

**A**  
**Summer Internship Report**  
**On**  
**"Blood Bank Project"**

(CE446 – Summer Internship - II)

**Prepared by**  
Amar Gokani(19CE031)

**Under the Supervision of**  
Assistant Prof. Dhaval Bhoi

**Submitted to**  
Charotar University of Science & Technology (CHARUSAT)  
for the Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Technology (B.Tech.)  
for Semester 7

**Submitted at**



**U & P U. PATEL DEPARTMENT OF COMPUTER ENGINEERING**  
**Chandubhai S. Patel Institute of Technology (CSPIT)**  
**Faculty of Technology & Engineering (FTE), CHARUSAT**  
**At: Changa, Dist: Anand, Pin: 388421.**  
**July 2021**



Accredited with Grade A by NAAC  
Accredited with Grade A by KCG

## CERTIFICATE

This is to certify that the report entitled “**Blood Bank Project**” is a bonafied work carried out by **Amar Gokani (19CE031)** under the guidance and supervision of **Prof. Dhaval Bhoi / Prof. Amit Thakkar** for the subject **Summer Internship – II (CE446)** of 7<sup>th</sup> Semester of Bachelor of Technology in **Computer Engineering** at Chandubhai S. Patel Institute of Technology (CSPIT), Faculty of Technology & Engineering (FTE) – CHARUSAT, Gujarat.

To the best of my knowledge and belief, this work embodies the work of candidate himself, has duly been completed, and fulfills the requirement of the ordinance relating to the B.Tech. Degree of the University and is up to the standard in respect of content, presentation and language for being referred by the examiner(s).

Under the supervision of,

Prof. Dhaval Bhoi  
Assistant Professor  
U & P U. Patel Dept. of Computer  
Engineering  
CSPIT, FTE, CHARUSAT, Changa, Gujarat

Dr. Ritesh Patel  
Head - U & P U. Patel Department of Computer Engineering,  
CSPIT, FTE, CHARUSAT, Changa, Gujarat.

---

---

**Chandubhai S. Patel Institute of Technology (CSPIT)**  
**Faculty of Technology & Engineering (FTE), CHARUSAT**

At: Changa, Ta. Petlad, Dist. Anand, Pin: 388421. Gujarat.

## **Acknowledgement**

With the help and guidance of the professors this project could see the light of the day. Our heartiest thanks to Prof. Dhaval Bhoi for providing us with the guidance and encouragement to develop this project, which thus helped us in shaping our abilities towards a constructive goal.

We owe special debt of gratitude to Dr. Ritesh Patel and Prof. Amit Thakkar for their constant support and guidance throughout the course of our work. Their sincerity, thoroughness and perseverance to have been a constant source of inspiration for us.

We also thank all the staff of the blood bank who took time out of their busy schedule to explain all the different modules and all the working of the blood bank so that we could develop the project and lead it to a better path.

We also would like to thank all our colleagues who have helped us solve doubts and issue that we have faced throughout the project and are grateful to all the people who were part of the project.

## **Abstract**

The project describes the blood bank management system. This report will help you know in deep the actual work that has been done as a team work. The main objective of the application is to digitalize the documentation. They need to maintain thousands of records. also searching should be an option, so that the results our found. Main objective is to create a system which helps the staff complete their work faster in a simple way by using computer and the olden ways of paper.

## Table of Contents

<b>Acknowledgement.....</b>	<b>i</b>
<b>Abstract.....</b>	<b>ii</b>
<b>Chapter 1 Introduction.....</b>	<b>1</b>
1.1 Purpose of Internship.....	1
1.2 Overview of Project.....	1
1.3 Objective .....	1
1.4 Scope .....	1
1.5 Roles and Responsibilities.....	2
1.6 Internship plan (Week wise).....	3
<b>Chapter 2 System Analysis.....</b>	<b>4</b>
2.1 Study of existing system & its limitations.....	4
2.2 Requirement of new system .....	4
2.2.1 Functional Requirements.....	4
2.2.2 Non-functional Requirements.....	5
2.3 Hardware Requirements .....	6
2.4 Software Requirements .....	6
<b>Chapter 3 Development Environment.....</b>	<b>7</b>
<b>Chapter 4 System Design.....</b>	<b>8</b>
4.1 ER Diagram.....	8
<b>Chapter 5 Implementation Screenshots.....</b>	<b>9</b>
<b>Chapter 6 Test Cases.....</b>	<b>15</b>
<b>Chapter 7 Limitations and Future Work.....</b>	<b>16</b>
7.1 Limitations.....	16
7.2 Future Work.....	16
<b>Chapter 8 Conclusion.....</b>	<b>17</b>
<b>References.....</b>	<b>18</b>

## **List of Figures**

<b>Fig 4.1 ER Diagram .....</b>	<b>8</b>
<b>Fig 5.1 Implementation Screenshot 1 .....</b>	<b>9</b>
<b>Fig 5.2 Implementation Screenshot 2 .....</b>	<b>10</b>
<b>Fig 5.3 Implementation Screenshot 3 .....</b>	<b>11</b>
<b>Fig 5.4 Implementation Screenshot 4 .....</b>	<b>12</b>
<b>Fig 5.5 Implementation Screenshot 5.....</b>	<b>13</b>
<b>Fig 5.6 Implementation Screenshot 6.....</b>	<b>13</b>
<b>Fig 5.7 Implementation Screenshot 7.....</b>	<b>14</b>

## **List of Tables**

<b>Table 1.1 Roles and Responsibilities .....</b>	<b>2</b>
<b>Table 1.2 Internship Plan (Week wise) .....</b>	<b>3</b>
<b>Table 6.1 Test Cases.....</b>	<b>15</b>

## **CHAPTER 1: INTRODUCTION**

### **1.1. PURPOSE OF INTERNSHIP**

Blood Bank Management Software is designed & suitable for several Blood Bank either operating as individual organization or part of Hospital. It covers all Blood banking process from Donor recruitment, donor management, mobile sessions, component preparation, screening covering all tests, blood stock inventory maintenance, patient registration, cross matching, patient issues etc.

### **1.2. OVERVIEW OF PROJECT**

The project consists of several modules that form the complete project which is to be used in the blood bank. It starts with the simple login and registration and then has all the required modules for the blood bank to be functional.

### **1.3. OBJECTIVE**

The main objective of this specification is to support the automated tracking of blood products administration of a blood transfusion and subsequent updates to care records.

To allow the probable recipients to make search and match the volunteer donors, and make request for the blood.

### **1.4. SCOPE**

The scope of the specification includes the following scenarios:

- Donor registration
- Blood bag entries
- Blood group identification
- Blood component separation



## 1.5. ROLES AND RESPONSIBILITIES

(Table 1.1 – Roles and Responsibilities)

Name	Responsibilities
Dhruv Joshi	Project Lead Developer, Full Stack Developer
Karan Hansalia	Full Stack Developer
Harshad Mangalia	Full Stack Developer
Krupa Chotai	Full Stack Developer
Amar Gokani	Full Stack Developer
Bhakti Pipaliya	Full Stack Developer

## 1.6. INTERNSHIP PLAN (WEEK WISE)

(Table 1.2 – Internship Plan)

<b>AMAR GOKANI</b>		
<b>Date</b>	<b>Description of work</b>	<b>Hrs</b>
03-06-2021	Meeting with faculty	1:30
04-06-2021	GUI , work distribution, general discussion	1
05-06-2021	GUI understanding	2
06-06-2021	Overview for PHP ,HTML, CSS	3
07-06-2021	Overview for html/php, learn Javascript	2
08-06-2021	Study for table and their attributes	2
09-06-2021	study table, bootstrap video	3
10-06-2021	study of sample code	1.3
11-06-2021	meeting for doubt in sample code and coding standard video among students	1
12-06-2021	meeting with faculty	1
13-06-2021	Designing GUI	2.5
14-06-2021	GUI discussion meeting	1
15-06-2021	Changes In GUI	1
16-06-2021	GUI verification database analysis	2
17-06-2021	Tutorials on php	2
18-06-2021	GUI verification meeting	0.5
19-06-2021	Database analysis	2
20-06-2021	create database and tables	1.5
21-06-2021	Learning about mysql	3
22-06-2021	Database connectivity with GUI	4
23-06-2021		
24-06-2021		
25-06-2021	Changes as per the discussion	1.5

## **CHAPTER 2: SYSTEM ANALYSIS**

### **2.1. STUDY OF EXISTING SYSTEM & ITS LIMITATIONS**

- The operation of the blood bank still now is maintained in the manual system.  
The operation is tedious, time consuming and space consuming.
- It creates room for errors as the data is entered manually by the persons.
- It includes the risk of the documents being lost over years and maintenance of the records is difficult.
- The data recorded during testing or while acquiring the details of different aspects of blood bank management system is not so accurate and precise.
- Maintaining the stock of blood and the daily transactions without computerization also poses a challenge.

### **2.2. REQUIREMENTS OF A NEW SYSTEM**

#### **2.2.1. Functional Requirements**

- Login  
The system provides security features through username-password matching where only authorized user can access the system with different authorization level.
- Admin  
Input: Username, Password  
Output: - Invalid or Update Blood Details, logout
- Donor Profile Registration  
This allows healthy public to register as volunteer donor.  
Input: Donor/ Recipient Id, Name, Date of Birth, Sex, Blood Group, Address, Contact Number, Email Address, Diseases (if any), Aadhar Card No.  
Output: - Successfully Registered
- Blood Bag Entry

Input: Blood bag details

Output: Successfully entered.

- Blood group Identification

Input: Blood details

Output: Blood Group of the donor

- Blood Component Separation

### 2.2.2. Non-functional Requirements

- **Availability**

The system should be available at all times, meaning the user can access it using application. In case of a hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved from the application data folder and saved by the administrator. It means 24 x 7 availability.

- **Security**

The system use SSL (secured socket layer) in all transactions that include any confidential customer information.

The system must automatically log out all customers after a period of inactivity.

- **Performance**

The system is interactive and the delays involved are less. When connecting to the server the delay is based on the distance of the 2 systems and the configuration between them so there is high probability that there will be or not a successful connection in less than 20 seconds for sake of good communication.

- **Reliability**

As the system provide the right tools for problem solving it is made in such a way that the system is reliable in its operations and for securing the sensitive details.

### **2.3. HARDWARE REQUIREMENTS**

For the project to run, the minimum hardware requirements are

- Intel Pentium
- 512MB RAM
- Stable Internet

### **2.4. SOFTWARE REQUIREMENTS**

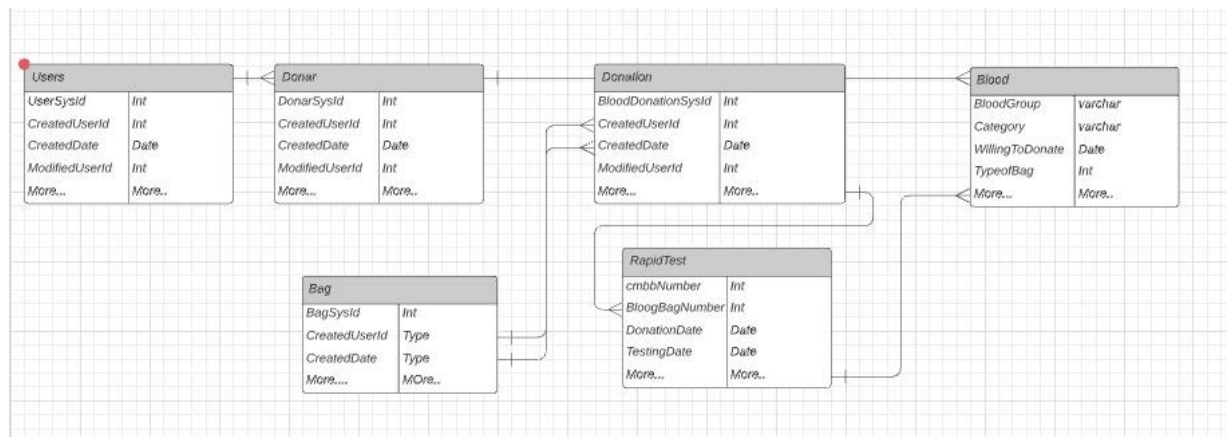
- Any browser (Preferably Chrome)

## **CHAPTER 3: DEVELOPMENT ENVIRONMENT**

The whole project has been developed using HTML, CSS, PHP and JS and the tools used for collaboration work are GitHub and Microsoft Teams.

## CHAPTER 4: SYSTEM DESIGN

### 4.1. ER DIAGRAM



(Figure 4.1 – Entity Relationship Diagram)

This Diagram describes the interrelated things of interest in this domain

## CHAPTER 5: IMPLEMENTATION SCREENSHOTS

### Add New User

New User Page

User Name

Password

Retype Password

User Type

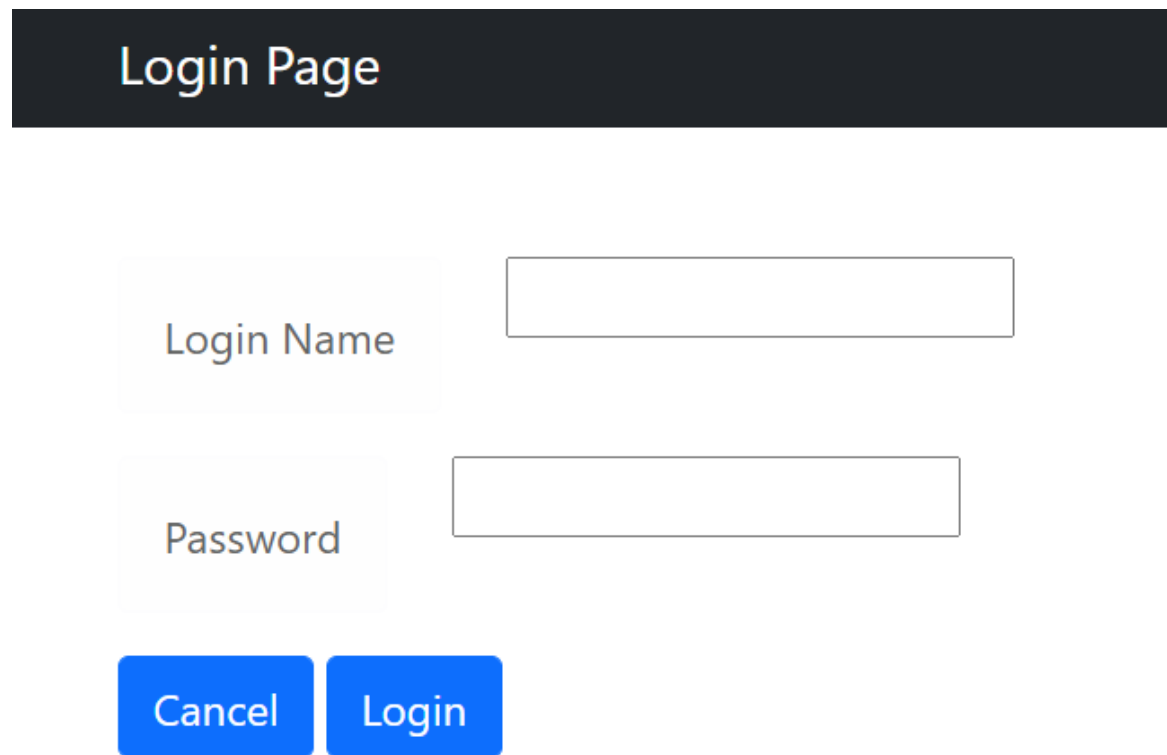
User Short Name

Cancel

Login

(Figure 5.1 – Implementation Screenshot 1)



**New login Page**

The screenshot shows a login page with a dark blue header bar containing the text "Login Page" in white. Below the header, there is a light gray background area. On the left side of this area, there are two labels: "Login Name" and "Password", each inside a light gray rounded rectangle. To the right of each label is a white rectangular input field. At the bottom of the light gray area, there are two blue buttons with white text: "Cancel" and "Login".

**(Figure 5.2 – Implementation Screenshot 2)**

## Add New Donor Page

Charotar Hospital Blood Bank
Add new donor

Mobile Number
Birth date
dd-----yyyy
Search
Add new

Sr. No.	Donor Full Name	Mobile Number	Birthdate	Address of Donor	Action
1	Ritesh Pravinbhai Patel	9999958009	27/10/1982	B/5 Astha Angan, Anand	<a href="#">Edit</a>
2					

Donor ID
2020/001

First Name
Middle Name
Last name

Weight
KG

Aadhar Number
Willing to Donate

Mobile 1
Mobile 2

Category
Voluntary-V
Email ID

Donor Status
Eligible for Blood Donation
Blood Group
A +Ve

Marriage Anniversary Date
dd-----yyyy
Birthdate
dd-----yyyy

Gender
Male Female

Age
Years

Address
Village/City
District
State

Save
Cancel
Clear

(Figure 5.3 – Implementation Screenshot 3)

## Blood Donation Information page

Blood Donation Information

Mobile Number

Birthdate

dd / mm / yyyy

Search

Sr. No.	Donor Full Name	Mobile Number	BirthDate	Address	Action
<div> <div>Donor ID</div> <div></div> </div> <div> <div>Donor Full Name</div> <div></div> </div> <div> <div>Blood Group</div> <div></div> </div>					

BP

<low>

<high>

BH

gm%

Pulse

/minute

Weight

KG

Temperature

Degree

Bloodbag No.

001

Segment No.

Lot No.

Type of Bag

Manufacturer

Volume

Mfg. Date

dd / mm / yyyy

Exp. Date

dd / mm / yyyy

Tapping Date

dd / mm / yyyy

Expiry Date

dd / mm / yyyy

Registration Time

--:--:--

Exam Time

--:--:--

Collection Time

--:--:--

Start Tapping

--:--:--

End Tapping

--:--:--

Out Tapping

--:--:--

Inv. Done By

Phlebotomy By

Save

Cancel

Clear

Submit

Remark

(Figure 5.4 – Implementation Screenshot 4)

Blood bag Entry Page

Blood Bag Entry

Blood Bag No

Segment No

Type Of Bag

Single

Mfg.Date

dd-mm-yyyy

With SAGM

Volume

350

Remarks

Date

dd-mm-yyyy

Lot No

Manufacturer

Vatsal Technorise

Exp.Date

dd-mm-yyyy

InvDoneBy

root

Bag Status

Instoke

Save

Clear

Submit

Cancel

(Figure 5.5 – Implementation Screenshot 5)

Component Separation Page

component Separation

Don\_Bld\_number:

Bag Type:

Volume:

Primary Volume:

Low Volume:

Cancel

Save

sep.Date:

dd-mm-yyyy

☐

PCV

☐

FFP

☐

PC

☐

LD

☐

CRYO☐

Cancel

Save

sep.Time:

--:--:--

Volume:

Volume:

Volume:

Volume:

Volume:

Volume:

(Figure 5.6 – Implementation Screenshot 6)

Rapid Test Page

Rapid Test

CMBB Number

Blood Bag Number

Donation Date

dd-mm-yyyy

Find

Testing Date: dd-mm-yyyy

HIV

Manufacturer:

Mfg. Date:

dd-mm-yyyy

Exp. Date:

dd-mm-yyyy

Type:

Result:

HbsAg

Manufacturer:

Open this

Mfg. Date:

dd-mm-yyyy

Exp. Date:

dd-mm-yyyy

Type:

Select

Result:

Select

HCV

Manufacturer:

Open this

Mfg. Date:

dd-mm-yyyy

Exp. Date:

dd-mm-yyyy

Type:

Select

Result:

Select

Syphilis

Manufacturer:

Open this

Mfg. Date:

dd-mm-yyyy

Exp. Date:

dd-mm-yyyy

Type:

Select

Result:

Select

MP

Type:

Select

Result:

Select

Submit

(Figure 5.7 – Implementation Screenshot 7)

## CHAPTER 6: TEST CASES

Test case scenarios	Test case Name	Pre-condition	Testing Steps	Testing Data	Expected Result	Post Condition	Status(Pass/Fail)
Create Login	Registering staff/admin	NA	<ol style="list-style-type: none"> <li>1. Enter Username</li> <li>2. Enter Password</li> <li>3. Retype Password</li> <li>4. Enter user type</li> <li>5. Enter user short name</li> <li>6. Submit</li> </ol>	User registered	Registered Successfully	Show Login page	Pass
Login	Logging in as staff or admin	User should be registered	<ol style="list-style-type: none"> <li>1. Enter Username</li> <li>2. Enter Password</li> <li>3. Click on Login</li> </ol>	<valid username> <invalid password>	Logged in successfully	Show dashboard	Pass
Add New Donor	Adding new user	Logged in as staff/admin	<ol style="list-style-type: none"> <li>1. Search by mobile number if already added.(if No)</li> <li>2. Enter necessary details</li> <li>3. Save</li> </ol>	Donor details	Donor added successfully	Show dashboard	Pass
BloodBag Entry	Adding blood bag details		<ol style="list-style-type: none"> <li>1. Enter necessary details</li> <li>2. Save</li> </ol>	Bag details	Bag added successfully	TBD	Pass
Donor details	Editing donor details		<ol style="list-style-type: none"> <li>1. Enter mobile number</li> <li>2. Enter birthdate</li> <li>3. Search</li> </ol>	Editing donor details failed	Edited successfully	TBD	Fail
BloodDonation Information	Blood donation Entry		<ol style="list-style-type: none"> <li>1. Enter necessary details</li> <li>2. save</li> </ol>	Donation entry successful	Added Successfully	Donation page	pass
Rapid test	Searching rapid test details	Blood bag no., blood donation no in database	<ol style="list-style-type: none"> <li>1. Enter necessary details</li> <li>2. search</li> </ol>	Reflected in 1 card for now	Details reflected	Same page	pass

**(Table 6.1 – Test Cases)**

## **CHAPTER 7: LIMITATIONS AND FUTURE WORK**

### **7.1. LIMITATIONS**

The web pages are not synched yet making some of the functionalities not testable. It also lacks a solid database as of now because some of the fields are obscure and the general flow is inconceivable.

### **7.2. FUTURE WORK**

For future, main focus will be given upon discerning the flow from entering a new donor till storing the donated blood bag by visiting the Charusat Hospital and understanding it in person. Creating a solid database structure and merging the pages excluded in the first flow.

## **CHAPTER 8: CONCLUSION**

The basic GUI and most of the web pages are completed and are working under generic database, First flow that is from registering new user to adding donor is completed as well. Amalgamation of website and concurrent database is remaining.



## REFERENCES

1. <https://www.w3schools.com/php/>
2. [https://www.tutorialspoint.com/android/android\\_php\\_mysql.htm](https://www.tutorialspoint.com/android/android_php_mysql.htm)
3. <https://www.w3schools.com/html/>
4. <https://getbootstrap.com/docs/5.0/forms/form-control/>
5. <https://www.youtube.com/channel/UC29ju8bIPH5as8OGnQzwJyA>