | | Approval Letter  Acknowledgements | iii  iv |
|  | | Table of Contents | v |
|  | | List of Figures | … |
|  | | List of Tables | … |
|  | | List of Abbreviation | … |
|  | | List of Symbols | …. |
|  | |  |  |
| 1 | | Introduction 1-2  1.1 Background  1.2 Motivation  1.3 Statement Of Problems  1.4 Objectives  1.5 Scope & Limitation | 1  1  2  …  …  .. |
|  | |  |  |
| 2 | | Literature Review  2.1 …………………….  2.2 …………………….  2.3 …………………….  2.3 …………………….  2.4 …………………..  2.5 Related Works |  |
|  | |  |  |
| 3 | | Project Management  3.1 Team Members  3.2 Feasibility Study  3.3 Work break down Structure |  |
| 4 | | Methodology  4.1 Background  4.2 Generic Model  4.2 Algorithm  4.3 Flowchart  4.4 Performance Parameters  4.6 Tools & Platform |  |
| 5 | | Expected Result |  |
|  |
|  | | References |  |
|  | | APPENDIX A |  |
|  | | APPENDIX B |  |

**ABSTRACT**

We have seen and gone through the many cases such as accidents where the urgency of specific blood type and the unavailability of that blood group have been the major problem. With comparison to the ratio of requirement of the blood, very less amount of people donate the blood that gives rise to the shortage of blood. Usually, Blood banks suffer frequent shortage of blood and hence, advertisements are frequently seen on social networks urging healthy individuals to donate blood for patients who urgently require blood transfusion. So, in order to reduce this problem in case of emergencies, we have proposed this project titled “E-Blood Bank” which is an Android application that allows the users to search and notify donors of specific blood group based on their location, in a short period of time. This application will not only display the list of donors but also facilitated with tracking the location of the nearby donors. In order to donate blood through the app, one has to register himself by providing all the required details. These details must be valid and true so that they can be tracked at the time of emergency. When all the information is accepted by the Admin, the donor will be further to the list of registered donors. GPS module is included in order to locate the donors. Thus, only registered members, who want to donate blood, are able to access the service.

Keywords: *E-Blood Bank, GPS, Android Application*

**CHAPTER 1**

**INTRDOUCTION**

* 1. **Background**

Blood Donation is one of the most significant contributions towards the society. Millions of people need blood transfusions each year. Some may need blood during surgery and others depend on it after an accident or because they have a disease that requires blood components. Currently, the world depends on technology and everyone from the young to the old seem to be deeply involved. Due to rapid development of technology, it play a significant role in the modern life of people and it’s an important elements in today’s society. One of the current technology is location tracking. A tracking system is a well-established technology in this era which is reliable technology. It detects the current geo-location of a target, which may be anything from a vehicle to an item in a manufacturing plant to a person. Using GPS enabled smartphones to collect route data is relatively new technologies, but rapidly advancing technique used in research. Smartphone GPS tracking (SGT) has been employed mainly in transportation and mobility studies. This study is aim to develop and evaluate the impact of tracking system in the blood shortage situation which is the urgent requirement of the fresh blood.

* 1. **Motivation**

In this era of modernity, we have found that the greatest predicament that exists is the cost of living and saving lives has become higher, and unfortunately life itself has lost its worth to us. Similarly, Manual systems and organizing blood donation campaigns are time consuming, laborious, and costly as compared to Computer Based Information Systems (CBIS). Organizers need to go to the nearest blood bank to inform and get necessary things to organize blood donation campaigns which is more time consuming and difficult task. Hence in order to convert this laborious and time consuming task to easy and user friendly one, we thought of this system which is an android application that allows the users to search donors of specific blood group based on their location, in a short period of time.

* 1. **Statement of Problems**
* Unavailability of blood during emergency
* Even willing donor can’t reach to the place where blood is needed due to lack of communication or information
* Blood donation announcement in social media has not been too effective
  1. **Objectives**

The objective of this project is:

* To bridge the communication/information gap between blood banks, hospitals, donors and needy people using GPS service.
  1. **Our Approach**

Our approach is to develop an android application that allows the users; Recipient: to search or locate the donors of specific blood group and Donors: to find the place where there is need of his/her blood group, based on their location with the help of GPS module.

* 1. **Scope**
* Real-time availability of donor as per blood group.
* Willing person can donate where needed which fulfills any shortage in blood bank.
* Blood donation campaign or any other related social awareness information can notified to all the registered users with ease.
* This system will build maintain a proper communication between donor and recipients including blood banks, hospitals and health centers.

**CHAPTER 2**

**LITERATURE REVIEW**

Currently the world depends on technology and everyone from the young to the old seem to be deeply involved. Due to the rapid development of technology, it play a significant role in the modern life of people and it important elements in today’s society. One of the current technology is location tracking. A tracking system is a well-established technology in this era which is reliable technology. It detects the current geo-location of a target, which may be anything from a vehicle to an item in a manufacturing plant to a person. Using GPS enabled smartphones to collect route data is relatively new technologies, but rapidly advancing technique used in research. Smartphone GPS tracking (SGT) has been employed mainly in transportation and mobility studies [1]. This study is aim to develop and evaluate the impact of tracking system in the blood shortage situation which is the urgent requirement of the fresh blood. Blood donation is one of the most significant contributions towards the society. Millions of people need blood transfusions each year. Some may need blood during surgery. Others depend on it after an accident or because they have a disease that requires blood components. According to World Health Organization, stated that in order to full filled the blood demand, 4.6% out of the population should come forward as a donor but only 2.25% who altruistically be as a donors [2]. Almost every hospital in Malaysia has the similar function of blood transfusion center. Although the government has this kind of facility, the government also took another extra initiative to attract more and more people to become blood donor. Therefore, the government came out with the idea of mobile blood transfusion service center. This mobile service center can be used during their blood donation campaign tournament nationwide [3]. It provides alert on donation eligibility and blood donation sites location navigation. Moreover it also provides information on the upcoming events that will take place in National Blood Center through push messages and event notification. Lastly this study is aim to develop and evaluate the impact of tracking system in the blood shortage situation which is the urgent requirement of the fresh blood and to improve the communication between the hospital and donor. This system will locate the nearest blood donor in cases of emergencies in fastest and easiest way using GPS. Blood donation awareness is still low, in year 2015 with only 660,000 people or just 2.25 percent of the entire Malaysian population donating blood. About 2,000 pints of blood is needed daily to treat 1,000 patient and shortage of blood is expected to occur if there is no awareness to donate blood. The National Blood Centre is calling on more Malaysians to donate blood, especially ahead of the festive season and school holidays, blood supply at hospitals nationwide would drop to below the safe limit of 3,000 blood bags a day. According to National Blood Center director Dr Noryati Abu Amin , ensuring an adequate blood supply in health facilities is a very challenging task because they has to be prepared for unpredictable, emergency cases. At the same time, the huge blood supply cannot be keep because it has a shelf life [4].In existing system is time consuming to provide request with the blood when in need and it just alert on donation eligibility and blood donation sites location navigation. The existing system also provides information on the upcoming events that will take place in National Blood Center through push messages and event notification. This give pries the need of such system which is available to everyone and can be used for blood management. The proposed system is a way to handle blood management and provide to hospital with blood in emergency in shortest time possible. This system will locate the nearest blood donor in cases of emergencies and in fastest way. At the same time, the admin (user) of the system analyze the blood donor details such as type of blood will notify the blood donor. The proposed system is a way to handle blood management and provide blood in emergency in shortest time possible. Blood is one of the most important elements of human body, it can be defined as fluid in the body that carry oxygen from lungs to the rest part of the body. We have 4 to 6 liters of blood in our adult body depend on size. This system is proposed to locate the nearest blood donor in cases of emergencies and in fastest way. This research also is solve the blood management’s problem where the blood can’t be keep for a long time and cause blood bank require blood anytime. A tracking system is used for the observing of persons or objects on the move and an ideal system constantly updates the target’s location, elevation, and range. Example of tracker is GPS tracking unit is a navigation device normally carried by a moving vehicle or person that uses the Global Positioning System (GPS) to track the device's movements and determine its location.

**CHAPTER 3**

**PROJECT MANAGEMENT**

In order to design this **E-Blood Bank**, first we will design the conceptual concept. We will draw the flow of program on the basis of the so generated concept. And we will design the program on the basis of these concepts.

**3.1 Project Member Information**

For this project, we have a group of four members:

|  |  |
| --- | --- |
| **Name** | **Roll No.** |
| Dipesh Deuja | 730314 |
| Kareena Bade | 730318 |
| Sanam Suwal | 730334 |
| Sujata Shrestha | 730344 |

**3.2 Feasibility Study**

The objectives of feasibility study are not solving the problem but to acquire a sense of its scope. During the study, the problem definition is crystallized and aspects of the problem to be included in the system are determined. Consequently, constant benefits are estimated and the greater reliability at this stage. This is a bridge in between the user requirements and the outputs. The proposed system will be reliable for tracking the user’s location and notifying them i.e. notifying the donor around shortest location radius when recipients demand or need the blood specifying a category.

**3.3 Work Breakdown Structure**

The four group members will work on the different modules. During the course of work, each member will communicate with each other so that no problem arises in the future. As all the task will be tracked in Github, there will not be any hassle on combining all the modules.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S.  N | Week Job  Description | 1st  Week | 2nd  Week | 3rd  Week | 4th  Week | 5th  Week | 6th  Week | 7th  Week | 8th  Week |
| 1. | Problem  Identification |  |  |  |  |  |  |  |  |
| 2. | Analysis |  |  |  |  |  |  |  |  |
| 3. | Design |  |  |  |  |  |  |  |  |
| 4. | Coding |  |  |  |  |  |  |  |  |
| 5. | Testing and  Debugging |  |  |  |  |  |  |  |  |
| 6. | Documentation |  |  |  |  |  |  |  |  |

*Fig 3.1: Work Schedule*

**CHAPTER 4**

**METHODOLOGY**

For developing E-Blood Bank, various phases and methods will be proceeded with the help of various software, tools and programming languages. In our project, we will develop a mobile application using Flutter and use GPS to track all the users and the locations.

* 1. **Block Diagram**
  2. **Use-Case Diagram**
  3. **Tools and Platform**

1. VS Code IDE
2. Flutter
3. Android Studio
4. Windows
5. Android

**CHAPTER 5**

**EXPECTED RESULTS**

**E-Blood Bank** will be able to notify the users as per their role in our system. When there is any need of blood for recipient, he/she will press a button for the demand of the blood mentioning a blood group and place. Then our system will notify the possible donors residing nearby locations and provide them the location information through GPS system in our mobile application. Our system will also notify our users about the upcoming or ongoing related campaigns. All these will surely prevents any shortage of blood in hospitals, blood banks and help the one in need in a convenient and in short period of time.

**REFERENCES**

[1] Korpilo, S., Virtanen, T. & Lehvävirta, S. (2017). Smartphone GPS Tracking—Inexpensive

And Efficient Data Collection on Recreational Movement. [12/11/2020]

[2] Ling, L. M., Hui, T. S., G., T. A. & Ling, G. S. (2018). Determinants of Blood Donation

Status in Malaysia: Profiling the Non-Donors, Occasional Donors and Regular Donors.

Kajian Malaysia, 36(1): 43-62. doi:10.21315/km2018.36.1.3. [12/11/2020]

[3] Ministry of Health. (2012). Derma darah. Retrieved from

http://www.myhealth.gov.my/derma-darah/ [12/11/2020]

[4] Brown, V. (2017, January 10). What You Can Do to Save Lives: Give Us Your Blood!. The

Star Retrieved from https://www.thestar.com.my/news/nation/2017/01/10/what-you-can-do-

to-save-lives-give-us-your-blood/. [12/11/2020]