

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELGAUM



## A Mini Project Report On **“Blood Bank Database Management System”**

Submitted in partial fulfilment of the requirements for the award of the 5<sup>th</sup> sem of

### BACHELOR OF ENGINEERING IN INFORMATION SCIENCE AND ENGINEERING

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**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**

**SRI VENKATESHWARA COLLEGE OF ENGINEERING**

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**2020-2021**

# SRI VENKATESHWARA COLLEGE OF ENGINEERING

(Affiliated by A.I.C.T.E and approved by V.T.U)



## CERTIFICATE

This is to certify that Database Management MiniProject [18CSL58] work entitled “**Blood Bank Database Management System**” submitted in partial fulfilment of the requirement for V semester bachelor of engineering in Information science and engineering prescribed by the **Visvesvaraya Technological University, Belgaum** is a result of the bonafide work carried out by **SHAYAN PAUL [1VE18IS046]** during the academic year **2020-21**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

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**2:.....**

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SHAYAN PAUL

[1VE18IS046]

## **DEPARTMENT VISION**

Global Excellence with Local relevance in Information Science and Engineering Education, Research and Development.

## **DEPARTMENT MISION**

M1. Strive for academic excellence in Information Science and Engineering through student centric innovative teaching-learning process, competent faculty members, efficient assessment and use of ICT.

M2. Establish Centre for Excellence in various vertical of Information Science and Engineering to promote collaborative research and Industry Institute Interaction.

M3. Transform the engineering aspirants to socially responsible, ethical, technically competent and value added professional or entrepreneur.

## **ASBTRACT**

Help Line is an voluntary and non-governmental organization. It maintains Online library of blood donors in India. Sometimes Doctors and Blood bank project have to face the difficulty in finding the blood group Donors at right time. Help Line has attempted to provide the answer by taking upon itself the task of collecting Blood bank project nationwide for the cause and care of people in need.

At any point of time the people who are in need can reach the donors through our search facility. By mobilizing people and organization who desire to make a difference in the lives of people in need. On the basis of humanity, Everyone is welcome to register as a blood donor.

Blood Bank Management System (BBMS) is a browser based system that is designed to store, process, retrieve and analyse information concerned with the administrative and inventory management within a blood bank. This project aims at maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and help them manage in a better way. Aim is to provide transparency in this field, make the process of obtaining blood from a blood bank hassle free and corruption free and make the system of blood bank management effective.

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# CHAPTER – 1

## ABOUT PROJECT

### 1. Introduction

The BLOOD BANK DATABASE MANAGEMENT SYSTEM is great project. This project is designed for successful completion of project on blood bank management system. the basic building aim is to provide blood donation service to the city recently. Blood Bank Management System (BBMS) is a browser based system that is designed to store, process, retrieve and analyze information concerned with the administrative and inventory management within a blood bank. This project aims at maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and help them manage in a better way. Aim is to provide transparency in this field, make the process of obtaining blood from a blood bank hassle free and corruption free and make the system of blood bank management effective.

The *Blood bank system project report* contain information related to blood like

- Blood type
- Date of Donation of blood
- validity of Blood s
- Available Blood group.

### 2. Need

Bank blood donation system in java is planned to collect blood from many donators in short from various sources and distribute that blood to needy people who require blood. To do all this we require high quality software to manage those jobs. The government spending lot of money to develop high quality “Blood Bank management system project”. For do all those kinds of need blood bank management system project in java contain modules which are include the detail of following areas:

- Blood Donor
- Equipments
- Stick
- Blood Recipient

- Blood collection
- Camp
- Stock details
- blood bank system project Reports
- Blood issued
- Blood bank system project

### 3. Features

- ✓ Blood Camp Management And Reporting
  - Provides recording of details of camp beginning from allocation of staff, details of facilities available in the camp venue.
  - Provides assigning of donor to a particular camp and generate camp organizer report
  - Automated report generation of camp details for submission to the Government
- ✓ Donor Management
  - The system allows automatic component data generation based on the component selected in the blood donor form.
  - The system allows bulk update for serology for blood units. Serology result for many donors can be updated at once.
  - The system allows for either component creation before serology test or vice versa. Based on the serology test, the component created are updated automatically.
- ✓ Donor Test Results Management and Adverse Reaction Data Management
  - Provides filterable selections for donor selections.
  - The reports are highly configurable and can be configured to display data as per institution requirements.
- ✓ Search based on Component ID, Donor Registration ID, Donor BloodBag Number and Donor Name
  - The results displayed in search is highly configurable.

- The search functionality also allows for site-wide search. It means a user can search for any data available in the system.
- Custom links can be added in the search results to allow easier navigation and accessibility.
- ✓ Blood Components Management
  - Automatic generation of components form donor form
  - Based on the date of collection, the system automatically derives the date of expiry and disallows issue of component if unit has expired
  - Until the serology test is done, the system marks the status of the the component as test awaited. And only after serology test is done, the component is marked for Ready for Issue
- ✓ Patient Management System
  - Captures patient personal information as well as the hospital where blood is required.
  - The system allows for reserving a unit for 24 hours for a patient.
  - The blood component issued, the payment made as well as link to the final bill is available when the patient page is opened

#### 4. Objectives

The main objective of this application is to automate the complete operations of the blood bank. They need maintain hundreds of thousands of records. Also searching should be very faster so they can find required details instantly.

To develop a web-based portal to facilitate the co-ordination between supply and demand of blood . This system makes conveniently available good quality, safe blood and other blood components, which can be provided in a sound, ethical and acceptable manner, consistent with the long-term well being of the community. It actively encourage voluntary blood donation, motivate and maintain a well-indexed record of blood donors and educate the community on the benefits of blood donation. This will also serve as the site for interaction of best practices in reducing unnecessary utilization of blood and help the state work more efficiently towards self-sufficiency in blood.



The system will provide the user the option to look at the details of the existing Donor List, Blood Group and to add a new Donor. It also allows the user to modify the record. The administrator can alter all the system data.

## CHAPTER – 2

### MINIMUM HARDWARE SPECIFICATIONS

#### 1. Hardware Requirement

Processor	:	Intel Core Duo 2.0 GHz or more
RAM	:	1 GB or More
Hard Disk	:	80GB or more
Monitor	:	15” CRT, or LCD monitor
Keyboard	:	Normal or Multimedia
Mouse	:	Compatible mouse

#### 2. Software Requirement

Front End	:	Visual Basic 2005 Express edition With SQL Server Compact Edition Microsoft SDK 2.0  Or  Visual Basic 2008 Express edition With SQL Server Compact Edition Microsoft SDK 3.0
Back End	:	MS SQL Server
Operating System	:	Windows 7 with server pack 2  Or  Windows 8.1

## CHAPTER – 3

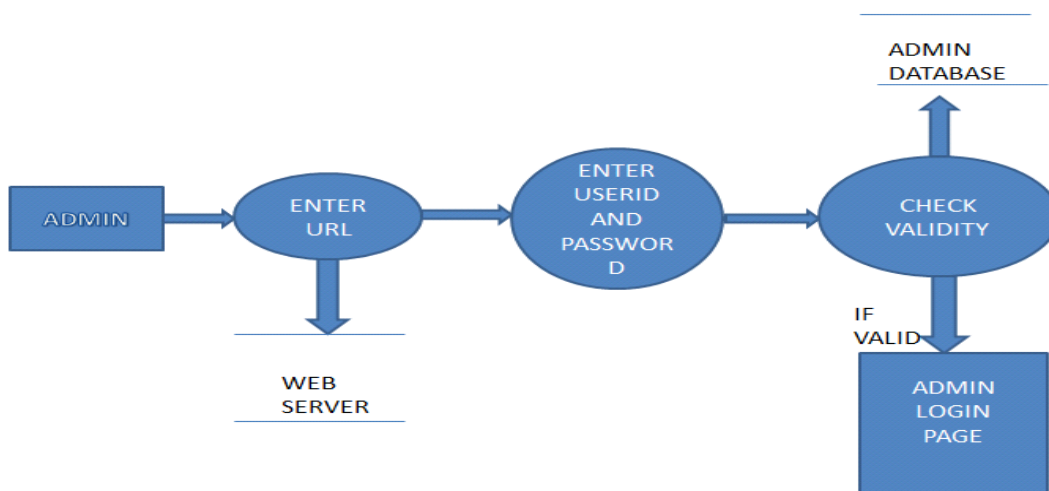
### MODULE DESCRIPTION

This is a website based on PHP. The purpose of this project 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 part of country basing on the hospitals demand. This project includes mainly two modules i.e. login and main page.

#### ➤ Login

##### 1.Admin

The page require user name and password to start the application. Login is a process by which individual access to a computer system is controlled by identifying and authenticating the user through the cardinalities presented by the user. Admin can add update or delete the user, city, state, camp etc.



##### 2. User

User can register the account by fill the information about you and click on save button. He/she can add the account for the further enquiry of the blood donation. The user have to login to get more information about the blood bank.

Admin are of a two type:

Admin level user

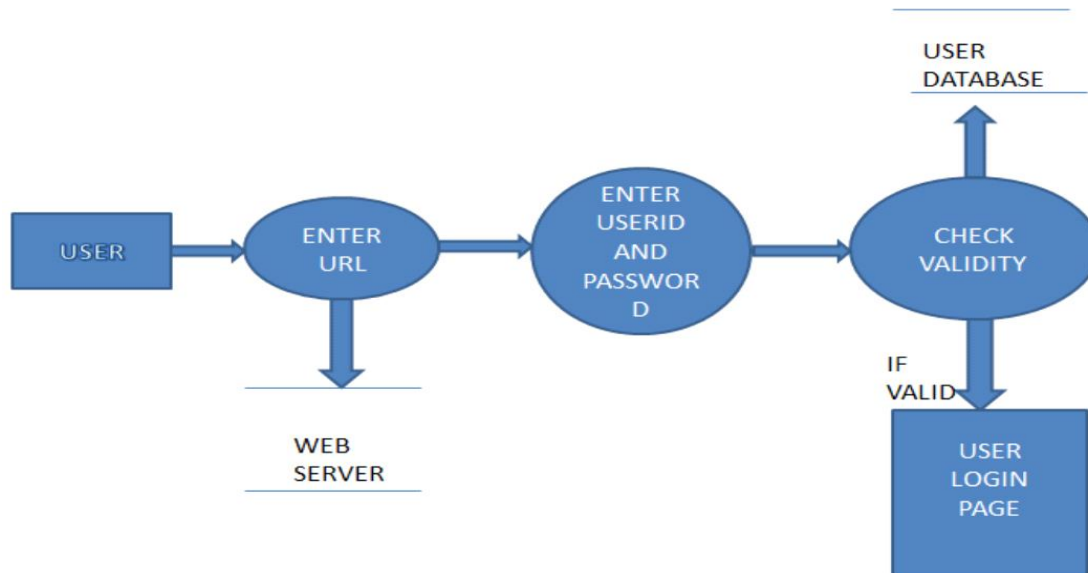
General level user

I. Admin level user:

Admin level user are a admin user, if he/she login a admin panel they work on a all the pages of the admin site like add user, update user, delete user, add city, update city, delete city etc.

## II. General level user:

General level user are a general user, if he/she login a admin panel they do not see all the pages of the admin site like add user, update user, delete user, add city, update city, delete city etc. They work on only a addition of the new user, city, state, camp etc.



## ➤ Main Page

### 1. Main Window

This project is designed for successful completion of project on blood bank management system. the basic building aim is to provide blood donation service to the city recently. Blood Bank Database Management System (BBDMS) is a browser based system that is designed to store, process, retrieve and analyze information concerned with the administrative and inventory management within a blood bank. This project aims at maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and help them manage in a better way.

### 2. Registration Page

Registration page includes the information of the donor who want to register. Donor can register the account by clicking on new register. He/she can add the account for the further enquiry of the blood donation.

### 3. Donor login

The page require donor id and password to open the donor pannel. Login is a process by which individual access to a computer system is controlled by identifying and authenticating the user through the cardinalities presented by the user. Donor can change password, update profile or view donations etc.

## E-R DIAGRAM and SCHEMA DIAGRAM

### 1. INTRODUCTION E-R DIAGRAM

The entity-relationship data model is based on a perception of a real world that consists of a collection of basic objects called entities and of relationships among these objects. An entity is an “object” in the real world that is distinguishable from other objects. **For e.g.** each customer is an entity and rooms can be considered to be entities. Entities are described by a set of attributes. **For e.g.** the attributes Room no. and Room type describes a particular Room in a hotel. The set of all entities of the same type and the set of all relationships of the same type are termed as an entity set and relationship set respectively.

The logical structure of a database can be expressed graphically by an E- R diagram consists of the following major components:

#### 1. Entity

An entity is an “object” in the real world that is distinguishable from all other objects. An entity set is a set of entities of the same type that share the same attributes.

#### 2. Weak Entity

An entity set that may not have sufficient attributes to form a primary key is termed as a weak entity set.

#### 3. Attributes

Attributes are descriptive properties possessed by each member of an entity set.

#### 4. Key attribute

A key attribute is the unique, distinguishing characteristic of the entity. For example, Guest ID might be the guest’s key attribute.

#### 5. Derived attribute

In these attributes the value can be derived from the values of other related attributes.

#### 6. Relationships

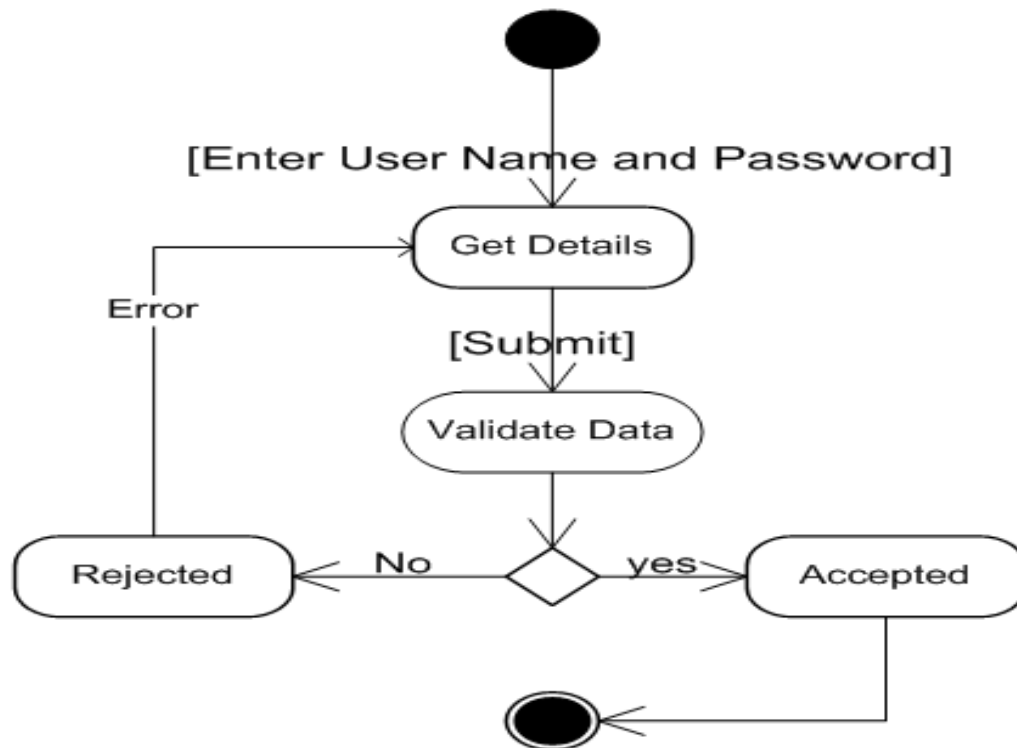
A relationships an association among several entities.

#### 7. Recursive Relationship

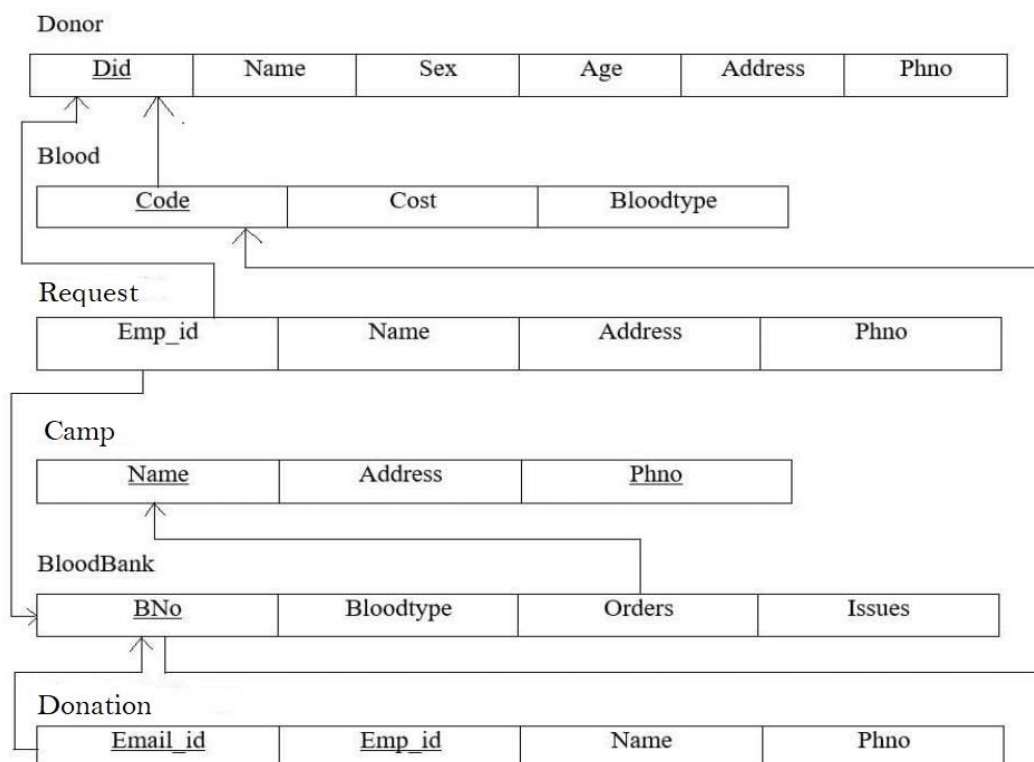
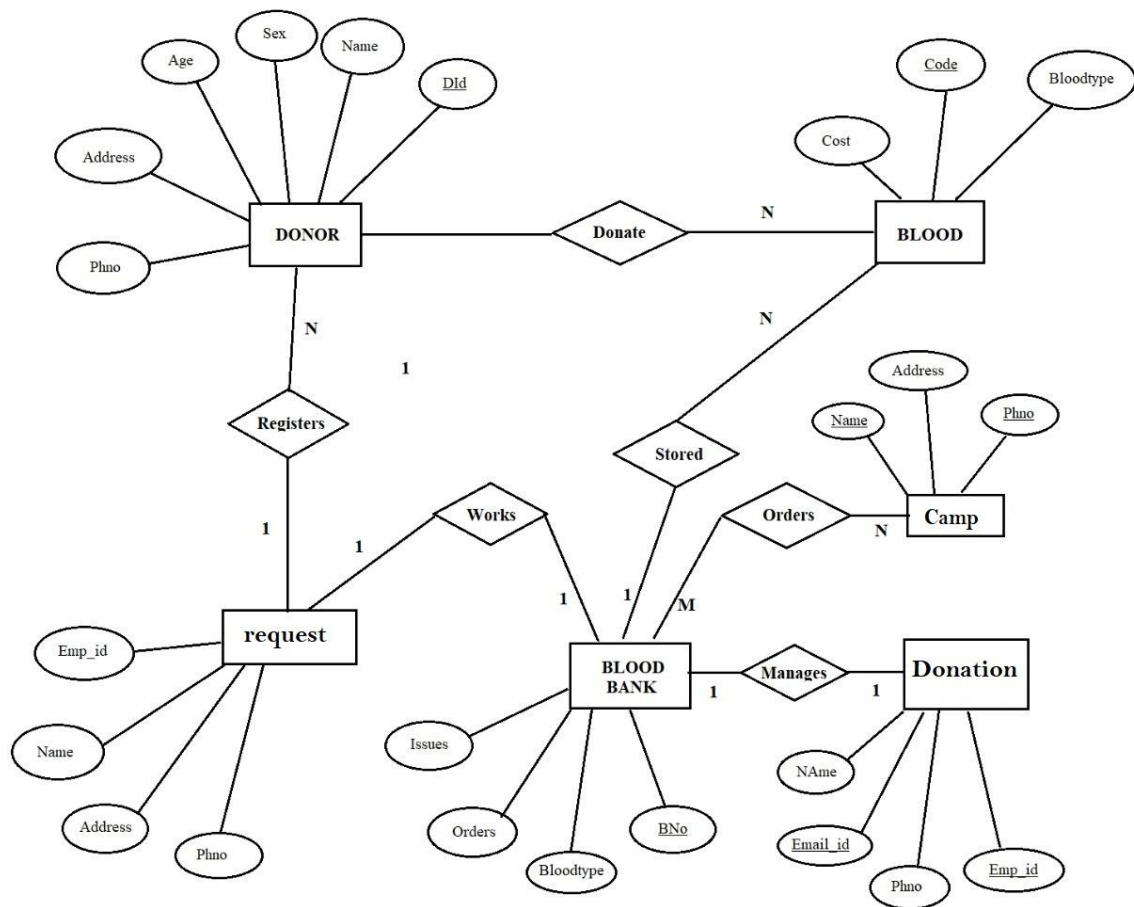
In some cases, entities can be self-linked. For example, Employees can supervise other employees in a hotel.

While using E-R diagrams, we can follow certain guidelines, which are as follows:

- Unnecessary attributes should not be introduced.
- Entities should be merged with common attributes.
- A complex entity should be simplified by decomposing a complex attribute into sub attributes.
- We should generalize or specialize wherever possible and appropriate. Generalization is the result of taking the union of several lower entity sets to produce higher- level entity set.



E-R and Schema Diagram for our Project:



## TRIGGERS

Triggers are stored programs, which are automatically executed or fired when some events occur. Triggers are, in fact, written to be executed in response to any of the following events

—

- ✓ A **database manipulation (DML)** statement (DELETE, INSERT, or UPDATE)
- ✓ A **database definition (DDL)** statement (CREATE, ALTER, or DROP).
- ✓ A **database operation** (SERVERERROR, LOGON, LOGOFF, STARTUP, or SHUTDOWN).

Triggers can be defined on the table, view, schema, or database with which the event is associated.

Benefits of Triggers

Triggers can be written for the following purposes —

- ✓ Generating some derived column values automatically
- ✓ Enforcing referential integrity
- ✓ Event logging and storing information on table access
- ✓ Auditing
- ✓ Synchronous replication of tables
- ✓ Imposing security authorizations
- ✓ Preventing invalid transactions

If you want to query the table in the same trigger, then you should use the AFTER keyword, because triggers can query the table or change it again only after the initial changes are applied and the table is back in a consistent state.

In our case the trigger name is triggerforrequest which is for for table name request. So whenever a request is put up by the donors the trigger triggerforrequest stores the insertion values at all times. Similarly more triggers can be added in order to keep a track deletion or updation of data in a table.



## STORED PROCEDURES

A stored procedure is a set of Structured Query Language (SQL) statements with an assigned name, which are stored in a relational database management system (RDBMS) as a group, so it can be reused and shared by multiple programs.

Stored procedures can access or modify data in a database, but it is not tied to a specific database or object, which offers a number of advantages.

Stored procedures in SQL Server can accept input parameters and return multiple values of output parameters; in SQL Server, stored procedures program statements to perform operations in the database and return a status value to a calling procedure or batch.

User-defined procedures are created in a user-defined database or in all system databases, except for when a read-only (resource database) is used. They are developed in Transact-SQL (T-SQL) or a reference to Microsoft. Temporary procedures are stored in tempdb, and there are two types of temporary procedures: local and global. Local procedures are only visible to the current user connection, while global procedures are visible to any user after they are created. System procedures arrive with SQL Server and are physically stored in an internal, hidden-resource database. They appear in the SYS schema of each system, as well as in a user-defined database.

## CHAPTER – 4

### SOFTWARE DEVELOPMENT PROCESS

#### 1. Initiation Phase

The Initiation Phase begins when a business sponsor identifies a need or an opportunity. The purpose of the Initiation Phase is to

- Identify and validate an opportunity to improve business accomplishments of the organization or a deficiency related to a business need.
- Identify significant assumptions and constraints on solutions to that need.
- Recommend the exploration of alternative concepts and methods to satisfy the need including questioning the need for technology, i.e., will a change in the business process offer a solution?
- Assure executive business and executive technical sponsorship.

#### 2. Planning Phase

Problem Recognition: A problem is well defined very rarely. It crops out with a vague feeling of some statements that lead to vague conclusions. So the first task is to get more crucial information by interviewing and meeting concerned people. It clarifies how the problem is felt, how often it occurs, how it affects the business and which departments are suffering with this.

Feasibility study: A feasibility study is a test of a system proposal according to its workability impact on organization, ability to meet user needs and effective use of resources. The objective of a feasibility study is not to solve a problem but to acquire a sense of its scope. During the study, the problem definition is crystallized and the aspects of the problem to be included in the system are determined. After the initial investigation of the system that helped to have in-depth study of the existing system, understanding its strength and weaknesses and the requirements for the new proposed system.

Technical feasibility: Technical feasibility centers on the existing computer system. (Hardware/software) and to what extent it can support the proposed addition also the organization already has sufficient high-end machines to serve the processing requirements of the proposed system. So there is no need to purchase new software as the organization has

necessary software i.e.tomcat5.0, j2ee1.4, Microsoft SQL Server or hardware to support the proposed system.

### 3. Analysis Phase

It was difficult to set the JDK information on the system in the mean time. Moreover it was a time consuming affair if a person is new to start working with java.

It was difficult to solve the problems those were arising during a particular installation of the software because of hardware compatibility issues.

Moreover there is usage an issue concerned with the software .This issue has been resolved by the WEB-IDE by providing Integrated Environment facility to its users.

User Requirements: Since end users are the ones who are finally going to use the system, their requirements need to be identified. This involves questioning the end users what their expectations were. The main requirement of the end user is that the system should be easy to use and take less time. In addition to these another important factor was to eliminate the need for database conversion and migration that had to be carried out presently. After conducting interviews with the users a document called the software requirement specification was created. This is the most important document that forms the basis for system development. It should be consistent, complete, unambiguous, traceable and inter-related.

Functional requirements: The functional requirements specify relationship between the inputs and outputs. All the operations to be performed on the input data to obtain output are to be specified. This includes specifying the validity checks on the input and output data, parameters affected by the operations and the other operations, which must be used to transform the inputs into outputs. Functional requirements specify the behavior of the system for valid input and outputs.

### 4. Development Phase

Effective completion of the previous stages is a key factor in the success of the Development phase. The Development phase consists of:

- Translating the detailed requirements and design into system components.
- Testing individual elements (units) for usability.
- Preparing for integration and testing of the IT system.

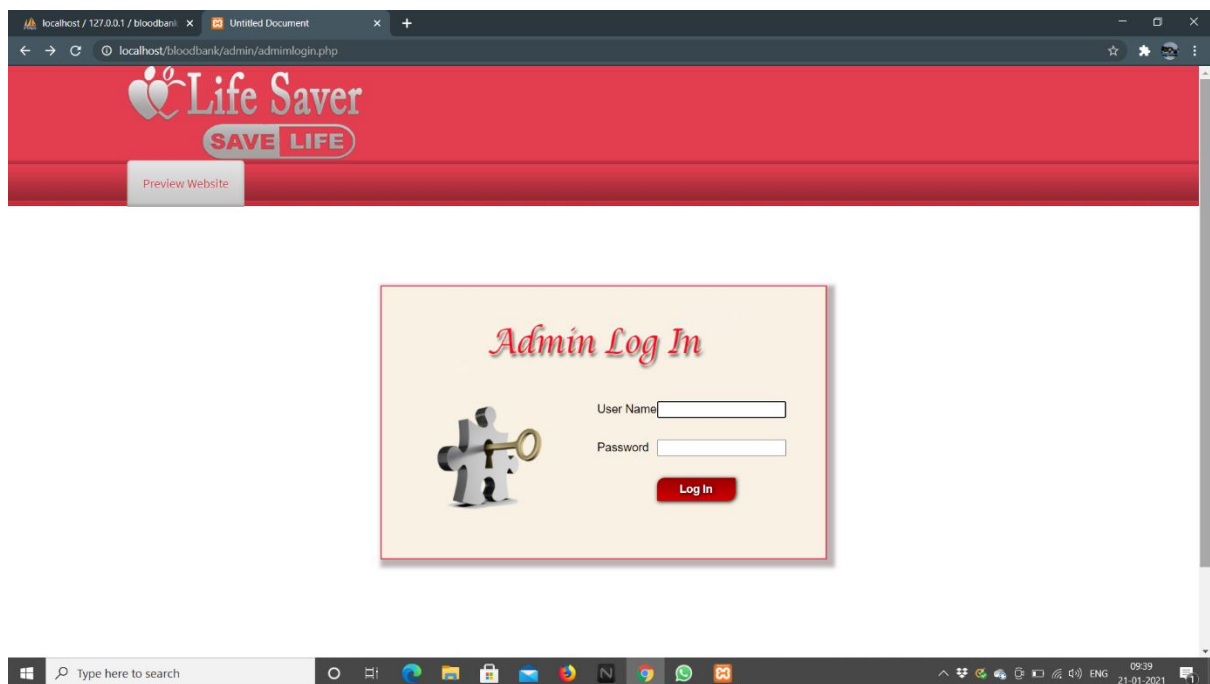
## 5. Implementation phase

This phase is initiated after the system has been tested and accepted by the user. In this phase, the system is installed to support the intended business functions. System performance is compared to performance objectives established during the planning phase. Implementation includes user notification, user training, installation of hardware, installation of software onto production computers, and integration of the system into daily work processes.

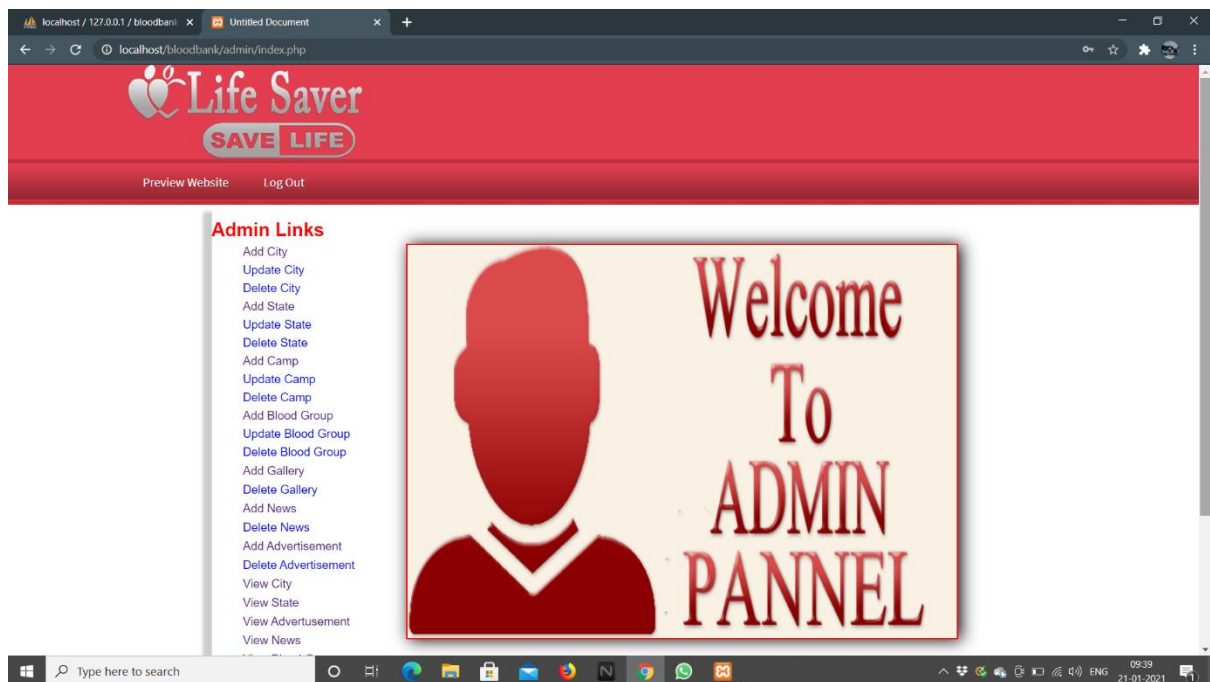
This phase continues until the system is operating in production in accordance with the defined user requirements.

## SNAPSHOTS

Admin login page:



Admin panel:



## Donor login page:

The screenshot shows a web browser window with the URL `localhost/bloodbank/login.php`. The page features a red header with the "Life Saver" logo and the tagline "SAVE LIFE". A navigation menu includes links for Home, Donor Registration, Send Request, View Request, Log In, Search, Contact Us, and About. The main content area displays a "DONOR Log In" form. To the left of the form is an illustration of a puzzle piece with a keyhole. The form contains input fields for "E-Mail" and "Password", a "Log In" button, and a link to "REGISTER" for new users. The browser's taskbar at the bottom shows the Windows search bar and various application icons.

## Donor registration page:

The screenshot shows a web browser window with the URL `localhost/bloodbank/registration.php`. The page features the same red header and navigation menu as the login page. The main content area displays a "Donor Registration" form. On the left side of the form is a vertical banner with the text "I WANT TO BECOME A DONOR". The form includes input fields for "Donor Name", "Age", "Mobile No", "E-Mail", "Password", and "Confirm Password". It also has a "Gender" section with radio buttons for "Male" (selected) and "Female", a "Blood Group" dropdown menu, and an "Upload Pic" section with a "Choose File" button. A "Resitred" button is located at the bottom right of the form. The browser's taskbar at the bottom shows the Windows search bar and various application icons.

## Search results:

The screenshot shows a web browser window with the URL `localhost/bloodbank/result.php?bg=13`. The page features a red header with the 'Life Saver' logo and a navigation menu. The main content area is titled 'Results' and displays a profile card for a donor. The profile card includes a photo of a man and the following details:

Name	shayan paul
Gender	male
Mobile No:	9735878598
Email	shayan97@gmail.com
Blood Group	o+

The footer of the page includes a navigation menu and the text 'Design by Shayan and Jeet'.

## Request for Blood registration Page:

The screenshot shows a web browser window with the URL `localhost/bloodbank/requests.php`. The page features a red header with the 'Life Saver' logo and a navigation menu. The main content area is titled 'Requests For Blood' and displays a registration form. The form includes the following fields:

- Name:
- Gender: ☒ Male ☐ Female
- Age:
- Mobile No:
- Select Blood Group:
- E-Mail:
- Till Required Date:
- Detail:

A red 'Submit' button is located at the bottom of the form.

## SUMMARY AND CONCLUSION:

With the theoretical inclination of our syllabus it becomes very essential to take the utmost advantage of any opportunity of gaining practical experience that comes along. The building blocks of this Major Project “BLOOD BANK DATABASE MANAGEMENT SYSTEM” was one of these opportunities. It gave us the requisite practical knowledge to supplement the already taught theoretical concepts thus making us more competent as a computer engineer. The project from a personal point of view also helped us in understanding the following aspects of project development:

- The planning that goes into implementing a project.
- The importance of proper planning and an organized methodology.
- The key element of team spirit and co-ordination in a successful project.

The project also provided us the opportunity of interacting with our teachers and to gain from their best experience.

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