

**A  
Project Report  
On  
E-Blood Bank Management System**



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**At: Changa, Dist: Anand – 388421**

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## CERTIFICATE

This is to certify that the report entitled “E-Blood Bank Management System” is a bonafied work carried out by **Mr. Varsh Patel (14CE107)** and **Ms. Drashti Vashi (14CE145)** under the guidance and supervision of Prof. Ronak Patel for the subject **Software Group Project (CE324)** of 6<sup>th</sup> Semester of Bachelor of Technology in **Computer Engineering** at Faculty of Technology & Engineering (C.S.P.I.T.) – CHARUSAT, Gujarat.

To the best of my knowledge and belief, this work embodies the work of candidate themselves, 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 to the examiner.

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## **Abstract**

This project is a web portal for social services to play a best part for the society and humanity. There are N numbers of blood bank today in India but still most of the death occurs due to unavailability of blood at the right place at the right time. We have collaborated to 3 or more hospitals that can directly book and order for blood online and get it delivered within a time frame of an hour or less. Donors can directly donate blood to our nearest collection centers that can be found and reached easily by Google maps within minutes. Once testing and required stuff is performed the blood is then ready to get delivered if required as per request by hospitals. Hospitals to buy maximum blood get featured on our website. Donors are allotted with points and various bases regarding their social services top donors with maximum points also get featured at our website to motivate and encourage others.

## **Acknowledgement**

We are thankful to my internal guide Prof. Ronak Patel from CHARUSAT for his constant and valuable guidance at each and every stage of the project. We would like to thank all our family members and friends for their support. Also extending our thanks to the rising technology of .NET and Microsoft that made us to select this project with great passion in order to learn and grab maximum from it.

# Table of contents

Abstract

Acknowledgement

Chapter1 Introduction.....	1
1.1. Purpose.....	1
1.2. Scope.....	1
1.3. Definitions, acronyms & abbreviations.....	1
1.4. References.....	1
1.5. Overview.....	1
Chapter 2 Overall Description.....	2
2.1. Product perspective.....	2
2.1.1. System interfaces.....	2
2.1.2. User interfaces.....	2
2.1.3. Hardware interfaces.....	2
2.1.4. Software interfaces.....	2
2.1.5. Communications interfaces.....	2
2.1.6. Memory constraints.....	2
2.1.7. Operations.....	3
2.1.8. Site adaptation requirements.....	3
2.2. Product functions.....	3
2.3. User characteristics.....	3
2.4. Constraints.....	3
2.5. Assumptions and dependencies.....	3
Chapter 3 System Analysis.....	4
3.1. Requirements of New System.....	4
3.1.1 Functional Requirements.....	4
3.1.2 Non Functional Requirements.....	5
3.2 Feasibility Study.....	5
3.3 Class Diagram.....	6
3.4 Sequence Diagram.....	7
3.5 Functions of system.....	9
3.6 Context Diagram.....	9
3.7 Data Flow Diagram (0 and 1 level or higher).....	10
3.8 Activity Diagram.....	11
3.9 Selection of Hardware and Software and Justification.....	12

Chapter 4 Project estimation.....	13
4.1 Estimation technique used.....	13
4.2 Effort resource, cost, project duration estimation.....	13
Chapter 5 Schedule in which.....	16
5.1 Breakdown structure.....	16
5.2 Task network representation.....	17
5.3 Gantt chart representation.....	17
5.4 Pert chart representation.....	18
Chapter 6 Project resources.....	19
6.1 People.....	19
6.2 Hardware & Software.....	19
Chapter 7 Project tracking & control plan.....	20
Chapter 8 System Design.....	21
8.1. System Application Design.....	21
8.1.1 Method Pseudo code.....	21
Chapter 9 Implementation Planning.....	23
9.1. Implementation Environment.....	23
9.2. Program/Modules Specification(refer appendix C).....	23
9.3. Coding Standards.....	23
Chapter 10 Testing.....	24
10.1 Testing Plan.....	24
10.2 Test Suit Design.....	24
10.2.1 Test Cases.....	24
Chapter 11 Limitation and Future Enhancement.....	27
Chapter 12 Conclusion and Discussion.....	28
12.1. Self-Analysis of Project Viabilities.....	28
12.2. Problem Encountered and Possible Solutions.....	28
12.3. Summary of Project work.....	28
Chapter 13 Graphical User Interface.....	29

## **CHAPTER 1 INTRODUCTION:**

### **1.1. PURPOSE:**

The main purpose of the specification is to guide the web developer about the web portal and the development structure, requirements and the input and output feature.

### **1.2. SCOPE:**

The E-Blood Bank Management System has the ability to provide online platform for blood bank services and its features just at your fingertips within a form of web portal

#### **BENEFITS:**

- Blood delivery at door steps.
- Hospitals can order online for blood.
- Efficient.

#### **OBJECTIVES:**

- Reduce risk of handling.
- Fast Delivery.

### **1.3. DEFINITIONS, ACRONYMS AND ABBREVIATION:**

- EBBMS – E-Blood Bank Management System
- BB – Blood Bank
- SSMS – SQL Server Management Studio
- SS – Social Service

### **1.4. REFERENCES:**

The books and materials referred during the pre-development stages of the project include:

- <https://msdn.microsoft.com/>
- <http://www.wikipedia.org>
- <http://www.google.com>

### **1.5. OVERVIEW:**

Section I gives a brief introduction about the document and the objectives of the software. The overall description such as system interface, software interface, hardware interface, communication interface are discussed in section II and the software product featured section III.

## CHAPTER 2 OVERALL DESCRIPTION:

### 2.1. PRODUCT PERSPECTIVE:

The EBBMS web portal works on your web browser efficiently for ordering blood online when required and get ensured for fast and reliable delivery within hour or less.

#### 2.1.1. System Interfaces:

Home page with informative video about the blood group and its compatibility.

Major services can be directly accessed from home page with all the information on our hospital partners at the bottom.

#### 2.1.2: User Interfaces:

User can easily navigate throughout the web pages and get what they need. Online order form and Donor list is readily available.

With few clicks here and few clicks there you can ensure the delivery at your door steps of hospitals.

#### 2.1.3: Hardware interfaces:

- Web service for PCs and Mobile browsers.

#### 2.1.4: Software Interfaces:

NAME	VERSION	SOURCE
Internet Browser	Any	Microsoft

#### 2.1.5: Communication Interface:

This application can run on Internet Facility.

#### 2.1.6: Memory Constraints:

The system would require a minimum requirement in order to use the web portal.



**2.1.7: Operations:**

The user can easily travel through bunch of web pages from simple clicks on menu bar and rest areas. Full knowledge on blood groups and its compatibility has been given on the home page only. In depth knowledge for the same has been provided as a service. Donor can directly donate blood at the nearest collection center. Whereas, hospital can directly request for blood online with form readily available online.

**2.1.8: Site Adaptation Requirements:**

The application requires no special modifications to adapt to particular installations except for the files that are required to be re-created.

**2.2. PRODUCT FUNCTIONS:**

The major function includes:

- Providing a web portal for blood bank services.
- Donors can easily donate blood with nearest collection center.
- Donor can reach nearest blood center via help of google maps.
- Hospitals can request for blood online with form readily available.
- We ensure the delivery of blood within an hour or less.
- Informative data on blood group and awareness of the same.

**2.3 USER CHARACTERISTICS:**

It is sufficient that the users have a basic knowledge needed for operating the internet browser. There is no need for any experience or technical knowledge.

**2.4. CONSTRAINTS**

Not applicable.

**2.5. ASSUMPTIONS AND DEPENDENCIES**

Three of the major hospitals have already collaborated with us (CHARUSAT Hospital, Zydus Hospital, Shree Krishna Hospital).

## **CHAPTER 3 SYSTEM ANALYSIS:**

### **3.1 REQUIREMENTS OF NEW SYSTEM**

#### **3.1.1 Functional Requirements**

##### **R.1 Log In -**

Description: Donors can Login to see their details and points earned.

Input: Credentials.

Output: Donor redirected to Donor\_login page.

##### **R.2 Services-**

Description: User is presented with the list of services provided by the web application.

Input: On click event.

Output: Redirected to the services section.

##### **R.3 Contact Us-**

Description: User is redirected to the details of the developers and the external links to affiliated hospitals.

Input: On click event.

Output: Redirected to Contact\_us section.

##### **R.4 Locate Us-**

Description: User can directly get the directions of the nearest collection centre in the city.

Input: Name of the city.

Output: Google maps.

##### **R.5 Hall of Fame-**

Description: User can see the leaderboard progress of the donors and the hospitals.

Input: On click event.

Output: Redirected to hof page.

##### **R.6 Review-**

Description: Donor can give their feedbacks and reviews about the services.

Input: Review

Output: List of reviews by donors.

### 3.1.2 Non Functional Requirements

- Usability- Software is easy to use.
- Reliable- There is less probability of failures.
- Portability- It can be used in Android Wear.
- Fault tolerance- In case of failure, the system can restart quickly.
- Extensibility- New features can be added to it in the future.

## 3.2 FEASIBILITY STUDY

### Questionnaire with doctor:

**Q: What is the rate of cases where patient has met with an accident?**

A: Twice in a day, we encounter a case where the patient has met with an accident.

**Q: How many casualties have occurred due to lack of blood availability?**

A: Sometimes, some blood groups are rare to find, if found it maybe at the blood bank away from city. So that by the time it reaches us, it happens to be late.

**Q: Have you affiliated your hospital to any blood bank in the city?**

A: Yes, we have affiliated with RED CROSS SOCIETY, but there should be increase in a number of blood bank because Red Cross alone is not able to handle all the blood requirements.

**Q: Would you like to affiliate your hospital with a private blood bank?**

A: Yes, if it is trust worthy, I would love to.

**Q: Would you prefer a blood bank which is online 24x7 accessible just a click away?**

A: That would be a great option if it serves the need in time.

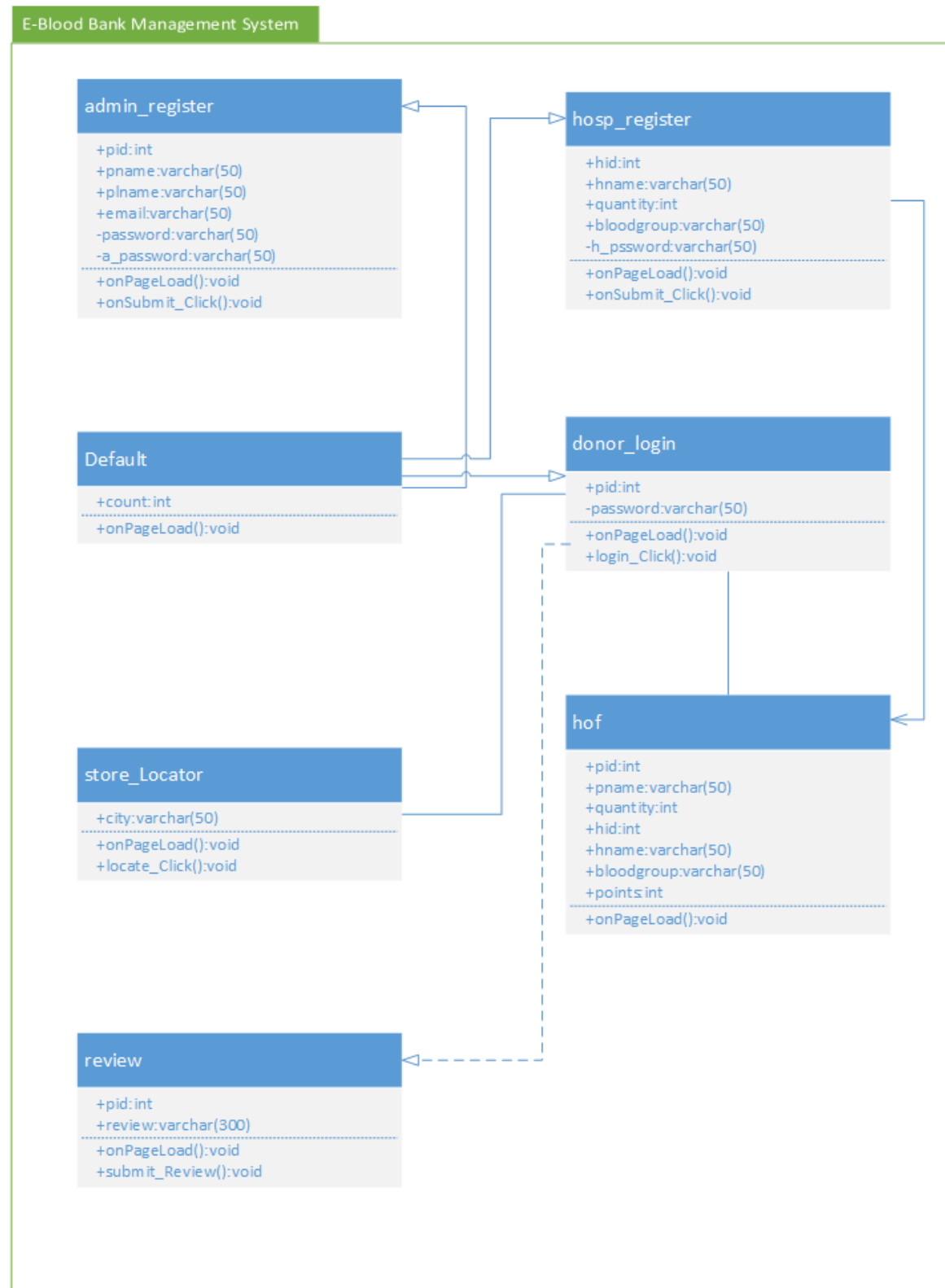
**Q: We are planning to offer the delivery service which is solely responsible on us. Will that option be reviewed by you?**

A: That would be of great help if the delivery is timely and accurate.

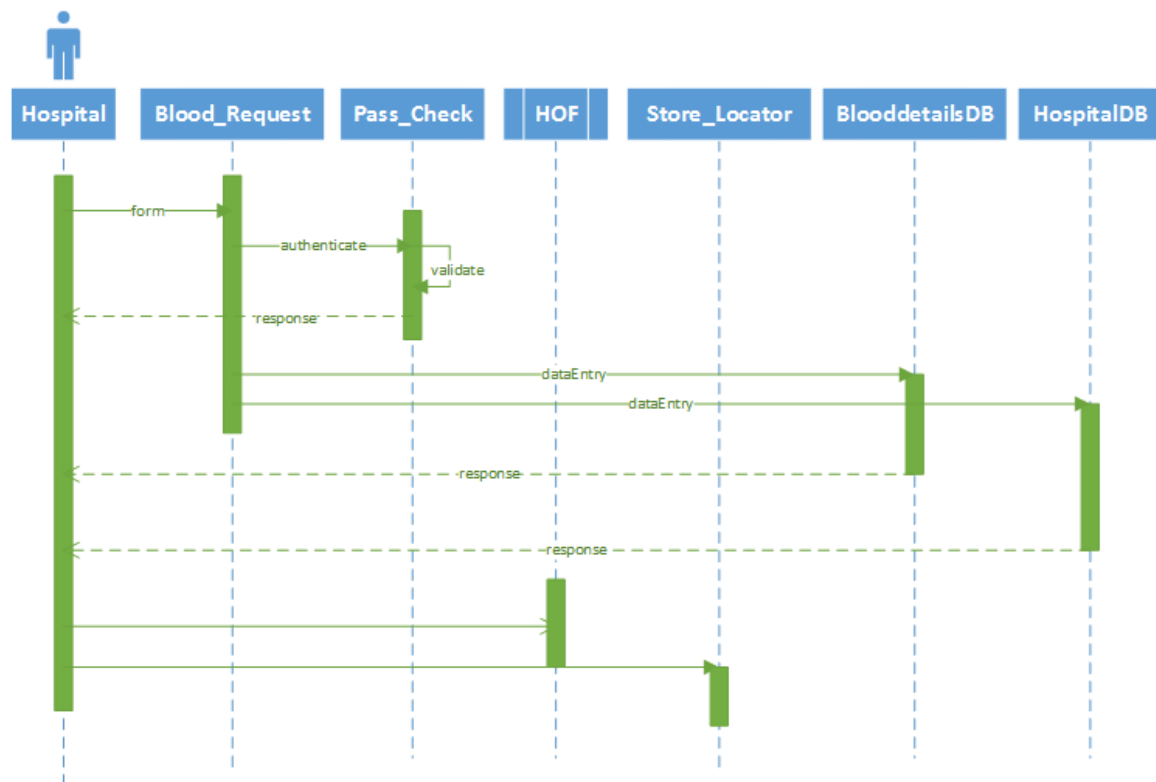
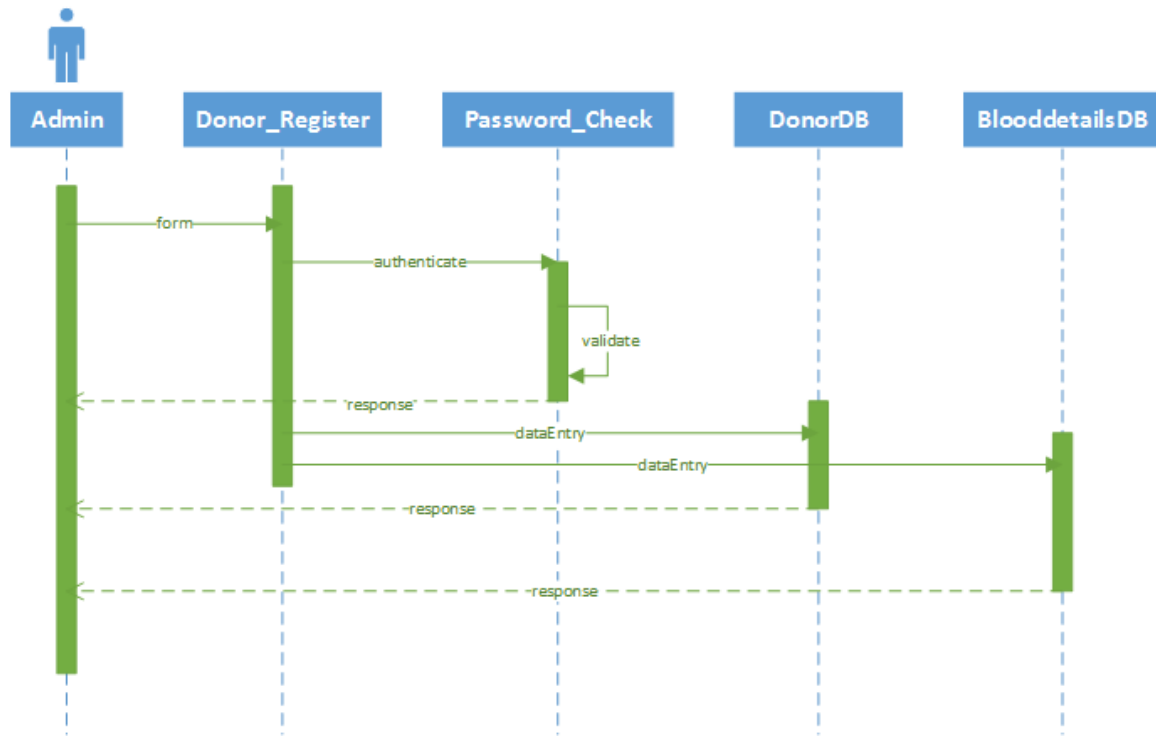
**Q: Do you have 24\*7 internet access at your hospital?**

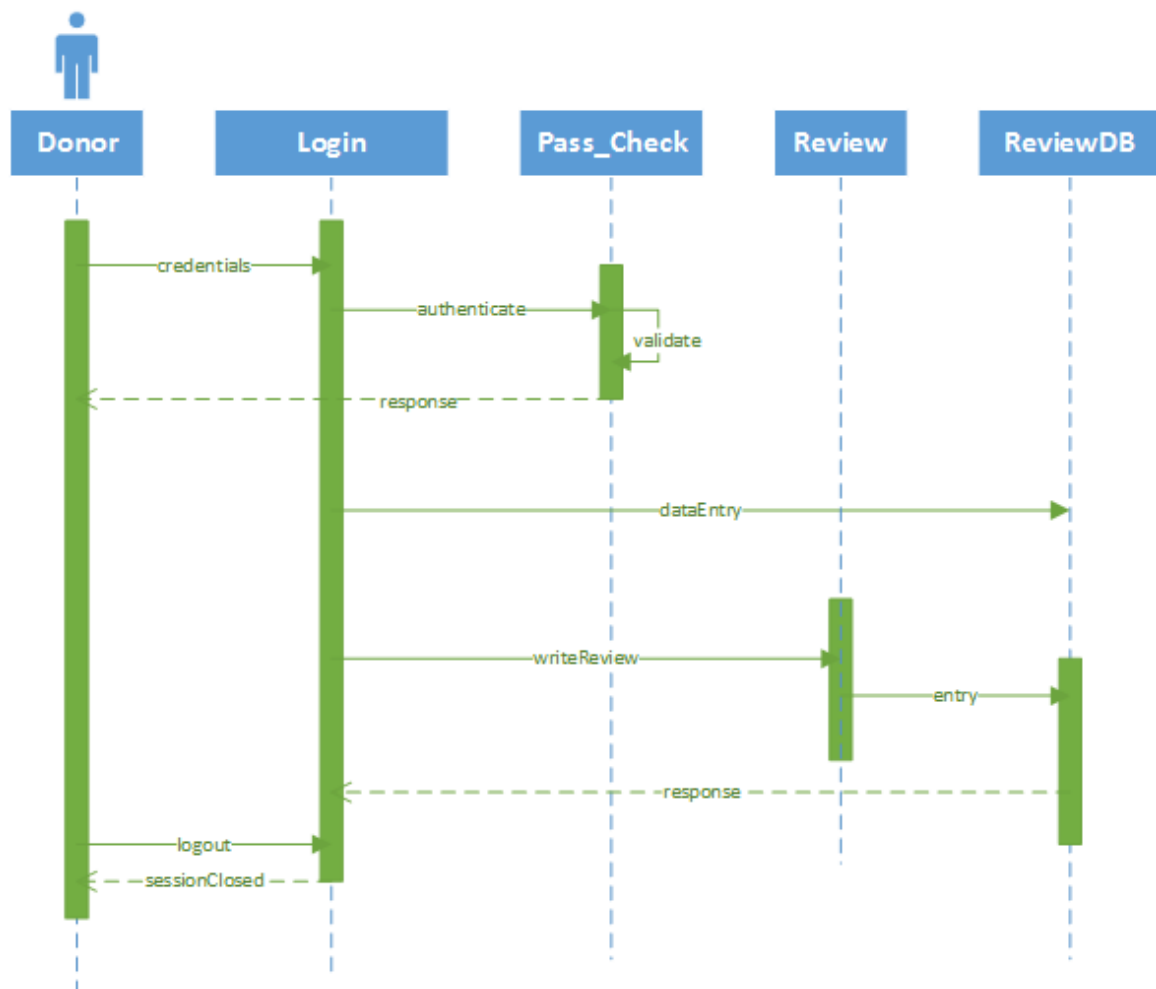
A: Yes.

### 3.3 CLASS DIAGRAM



### 3.4 SEQUENCE DIAGRAM

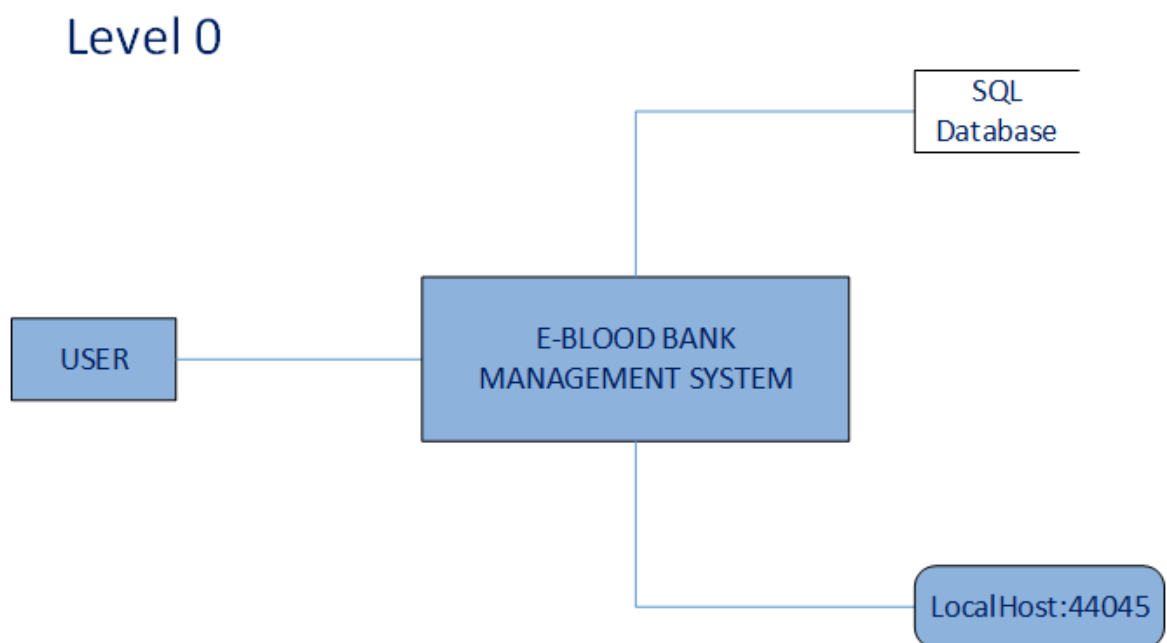




### 3.5 FUNCTIONS OF SYSTEM

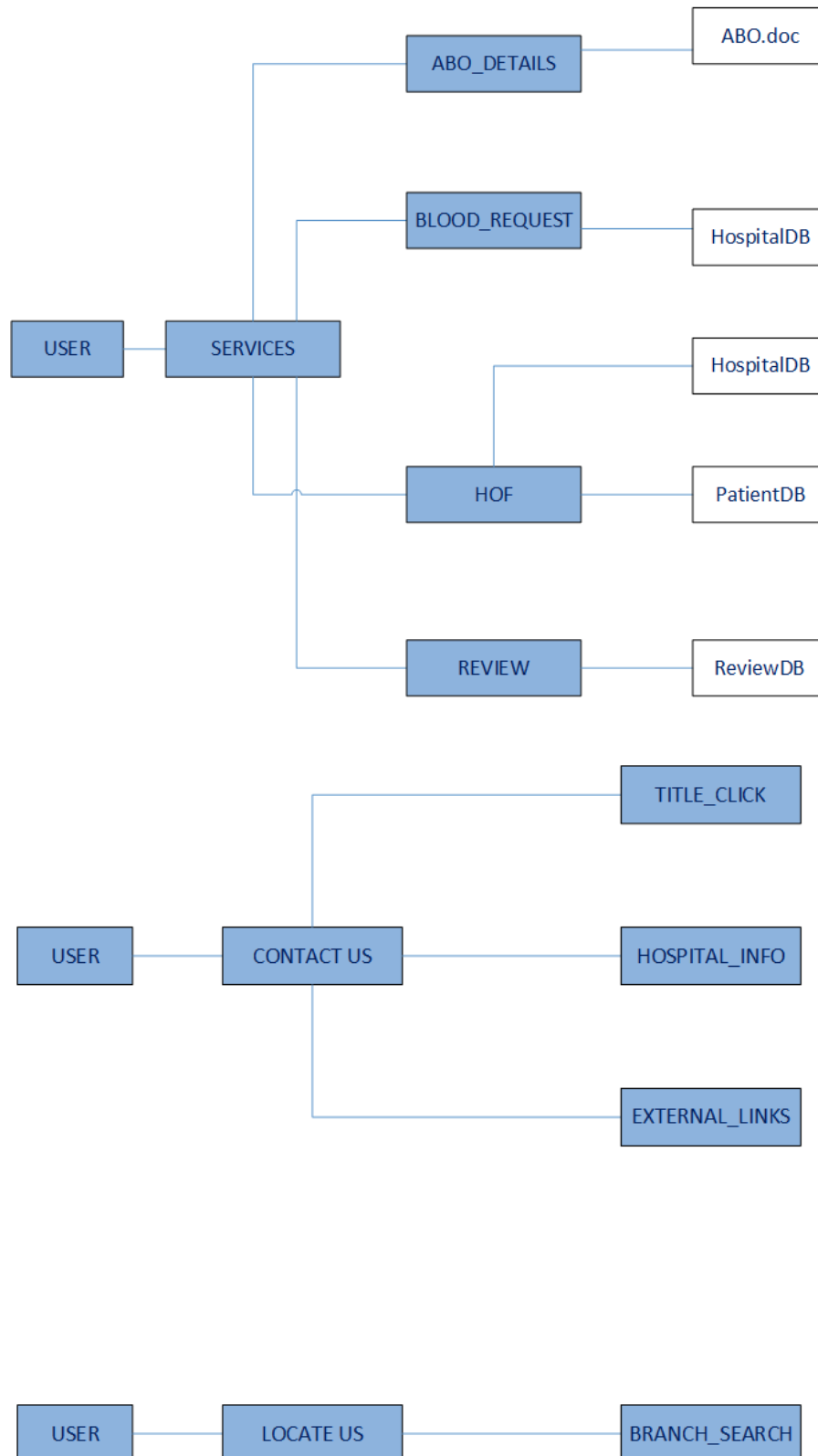
- Providing a web portal for blood bank services.
- Donors can easily donate blood with nearest collection center.
- Donor can reach nearest blood center via help of google maps.
- Hospitals can request for blood online with form readily available.
- We ensure the delivery of blood within an hour or less.
- Informative data on blood group and awareness of the same.

### 3.6 CONTEXT DIAGRAM



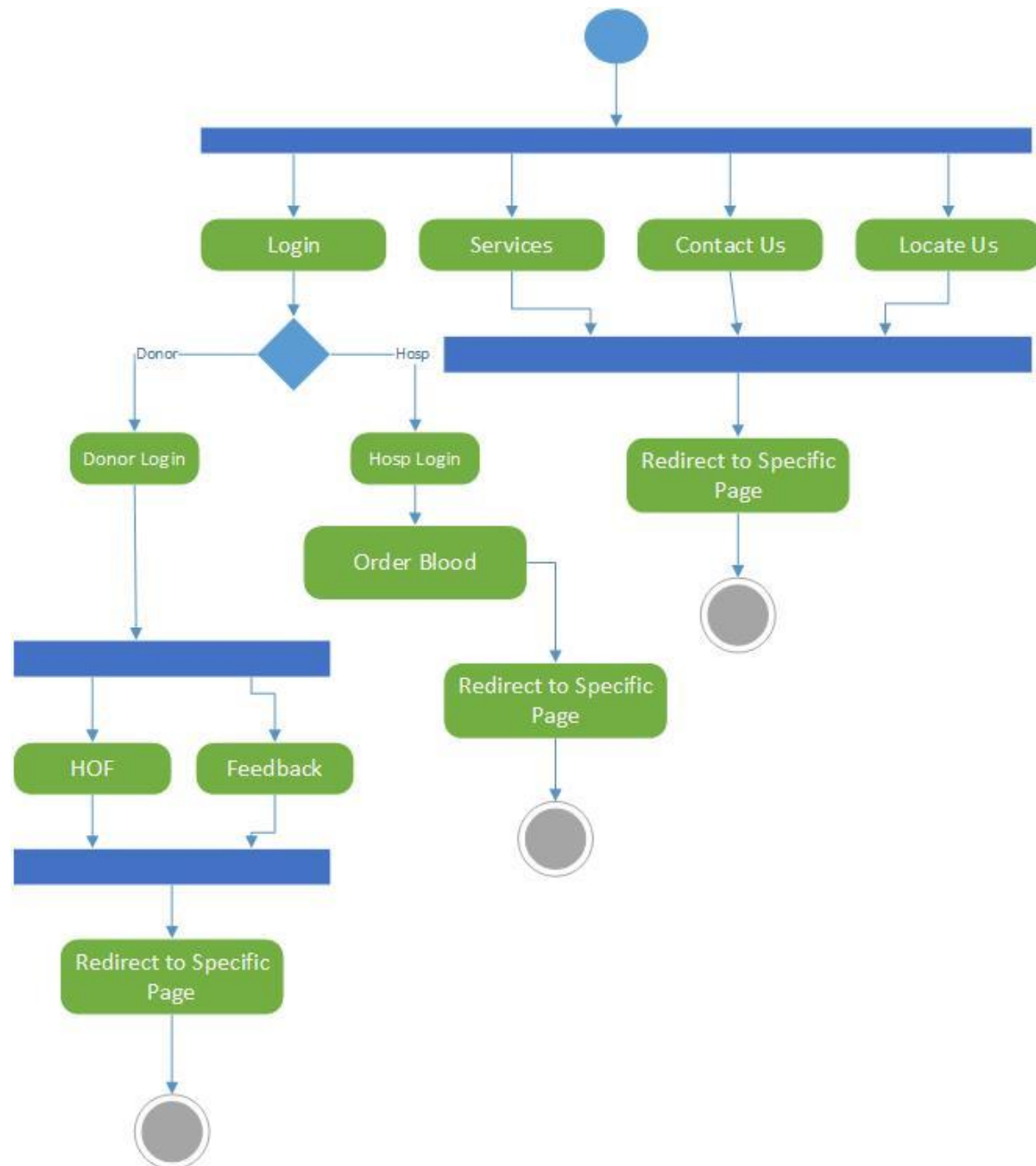
### 3.7 DATA FLOW DIAGRAM

Level 1





### 3.8 ACTIVITY DIAGRAM



### **3.9 SELECTION OF HARDWARE AND SOFTWARE AND JUSTIFICATION**

We have selected Visual Studio 2015 for .Net C# web programming. Team collaboration and merging of project was done through Team Foundation Server (TFS). For bank end database functionality we have used SSMS.

## CHAPTER 4 PROJECT ESTIMATION:

### 4.1 ESTIMATION TECHNIQUE USED:

The project size is a measure of the problem complexity in terms of the effort and time required to develop the product. Currently, two metrics are popularly being used to estimate size: Line of code (LOC) and function point (FP).

### 4.2 EFFORT RESOURCE, PROJECT DURATION ESTIMATION:

Parameters	Count		Simple	Average	Complex		Total
No. of user Input	3	X	3	<b>4</b>	6	=	12
No. of user Output	2	X	4	<b>5</b>	7	=	10
No. of Inquires	3	X	3	<b>4</b>	6	=	12
No. of Files	2	X	7	<b>10</b>	15	=	20
external Interface	2	X	5	<b>7</b>	10	=	14

**Complexity Weight Factor:**

<b>Sr. No.</b>	<b>Factors</b>	<b>Weights</b>
1.	Does the system require reliable backup and recovery?	<b>1</b>
2.	Are data communication required?	<b>3</b>
3.	Are there distributed processing functions?	<b>1</b>
4.	Is performance critical?	<b>3</b>
5.	Will the system run in an existing, heavily utilized operational environment?	<b>2</b>
6.	Does the system require online data entry?	<b>5</b>
7.	Does the on-line data entry require the input transactions to be built over multiple screens or operation?	<b>5</b>
8.	Are the master file updated on-line	<b>4</b>
9.	Are the inputs, outputs, files, or inquiries complex?	<b>4</b>
10.	Is the internal processing complex?	<b>3</b>
11.	Is the code designed to be reusable?	<b>3</b>
12.	Are conversion and installation included in the design?	<b>4</b>
13.	Is the system designed for multiple installations in different organizations?	<b>5</b>
14.	Is the application designed to facilitate change and ease of use by the user?	<b>5</b>

<b>Weight</b>	<b>Degree Of Influence</b>
0	No Influence
1	Incidental
2	Moderate
3	Average
4	Significant
5	Essential

**FP Count:**

$$FP = \text{count total} * [0.65 + 0.01 * \sum(D_i)]$$

$$FP = 48 * [0.65 + 0.01 * 68]$$

$$FP = 76.84$$

**Function Point is: 76.84**

$$\text{Line of code (LOC)} = FP * 30 = 76.84 * 30 = 2305.20$$

$$KLOC = 2.30520$$

**Software Project Type**

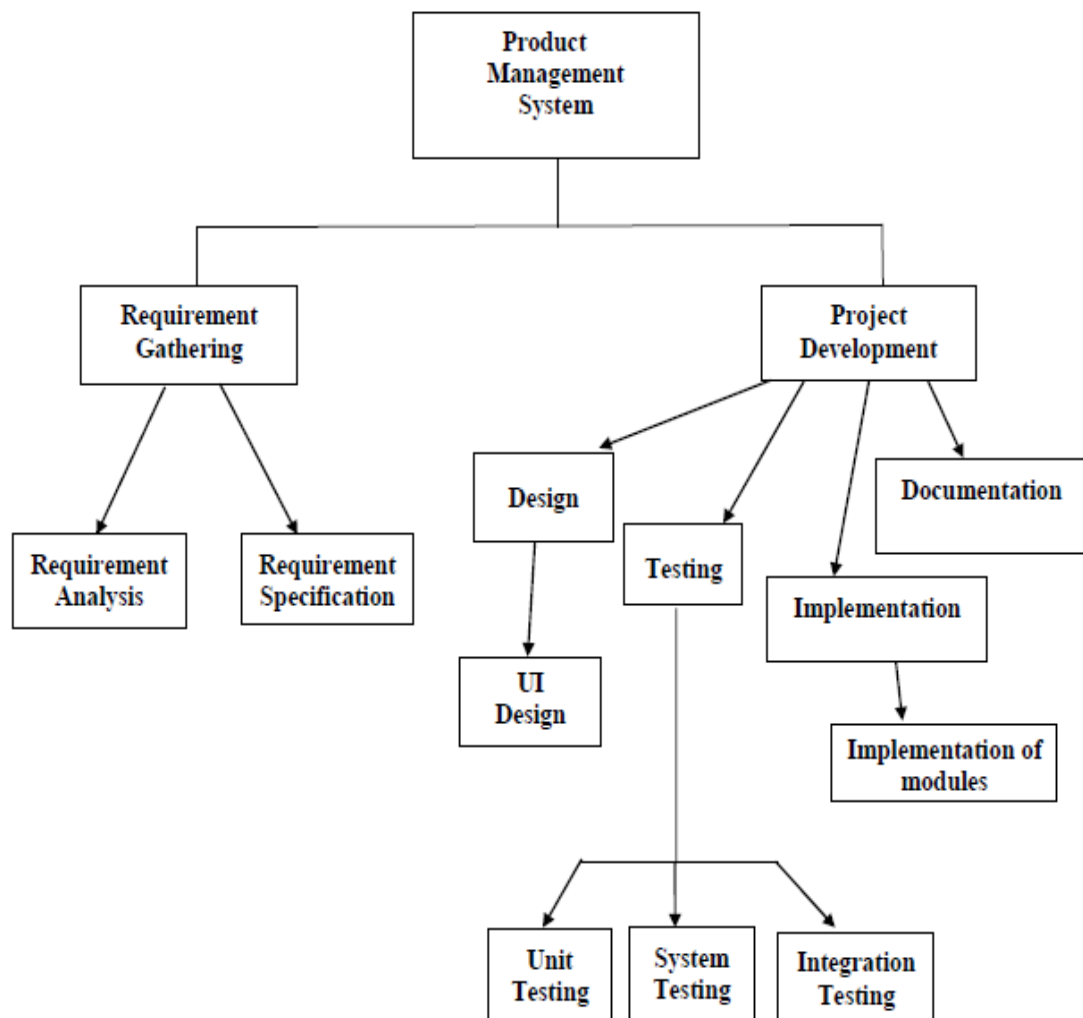
Type	a <sub>b</sub>	b <sub>b</sub>	c <sub>b</sub>	d <sub>b</sub>
Organic	2.4	1.05	2.5	0.38
<b>Semi-detached</b>	<b>3.0</b>	<b>1.12</b>	<b>2.5</b>	<b>0.35</b>
Embedded	3.6	1.20	2.5	0.32

$$\begin{aligned} \text{Effort} &= a_b * (KLOC)^{b_b} \\ &= 3.0 * (2.30520)^{1.12} \\ &= 7.64 \text{ PM} \end{aligned}$$

$$\begin{aligned} T_{dev} &= c_b * (\text{Effort})^{d_b} \\ &= 2.5 * (7.64)^{0.35} \\ &= 5.09 \text{ Months} \end{aligned}$$

## CHAPTER 5 SCHEDULE IN WHICH

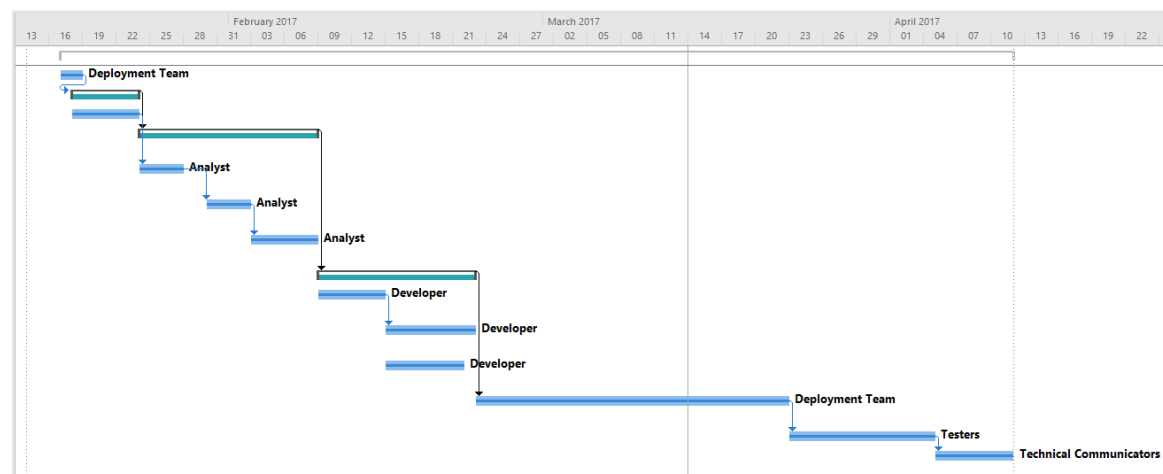
### 5.1 BREAKDOWN STRUCTURE



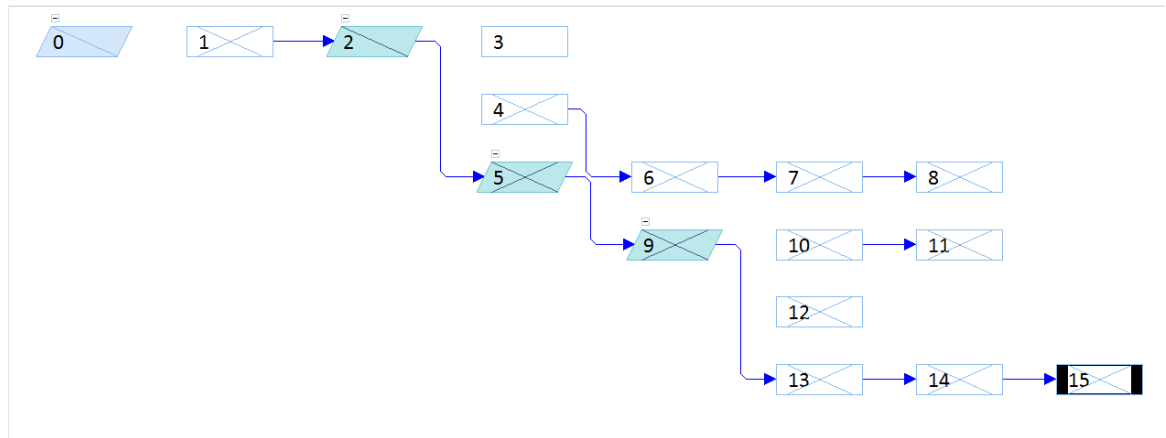
## 5.2 TASK NETWORK REPRESENTATION

		Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾	Resource Names ▾
0			<b>E-Blood Bank Management</b>	<b>61 days</b>	<b>Tue 17-01-17</b>	<b>Tue 11-04-17</b>		
1			<b>Feasibility Study</b>	2 days	Tue 17-01-17	Wed 18-01-17		<b>Deployment Team</b>
2			<b>Requirement Gathering</b>	4 days	Wed 18-01-17	Mon 23-01-17	1	<b>Analyst</b>
3			Survey	4 days	Wed 18-01-17	Mon 23-01-17		
4			<b>Planning and Analysis</b>	12 days	Tue 24-01-17	Wed 08-02-17	2	<b>Deployment Team</b>
5			Hrs. Distribution	4 days	Tue 24-01-17	Fri 27-01-17	3	Analyst
6			Work Distribution	4 days	Mon 30-01-17	Thu 02-02-17	5	Analyst
7			Resource Allocation	4 days	Fri 03-02-17	Wed 08-02-17	6	Analyst
8			<b>Designing</b>	10 days	Thu 09-02-17	Wed 22-02-17	4	<b>Deployment Team</b>
9			Models	4 days	Thu 09-02-17	Tue 14-02-17		Developer
10			Web Services	6 days	Wed 15-02-17	Wed 22-02-17	9	Developer
11			SQL Server Management	5 days	Wed 15-02-17	Tue 21-02-17		Developer
12			<b>Implementation and Coding</b>	20 days	Thu 23-02-17	Wed 22-03-17	8	<b>Deployment Team</b>
13			<b>Testing</b>	9 days	Thu 23-03-17	Tue 04-04-17	12	<b>Testers</b>
14			<b>Documentation</b>	5 days	Wed 05-04-17	Tue 11-04-17	13	<b>Technical Communicators</b>

## 5.3 GANTT CHART REPRESENTATION



## 5.4 PERT CHART REPRESENTATION





## CHAPTER 6: PROJECT RESOURCES

### 6.1 PEOPLE

Developer	Roles and Responsibilities
14CE107	Survey, Feasibility study, Documentation, Frontend developing, Testing.
14CE145	Implementation, Programming, Backend developing, Database management, Testing.

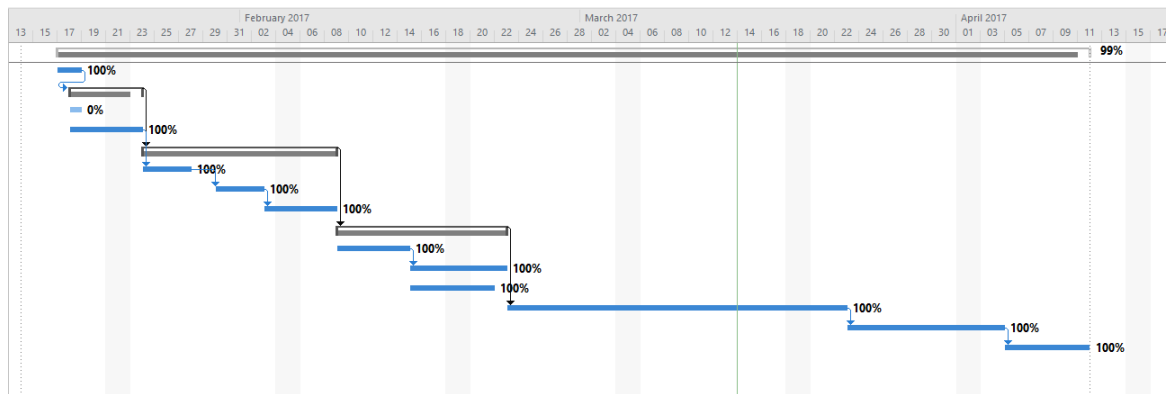
User: Any user having basic knowledge of computer and internet services can use this software.

Developer: Developer with knowledge of .NET and C# web development can develop and work on this web portal.

### 6.2 HARDWARE AND SOFTWARE

Hardware	Software
<u>PC Specifications:</u> RAM:1 GB Hard Disk: 500 GB Windows Version: Windows XP and above.	Internet Explorer 9 and above.

## CHAPTER 7: PROJECT TRACKING AND CONTROL PLAN



## CHAPTER 8: SYSTEM DESIGN

### 8.1 SYSTEM APPLICATION DESIGN

#### 8.1.1 Method Pseudo code

Body tag of Site.Master Module:

```
<body>
  <form runat="server">
    <asp:ScriptManager runat="server">
      <Scripts>
        <!--Framework Scripts-->
        <asp:ScriptReference Name="MsAjaxBundle" />
        <asp:ScriptReference Name="jquery" />
        <asp:ScriptReference Name="jquery.ui.combined" />
        <asp:ScriptReference Name="WebForms.js" Assembly="System.Web"
Path="~/Scripts/WebForms/WebForms.js" />
        <asp:ScriptReference Name="WebUIValidation.js" Assembly="System.Web"
Path="~/Scripts/WebForms/WebUIValidation.js" />
        <asp:ScriptReference Name="MenuStandards.js" Assembly="System.Web"
Path="~/Scripts/WebForms/MenuStandards.js" />
        <asp:ScriptReference Name="GridView.js" Assembly="System.Web"
Path="~/Scripts/WebForms/GridView.js" />
        <asp:ScriptReference Name="DetailsView.js" Assembly="System.Web"
Path="~/Scripts/WebForms/DetailsView.js" />
        <asp:ScriptReference Name="TreeView.js" Assembly="System.Web"
Path="~/Scripts/WebForms/TreeView.js" />
        <asp:ScriptReference Name="WebParts.js" Assembly="System.Web"
Path="~/Scripts/WebForms/WebParts.js" />
        <asp:ScriptReference Name="Focus.js" Assembly="System.Web"
Path="~/Scripts/WebForms/Focus.js" />
        <asp:ScriptReference Name="WebFormsBundle" />
        <!--Site Scripts-->

      </Scripts>
    </asp:ScriptManager>
    <header>
      <div class="title-final">
        <asp:ImageButton runat="server" ImageUrl="~/Images/head_logo.jpg"
OnClick="Unnamed3_Click"></asp:ImageButton>
        <!-- <p class="site-title">
          
          <asp:Label ID="Label1" runat="server" Text="Blood Bank Management"
Font-Names="Cambria, Cochin, Georgia, Times" Font-Size="50px" Font-Bold="True"
ForeColor="#FF0000"></asp:Label>
        </p> -->
      </div>
      <asp:LoginStatus runat="server"
LogoutAction="Redirect" LogoutText="Log off" LogoutPageUrl="~/ " />
    </p>
    </LoggedInTemplate>
  </asp:LoginView>
</section>
</div>
</header>
<div id="body" style="background-color: #FFE1E2">
  <asp:ContentPlaceHolder runat="server" ID="FeaturedContent" />
```

```

        <section class="content-wrapper main-content clear-fix">
            <asp:ContentPlaceHolder runat="server" ID="MainContent" />
        </section>
    </div>
    <footer id="fh5co-footer" class="padding100">

        <div class="fh5co-footer-content">
            <div class="container">
                <div class="row">
                    <div class="col-md-3 col-sm-4 col-md-
push-3 animated wow fadeInUp" data-wow-delay="0.2s">
                        <h3 class="fh5co-lead">USEFUL
LINKS</h3>

                            <ul>
                                <li><a
href="http://www.charusat.ac.in/">CHARUSAT University</a></li>
                                <li><a
href="http://www.charusathospital.org/">Charusat Hospital</a></li>
                                <li><a
href="http://www.zydushospitals.com/Anand/">Zydus HealthCare</a></li>
                                <li><a
href="http://www.charutarhealth.org">Shree Krishna Hospital</a></li>
                            </ul>
                        </div>
                        <div class="col-md-3 col-sm-12 col-md-
pull-9 animated wow fadeInUp" data-wow-delay="0.8s">
                            <div class="fh5co-footer-logo"><a
href="Default.aspx">Blood Bank Management</a></div>
                            <p class="fh5co-
copyright">&nbsp;</p>
                            <p class="fh5co-social-icons">
                                <a
href="http://www.twitter.com"><i class="fa fa-twitter"></i></a>
                                <a
href="http://www.facebook.com"><i class="fa fa-facebook"></i></a>
                                <a
href="http://www.instagram.com"><i class="fa fa-instagram"></i></a>
                                <a
href="http://www.youtube.com"><i class="fa fa-youtube"></i></a>
                            </p>
                        </div>
                    </div>
                </div>
            </div>
        </footer>
    <!-- jQuery -->
    <script src="js/jquery.js"></script>
    <!-- Bootstrap Core JavaScript -->
    <script src="js/bootstrap.min.js"></script>
    <script src="js/wow.min.js" type="text/javascript"></script>
    <script src="js/tutorial.js"></script>
    <script src="css/owl/owl.carousel.js" type="text/javascript"></script>
    <!-- SmartMenus jQuery plugin -->
    <script type="text/javascript" src="js/jquery.smartmenus.js"></script>
    <!-- SmartMenus jQuery Bootstrap Addon -->
    <script type="text/javascript"
src="js/jquery.smartmenus.bootstrap.js"></script>
</form>
</body>

```

## **CHAPTER 9: IMPLEMENTATION PLANNING**

### **9.1 IMPLEMENTATION ENVIRONMENT (Single vs Multiuser, GUI vs Non GUI)**

The implementation environment is single user and has user friendly interactive web pages when opened with internet browser.

### **9.2 PROGRAM /MODULES SPECIFICATION**

In this project, we have used one database named hospitalDB having multiple tables. Database is managed by SSMS and is integrated to VS for its usage.

### **9.3 CODING STANDARD**

- Class names have first letter in capital case.  
Example: Login
- Variable names are in lower case.  
Example: wpm
- Method names are in mixed case with first letter in lower case.  
Example: void check();
- Name of packages are in lower case.  
Example: package cashfree1test;
- Textarea and Textpane names are of the form name\_textarea.  
Example: type\_textarea
- Buttons names are of the form name\_button. For example pause\_button.
- Buttons used to make the keyboard are named by letter name.  
Example: a

## CHAPTER 10: TESTING

### 10.1 TESTING PLAN

We have used Black box testing for the project

### 10.2 TEST SUITE DESIGN

#### 10.2.1 Test Cases

#### Homepage Test Suite and Test Case Design

Test Suite No: 1

Test Suite Detail: OnLoad web application.

Test Case ID	Function Name	Test Case (condition)	Expected Results	Actual Result	Pass/Fail
1	Onclick_Logo	On click of the logo	The homepage of the web application is displayed. The “Blood Information” video is auto-played.	The homepage of the web application is displayed. The “Blood Information” video is auto-played.	Pass
2	Onclick_Services	On click of Services button	Redirects the user to the list of the services provided by the web application.	Redirects the user to the list of the services provided by the web application.	Pass
3	Onclick_ContactUs	On click of Contact us button	Redirects the user to the page consisting information of the affiliated hospitals and developers.	Redirects the user to the page consisting information of the affiliated hospitals and developers.	Pass
4	Onclick_LocateUs	On click Locate Us button	Redirects the user to new webpage consisting of search bar for the branches located in different cities.	Redirects the user to new webpage consisting of search bar for the branches located in different cities.	Pass

**Services Test Suite and Test Case Design**

Test Suites No: 1

Test Suite Detail: On click Services

Test Case ID	Function Name	Test Case (condition)	Expected Results	Actual Result	Pass/Fail
1	Onclick_info	On click for further information of “Know the ABO more.”	Redirects the user to a new page consisting of various blood group information.	Redirects the user to a new page consisting of various blood group information.	Pass
2	Onclick_info	On click for further information of “our round-the-clock services”	Redirects the user to a new page with different login options. 1.Donor 2.Hospital 3.Admin	Redirects the user to a new page with different login options. 1.Donor 2.Hospital 3.Admin	Pass
3	Onclick_info	On click for further information of “Hall of Fame”			Pass

**Contact Us Test Suite and Test Case Design**

Test Suites No: 1

Test Suite Detail: On click Contact Us Button

Test Case ID	Function Name	Test Case (condition)	Expected Results	Actual Result	Pass/Fail
1	Onclick_BMS	On click for BMS button	Redirects the user to the HomePage.	Redirects the user to the HomePage	Pass
2	Onclick_Links	On click links of affiliated hospitals.	Redirects the user to the official websites of respective hospitals.	Redirects the user to the official websites of respective hospitals.	Pass

**Locate Us Test Suite and Test Case Design**

Test Suites No: 1

Test Suite Detail: On click Locate Us Button

Test Case ID	Function Name	Test Case (condition)	Expected Results	Actual Result	Pass/Fail
1	Onclick_EBBMS	On click for EBBMS button	The branch of EBBMS in the searched city is displayed with its directions.	The branch of EEBMS in the searched city is displayed with its directions.	Pass
2	Onclick_EBBMS	On click for EBBMS button	The branch of EBBMS in the searched city is displayed with its directions.	If the searched city has no EBBMS branch then respective message is displayed.	Pass

**Our round-the-clock service Test Suite and Test Case Design**

Test Suites No: 1

Test Suite Detail: On click our round-the-clock service button.

Test Case ID	Function Name	Test Case (condition)	Expected Results	Actual Result	Pass/Fail
1	Onclick_Donor	On click for Donor button			Pass
2	Onclick_Hospital	On click for Hospital button			Pass
3	Onclick_Admin	On click for Admin button	Allows authenticated user to enter the new donor's details.	Allows authenticated user to enter the new donor's details.	Pass



## **CHAPTER 11: LIMITATION AND FUTURE ENHANCEMENT**

### **Limitation:**

- Only collaborated hospitals can request for blood online.
- Limited to Web Browsers only.

### **Future Enhancement:**

- This portal can be used to make Mobile platform application.
- Can be collaborated with other hospitals to provide more and more services in India and outside world.

## **CHAPTER 12: CONCLUSION AND DISCUSSION**

### **12.1 SELF ANALYSIS OF PROJECT VIABILITIES**

- We surveyed that maximum deaths in hospital occurs due to lack of availability of blood on time, this web portal is developed to overcome that.
- We also thought of android extension application for this web portal.

### **12.2 PROBLEM ENCOUNTERED AND POSSIBLE SOLUTIONS**

- There were so many problems related to implementation of Team Foundation Server and SSMS during implementation phase of project.
- To find best compatible version of SSMS that can work easily with VS 2015 was a tough job too.

### **12.3 SUMMARY OF PROJECT WORK**

- We have developed a web portal for EBBMS that ensures the delivery of blood to door step of hospital within one hour or less after request has been done by hospital online.

## CHAPTER 13: GRAPHICAL USER INTERFACE

