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**Faculty of Technology**



*Faculty of Technology,  
Department of Computer Engineering,  
Dharmsinh Desai University.*

**Computer Engineering Department**  
**B.Tech – Semester – VI**

**Subject : Web Services Development**

**Project Title : Blood Management And Support System**

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**[20CEUOS010]**

**Dharmsinh Desai University**  
**Department of Computer Engineering**  
**Faculty of Technology**



**CERTIFICATE**

This is to certify that the project work carried out in the subject  
of **Web Services Development** is the  
Bonafide work of  
**VASANI VATSALKUMAR BHARATBHAI (CE155) [20CEUOS010]**  
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## 1. ABSTRACT

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-> Blood is a crucial aspect of modern healthcare, as effective blood utilization can improve patient outcomes, decrease transfusion-related complications, and reduce healthcare costs. To address these concerns, a blood management And Support system (BMS) can be implemented to Provide a Platform to User So that They Can contribute to the society as well as can get benefit in case of need for blood.

-> The BMS comprises a set of strategies and processes that aim to help all the needy once and also provide platform where donor find easy path for donate blood. This system involves several key components, including connect donor or needy directly to the hospital which can save the time of finding blood at a crucial time.

-> The BMS also take review from customer and try to find better way every time to make system user friendly as much as possible so that one who does not have much prior knowledge can also use the system without any difficulties.

-> In Short, Blood Donation Is It Self A Very Big Opportunity For Contributing Towards The Society . My Aim For This Web Application To Provide Platform To Those People Who Want To Contribute To The Society As Well As For Those Who Can Take Benefit To Find Relevant And Fast Information For Their Need From This System

## 2. INTRODUCTION

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### 2.1 Brief Introduction:-

-> This Web Application Allow Anyone To Register As Normal User As Well As Allow Established Hospitals To Register Into The System. This System Give Relevant Information About Hospital To The Donor And Beneficiary Person Through E-Mail Based On The Data Is Available To The System From Hospitals. System Try To Find Best Suitable Option Of Hospital Based On City , Particular Blood Availability etc. And Send Information To User Through His / Her Registered E-Mail.

-> My Aim Is to Design , Implement And Test A Blood Management And Support System. This Enables User To Get A Hospital Suggestion For Donate A Blood. This System Also Allow User To Search For Their Need Of Blood. Which As A Result Suggest A Suitable Nearby Hospital Where Their Need Can Be Fulfil. This Web Application Has A Very User Friendly Interface. That's Why The Users Will Feel Very Easy To Work On It. The User Can Register To The System And Can Become Donor Or Beneficiary As Well As Hospital Also Can Register To The System By Providing Necessary Information. By Using This System Hospital Can Manage Their Own Information And Can Change The Information Accordingly. As Well As Normal User Also Can Change Their Information Accordingly And They Also Can See Their Donation And Beneficiary Information.

-> I Try To Make Application As Sustainable As Much As Possible So That There Is No Higher Delay In The Availability Of Any Donor, Beneficiary Or Hospital Information, Whenever Needed Information Can Be Captured Very Quickly And Easily. An User Or Hospital Should Create A New Account For The First Time To Register Him / Her Into The System ,Later On He / She Can Logging Into The System With His / Her Created Account. And They Can Access The System According to Their Access.

### 2.2 Tools, Technology and Platform used :-

- 1) **Programming Languages** : JavaScript , C#.
- 2) **IDE** : Visual Studio Code , Visual Studio
- 3) **.NET CORE** For Backend Development.
- 4) **React** As Front End Technology.
- 4) **Microsoft SQL Server** As Database.

### 3. SOFTWARE REQUIREMENTS SPECIFICATIONS

---

#### **3.1 Product Scope**

It Is Proposed To Develop A Application That Can Be Used By Users Who Register In System To Donate The Blood And Contribute Towards The Society Or Want To Request For Their Need Of Blood. The Following Is An Informal Description Of The Requirements Of This System. Develop The Functional And Non-Functional Requirements For The Software.

#### **3.2 Types Of User**

-> Here, There Are Two Type Of User :

**1) Normal User**

**2) Hospital**

- **FUNCTIONAL REQUIREMENTS :**

**1) Mange Registration :**

**R.1.1 : User Registration:**

->

**Description** : Using This User Can Register His / Her Self Into The System.

**Input** : All Necessary Details.

**Output** : Appropriate Response From The Server After Client Side Validation.

**R.1.2 : Hospital Registration :**

->

**Description** : Using This Hospitals Can Register Into The System.

**Input** : All Necessary Details.

**Output** : Appropriate Response From The Server After Client Side Validation.

**2) Login :**

->

**Description** : This Process Allow Authorized Users Or Hospital To Access The System.

**Input** : Username and Password.

**Output** : Successfully Logged In / Invalid Username Or Password.

**3) Manage User Details:**

**R.3.1 : Update User Details :**

->

**Description** : Using this functionality User can Update the detail of His Own.

**Input** : Enter the new details.

**Output** : Appropriate Success Or Failure Response From Server.

#### **R.3.2 : Delete User Details:**

->

**Description** : Using this functionality User can Delete His Account From System.

**Input** : User Selection.

**Output** : Redirect User To Login Page.

#### **R.3.3 : View Data of User :**

->

**Description** : Using this functionality User can see His Information

**Input** : User Selection.

**Output** : Display all details of User.

### **4) Manage Donor :**

#### **R.4.1 : View Data of Donation :**

->

**Description** : Using this functionality User can see All Details Of His Donation.

**Input** : User Selection.

**Output** : Display all details of Donation.

#### **R.4.2 : Send Enquiry For Donation :**

->

**Description** : Using this functionality User can Enquire About Hospital For Donate Blood.

**Input** : Fill Necessary Details In Form.

**Output** : Mail Send To Client On Registered Email ID With Detail About Hospital.

### **5) Manage Beneficiary:**

#### **R.5.1 : View Beneficiary Details :**

->



**Description** : Using this functionality User can View The detail of Benefit That User Get.

**Input** : User Selection.

**Output** : Display All Details Of Benefits.

#### **R.5.2 : Request For Blood :**

->

**Description** : Using this functionality User can Enquire For Blood Of Their Need.

**Input** : Fill Necessary Details in Form.

**Output** : Send Email About Nearest Hospital Details Where His Need Can Be Fulfil.

### **6) Manage Hospital Details :**

#### **R.6.1 : Update Hospital Details :**

->

**Description** : Using this functionality Hospital can Update The detail of his Own.

**Input** : Enter the new detail of Hospital.

**Output** : Success Message Showing Details of Hospital is Updated Successfully.

#### **R.6.2 : Delete Hospital Details :**

->

**Description** : Using this functionality Hospital can Delete His Account.

**Input** : User Selection.

**Output** : Server Response With Account Deleted Successfully And Redirect User To Login Page.

#### **R.6.3 : View Hospital Details :**

->

**Description** : Using this functionality Hospital can View His detail.

**Input** : User Selection.

**Output** : Display All Details Of Hospital.

## **7) Manage Review:**

### **R.7.1 : View Review Details :**

->

**Description** : Using this functionality User can View The Review By Others As Well As By him.

**Input** : User Selection.

**Output** : Display Some Of The Reviews Add By User.

### **R.7.2 : Add Review :**

->

**Description** : Using this functionality User can Give His Review About His Experience With System.

**Input** : Fill Necessary Details in Form.

**Output** : Server Send Thanks Message As Response.

### **R.7.3 : Update Review Details :**

->

**Description** : Using this functionality User can Update The Review Add By him.

**Input** : New Review Details.

**Output** : Appropriate Response Send By Server.

### **R.7.4 : Delete Review Details :**

->

**Description** : Using this functionality User can Delete The Review Add By him.

**Input** : User Selection.

**Output** : Success Message Saying Your Feedback Is Deleted Successfully.

- NON - FUNCTIONAL REQUIREMENTS

**N.1 Usability** : The system should Be a user-friendly , with clear instructions for all actions. Users should be able to Work On Any Functionalities Without Having Much Prior Knowledge About Same.

**N.2 Database** : A data base management system that is available free of cost in the public domain should be used as Database. In this we are using Microsoft SQL as Database.

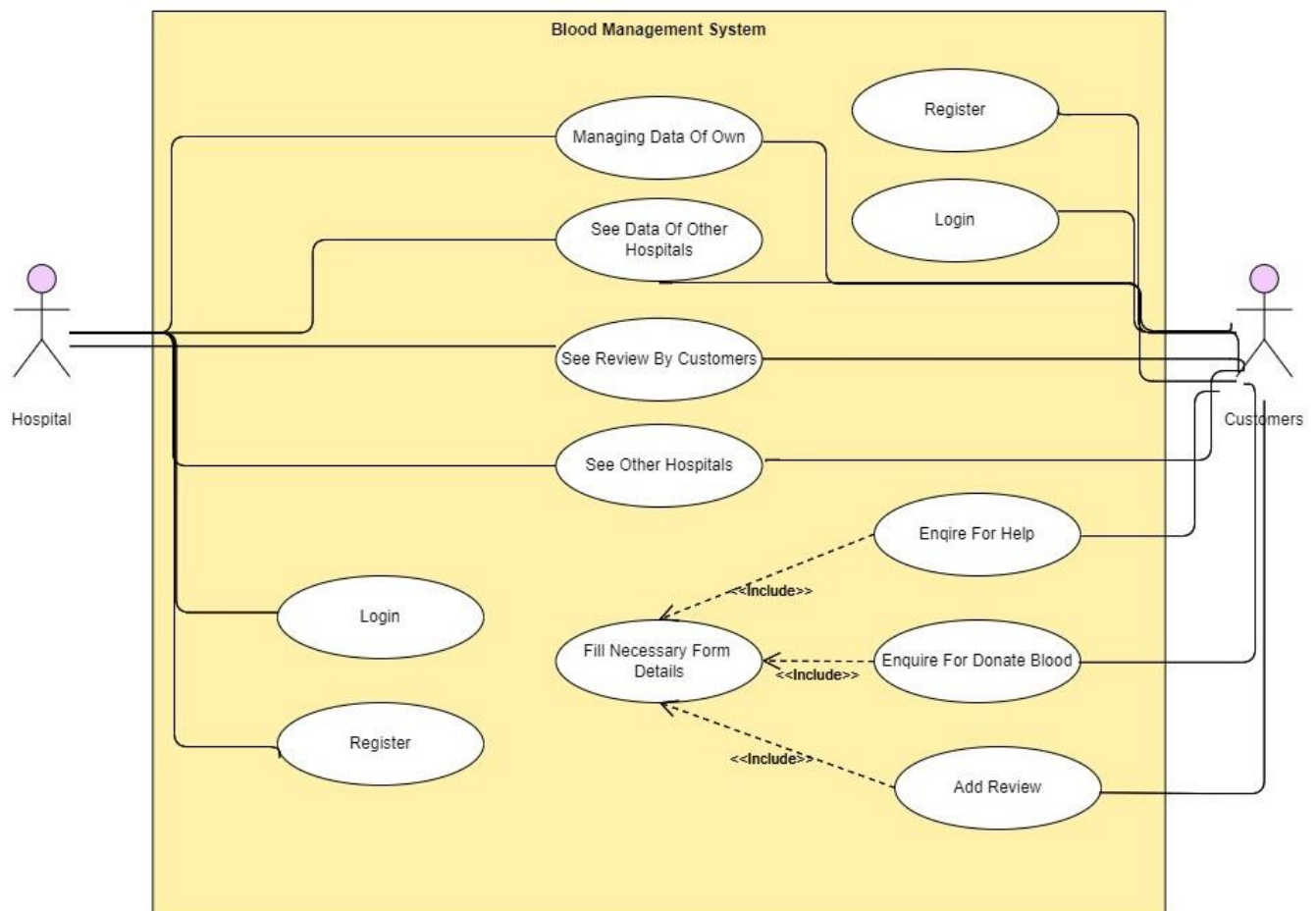
**N.3 Reliability** : The system should be reliable, There Should Not Be Much Delay For Sending Any Type Of Response By Server.

**N.4 Security**: The system should be secure, with appropriate measures in place to protect user data from unauthorised access.

## 4. Design

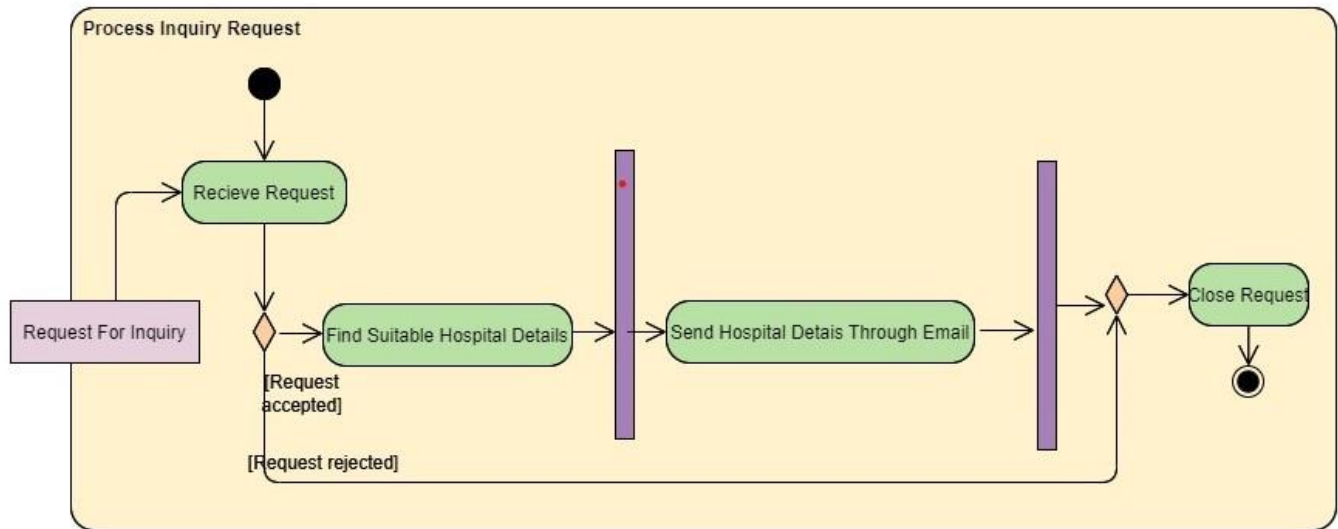
### i) Use Case Diagram :

->



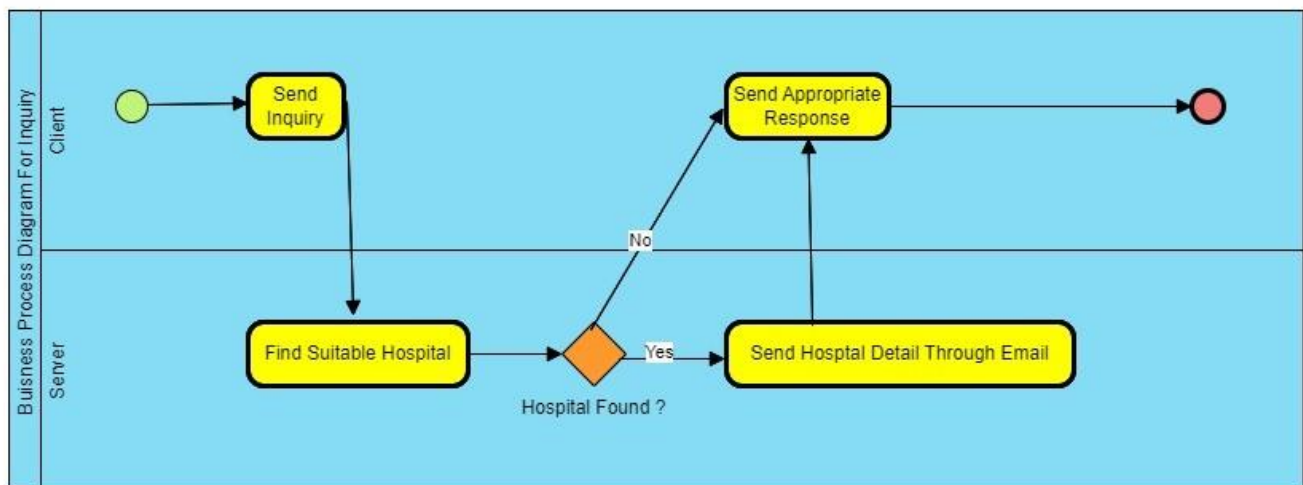
ii) Activity Diagram :

->



iii) Business Process Diagram :

->

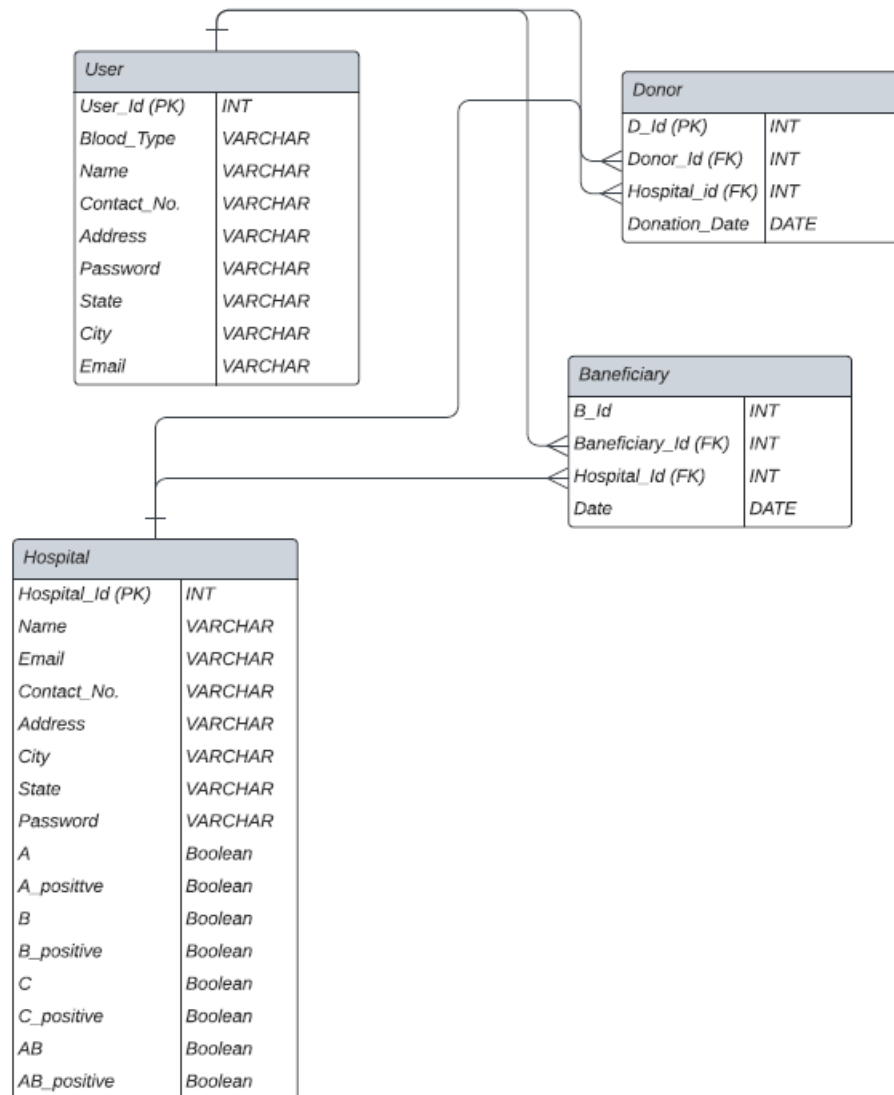


iv) ER DIAGRAM :

->

### Blood Management System

Vatsal Vasani | February 11, 2023



v) DATABASE SCHEMA :-

->

| <u>User1</u>      |                 |              |                       |
|-------------------|-----------------|--------------|-----------------------|
| <u>Field Name</u> | <u>Datatype</u> | <u>Width</u> | <u>Constraint</u>     |
| User1Id           | BIGINT          | -            | PRIMARY KEY           |
| User_Name         | NVARCHAR        | MAX          | NOT NULL              |
| Contact_no        | NVARCHAR        | MAX          | NOT NULL              |
| Address           | NVARCHAR        | MAX          | NOT NULL              |
| Blood_type        | NVARCHAR        | MAX          | NOT NULL              |
| Email             | NVARCHAR        | MAX          | NOT NULL              |
| State             | NVARCHAR        | MAX          | NOT NULL              |
| City              | NVARCHAR        | MAX          | NOT NULL              |
| PasswordHash      | VARBINARY       | MAX          | DEFAULT (0x) NOT NULL |
| PasswordSalt      | VARBINARY       | MAX          | DEFAULT (0x) NOT NULL |

| <u>Hospital</u>   |                 |              |                   |
|-------------------|-----------------|--------------|-------------------|
| <u>Field Name</u> | <u>Datatype</u> | <u>Width</u> | <u>Constraint</u> |
| HospitalId        | BIGINT          | -            | PRIMARY KEY       |
| Hospital_Name     | NVARCHAR        | MAX          | NOT NULL          |

|              |           |     |                       |
|--------------|-----------|-----|-----------------------|
| Email        | NVARCHAR  | MAX | NOT NULL              |
| Contat_no    | NVARCHAR  | MAX | NOT NULL              |
| address      | NVARCHAR  | MAX | NOT NULL              |
| city         | NVARCHAR  | MAX | NOT NULL              |
| State        | NVARCHAR  | MAX | NOT NULL              |
| A            | BIT       | -   | NOT NULL              |
| A_positive   | BIT       | -   | NOT NULL              |
| B            | BIT       | -   | NOT NULL              |
| B_positive   | BIT       | -   | NOT NULL              |
| C            | BIT       | -   | NOT NULL              |
| C_positive   | BIT       | -   | NOT NULL              |
| AB           | BIT       | -   | NOT NULL              |
| AB_positive  | BIT       | -   | NOT NULL              |
| PasswordHash | VARBINARY | MAX | DEFAULT (0x) NOT NULL |
| PasswordSalt | VARBINARY | MAX | DEFAULT (0x) NOT NULL |

| <u>Donor</u>      |                 |              |                   |
|-------------------|-----------------|--------------|-------------------|
| <u>Field Name</u> | <u>Datatype</u> | <u>Width</u> | <u>Constraint</u> |
| DonorId           | BIGINT          | -            | PRIMARY KEY       |



|              |           |   |             |
|--------------|-----------|---|-------------|
| User1Id      | BIGINT    | - | FOREIGN KEY |
| HospitalId   | BIGINT    | - | FOREIGN KEY |
| DonationDate | DATETIME2 | 7 | NOT NULL    |

| <b><u>Beneficiary</u></b> |                 |              |                   |
|---------------------------|-----------------|--------------|-------------------|
| <u>Field Name</u>         | <u>Datatype</u> | <u>Width</u> | <u>Constraint</u> |
| BeneficiaryId             | BIGINT          | -            | PRIMARY KEY       |
| User1Id                   | BIGINT          | -            | FOREIGN KEY       |
| HospitalId                | BIGINT          | -            | FOREIGN KEY       |
| Date                      | DATETIME2       | 7            | NOT NULL          |

| <b><u>Review1</u></b> |                 |              |                   |
|-----------------------|-----------------|--------------|-------------------|
| <u>Field Name</u>     | <u>Datatype</u> | <u>Width</u> | <u>Constraint</u> |
| Review1Id             | BIGINT          | -            | PRIMARY KEY       |
| User1Id               | BIGINT          | -            | FOREIGN KEY       |
| Description           | NVARCHAR        | 100          | NOT NULL          |

## 5. Testing :

---

### 6.1 Testing Method Used :

-> For testing purpose, I used black box testing method. For black box testing, I have designed the test cases for each sub project and have tested it in My application. Also, I have observed the output and note down the results in the next section.

### 6.2) Test Cases :

->

| Sr No | Test Scenario  | Expected Results                                      | Actual Result  | Status  |
|-------|--|---|--|---------|
| 1.    | Login in with the correct credentials                      | User should be able to log in.                        | User is logged in and redirected to home screen          | success |
| 2.    | Login with incorrect credentials                           | User should not be able to logged in                  | System give a message to user and Keep User In same page | success |
| 3.    | Register with correct details                              | User should be able to register in our system.        | User is successfully register into system                | success |
| 4.    | Register with Email Id Which Is Already Registered details | User should not be able to Register in our system     | System give a message to user and keep User in Same page | success |
| 5.    | Send Enquiry For Blood Donation                            | User Get E-Mail Containing Information About Hospital | Get E-Mail From System's Email ID                        | success |
| 6.    | Add Review   | Get Thanks Message As Response From Server            | Get Message Saying Thank's For Your Feedback             | success |

|     |                                |   |   |         |
|-----|--------------------------------|---|---|---------|
| 7.  | Update Profile                 | Profile Should Be Updated.  | Profile Is Updated  | success |
| 8.  | Send Enquiry For Need Of Blood | User Get E-Mail Containing Information About Hospital   | Get Email From System's Email Id  | success |
| 9.  | Delete Profile                 | User's Account Is Deleted From System   | Account Deleted From System And Redirect To Login Page  | success |
| 10. | Logout                         | User or Admin will be logged out from the system and restricted To Access Data from the system until next login | User or Admin will successfully logged out from the system And Unable To Get Data On Backward Button. | Success |

## 6. Screenshots :

### 1) User Registration :

### START SAVING LIVES

Your Name

E-mail

Mobile No.

Address

City

State

Password

Enter Your Blood Group

CREATE ACCOUNT


REGISTER AS HOSPITAL?

ALREADY REGISTER?

### 2) Login :

### Save Lives

Join our wonderful community and start saving lives.  
You can become someone's unknown but all important Hero.



### START SAVING LIVES

E-mail

Password

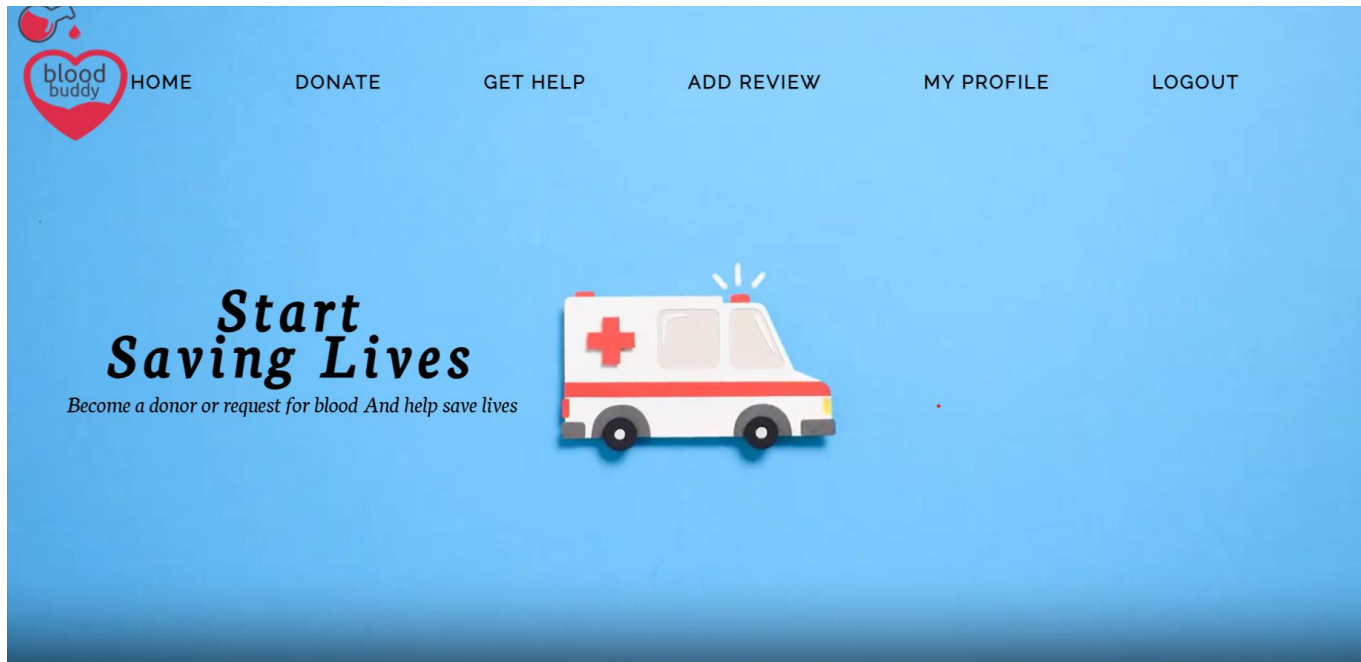
LOGIN AS USER

LOGIN AS HOSPITAL

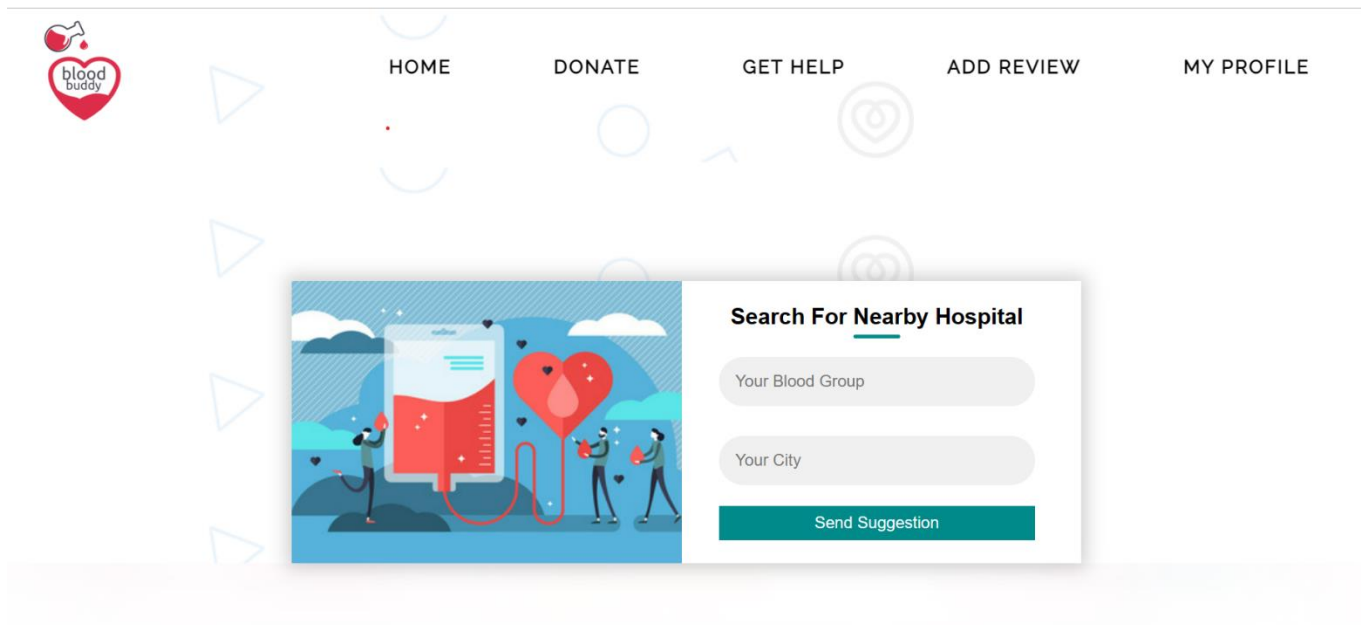
REGISTER

-> User side :

**1) Home Page :**




**2) Donate Page :**



### 3) Get Help :

---




HOME

DONATE

GET HELP

ADD REVIEW

MY PROFILE



#### Search For Nearby Hospital


Needed Blood Group

Your City

Send Suggestion

### 4) Add Review :

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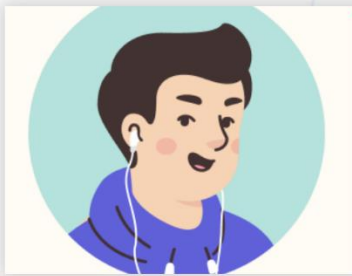
HOME

DONATE

GET HELP

ADD REVIEW

MY PROFILE



#### Add Review

ADD

## 5) My Profile :

[HOME](#)[DONATE](#)[GET HELP](#)[ADD REVIEW](#)[MY PROFILE](#)

### Your Data

| User Id | User Name | Contact No | Address | Blood Type | State   | City  | Actions                                       |
|---------|-----------|------------|---------|------------|---------|-------|---|
| 10007   | VATSAL    | 9999999998 | Delhi   | A+         | Gujarat | Surat | <a href="#">Update</a> <a href="#">Delete</a> |

### Review Added By You

| Review Id | User Id | Description                                | Actions                                       |
|-----------|---------|--|---|
| 20002     | 10007   | Hi This Dhruvil Very Good Experience Here. | <a href="#">Update</a> <a href="#">Delete</a> |

### Benefit You Get

| Beneficiary Id | User Id | Date                        |
|----------------|---------|-----------------------------|
| 3              | 10007   | 2023-02-19T23:38:41.0884834 |

[HOME](#)[DONATE](#)[GET HELP](#)[ADD REVIEW](#)[MY PROFILE](#)

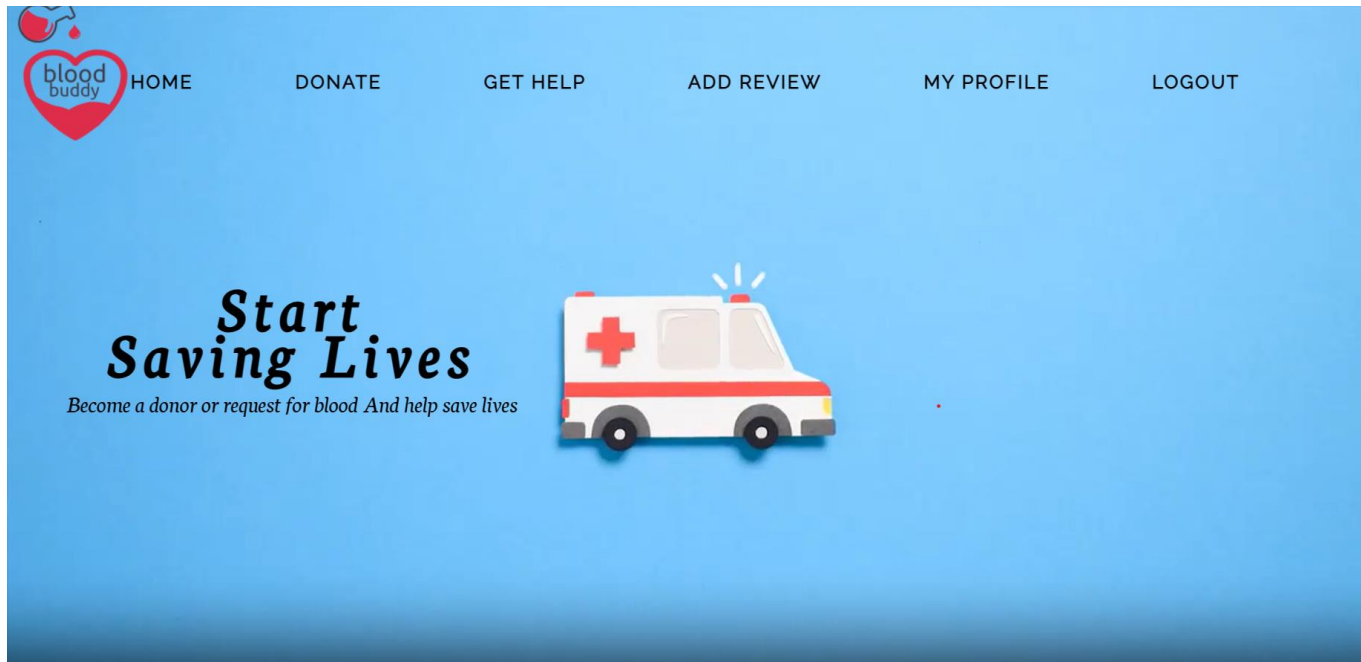
| Beneficiary Id | User Id | Date                        |
|----------------|---------|-----------------------------|
| 3              | 10007   | 2023-02-19T23:38:41.0884834 |
| 10002          | 10007   | 2023-02-20T07:32:07.3377812 |
| 10003          | 10007   | 2023-02-20T07:37:01.0856546 |
| 20002          | 10007   | 2023-02-24T18:30:19.2192705 |
| 20003          | 10007   | 2023-02-24T18:30:33.8669529 |
| 30002          | 10007   | 2023-03-13T22:21:08.997065  |
| 30003          | 10007   | 2023-03-13T22:27:33.1620316 |
| 30004          | 10007   | 2023-03-13T22:27:35.5493644 |

### Your Contribution Towards Society


| Donor Id | User Id | Date And Time Of Donation   |
|----------|---------|-----------------------------|
| 10007    | 10007   | 2023-02-19T18:09:24.4213574 |
| 30007    | 10007   | 2023-02-24T11:52:00.536947  |
| 40007    | 10007   | 2023-02-24T12:17:50.1008372 |
| 40008    | 10007   | 2023-02-24T12:19:21.4804667 |
| 50007    | 10007   | 2023-02-24T18:25:13.1870554 |

## -> Hospital Side :

### 1) Home Page :



### 2) Profile Page :



[HOME](#) [MY PROFILE](#)

| Your Data   |                |             |         |       |       |      |      |       |      |      |      |       |      |   |
|-------------|----------------|-------------|---------|-------|-------|------|------|-------|------|------|------|-------|------|---|
| Hospital Id | Hospital Name  | Contact No. | Address | City  | State | A    | A+   | B     | B+   | C    | C+   | AB    | AB+  | Actions                                       |
| 40004       | Kiran Hospital | 7894561232  | Delhi   | Delhi | Delhi | true | true | false | true | true | true | false | true | <a href="#">Update</a> <a href="#">Delete</a> |



## 7. Conclusion :

---

-> A well implemented blood management And support system is essential for ensuring the efficiency of data. Such a system helps to minimize the risk of False Information. Key Component Of This Blood Management And Support System Is That It Directly Connect Needy To Hospitals Which Can Help Him At Right Time And This Also Reduce Unnecessary Time For Finding Blood At Crucial Time. This Application Also Shows The Data Of Past Donors Which Encourage Other Also For Donate The Blood And It Also Provide Easy Way For Blood Donation And Free The Donor From Long Procedure For Donate The Blood. Here Are The Some Functionalities Which We Implement In This Application.

- User Registration
- User Login
- Hospital Registration
- Hospital Login
- Enquiry For Blood Donation
- Enquiry For Help
- Add Review
- Send Info Through Email
- Update or Delete User Profile
- Update or Delete Hospital Details

## 8. Limitation and future extension of system:

---

### -> Limitations :

1. In This Application Right Now It Only Suggest Hospital Which Is Nearby User's City If Not Then No Info. Is Send To User.
2. Right Now It Only Suggest One Hospital To User Which Ever Is Most Suitable.

### -> Future Extension :

1. Later On I Can Write Service Such A Way So That It Send The Hospital Detail According To Other Parameter Also.
2. Later On I Can Implement Service Such A Way So That It Can Send More Then One Hospital Details To User.

## 9. Bibliography :

---

### **REFERENCES :**

- <https://learn.microsoft.com/en-us/sql/?view=sql-server-ver16>
- <https://reactjs.org/docs/getting-started.html>
- <https://www.w3schools.com/REACT/DEFAULT.ASP>
- <https://jwt.io/introduction/>
- [Get started with Bootstrap · Bootstrap v5.2 \(getbootstrap.com\)](#)
- [Home v6.9.0 | React Router](#)
- <https://stackoverflow.com/questions/>