**I. INTRODUCTION**

**1.1 Project Context**

Life. Growth. Health.

These three words, when combined will describe the purpose of the most important fluid that has been circulating throughout our body from the day we are made. Carrying all the vital substances like oxygen, nutrients and even disease fighting cells, it ensures that we always stay fit and in shape. It is our blood.

However, it is undeniable that some of us are facing problems when it comes to maintaining the quality and quantity of this “life giving” fluid because of heredity, disease and accident related reasons. This pushed the private sectors and the government to establish blood banks and centers which will cater the growing need for blood.

Ironically, the law governing the process of getting the resources from the banks makes this process somehow “bloody.”

As mandated by Section 2 and 4 of Republic Act No. 7719 also known as National Blood Services Act of 1994, the Department of Health (DOH) shall organize a National Blood Transfusion Service Network (NBTSN) which will centralize all the provisions, adequacy and safety of blood supplies across the blood centers which are established in every province strategically. The blood centers, in turn, will distribute the supplies to Rural Health Units (RHU) and hospitals in need of the resource.

As for the Cavite Province, the Philippine Red Cross (PRC) which is sited in San Roque, Cavite City serves as its NBTSN.

The current procedure goes this way, any individual who wished to donate blood can go personally to the PRC headquarters, participate in bloodletting programs or interfere in other Red Cross activities for screening. They are given a form that they must answer legibly and honestly. Furthermore, they also undergo various tests like Body Mass Index (BMI) and blood pressure testing.

When all the tests were passed, that is the only time they will undergo the blood extracting process which takes about ten minutes. They will gain their corresponding Donor’s Identification (ID) Card which grants them discount when they request blood.

The blood donations is then transferred from the blood collection units to the blood center for storage and bar coding. The blood centers will keep this supplies until it is requested.

When it comes to blood requests, requestors can do it via phone call or walk-in which follows the first come first serve basis. During the requisition process, the blood is tested for anomaly and validity. The blood is considered a “spoilage” when it failed the test and is subjected for disposal.

A request can last for a maximum of six hours. If it happens that the requestor wants to extend the request, a call is made. This rule must be remembered or else they will have to start the process all over again.

Blood service fees is then charged to the party and individuals in need of blood for the return of testing fees.

Despite of the centralization, hospitals and individuals needing blood is still having difficulty looking for the needed resource. They will often call the near blood banks for immediate allocation of the blood units which is sometimes, out of stock. The process will continue until they find a valid provider, thus, prolonging the agony and pain of the patient and the party involved and worsen the situation.

This capstone project proposal entitled EBloodBank will focus on the creation and development of a mobile responsive web based application which shall embody the centralization made by NBTSN and will streamline the problems with the blood banking and donating process in the Cavite Province.

**1.2 Research Locale**

**1.3 Statement of the Problem**

**1.4 Scope and Limitation**

**1.5 Objectives**

***General Objective***

***Specific Objectives***

**1.6 Importance of the Study**

**1.7 Review of Related Literature and Studies**

**Technical Background**

For the fulfillment of this capstone project proposal, several web application development tools and frameworks were utilized:

**Bulma**

Bulma is an open source Flexbox based CSS framework. It is a simple, elegant, and modern CSS framework that a lot of developers prefer over Bootstrap (Borgen, 2018). This is used as designing tool for the entire user interface of the website and it is linked in an HTML document file.

**Flask**

Flask is a small and powerful web framework for Python. Easy to learn and simple to use, enabling you to build your web app in a short amount of time according to [Polepeddi](https://tutsplus.com/authors/lalith-polepeddi) (2013). Flask allows you to build web application by providing tools, libraries and technologies (“Introduction to Flask,” n.d.).

**Jinja 2**

Jinja2 is a modern-day templating language for Python developers. Used to create an HTML, XML or other markup format and return to the user via an HTPP request (“Jinja2 Explained in 5 Minutes! – codeburst,” 2018). Jinja templates are files with .html which is placed in the /templates directory in flask. This was used by the team in frontend which embedded in a HTML file to call a python function.

**Python**

According to Python.org (n.d), python is an object-oriented and high-level programming language that is easy to learn syntax and reduces the cost of program maintenance. It supports modules and packages which encourages program modularity and code reuse. The team used this as their programming language for their web based and mobile responsive application.

**SQLAlchemy**

As stated by Krebs (2017), SQLAlchemy is a library that facilitates the communication between Python programs and databases. He says that it translates Python classes to tables on relational databases and automatically converts function calls to SQL statements by using an [Object Relational Mapper (ORM)](https://en.wikipedia.org/wiki/Object-relational_mapping) tool.

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