**CHAPTER 1**

**RESEARCH DESCRIPTION**

**Overview of the Current State of Technology**

In today’s generation computers grow fast and became a way of life in working, it is evident that nowadays we people know how to use computer. Most of the offices now use computers to connect other offices by the use of internet specially to those affiliated institutions and departments specifically the Philippine Red Cross. This government department supports blood banking program which is very essential at the time that blood is needed for treatment.

Nowadays, people struggles to find bloods for their patients at the time that blood is urgently needed.Lack of stocks, compatibility and long-distance blood banks that will waste their time and money for travelling yet un assured outcomes.Blood banks cannot accommodate all request due to the lack of blood donors and because of this problem some patients cannot recover to their diseases and result to even worst situation.

With the presence of Technology today, this research is intended to solve those problems with the help of Information Technology to design a web-based blood banking system that will help those people find blood urgently and minimize those existing problems. This system will be implemented through website that can be accessible anytime and anywhere as long as there is internet connection. This system is very significant because it will lead us to faster transaction and guarantee us faster blood seeking. With the help of this system, problems existing will be lessened, and because of this it will be easy now to find blood.

Thus, the proponents want to propose this research at the three red cross blood banks in misamis occidental including Ozamiz, Oroquieta and Tangub City chapter.

**Research Objectives**

The main objective of this project is to provide a reliable and accessible web-based blood banking system website that can be used in searching for blood in different Red Cross blood banks Oroquieta, Tangub and Ozamiz Chapter. Specifically, it aims to:

1. Provide Online Blood Banking Transactions that will serve multiple processes of the system via web.
2. Lessen paper work to the administrator and introduce online record keeping
3. Connect and establish communication of data and records for the three blood banks included.
4. Provide real time blood records with information which depends to the specifications of blood seeker; and,
5. Design and Develop a Web Based Blood Banking System what will be suitable for any people accessing it.

**Scope and Delimitations/Limitations of the Research**

The research will be conducted in the three blood banks in Misamis Occidental, specifically in Ozamiz City, Oroquieta City and Tangub City. The study focuses on serving collective data of blood information from a single database to multiple users.

**Significance of the Research**

The project Blood Seeker (*web-based blood banking system*) can be a big contribution in the field of Information Technology through this innovative project specifically in the field of web development. This project will be a big help to the society and to the beneficiaries that will use this kind of new innovation. This will give a faster and reliable system that can be accessible anytime that blood will be needed urgently. This project will benefit the people behind the kind of methods and tools used in this project in the development process. It will be a big impact to the society that Information Technology is very useful nowadays in terms of blood banking. Aside from it, the project will benefit the following:

**People**: This project will help people away from city blood banks to be keep in touch and see available bloods without spending time and money when blood is needed urgently.

**Administrators:** This project will help blood bank administrator to lessen their paper works and to make the operation more fast and convenient.

**Blood Donors:** This project will help blood donors to lessen hassle to multiple forms to be filled up just to donate blood.

**Future Researchers:** This project will be used by future researchers so that they can establish their own ideas for improving their system.

**Operational Definition of Terms**

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| **Term** | **Definition** |
| SDD | (Software Design Description) is a written description of a software product, that a software designer writes in order to give a software development team overall guidance to the architecture of the software project. |
| System Architecture | is a conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. |
| System Design | is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirement. Systems design could be seen as the application of systems theory to product development. |
| UI | (User Interface) the means by which the user and a computer system interact, in particular the use of input devices and software. |
| Test Design | is creating a set of inputs for given software that will provide a set of expected outputs. The idea is to ensure that the system is working good enough and it can be released with as few problems as possible for the average user. Broadly speaking there are two main categories of Test Design Techniques. |
| System Requirements | often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. |
| UML | (Unified Modeling Language) is a general-purpose, developmental, modeling language in the field of software engineering, that is intended to provide a standard way to visualize the design of a system. |
| Deployment | the action of bringing resources into effective action. The implementation of the project within a specific client. |
| Diagram | a simplified drawing showing the appearance, structure, or workings of something; a schematic representation. |
| Test Plan | is a document detailing the objectives, target market, internal beta team, and processes for a specific beta test for a software or hardware product. The plan typically contains a detailed understanding of the eventual workflow. Software Testing portal. |
| Architectural Design | the process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system. |
| Software | the programs and other operating information used by a computer. |
| Use Case Diagram | are usually referred to as behavior diagrams used to describe a set of actions (use cases) that some system or systems (subject) should or can perform in collaboration with one or more external users of the system (actors). |
| Blood Banking | refers to the process of collecting, separating, and storing blood. blood banks collect blood and separate it into its various components so they can be used most effectively according to the needs of the patient. |
| PRC | (Philippine Red Cross) is a member of the International Red Cross and Red Crescent Movement. The PRC was established in 1947, with roots in the Philippine Revolution against the Spanish Empire. |
| SRS | (System Requirements Specification) is a description of a software system to be developed. It lays out functional and non-functional requirements, and may include a set of use cases that describe user interactions that the software must provide. |
| Data Structure | is a particular way of organizing **data** in a computer so that it can be used efficiently |
| Database | is a computer software application that interacts with the user, other applications, and the database itself to capture and analyze data. A general-purpose DBMS is designed to allow the definition, creation, querying, update, and administration of databases. |
| User Interface Design | User interface design (UI) or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing usability and the user experience. |
| Maintenance | the process of maintaining or preserving someone or something, or the state of being maintained. |
| Process | A paradigm (methodology) for producing a project. Examples are the Waterfall Paradigm, the Unified Software Development Process  or Rapid-Prototyping. |
| System Reference | A document designed to be the foundation for all maintenance. It includes the SRS, SDD, Test Design, User Manual and information about the current state of the project. |
| User Manual | A user guide or user's guide, also commonly known as a manual, is a technical communication document intended to give assistance to people using a particular system. |