### **A Project Final Review**

### Report On

#### **BLOOD BANK MANAGMENT SYSTEM**

Submitted in partial fulfillment of the requirement for the award of the degree of

## B. Tech in Computer Science



(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

Under The Supervision of B. BALAMURGAN SIR Assistant Professor

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#### CANDIDATE'S DECLARATION

I/We hereby certify that the work which is being presented in the project, entitled "BLOOD BANK MANAGEMENT SYSTEM: A cross-platform Application" in partial fulfillment of the requirements for the award of the

# BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of JULY-2021 to DECEMBER-2021, under the supervision of Mr. B. Balamurugan sir, Assistant Professor, Department of Computer Science and Engineering of School of Computing Science and Engineering, Galgotias University, Greater Noida

The matter presented in the project has not been submitted by me/us for the award of any other degree of this or any other places.

18SCSE1010198 – SAMIULLAH RAZI 18SCSE1010228 – VISHAL KUMAR RAI

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Supervisor

(Mr. B. Balamurugan, Assistant Professor)

### **CERTIFICATE**

The Final Project Viva-Voce examination of 18SCSE1010198 – SAMIU	LLAH RAZI,
18SCSE1010228 - VISHAL KUMAR RAI has been held on	and
his/her work is recommended for the award of BACHELOR OF TECH	NOLOGY IN
COMPUTER SCIENCE AND ENGINEERING.	
Signature of Examiner(s)  Signature	re of Supervisor(s)
Signature of Project Coordinator Signature of Project Coordinator	ignature of Dean
Date:	
Place:	

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## **Abstract**

The purpose of this study was to develop a blood management information system to assist in the management of blood donor records and ease/or control the distribution of blood in various parts of the country basing on the hospital demands. Without quick and timely access to donor records, creating market strategies for blood donation, lobbying and sensitization of blood donors becomes very difficult. The blood management information system offers functionalities to quick access to donor records collected from various parts of the country. It enables monitoring of the results and performance of the blood donation activity such that relevant and measurable objectives of the organization can be checked. It provides to management timely, confidential and secure medical reports that facilitates planning and decision making and hence improved medical service delivery. The reports generated by the system give answers to most of the challenges management faces as faras blood donor records are concerned.

The proposed of Blood Bank Web App helps the people who are in need of a blood by giving them all details of blood group availability or regarding the donors with the same blood group. They don't need to go anywhere to search the blood when they need. They just need to use this software then all the result will appear in just a second .Our life is so busy so we don't have time to spend going here and there, we can use technical way to search the blood by using the Blood Bank software we can find thousands of people who are donating the blood and also get the detail the of that person that in which city he belongs to and what is the Blood group of that person .So this is the most useful software ever .

## **CHAPTER-1** Introduction

The software system is an online blood bank management system that helps in managing various blood bank operations effectively. The project consists of a central repository containing various blood deposits available along with associated details. These details include blood type, storage area and date of storage. These details help in maintaining and monitoring the blood deposits. The project is an online system that allows to check weather required blood deposits of a particular group are available in the blood bank. Moreover the system also has added features such as patient name and contacts, blood booking and even need foe certain blood group is posted on the website to find available donors for a blood emergency. This online system is developed on net platform and supported by an Sql database to store blood and user specific details.

## **AIM**

The main aim of developing this software is to provide blood to the people who are in need of blood. The numbers of persons who are in need of blood are increasing in large number day by day. Using this system user can search the blood group available in the city and he can also get contact number of the donor who has the same blood group. In order to help people who are in need of blood, this Online Blood Bank software can be used effectively for getting the details of available blood groups and user can also get contact number of the blood donors having the same blood group and within the same city.

## **EXISTING SYSTEM**

There are a quite good number of software packages that exist for Inventory control. But, when I visited blood bank of Karnataka cancer hospital in Navanagar . I found that existing system is limited only to those particular bloodbank . At the present there is no software to keep any records in blood bank. It becomes difficult to provide any record immediately at times of emergency. Required more human efforts in maintaining the branch related information . Manually to keep the accounts is also tedious & risky job & to maintain those accounts in ledgers for a long period is also very difficult . Difficult to manage and maintain the files . Chance of damage of files, if the data is stored in the files for duration of time. Privacy is difficult. Time consuming is retervieng , storing and updating the data. It is difficult to keep track the record about the donor & receiver he has donated or recievered the blood at the last time.

## PROPOSED SYSTEM

The proposed system (Blood Bank Management System) is designed to help the Blood Bank administrator to meet the demand of Blood by sending and/or serving the request for Blood as and when required .The proposed system gives the procedural approach of how to bridge the gap between Recipient, Donor, and Blood Banks. This Web Application will provide a common ground for all the three parties (i.e. Recipient, Donor, and Blood Banks) and will ensure the fulfillment of demand for Blood requested by Recipient and/or Blood Bank .The features of proposed system are ease of data entry , system should provide user friendly interfaces , no need to maintain any manual register and form , immediate data retrievel and so on. The new system covers all the aspects of the existing system as well asenhanced features for the existing system For

## CHAPTER-2 Literature Survey

## FEASIBILITY STUDY

A feasibility study is a high-level capsule version of the entire System analysis and Design Process. The study begins by classifying the problem definition. Feasibility is to determine if it's worth doing. Once an acceptance problem definition has been generated, the analyst develops a logical model of the system. A search for alternatives is analyzed carefully. There are 3 parts in feasibility study. The feasibility study is performed to determine whether the proposed system is viable considering the Technical, Operational and Economical factors. After going through feasibility study we can have a clear-cut view of the system's benefits and drawbacks.

- 1) Operational Feasibility
- 2) Technical Feasibility
- 3) Economical Feasibility

## OPERATIONAL FEASIBILITY

Operational feasibility is the measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development .The operational feasibility assessment focuses on the degree to which the proposed development projects fits in with the existing business environment and objectives with regard to development

schedule, delivery date, corporate culture and existing business processes .To ensure success, desired operational outcomes must be imparted during design and development. These include such design-dependent parameters as maintainability, supportability, usability, reliability, producibility, disposability, sustainability, affordability and others. These parameters are required to be considered at the early stages of design if desired operational behaviours are to be realized. A system design and development requires appropriate and timely Web application of engineering and management efforts to meet the previously mentioned parameters. A system may serve its intended purpose most effectively when its technical and operating characteristics are engineered into the design. Therefore, operational feasibility is a critical aspect of systems engineering that needs to be an integral part of the early design phases.

## TECHNICAL FEASIBILITY

This involves questions such as whether the technology needed for the system exists, how difficult it will be to build, and whether the firm has enough experience using that technology. The assessment is based on outline design of system requirements in terms of input, processes, output, fields, programs and procedures. This can be qualified in terms of volume of data, trends, frequency of updating inorder to give an introduction to the technical system. The Web application is the fact that it has been developed on windows XP platform and a high configuration of 1GB RAM on Intel Pentium Dual core processor. This is technically feasible .The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their Web applicability to the expected needs of the proposed system. It is an evaluation of the hardware and software and how it meets the need of the proposed system.

The proposed system is developed using Active Server Page, VB Script and HTML as front-end tool and Oracle 8 as the back end. The proposed system needs a Personal Web Server to serve the requests submitted by the users. The Web browser is used to view the web page that is available within the Windows operating system itself. The proposed system will run under Win9x, NT, and win2000 environment. As Windows is very user friendly and GUI OS it is very easy to use. All the required hardware and software are readily available in the market. Hence the system is technically feasible

## ECONOMICAL FEASIBILITY

Establishing the cost-effectiveness of the proposed system i.e. if the benefits do not outweigh the costs then it is not worth going ahead. In the fast paced world today there is a great need of online social networking facilities. Thus the benefits of this project in the current scenario make it economically feasible. The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. It includes quantification and identification of all the benefits expected. This assessment typically involves a cost/benefits analysis. As the necessary hardware and software are available in the market at a low cost, the initial investment is the only cost incurred and does not need any further enhancements. Hence it is economically feasible. The system is feasible in all respects and hence it encourages taking up the system design.

## **Problem Formulation**

This applied research aims to design, develop and implement online blood bank management system.

This web-based application provides:

- To ensure hospital to have good supply or inventories of blood bags.
- To check the availability of blood bags anytime.
- To manage the information of its blood donor.
- Function to check if the person donate blood for the last 3 months.
- To allow good documentation about the donor and its blood donation activities.
- Support fast searching to find match blood bags for the right person.

#### SOFTWARE VERIFICATION AND VALIDATION

#### Introduction

In software project management, software testing, and software engineering, verification and validation (V&V) is the process of checking that a software system meets specifications and that it fulfills its intended purpose. It may also be referred to as software quality control. It is normally the responsibility of software testers as part of the software development lifecycle. Validation checks that the product design satisfies or fits the intended use (high-level checking), i.e., the software meets the user requirements. This is done through dynamic testing and other forms of review. Verification and validation are not the same thing, although they are often confused. Boehm succinctly expressed the difference between

- Validation : Are we building the right product?
- Verification : Are we building the product right?

According to the Capability Maturity Model

Software Verification: The process of evaluating software to determine whether the products of a given development phase satisfy the conditions imposed at the start of that phase.

Software Validation: The process of evaluating software during or at the end of the development process to determine whether it satisfies specified requirements.

In other words, software verification is ensuring that the product has been built according to the requirements and design specifications, while software validation ensures that the product meets the user's needs, and that the specifications were correct in the first place. Software verification ensures that "you built it right". Software validation ensures that "you built the right thing". Software validation confirms that the product, as provided, will fulfill its intended use.

### From Testing Perspective

- Fault wrong or missing function in the code.
- Failure the manifestation of a fault during execution.
- Malfunction according to its specification the system does not meet its specified functionality

Both verification and validation are related to the concepts of quality and of software quality assurance. By themselves, verification and validation do not guarantee software quality; planning, traceability, configuration management and other aspects of software engineering are required. Within the modeling and simulation (M&S) community, the definitions of verification, validation and accreditation are similar:

- M&S Verification is the process of determining that a computer model, simulation, or federation of models and simulations implementations and their associated data accurately represent the developer's conceptual description and specifications.
- M&S Validation is the process of determining the degree to which a model, simulation, or federation of models and simulations, and their associated data are accurate representations of the real world from the perspective of the intended use(s).

#### **Classification of Methods**

In mission-critical software systems, where flawless performance is absolutely necessary, formal methods may be used to ensure the correct operation of a system. However, often for non-mission-critical software systems, formal methods prove to be very costly and an alternative method of software V&V must be sought out. In such cases, syntactic methods are often used.

#### **Test Cases**

A test case is a tool used in the process. Test cases may be prepared for software verification and software validation to determine if the product was built according to the requirements of the user. Other methods, such as reviews, may be used early in the life cycle to provide for software validation.

### **Black-Box Testing**

Black-box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings. This method of test can be applied virtually to every level of software testing: unit, integration, system and acceptance. It typically comprises most if not all higher level testing, but can also dominate unit testing as well.

#### **Test Procedures**

Specific knowledge of the application's code/internal structure and programming knowledge in general is not required. The tester is aware of what the software is supposed to do but is not aware of how it does it. For instance, the tester is aware that a particular input returns a certain, invariable output but is not aware of how the software produces the output in the first place.

#### **Test Cases**

Test cases are built around specifications and requirements, i.e., what the application is supposed to do. Test cases are generally derived from external descriptions of the software, including specifications, requirements and design parameters. Although the tests used are primarily functional in nature, nonfunctional tests may also be used. The test designer selects both valid and invalid inputs and determines the correct output, often with the help of an oracle or a previous result that is known to be good, without any knowledge of the test object's internal structure.

### White-Box Testing

testing (also White-box known as clear box testing, glass testing, transparent box testing, and structural testing) is a method of testing software that tests internal structures or workings of an application, as opposed to its functionality (i.e. black-box testing). In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases. The tester chooses inputs to exercise paths through the code and determine the appropriate outputs. This is analogous to testing nodes in a circuit, e.g. in-circuit testing (ICT). White-box testing can be applied at the unit, integration and system levels of the software testing process. Although traditional testers tended to think of white-box testing as being done at the unit level, it is used for integration and system testing more frequently today. It can test paths within a unit, paths between units during integration, and between subsystems during a system-level test. Though this method of test design can uncover many errors or problems, it has the potential to miss unimplemented parts of the specification or missing requirements.

#### Levels

- 1) Unit testing: White-box testing is done during unit testing to ensure that the code is working as intended, before any integration happens with previously tested code. White-box testing during unit testing catches any defects early on and aids in any defects that happen later on after the code is integrated with the rest of the application and therefore prevents any type of errors later on.
- **2**) **Integration testing:** White-box testing at this level are written to test the interactions of each interface with each other. The Unit level testing made sure that each code was tested and working accordingly in an isolated environment and integration examines the correctness of the behaviour in an open environment through the use of white-box testing for any interactions of interfaces that are known to the programmer.
- **3**) **Regression testing:** White-box testing during regression testing is the use of recycled white-box test cases at the unit and integration testing levels.

#### **Procedures**

White-box testing's basic procedures involves the tester having a deep level of understanding of the source code being tested. The programmer must have a deep understanding of the application to know what kinds of test cases to create so that every visible path is exercised for testing. Once the source code is understood then the source code can be analyzed for test cases to be created. These are the three basic steps that white-box testing takes in order to create test cases:

- Input involves different types of requirements, functional specifications, detailed designing of documents, proper source code, security specifications. This is the preparation stage of white-box testing to layout all of the basic information.
- Processing involves performing risk analysis to guide whole testing process, proper test plan, execute test cases and communicate results. This is the phase of building test cases to make sure they thoroughly test the application the given results are recorded accordingly.
- Output involves preparing final report that encompasses all of the above preparations and results.

### **5.5.3** Advantages

White-box testing is one of the two biggest testing methodologies used today. It has several major advantages:

- Side effects of having the knowledge of the source code is beneficial to thorough testing.
- Optimization of code by revealing hidden errors and being able to remove these possible defects.
- Gives the programmer introspection because developers carefully describe any new implementation.
- Provides traceability of tests from the source, allowing future changes to the software to be easily captured in changes to the tests.
- White box testing give clear, engineering-based, rules for when to stop testing.

### **5.5.5 Disadvantages**

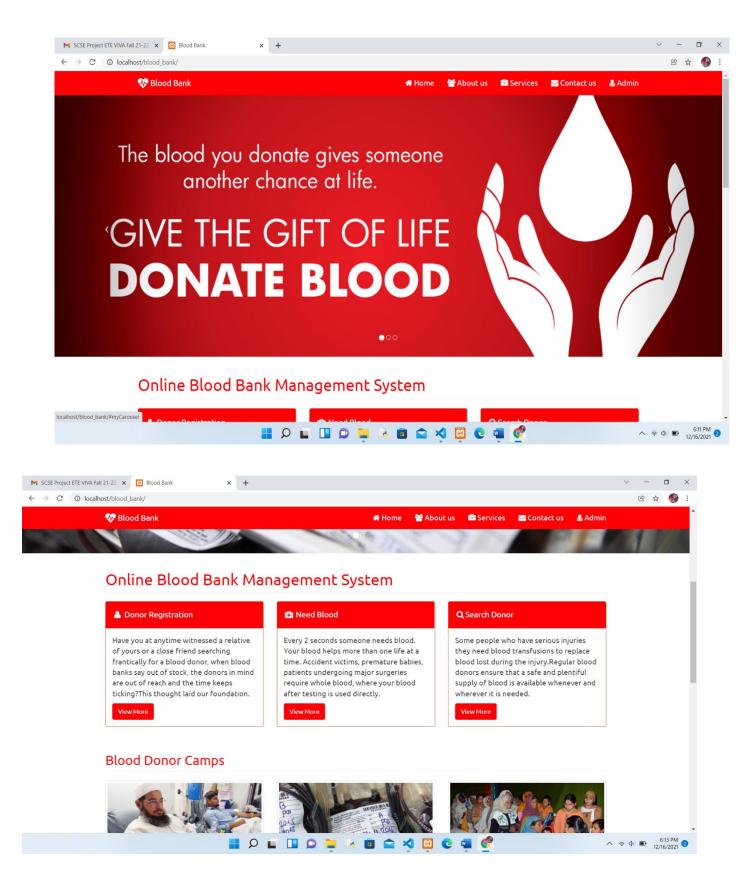
Although white-box testing has great advantages, it is not perfect and contains some disadvantages:

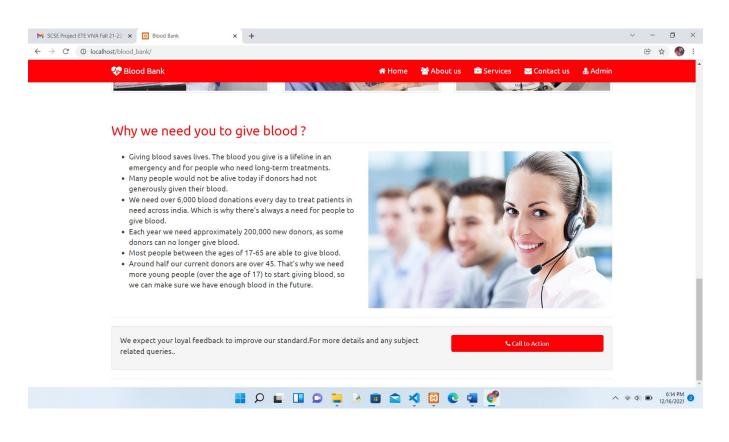
- White-box testing brings complexity to testing because the tester must have knowledge of the program, including being a programmer. White-box testing requires a programmer with a high level of knowledge due to the complexity of the level of testing that needs to be done.
- On some occasions, it is not realistic to be able to test every single existing condition of the application and some conditions will be untested.
- The tests focus on the software as it exists, and missing functionality may not be discovered.

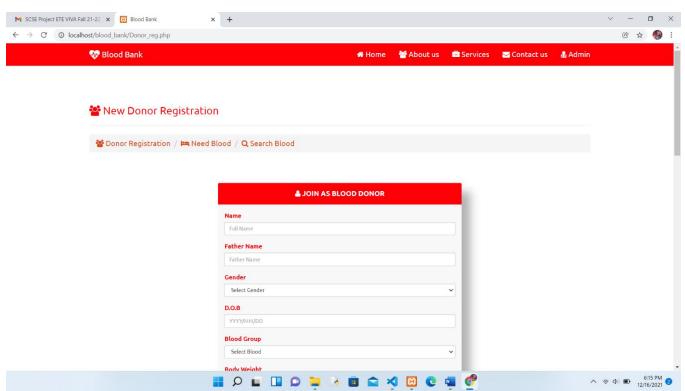
#### **SYSTEM TESTING**

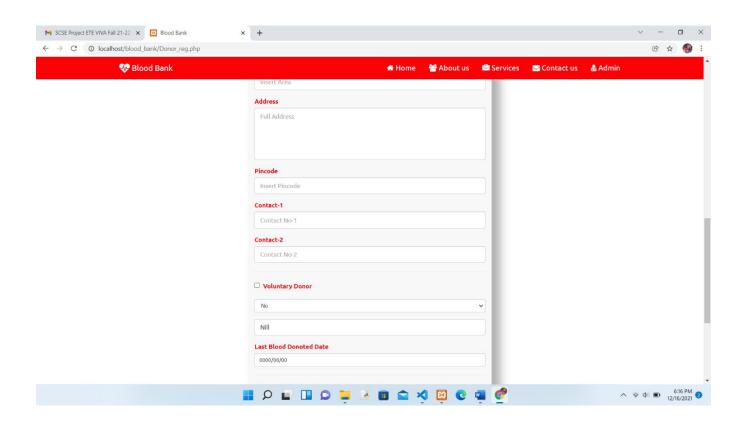
System testing of software or hardware is testing conducted on a complete, integrated system to evaluate the system's compliance with its specified requirements. System testing falls within the scope of black-box testing, and as such, should require no knowledge of the inner design of the code or logic. As a rule, system testing takes, as its input, all of the "integrated" software components that have passed integration testing and also the software system itself integrated with any applicable hardware system(s). The purpose of integration testing is to detect any inconsistencies between the software units that are integrated together (called assemblages) or between any of the assemblages and the hardware. System testing is a more limited type of testing; it seeks to detect defects both within the "inter-assemblages" and also within the system as a whole.

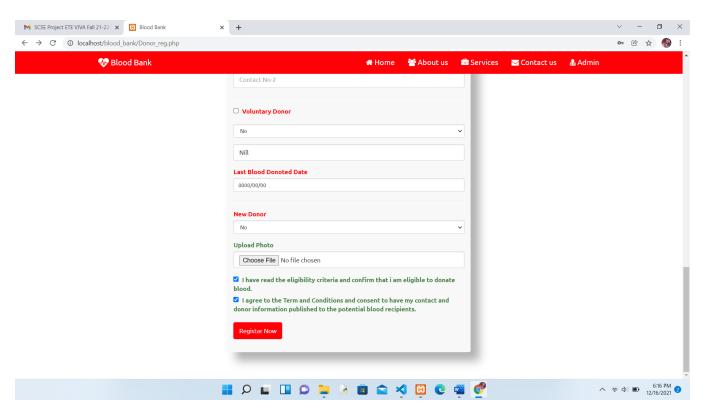
System testing is performed on the entire system in the context of a Functional Requirement Specification(s) (FRS) and/or a System Requirement Specification (SRS). System testing tests not only the design, but also the behavior and even the believed expectations of the customer. It is also intended to test up to and beyond the bounds defined in the software/hardware requirements specification(s).

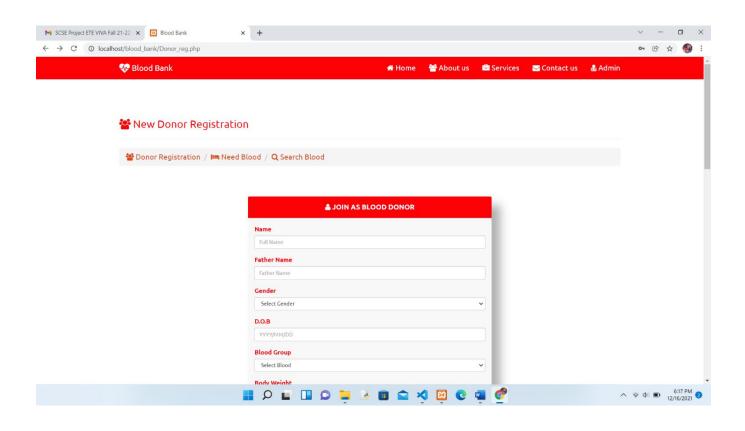


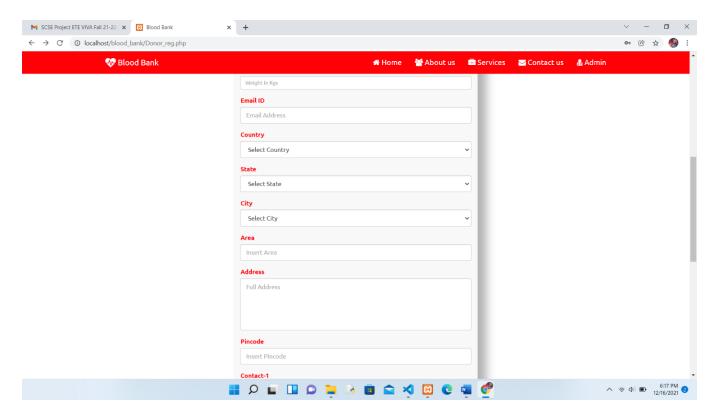


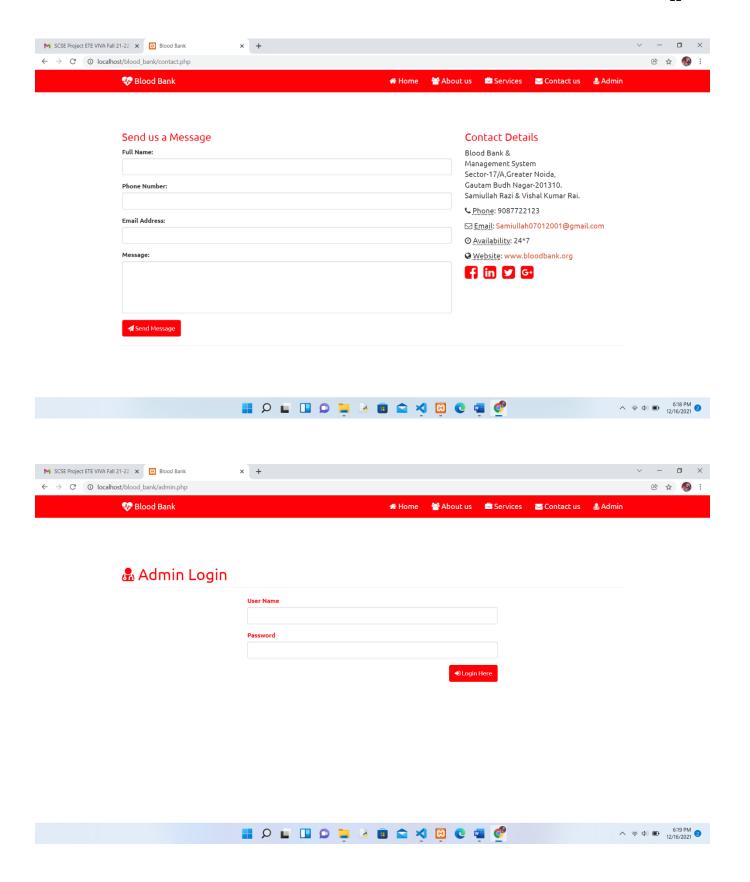


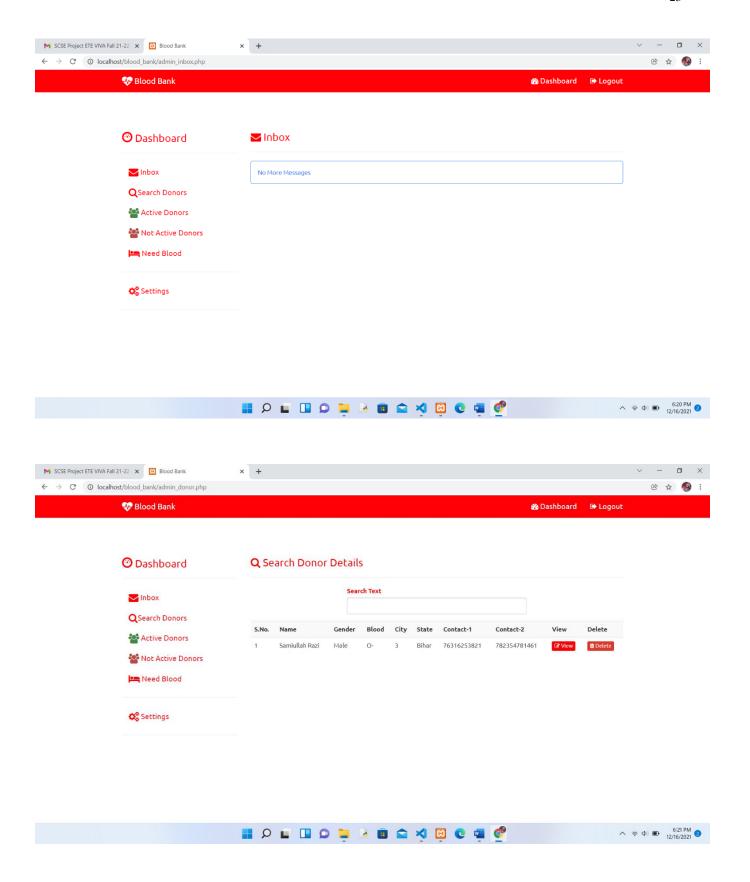


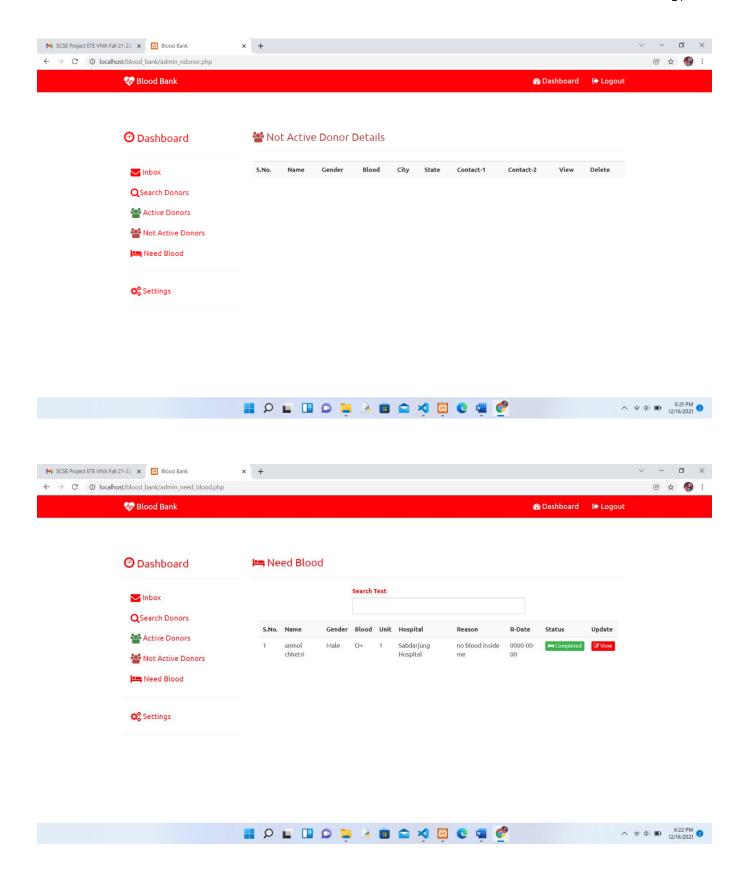


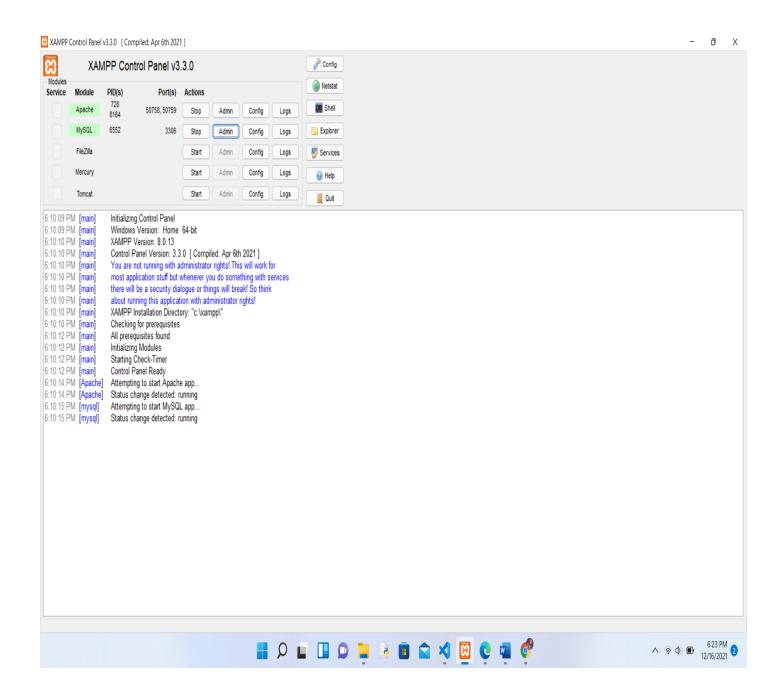


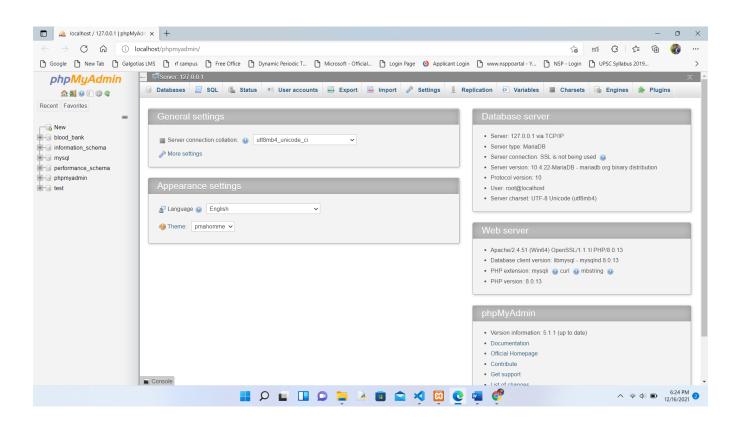


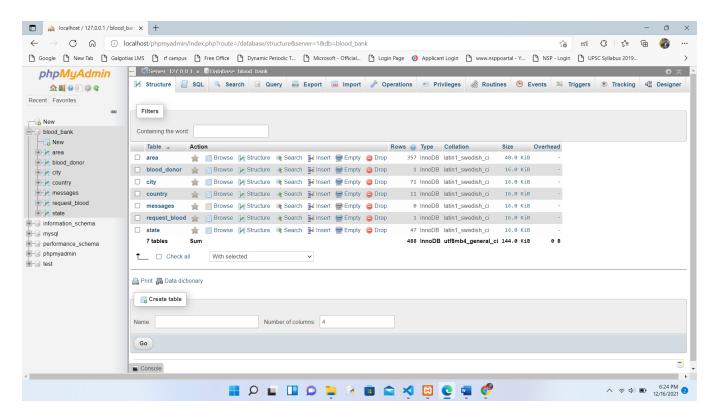


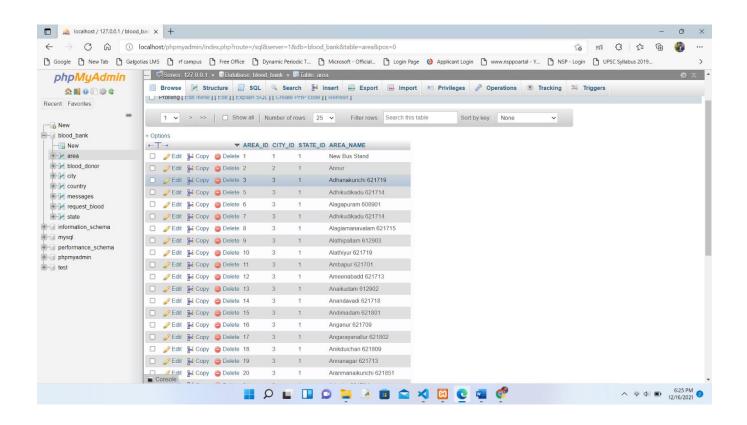


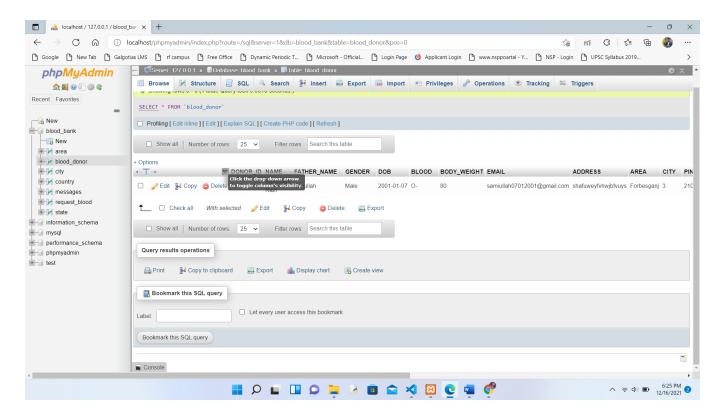


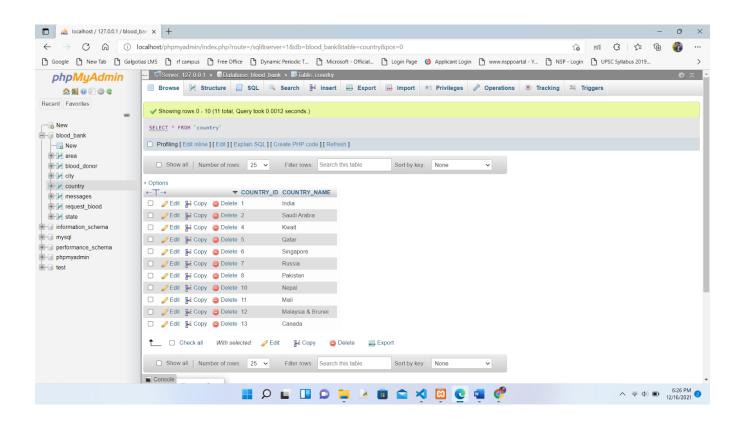


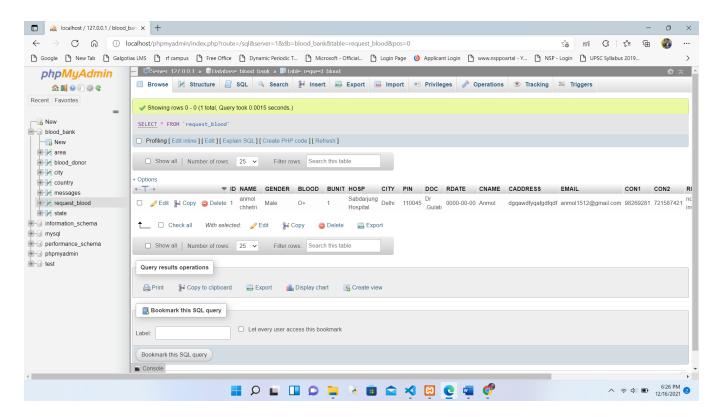


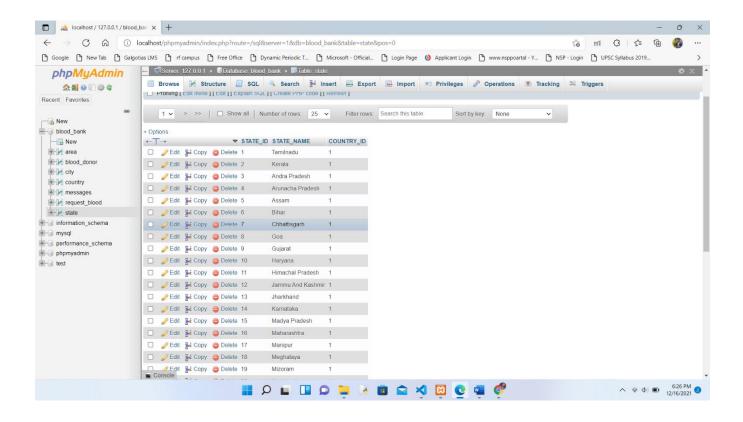


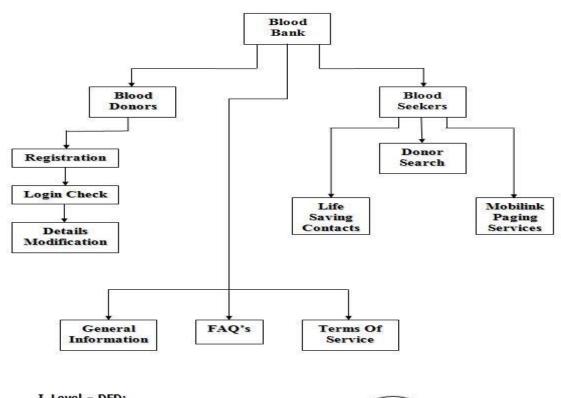


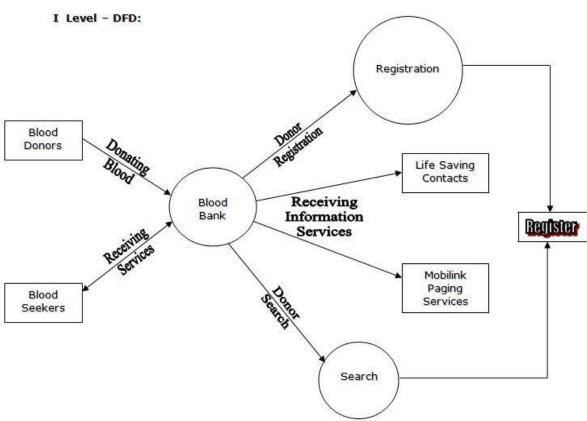












### **FUTURE ENHANCEMENT:**

As there was a little number of contact person's information given, some people may face difficulty in getting blood fast. So i like to gather more information regarding the contact persons in other cities as well as villages and will provide much more services for the people and help everyone with humanity.

## **CONCLUSION**

This project has given me an ample opportunity to design, code, test and implements The Web application. This has helped in putting into practice of various Software Engineering principles and Database Management concepts like maintaining integrity and consistency of data. Further, this has helped me to learn more about ORACLE 8, ASP 2.0, HTML, VB Script, Adobe Photoshop 7.0 and Personal Web Server.

I thank my guide for his invaluable contribution in guiding me through out the project. I also thank my friends who have supported and motivated me to complete this project successfully.

### Extensibility:

The other features, which the Blood bank services provide, can also be incorporated into this Blood Bank. The Encryption standards can also be used to make the transactions more secure. The Socket Secure Layer protocol can also used in implementing the system, which gives highest security in the Internet.

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