

Blood Bank Management

**A Project Report Submitted In Partial Fulfillment of the Requirements for
The Degree of**

MASTER OF COMPUTER APPLICATIONS

by

Rohit

(Roll no.: 1900290140028)

Under the supervision of

Prof. Vidushi Mishra

Associate Professor

KIET GROUP OF INSTITUTIONS, GHAZIABAD



to the

DEPARTMENT OF COMPUTER APPLICATIONS

**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY
LUCKNOW**

(Formerly Uttar Pradesh Technical University, Lucknow)

May 2022

DECLARATION

I hereby declare that the work presented in this report entitled “**Blood Bank**” Application was carried out by US. I have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors/sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution.

I have used quotation marks to identify verbatim sentences and given credit to the original authors/sources.

I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, We shall be fully responsible and answerable.

Rohit

University Roll No. :1900290140028

TRAINING CERTIFICATE



GSTIN: 09BYQPG9559K1ZE

Fair Deal Global

G-3, R 8/2, Satyadeep Apartments
Raj Nagar, Sector 8, Ghaziabad, UP, 201002

Date : 25/05/2022

To
Mr. Rohit

Sub: Internship Completion Certificate

Dear Rohit ,

We would like to certify that **Rohit** has successfully completed his three month paid Internship as a **Full Stack Developer** at the Fair Deal Global from **25/02/2022** to **25/05/2022 (DD/MM/YYYY)** .

Internship Responsibilities:

- Developing frontend application using Angular , Nextjs.
- Handling Backend application by using NodeJS and php
- optimizes the workflow around managing multi-package repositories with git and npm by using **Lerna workspace**

Sincerely,
Sachin Gupta
Lead Recruitment Team ,
Fair Deal Global

EMAIL: FAIRDEALGLOBAL18@GMAIL.COM

PHONE: +91-9958582452

CERTIFICATE

Certified that **Rohit (Univ. Roll No.-1900290140028)** have carried out the project work having “**Blood Bank**” for Master of Computer Application from Dr.A.P.J.Abdul Kalam Technical University (AKTU), Technical University, Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

Date:

Rohit (Univ. Roll No -1900290140028)

This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

Miss Vidushi Mishra
Assistant Professor
Department of Computer Applications
KIET Group of Institutions, Ghaziabad

Date:

Signature of External Examiner

Signature of Internal Examiner

Dr. Ajay Kumar Shrivastava
Head, Department of Computer Applications
KIET Group of Institutions, Ghaziabad

ABSTRACT

This system mainly reduces the work task, and it is easy to maintain the records for a long time than normal handwritten records as well give ease. The user can check his record details by just entering his demand no need to search all the record. So, the maintenance and Presidency of institute became very easy.

- Easy accessibility.
- It makes searching records easier and faster.
- User is no longer required to check his register in search of records, as now it can be searched over the software by choosing some options.
- The user need not to type in most of the information.
- On the whole it liberates the user from keeping lengthy manual records.
- Everyone wants his/her work to be done by computer automatically and displaying the result for further manipulations.
- So, this project is about providing convenience.

ACKNOWLEDGEMENTS

Success in life is never attained single handedly. My deepest gratitude goes to my thesis supervisor **Dr. Sangeeta Arora**, for his guidance, help and encouragement throughout our project work. Their enlightening ideas, comments, and suggestions.

Words are not enough to express my gratitude to **Dr. Ajay Kumar Shrivastava**, Professor and Head, Department of Computer Application, for his insightful comments and administrative help at various occasions.

Fortunately, I have many understanding friends, who have helped me a lot on many critical conditions.

Finally, my sincere thanks go to my family members and all those who have directly and indirectly provided me moral support and other kind of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

Rohit

Univ. Roll No. 1900290140028

TABLE OF CONTENTS

	Page No.
Front page	i
Declaration	ii
Certificate / Training Certificate	iii-iv
Abstract	v
Acknowledgement	vi
List of Figures	xi-xiii
CHAPTER 1: INTRODUCTION	1-3
1.1 Project Title	1
1.2 Project Description	1-2
1.3 Problem Definition	3
1.4 Hardware/Software used in Project	4
1.5 Project Schedule (GANTT CHART)	
CHAPTER 2: FEASIBILITY STUDY	5-6
2.0 Feasibility Study	5
2.1 Technical Feasibility	5
2.2 Operation Feasibility	6
2.3 Economic Feasibility	6
2.4 SRS	7
CHAPTER 3: BACKNED DESIGN	8-77
3.0 Modules	8-18
3.1 DFD	18-30
3.2 UML Diagram	31-32
3.3 Database design / database tables	32-41
3.4 ER Diagram	42-63
3.5 Database Tables	64-77
CHAPTER 4: FRONTEND DESIGN	78-85

4.0 input / output Form (Screenshot)	
CHAPTER 5: Report	85
5.0 Report /Output(Screenshot)	
CHAPTER 6: TESTING	86-100
6.0 Test Case (Screenshot)	
CHAPTER 7: Limitation	102
7.0 Limitation	
7.1 Future Scope	
CHAPTER 8: CONCLUSION	101
Future Enhancement	
CHAPTER 9: BIBLIOGRAPHY & REFERENCES	103

LIST OF FIGURES

Figure 1.1 Pert chart	18
Figure 1.2: Gannt chart for project	19
Figure 2.1: Design	23
Figure 2.2: Flow of website	23
Figure 2.3: Some screens	24
Figure 4.1: Above image depicting the planning step.....	377
Figure 4.2: Prototype model	40
Figure 4.3: Apex Work.....	42
Figure 4.4 Context level	42
Figure 4.5 Dfd 1 level.....	43
Figure 4.6: Uml use case diagram.....	43
Figure 4.7:ER diagram of system	444
Figure 5.1 System.....	455
Figure 7.1: Testing pyramid.....	61

INTRODUCTION

1.1. Project Overview

The Blood Donation Agent is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover, if any general consumer wants to make request blood online, he can also take the help of this site. Admin is the main authority who can do addition, deletion, and modification if required.

1.2. Project Description

This project is aimed to developing an online Blood Donation Information. The entire project has been developed keeping in view of the distributed client server computing technology, in mind.

The Blood Donation Agent is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover, if any general consumer wants to make request blood online he can also take the help of this site.

Admin is the main authority who can do addition, deletion, and modification if required.

The project has been planned to be having the view of distributed architecture, with centralized storage of the database. The application for the storage of the data has been planned. Using the constructs of MS-SQL Server and all the user interfaces have been designed using the ASP.Net technologies.

The database connectivity is planned to use the “SQL Connection” methodology. The standards of security and data protective mechanism have been given a big choice for proper usage.

The application takes care of different modules and their associated reports, which are produced as per the applicable strategies and standards that are put forwarded by the administrative staff.

The entire project has been developed keeping in view of the distributed client server computing technology, in mind. The specification has been normalized up to 3NF to eliminate all the anomalies that may arise due to the database transaction that are executed by the general users and the organizational administration. The user interfaces are browser specific to give distributed accessibility for the overall system. The internal database has been selected as MS-SQL server 2000.

The basic constructs of table spaces, clusters and indexes have been exploited to provide higher consistency and reliability for the data storage. The MS-SQL server 2000 was a choice as it provides the constructs of high-level reliability and security. The total front end was dominated using the ASP.Net technologies. At all proper levels high care was taken to check that the system manages the data consistency with proper business rules or validations.

The database connectivity was planned to use the latest “SQL Connection” technology provided by Microsoft Corporation. The authentication and authorization were crosschecked at all the relevant stages. The user level accessibility has been restricted into two zones namely.

Problem Definition

1.3 Existing System

- Cannot Upload and Download the latest updates.
- No use of Web Services and Remoting.
- Risk of mismanagement and of data when the project is under development.
- Less Security.
- No proper coordination between different Applications and Users.
- Fewer Users – Friendly

Disadvantages

1. User friendliness is provided in the application with various controls.
2. The system makes the overall project management much easier and flexible.
3. Readily upload the latest updates, allows user to download the alerts by clicking the URL.
4. There is no risk of data mismanagement at any level while the project development is under process.
5. It provides high level of security with different level of authentication.

1.4. Proposed System

To debug the existing system, remove procedures those cause data redundancy, make navigational sequence proper. To provide information about audits on different level and also to reflect the current work status depending on organization/auditor or date. To build strong password mechanism.

Advantages:

- User friendliness I provided in the application with various controls.
- The system makes the overall project management much easier and flexible.
- Readily upload the latest updates, allows user to download the alerts by clicking the URL.
- It provides high level of security with different level of authentication.

1.3 HARDWARE / SOFTWARE USED IN PROJECT

- HARDWARE REQUIREMENT**

Hardware	Configuration
Processor	Above 4.4
Ram	4GB
Rom	100 GB

- SOFTWARE REQUIREMENT**

Software	Configuration
Database	Firebase
Language	Typescript and JavaScript
Frameworks	Angular and NestJs

2.0 Feasibility Study

Preliminary investigation examine project feasibility, the likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the Technical, Operational and Economical feasibility for adding new modules and debugging old running system. All system is feasible if they are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary investigation:

- Technical Feasibility
- Operation Feasibility
- Economic Feasibility

2.1. Technical Feasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:

- Does the necessary technology exist to do what is suggested?
- Do the proposed equipments have the technical capacity to hold the data required to use the new system?
- Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
- Can the system be upgraded if developed?
- Are there technical guarantees of accuracy, reliability, ease of access and data security?

Earlier no system existed to cater to the needs of ‘Secure Infrastructure Implementation System’. The current system developed is technically feasible. It is a web-based user interface for audit workflow at NIC-CSD. Thus, it provides an easy access to the users.

The database’s purpose is to create, establish and maintain a workflow among various entities in order to facilitate all concerned users in their various capacities or roles. Permission to

the users would be granted based on the roles specified. Therefore, it provides the technical guarantee of accuracy, reliability and security.

The software and hard requirements for the development of this project are not many and are already available in-house at NIC or are available as free as open source. The work for the project is done with the current equipment and existing software technology. Necessary bandwidth exists for providing fast feedback to the users irrespective of the number of users using the system.

2.2. Operational Feasibility

Proposed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

- Is there sufficient support for the management from the users?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So there is no question of resistance from the users that can undermine the possible application benefits.

The well-planned design would ensure the optimal utilization of the computer resources and would help in the improvement of performance status.

2.3. Economic Feasibility

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economic feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs.

The system is economically feasible. It does not require any addition hardware or software. Since the interface for this system is developed using the existing resources and technologies available at NIC, there is nominal expenditure and economic feasibility for certain.

System Analysis

3.1. Software Requirement Specification (SRS)

The software, Site Explorer is designed for management of web sites from a remote location.

INTRODUCTION

Purpose: The main purpose for preparing this document is to give a general insight into the analysis and requirements of the existing system or situation and for determining the operating characteristics of the system.

Scope: This Document plays a vital role in the development life cycle (SDLC) and it describes the complete requirement of the system. It is meant for use by the developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process.

DEVELOPERS RESPONSIBILITIES OVERVIEW:

The developer is responsible for:

- Developing the system, which meets the SRS and solving all the requirements of the system?
- Demonstrating the system and installing the system at client's location after the acceptance testing is successful.
- Submitting the required user manual describing the system interfaces to work on it and also the documents of the system.
- Conducting any user training that might be needed for using the system.
- Maintaining the system for a period of one year after installation.

The modules involved are:

1. Administration:

In this module the Administrator has the privileges to add all the Blood Groups, Blood Type, Organization, Type, Country, State, City, and Location. He can search all the info about the Organization, Donor.

User Account:

- AccountID
- Username
- Password
- UserDesc
- HintQuestion
- Answer
- RoleID
- Active

Functionality

- Association User Account with UserRole.
- Association User Account with Organisation.
- Association User Account with personal Details.
- Association User Account with Employee deatails.
- Association User Account with BloodDonation Details.

Alerts:

- All fields are mandatory
- Select user role
- Select role id
- Select role name

UserRole:

- RoleID
- RoleName
- RoleDesc
- Active

Functionality:

- Association user role with user Account

Alerts:

- Select Role Id
- Select role name

BDA State:

- StateID
- StateName

- StateCode
- StateDesc
- CountryID
- Active

Functionality:

- Association state with city
- Association state with Address

Alerts:

- Select State id
- Select state name

Country:

- CountryID
- CountryName
- CountryDesc
- CountryCode
- Active

Functionality:

- Association state with country
- Association state with Address

Alerts:

- Select countryId

- Select countryname
- Select country code

BDA City:

- CityID
- CityName
- CityDesc
- CityCode
- StateID
- Active

Functionality:

- Association Location with city
- Association Address with city.

Alerts:

- Select cityId
- Select cityNane
- Select state code

BDA Location:

- LocationID
- LocationName
- LocationDesc
- LocationCode
- CityID
- Pin code
- Active

Functionality:

- Association Location with Address.

Alerts:

- Select LocationId
- Select Location Name
- Select Pincode.

BloodGroup:

- BloodGroupID
- BloodGroup
- Description
- Active

Functionality:

- Association Blood group with Personal details.

Alerts:

- Select BloodGroupID
- Select BloodGroupID

Blood Type:

- BloodTypeID
- TypeName
- TypeDesc
- Active

Functionality:

- Association Blood type with Personal details.

Alerts:

- Select BloodGroupID
- Select TypeName

Personal Details:

- UserAccountID
- FirstName
- MiddleName
- LastName
- Email
- DOB
- Weight
- Gender
- ImageURL
- BloodGroupID
- BloodType
- BloodType
- AddressID
- ContactNo_Office
- ContactNo_Residence

- MobileNo
- Active

Functionality:

- Association personal details with preferred location Day Time Details.

Alerts:

- Select user account id
- Select Email id
- Select date of birth

Call Center:

In this module all the employee who has been appointed by Admin will come. Admin will add all the information of employee and assign user name and password to them. By using that user name and password they will enter to their login and can search for all the donor, and about all the blood request which have been made by either consumer, donor or any organization. Call center people will assign donor to related request.

Employee Detail:

- EmpId
- Name
- Address
- Phone
- Email
- Active

Functionality:

- Association Employee Details type with user Accounts.

Alerts:

- Select Emp Id
- Select email id

Donor:

Donor is that person who is interested in donating their blood so they can register themselves through this website. If any requirement comes then they will be contacted and they can donate their blood. Along with it they can search for the various organization locations wise and can also make request for blood if needed

Donation Frequencies:

- Frequency ID
- Frequency
- Description

Functionality:

- Association Donor Frequencies with Blood donation preferences.

Alerts:

- Select Frequency Id

Donor Preferred Organization:

- User Account D
- Organization ID
- Active

Functionality:

- Association Donor preferred organization with personal details.

Alerts:

- Select user account id
- Select organization id.

Organization:

In this module if any organization wants to register itself then it can do it. It can also search for donor location wise and if needed then it can also make request for blood

Organization:

- OrgID
- OrgName
- OrgType
- Email
- OrgAddrID
- OrgImageURL
- OrgDescription
- ContactNo
- MobileNo
- Active
- Comment

Functionality:

- Association organization type with Organization type.

Alerts:

- Select OrgId
- Select Email

Organization Type:

- TypeID
- TypeName
- Type Description

Functionality:

- Association organization type with Organization.

Alerts:

- Select Type Id
- Select Type Name

HARDWARE REQUIREMENTS:

- PIV 2.8 GHz Processor and Above
- RAM 512MB and Above
- HDD 20 GB Hard Disk Space and Above

SOFTWARE REQUIREMENTS:

- WINDOWS OS (XP / 2000 / 200 Server / 2003 Server)
- Visual Studio .Net 2005 Enterprise Edition
- Internet Information Server 5.0 (IIS)
- Visual Studio .Net Framework (Minimal for Deployment)
- SQL Server 2000 Enterprise Edition

System Design

5.1. Data Flow Diagrams (DFD)

A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams.

The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations. A full description of a system actually consists of a set of data flow diagrams. Using two familiar notations Yourdon, Gane and Sarson notation develops the data flow diagrams. Each component in a DFD is labeled with a descriptive name. Process is further identified with a number that will be used for identification purpose.

The development of DFD'S is done in several levels. Each process in lower level diagrams can be broken down into a more detailed DFD in the next level. The top-level diagram is often called context diagram. It consists a single process bit, which plays vital role in studying the current system. The process in the context level diagram is exploded into other process at the first level DFD.

The idea behind the explosion of a process into more process is that understanding at one level of detail is exploded into greater detail at the next level. This is done until further explosion is necessary and an adequate amount of detail is described for analyst to understand the process.

Larry Constantine first developed the DFD as a way of expressing system requirements in a graphical form, this lead to the modular design.

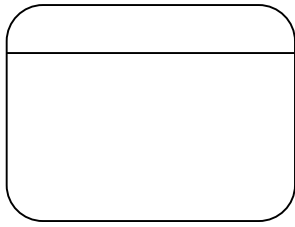
A DFD is also known as a "bubble Chart" has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So it is the starting point of the design to the lowest level of detail. A DFD consists of a series of bubbles joined by data flows in the system.

DFD SYMBOLS:

In the DFD, there are four symbols

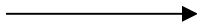
1. A square defines a source(originator) or destination of system data
2. An arrow identifies data flow. It is the pipeline through which the information flows
3. A circle or a bubble represents a process that transforms incoming data flow into outgoing data flows.

4. An open rectangle is a data store, data at rest or a temporary repository of data

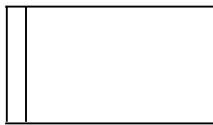


Process that transforms data flow.

Source or Destination of data



Data flow



Data Store

CONSTRUCTING A DFD:

Several rules of thumb are used in drawing DFD'S:

1. Process should be named and numbered for an easy reference. Each name should be representative of the process.
2. The direction of flow is from top to bottom and from left to right. Data traditionally flow from source to the destination although they may flow back to the source. One way to indicate this is to draw long flow line back to a source. An alternative way is to repeat the source symbol as a destination. Since it is used more than once in the DFD it is marked with a short diagonal.
3. When a process is exploded into lower level details, they are numbered.
4. The names of data stores and destinations are written in capital letters. Process and dataflow names have the first letter of each word capitalized

A DFD typically shows the minimum contents of data store. Each data store should contain all the data elements that flow in and out.

Questionnaires should contain all the data elements that flow in and out. Missing interfaces redundancies and like is then accounted for often through interviews.

SAILENT FEATURES OF DFD'S

1. The DFD shows flow of data, not of control loops and decision are controlled considerations do not appear on a DFD.
2. The DFD does not indicate the time factor involved in any process whether the dataflow take place daily, weekly, monthly or yearly.
3. The sequence of events is not brought out on the DFD.

TYPES OF DATA FLOW DIAGRAMS

1. Current Physical
2. Current Logical
3. New Logical
4. New Physical

CURRENT PHYSICAL:

In Current Physical DFD proecess label include the name of people or their positions or the names of computer systems that might provide some of the overall system-processing label includes an identification of the technology used to process the data. Similarly data flows and data stores are often labels with the names of the actual physical media on which data are stored such as file folders, computer files, business forms or computer tapes.

CURRENT LOGICAL:

The physical aspects at the system are removed as mush as possible so that the current system is reduced to its essence to the data and the processors that transform them regardless of actual physical form.

NEW LOGICAL:

This is exactly like a current logical model if the user were completely happy with he user were completely happy with the functionality of the current system but had problems with how it was implemented typically through the new logical model will differ from current logical model while having additional functions, absolute function removal and inefficient flows recognized.

NEW PHYSICAL:

The new physical represents only the physical implementation of the new system.

RULES GOVERNING THE DFD'S

PROCESS

- 1) No process can have only outputs.
- 2) No process can have only inputs. If an object has only inputs than it must be a sink.
- 3) A process has a verb phrase label.

DATA STORE

- 1) Data cannot move directly from one data store to another data store, a process must move data.
- 2) Data cannot move directly from an outside source to a data store, a process, which receives, must move data from the source and place the data into data store
- 3) A data store has a noun phrase label.

SOURCE OR SINK

The origin and /or destination of data.

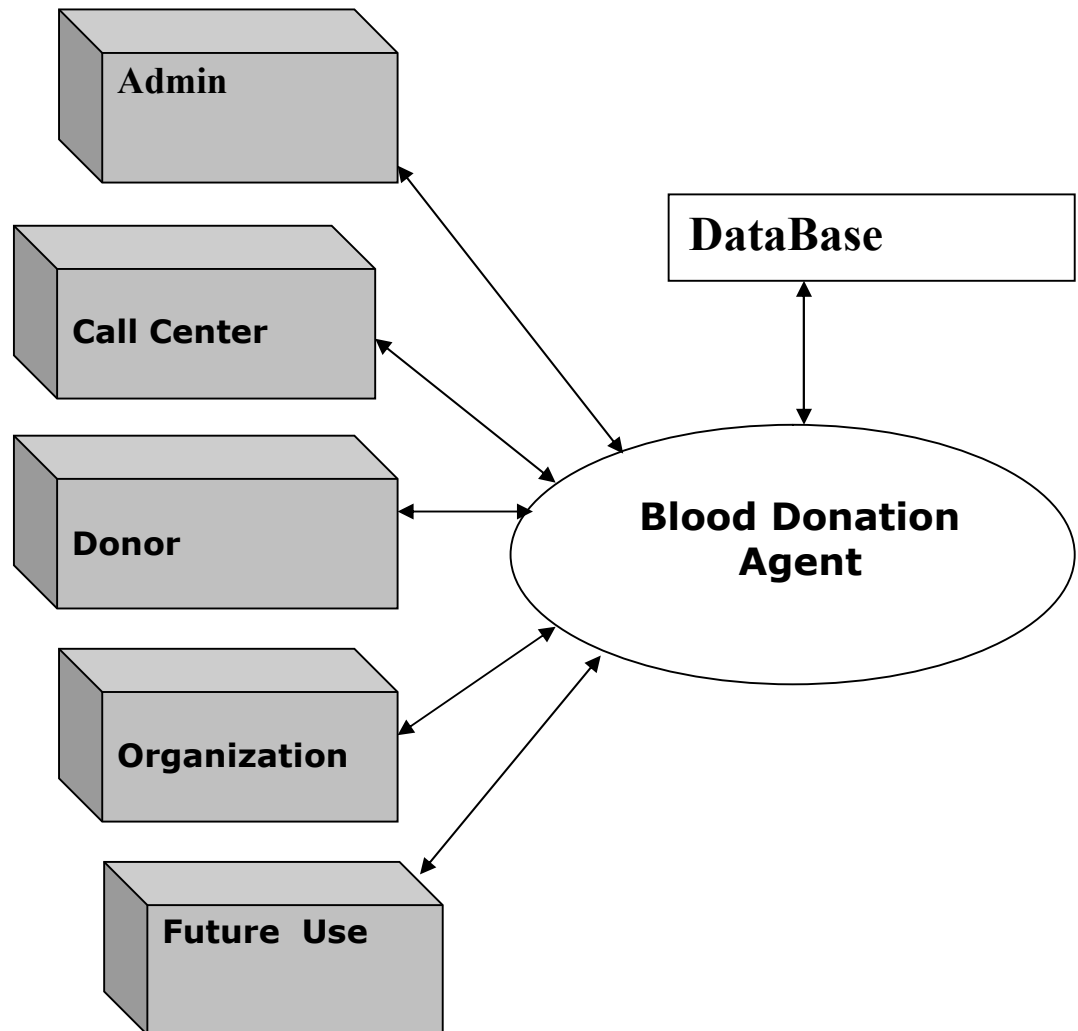
- 1) Data cannot move direly from a source to sink it must be moved by a process
- 2) A source and /or sink has a noun phrase land

DATA FLOW

- 1) A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The later is usually indicated however by two separate arrows since these happen at different type.
- 2) A join in DFD means that exactly the same data comes from any of two or more different processes data store or sink to a common location.

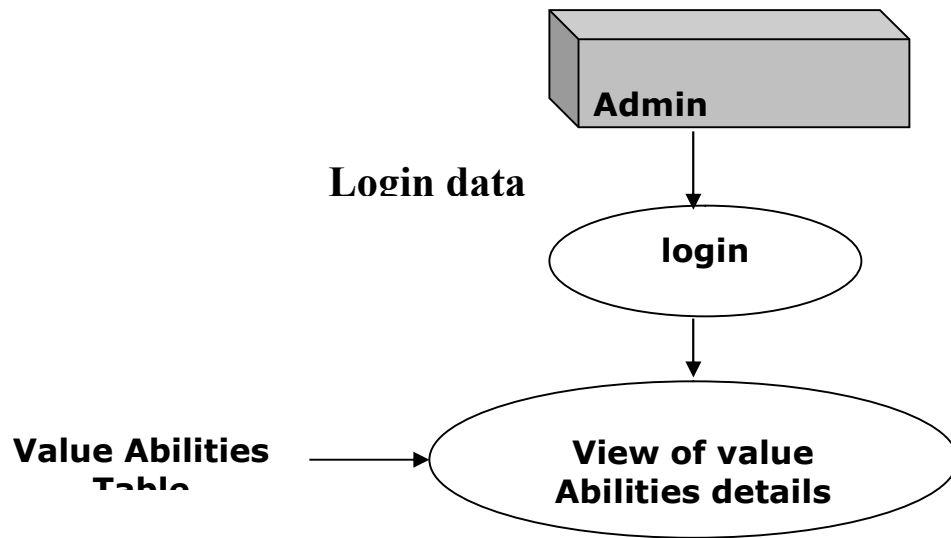
- 3) A data flow cannot go directly back to the same process it leads. There must be atleast one other process that handles the data flow produce some other data flow returns the original data into the beginning process.
- 4) A Data flow to a data store means update (delete or change).
- 5) A data Flow from a data store means retrieve or use.

Context Diagram

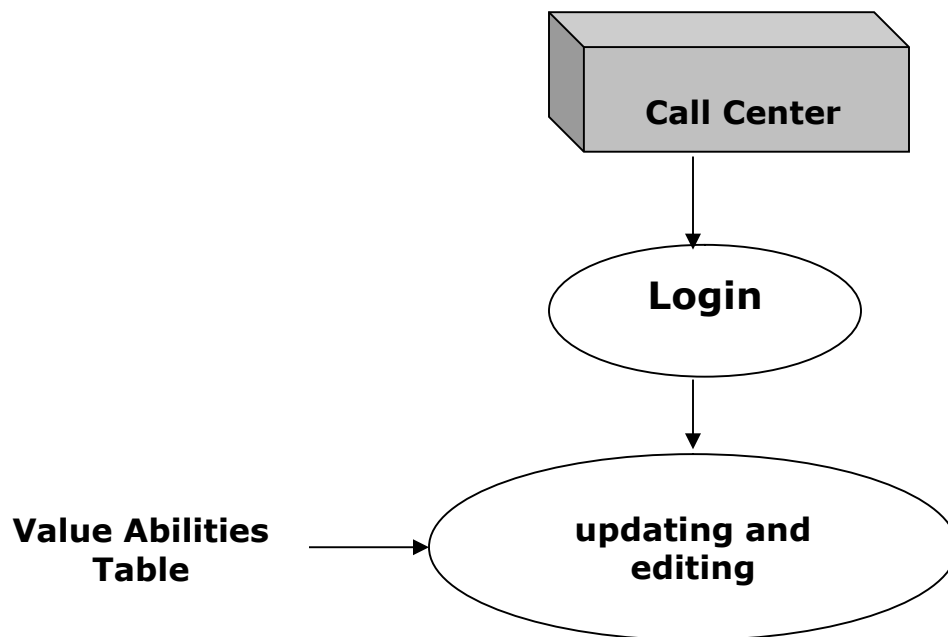


1st Level DFD's

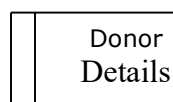
Level 1 DFD: For Admin Module



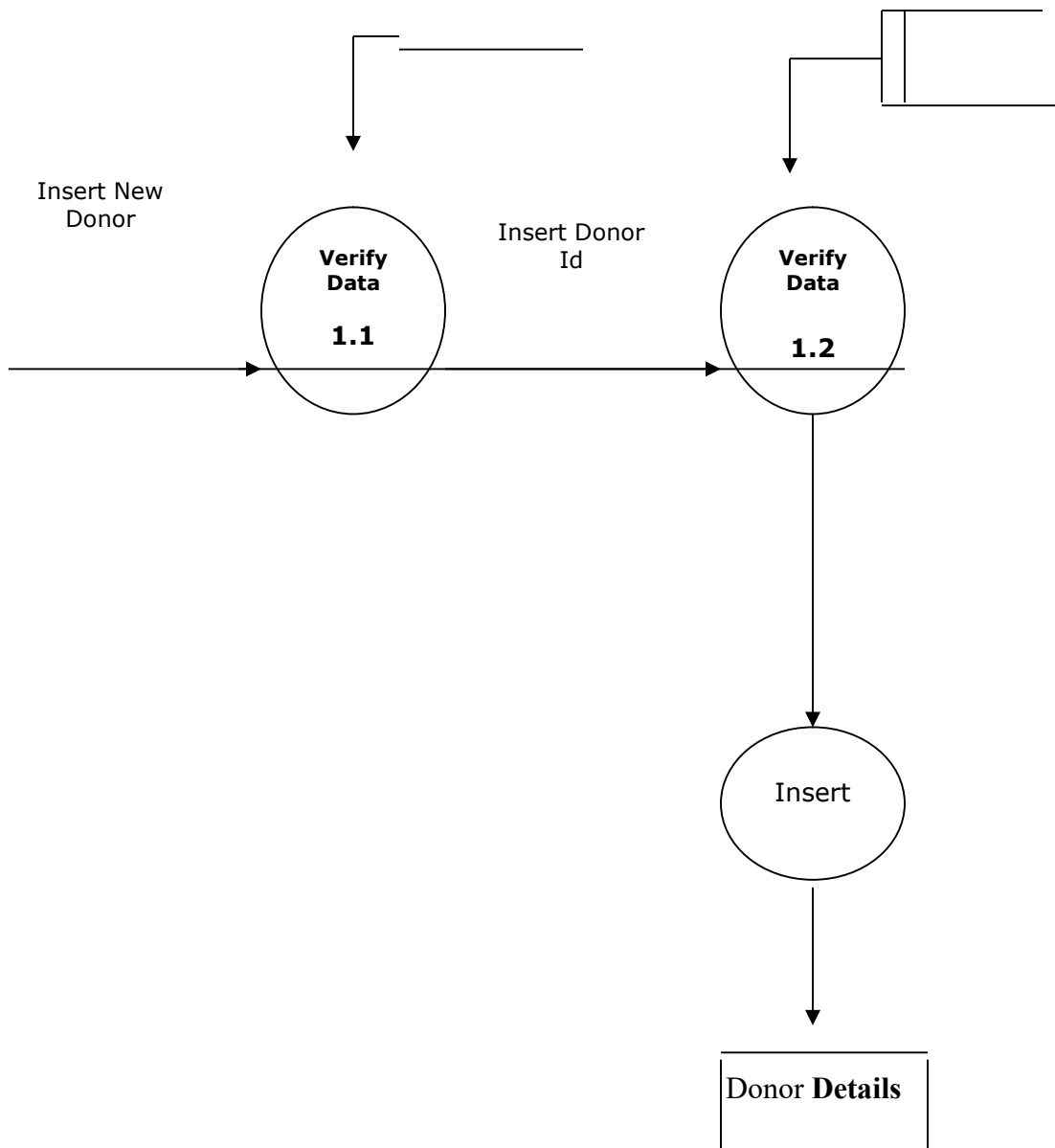
Level 1 DFD: For Users Module



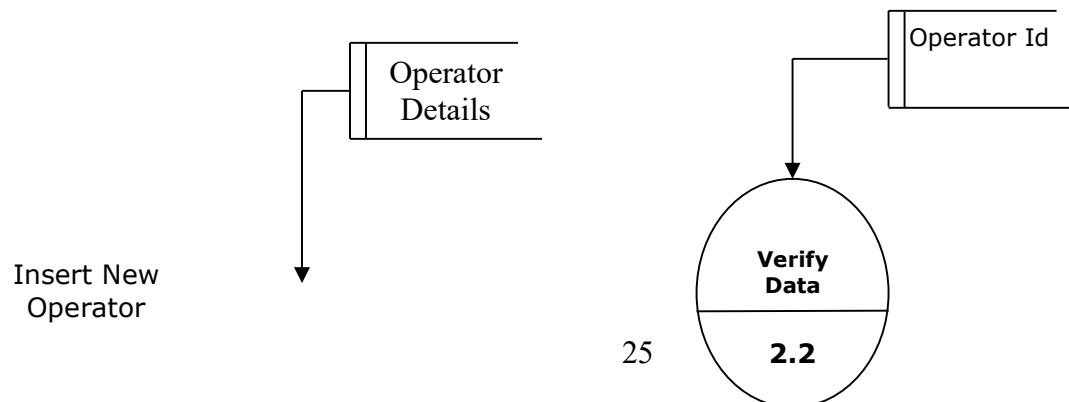
DFD For Donor Creation

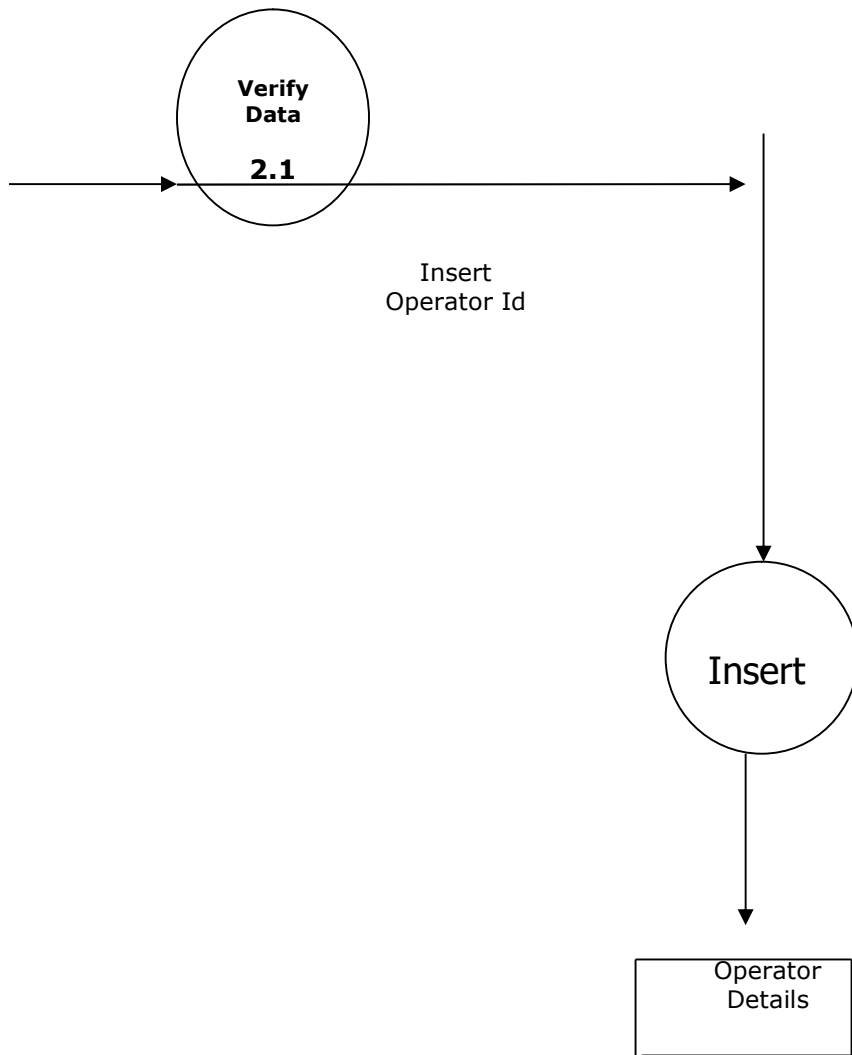


Donor Id

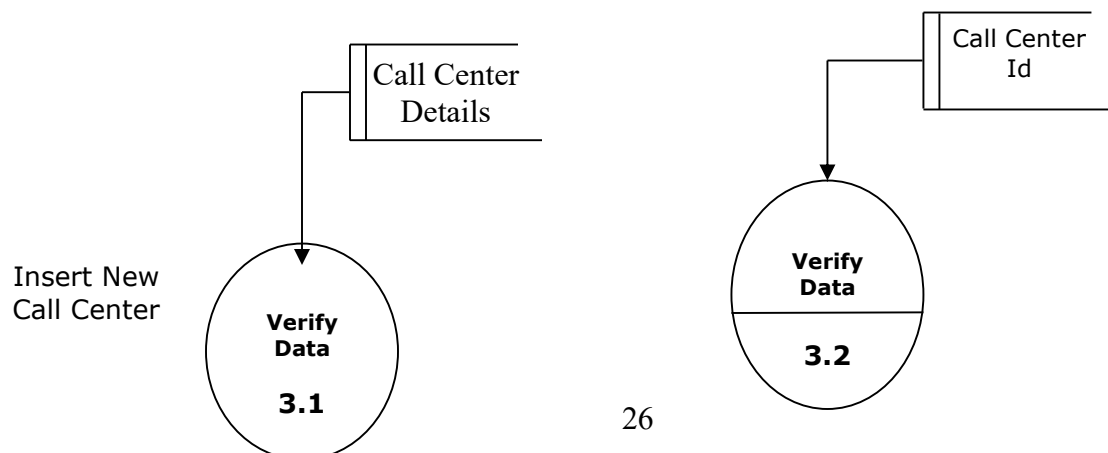


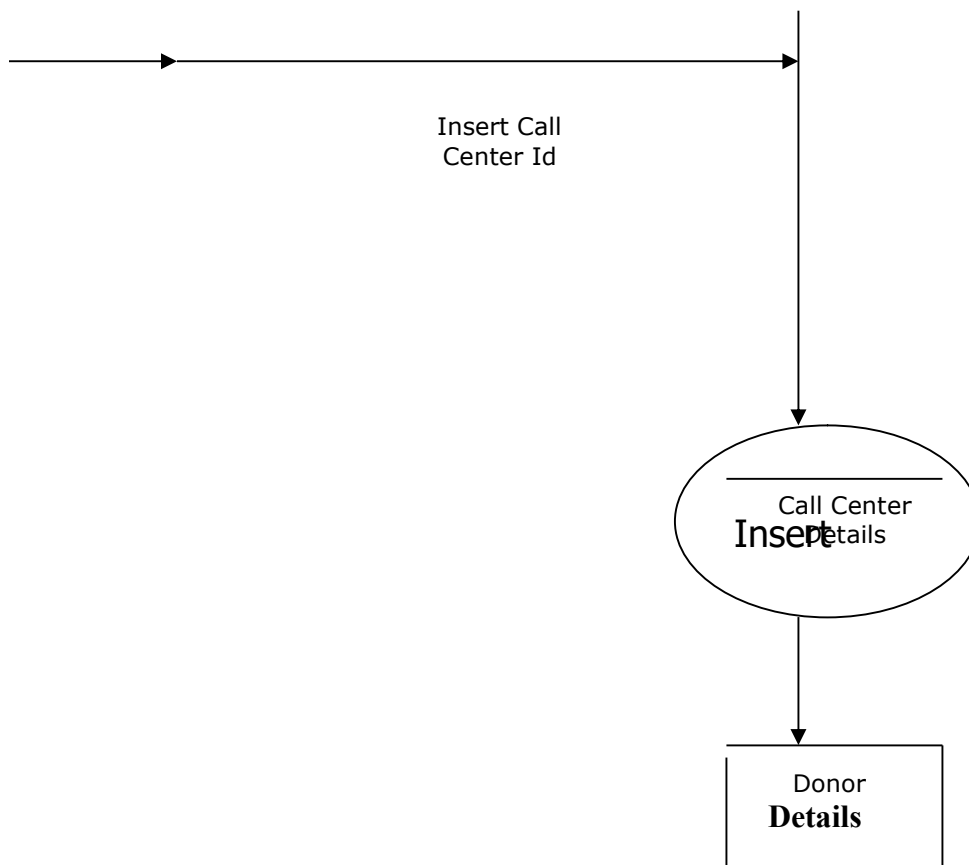
DFD For Operator Creation



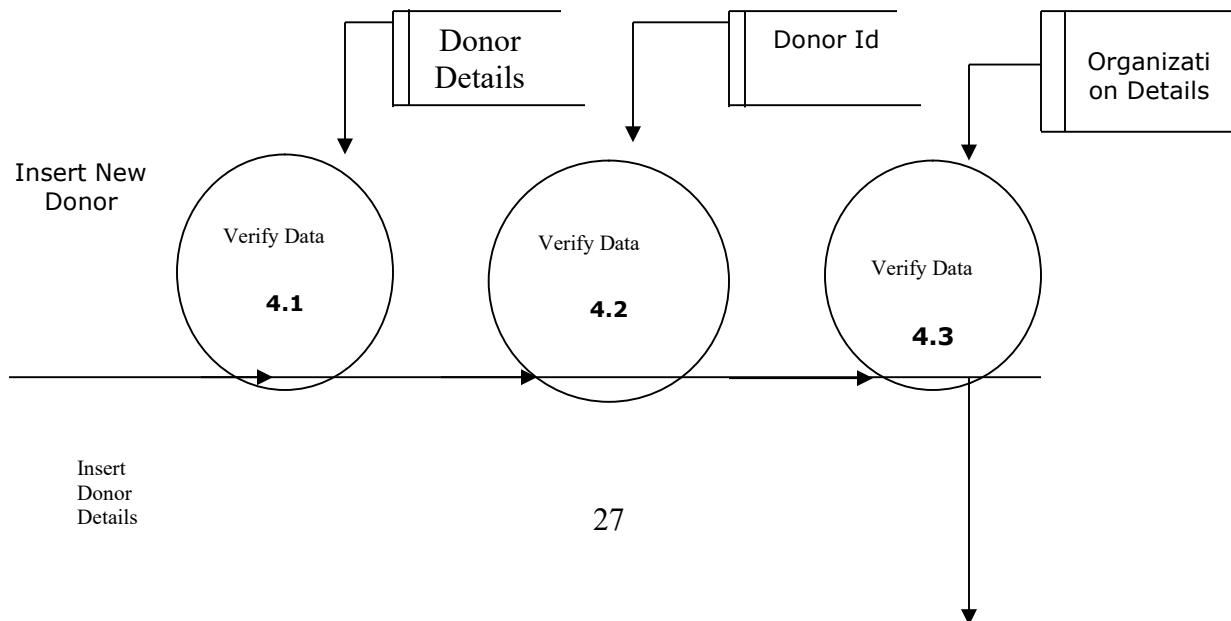


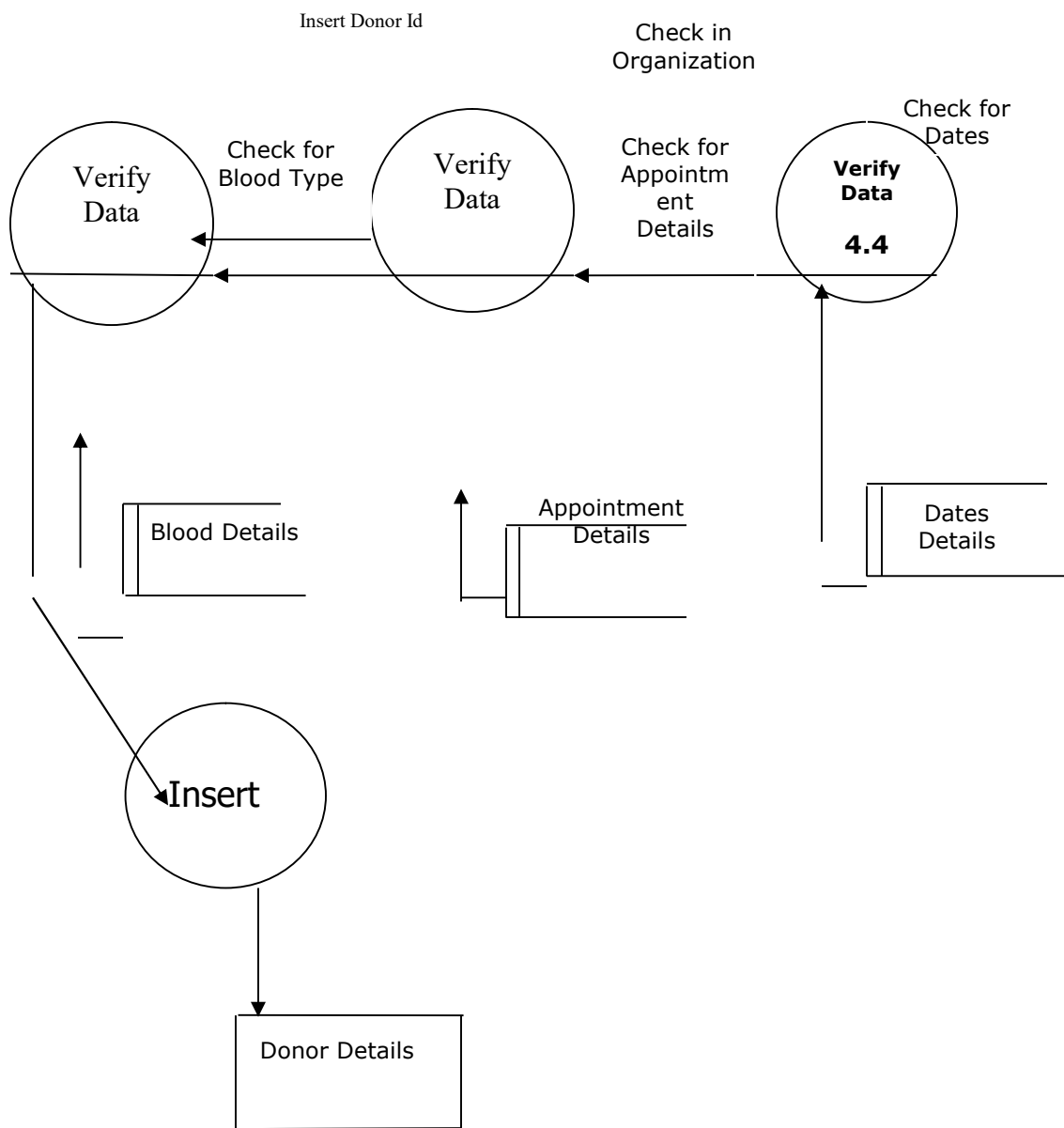
DFD For Call Center Creation





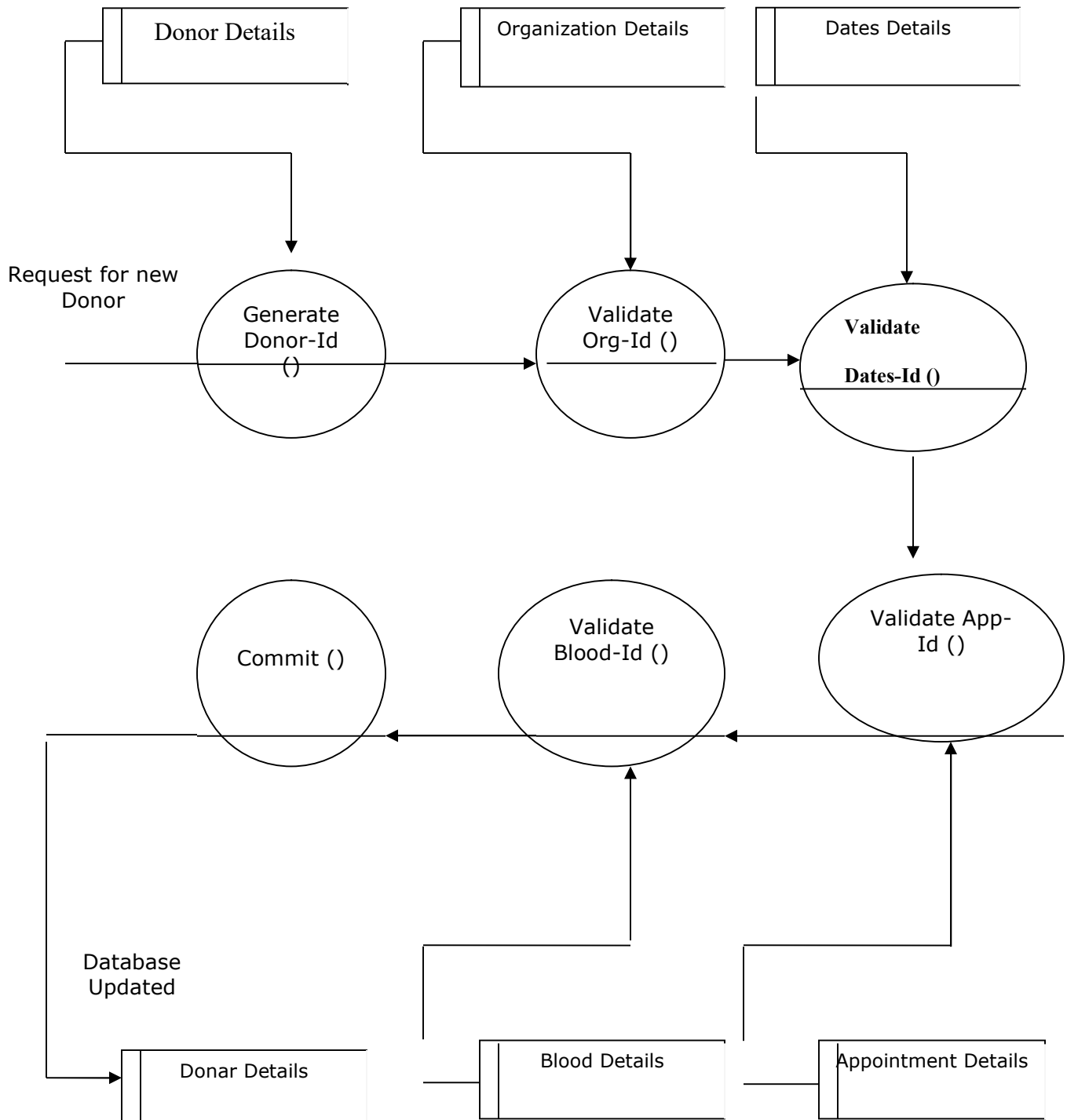
DFD for Donor Creation



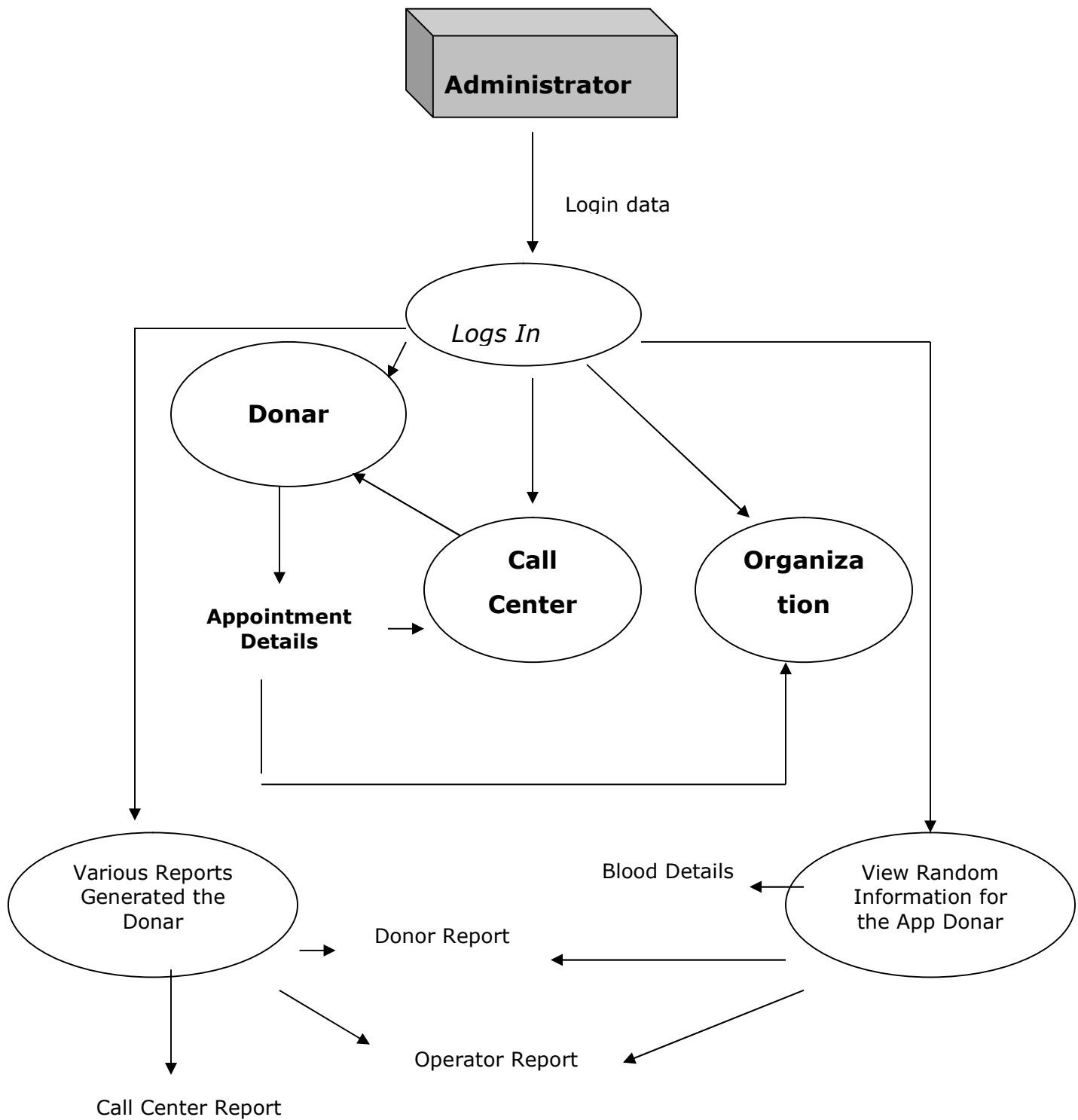


3rd Level DFD'S

DFD For Donor Creation



Work Flow of All Modules



5.2. UML Diagrams

Use Case Diagram:

- The unified modeling language allows the software engineer to express an analysis model using the modeling notation that is governed by a set of syntactic semantic and pragmatic rules.
- A UML system is represented using five different views that describe the system from distinctly different perspective. Each view is defined by a set of diagram, which is as follows.
- User Model View
 - i. This view represents the system from the users perspective.
 - ii. The analysis representation describes a usage scenario from the end-users perspective.

Structural model view

- In this model the data and functionality are arrived from inside the system.
- This model view models the static structures.

Behavioral model view

It represents the dynamic of behavioral as parts of the system, depicting the interactions of collection between various structural elements described in the user model and structural model view.

Implementation Model View

In this the structural and behavioral as parts of the system are represented as they are to be built.

Environmental Model View

In this the structural and behavioral aspects of the environment in which the system is to be implemented are represented.

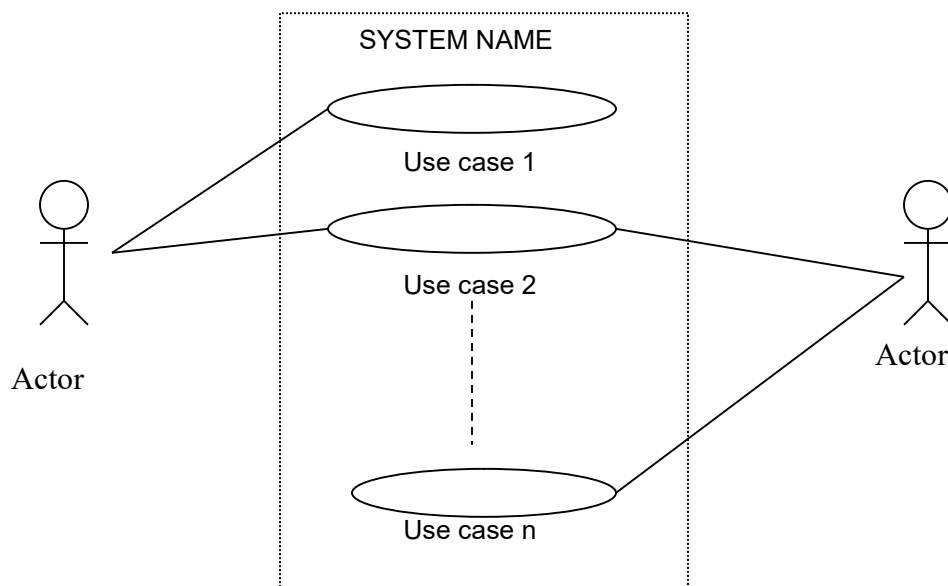
UML is specifically constructed through two different domains they are

- UML Analysis modeling, which focuses on the user model and structural model views of the system.
- UML design modeling, which focuses on the behavioral modeling, implementation modeling and environmental model views.

Use case Diagrams represent the functionality of the system from a user's point of view. Use cases are used during requirements elicitation and analysis to represent the functionality of the system. Use cases focus on the behavior of the system from external point of view.

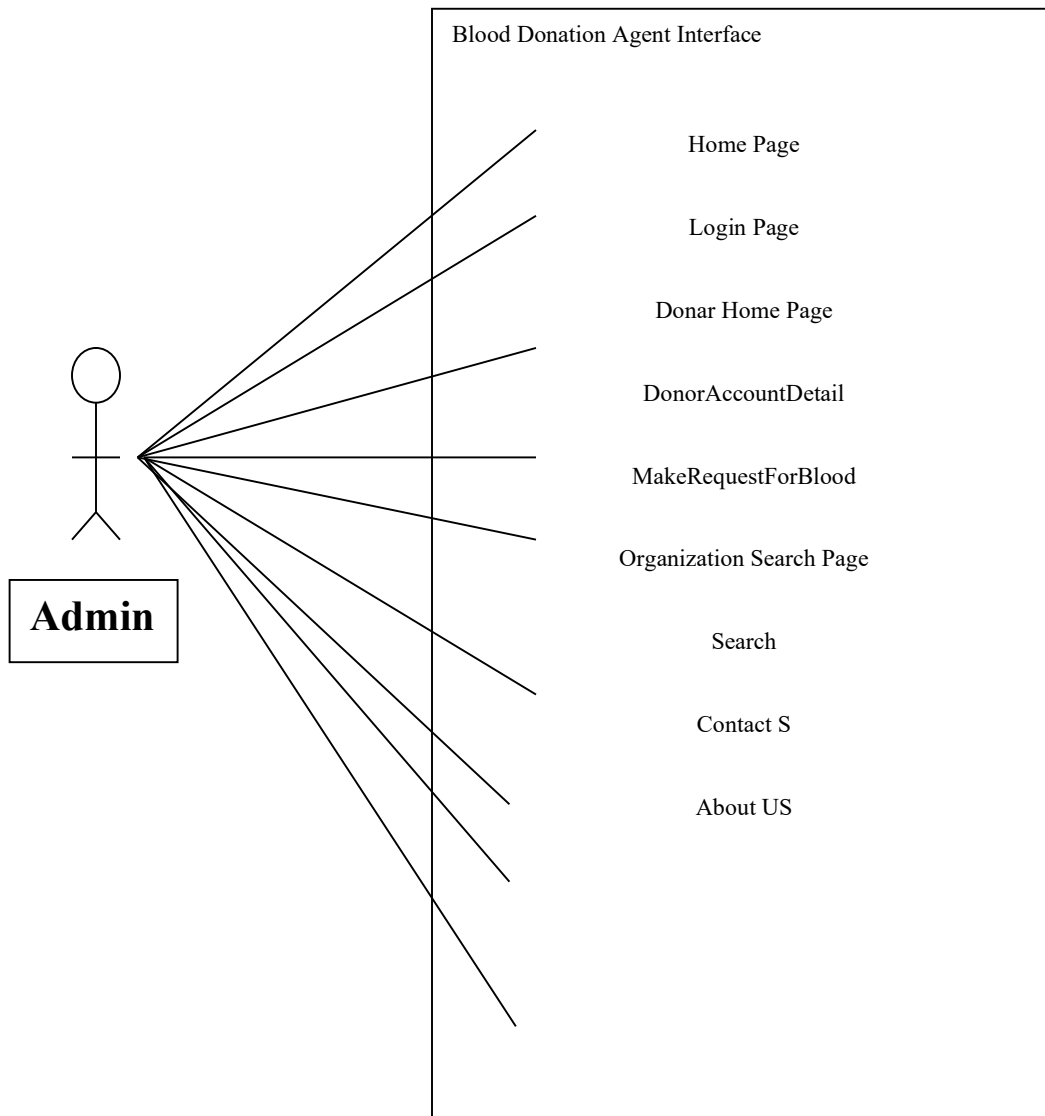
Actors are external entities that interact with the system. Examples of actors include users like administrator, bank customer ...etc., or another system like central database.

Use case Model

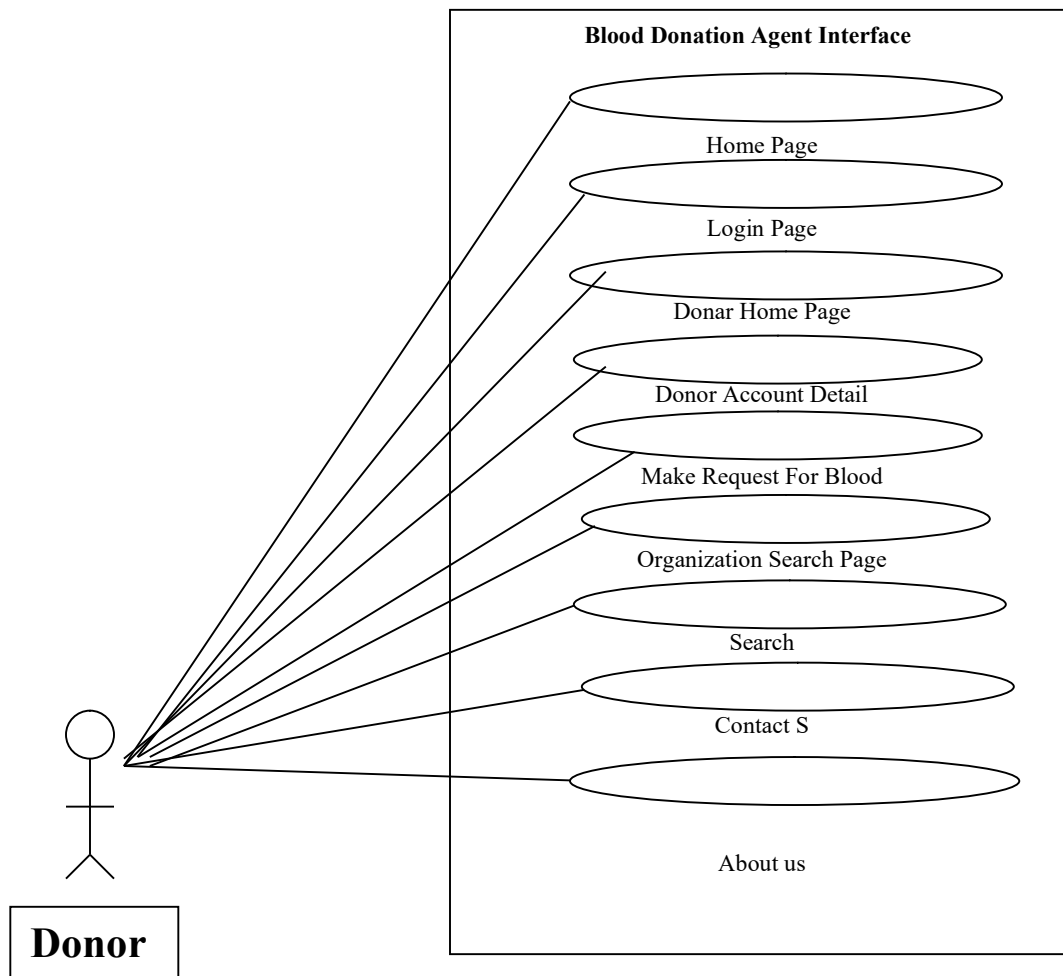


Use Cases of Blood Donation Agent Interface

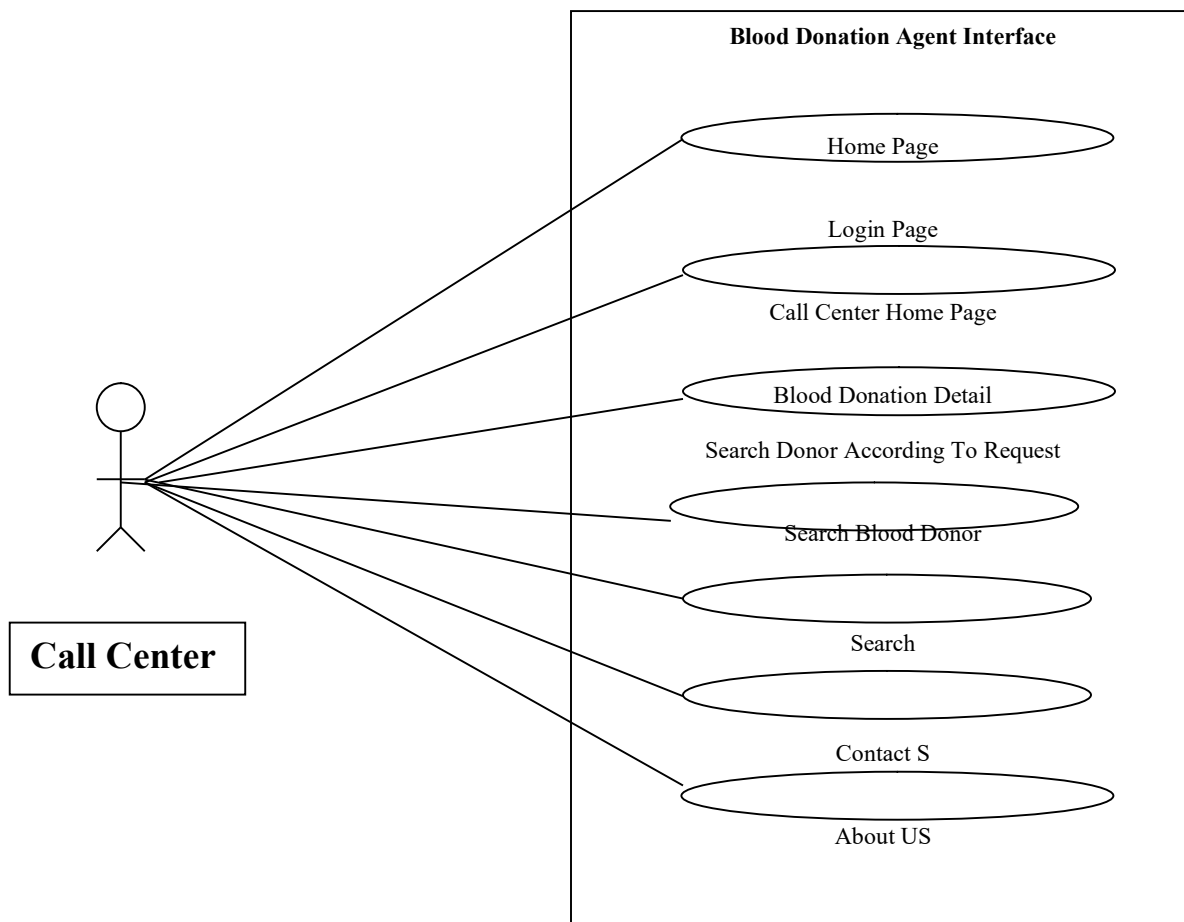
Use case For Admin Module



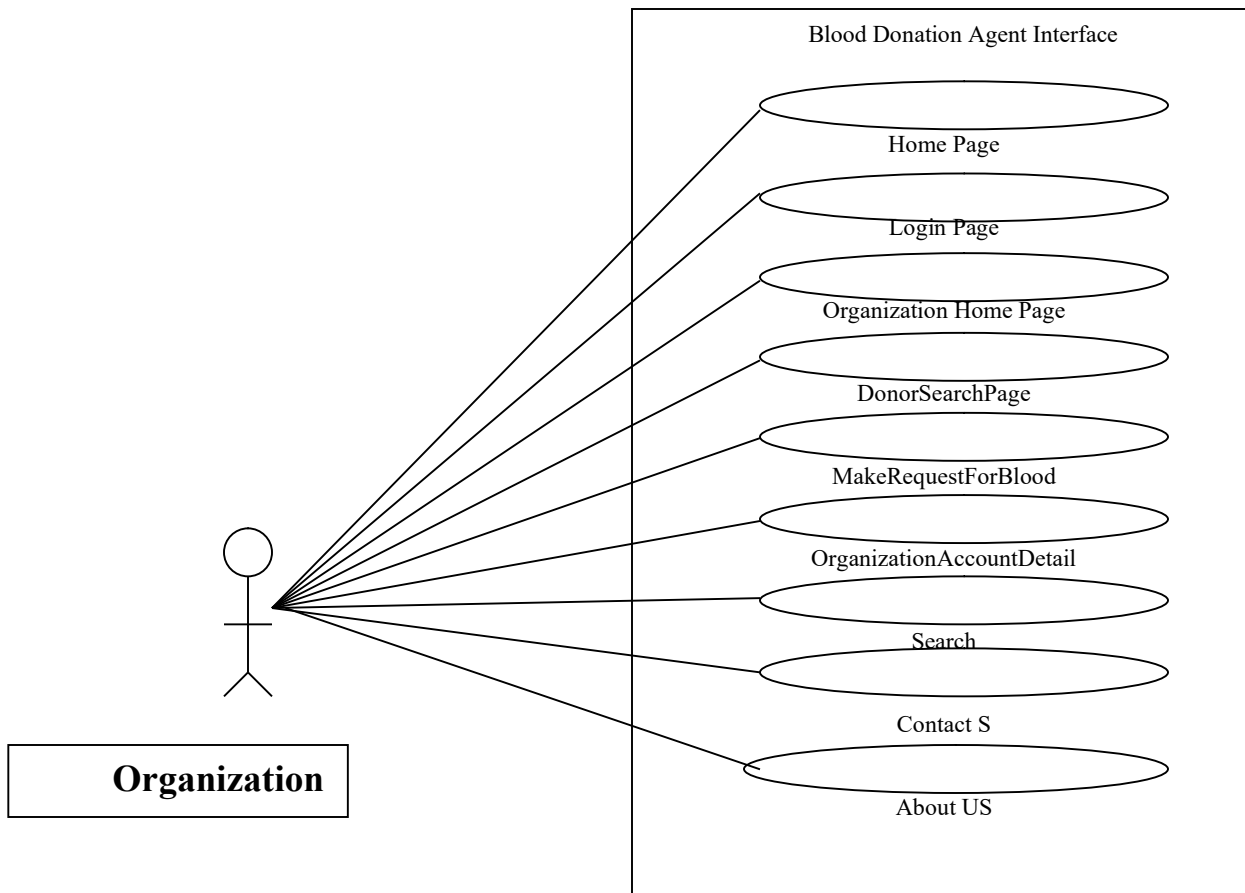
Use case For Donor Module



Use case For Call Center Module



Use case For Organization Module



<i>Use case name</i>	Login
<i>Participating actors</i>	Admin, Donor, Call Center, Organization
<i>Flow of events</i>	The Actor will give the user name and password to the system. The system will verify the authentication.
<i>Entry Condition</i>	The actor will enter the system by using username and password
<i>Exit condition</i>	If un authenticated should be exited
<i>Quality Requirements</i>	Password must satisfy the complexity requirements.

<i>Use case name</i>	Admin Registration
<i>Participating actors</i>	Admin
<i>Flow of events</i>	The Admin will submit all the details and place in the application.
<i>Entry Condition</i>	Must satisfy all the norms given by the Blood Donation Agent interface site.
<i>Exit condition</i>	Successful or Un successful completion of creation of account.
<i>Quality Requirements</i>	All fields are mandatory.

<i>Use case name</i>	Donor Registration
<i>Participating actors</i>	Donor
<i>Flow of events</i>	The Donor must enter all his personal details.
<i>Entry Condition</i>	View Home page

<i>Exit condition</i>	Registered Donor should be successfully logged out. Error Message should be displayed on Un successful creation.
<i>Quality Requirements</i>	Best Error Handling techniques. Check on Mandatory fields.

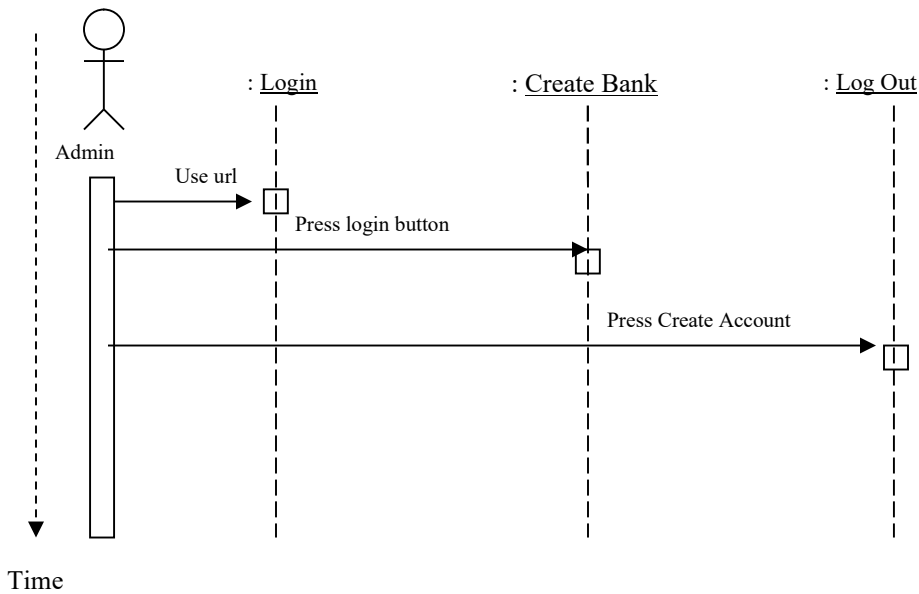
<i>Use case name</i>	Call Center Registration
<i>Participating actors</i>	Call Center
<i>Flow of events</i>	The Call Center must enter all his personal details.
<i>Entry Condition</i>	View Home page
<i>Exit condition</i>	Registered Call Center should be successfully logged out. Error Message should be displayed on Un successful creation.
<i>Quality Requirements</i>	Best Error Handling techniques. Check on Mandatory fields.

<i>Use case name</i>	Organization Registration
<i>Participating actors</i>	Organization
<i>Flow of events</i>	The Organization must enter all his personal details.
<i>Entry Condition</i>	View Home page
<i>Exit condition</i>	Registered Organization should be successfully logged out. Error Message should be displayed on Un successful creation.
<i>Quality Requirements</i>	Best Error Handling techniques. Check on Mandatory fields.

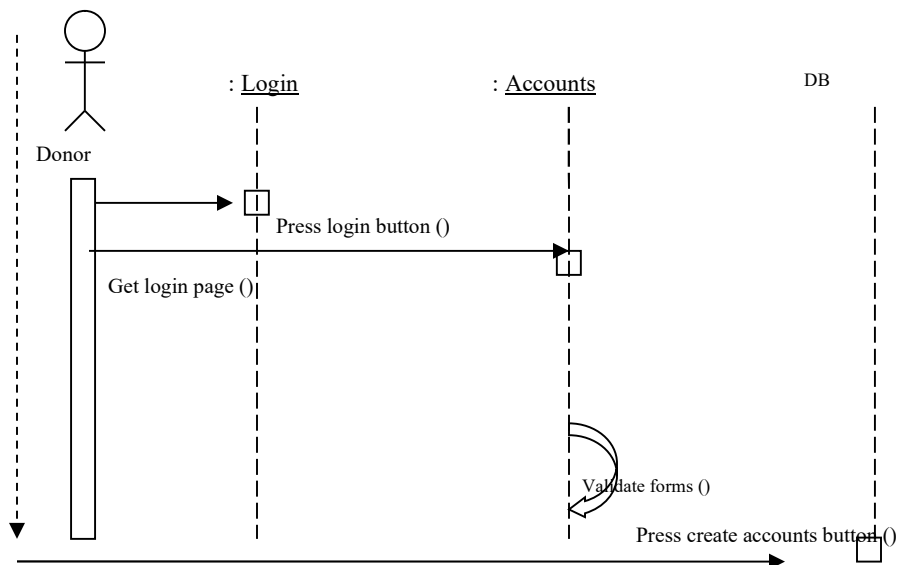
SEQUENCE DIAGRAMS

Sequence Diagrams Represent the objects participating the interaction horizontally and time vertically.

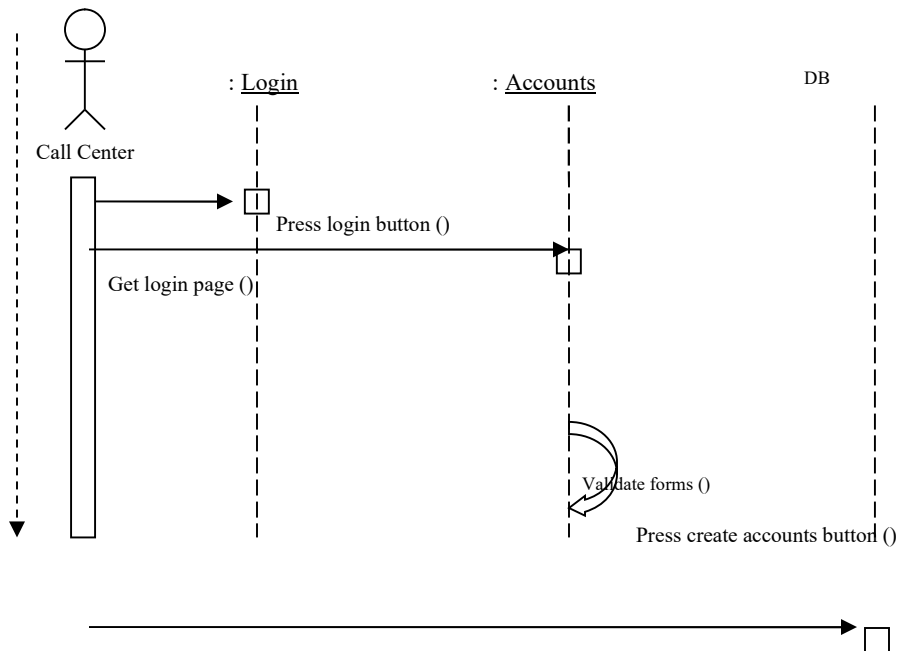
Sequence Diagram for Admin



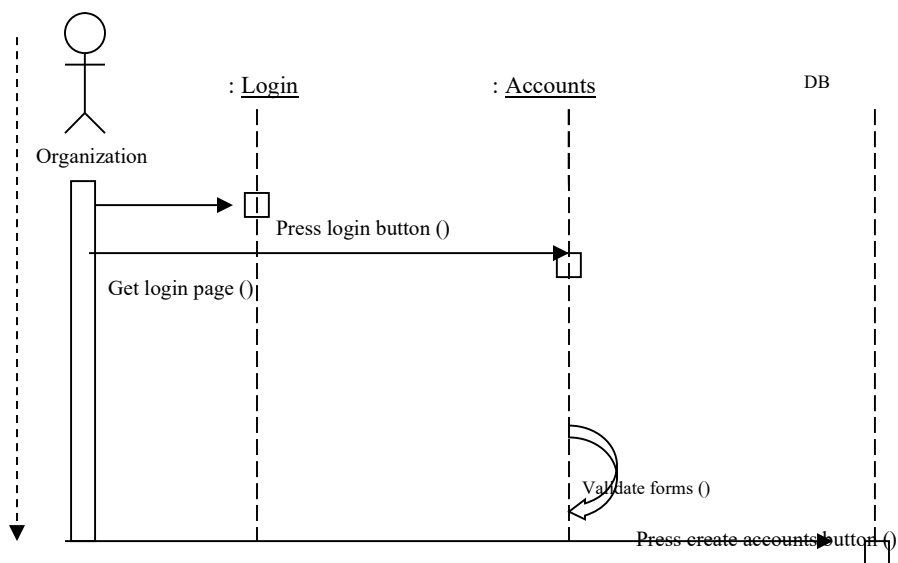
Sequence Diagram for Donor



Sequence Diagram for callcenter



Sequence Diagram for organization



Sequence Diagram 5

5.4. Database Design

Entities with Attributes:

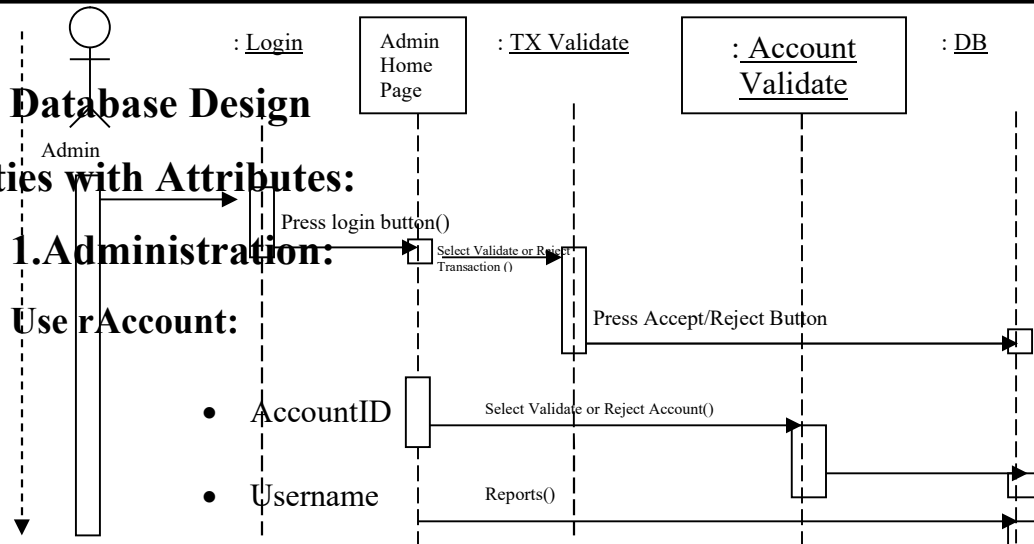
1. Administration:

User Account:

- AccountID
- Username
- Password
- UserDesc
- HintQuestion
- Answer
- RoleID
- Active

User Role:

- RoleID
- RoleName
- RoleDesc
- Active



BDASState:

- StateID
- StateName
- StateCode
- StateDesc
- CountryID
- Active

Country:

- CountryID
- CountryName
- CountryDesc
- CountryCode

BDACity

- CityID
- CityName
- CityDesc
- CityCode
- StateID
- Active

:

BDALocation:

- LocationID
- LocationName
- LocationDesc
- LocationCode
- CityID

BloodGroup:

- Pin code
 - Active
-
- BloodGroupID
 - BloodGroup
 - Description
 - Active

BloodType:

- BloodTypeID
- TypeName
- TypeDesc
- Active

PersonalDetails:

- UserAccountID
- FirstName
- MiddleName
- LastName
- Email
- DOB
- Weight
- Gender
- ImageURL
- BloodGroupID

- BloodType
- BloodType
- AddressID
- ContactNo_Office
- ContactNo_Residence
- MobileNo
- Active

EmployeeDetail:

- EmpId
- Name
- Address
- Phone
- Email
- Active

DonationFrequencies:

- FrequencyID
- Frequency
- Description
- Active

Donor Preferred Organization:

- UserAccountID
- OrganisationID
- Active

Organisation:

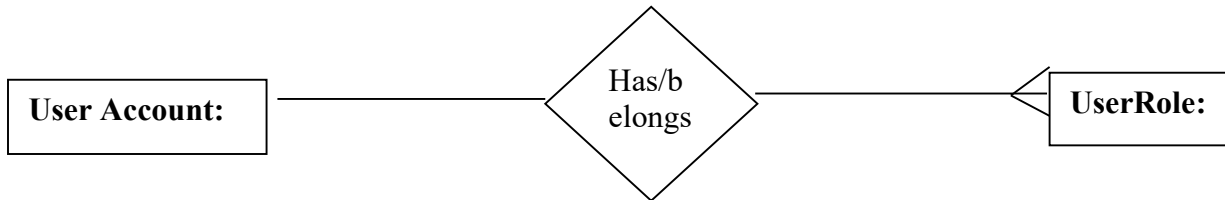
- OrgID
- OrgName
- OrgType
- Email
- OrgAddrID
- OrgImageURL
- OrgDescription
- ContactNo
- MobileNo
- Active
- Comment

OrganisationType:

- TypeID
- TypeName
- TypeDescription
- OrgImage
- Active

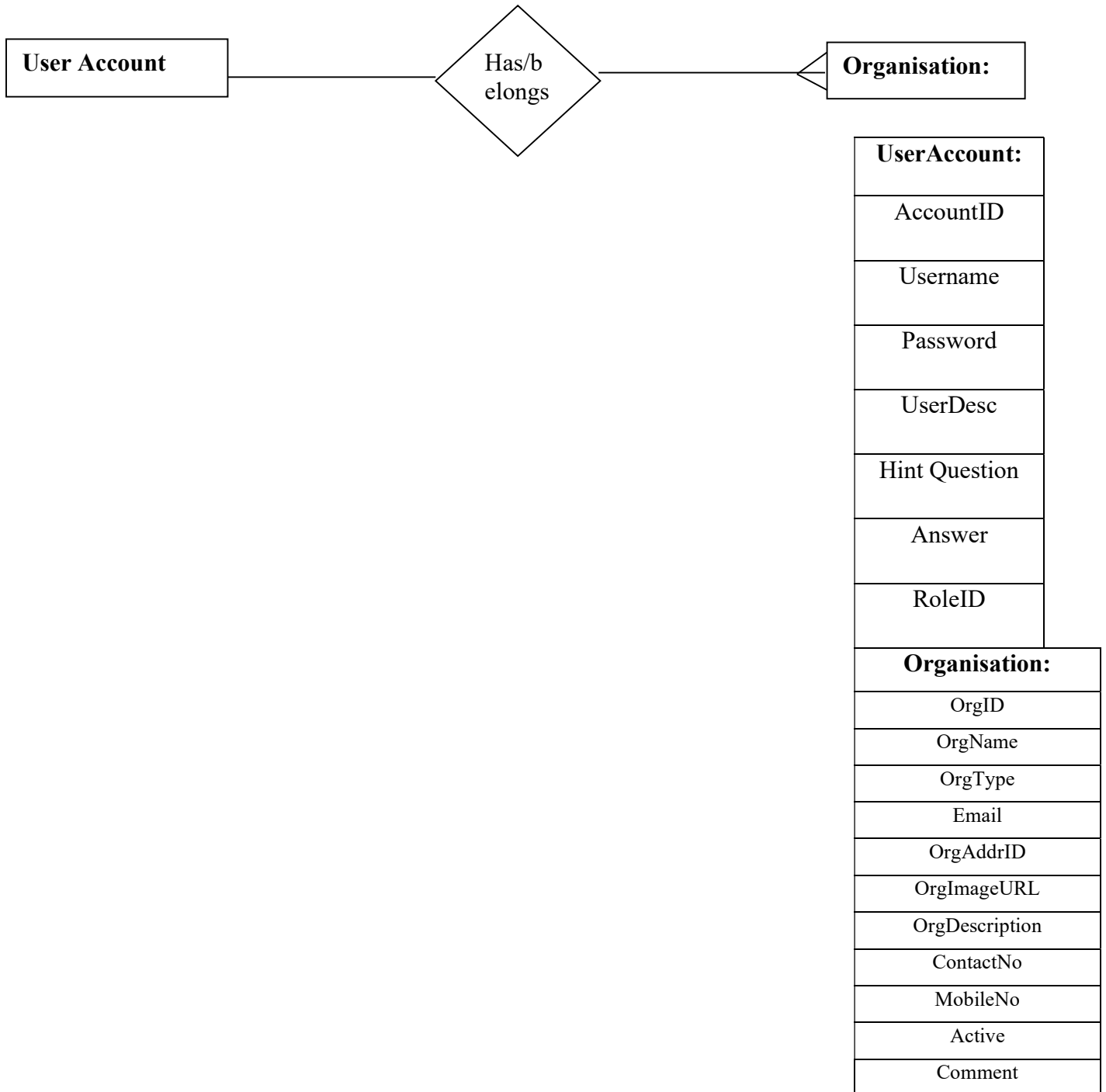
ER Diagrams

ER diagram for User Account and Users

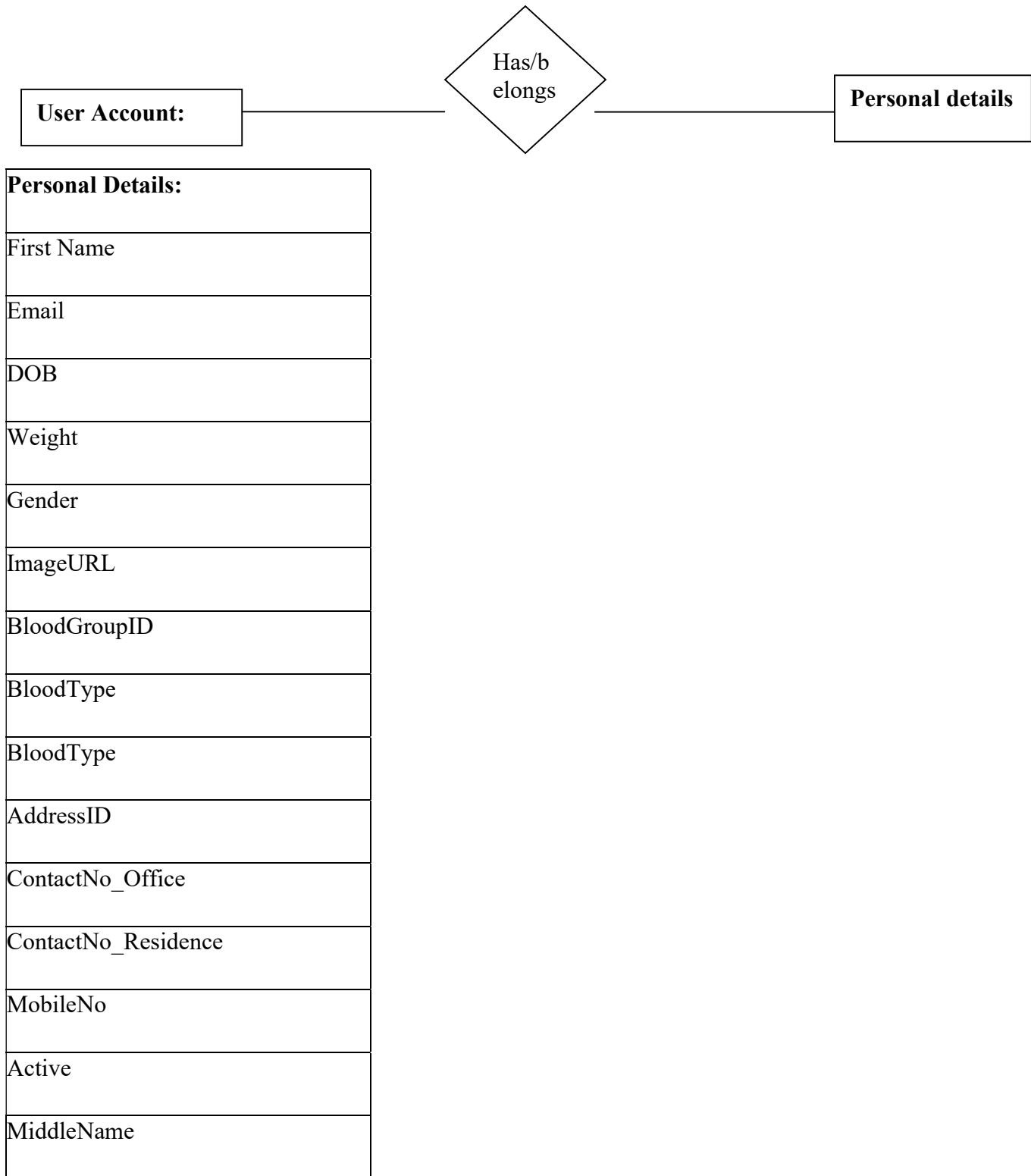


UserRole:	
RoleID	
RoleName	
RoleDesc	
Active	
UserAccount:	
AccountID	
Username	
Password	
UserDesc	
HintQuestion	
Answer	
RoleID	

ER diagram for User Account and Organization

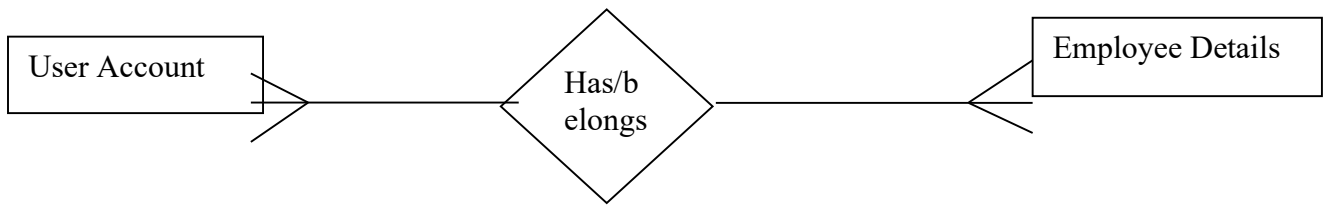


ER diagram for Users Account and Personal Details



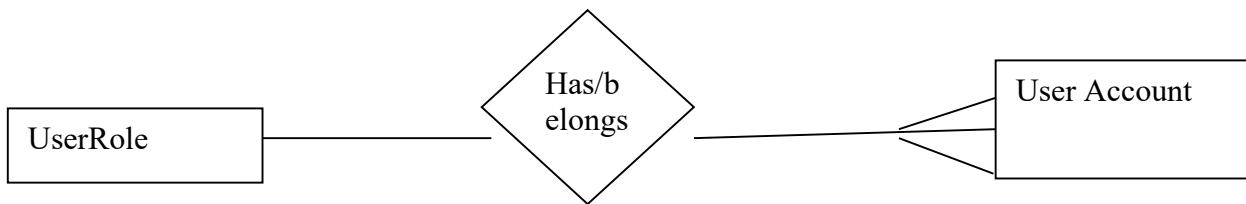
UserAccount:
AccountID
Username
Password
UserDesc
HintQuestion
Answer
RoleID

ER diagram for User Account and Employee Details



Employee Details:	
Emp Id	
Name	
Address	
Phone	
Email	
Active	
User Account:	
AccountID	
Username	
Password	
User Desc	
Hint Question	
Answer	
Role ID	

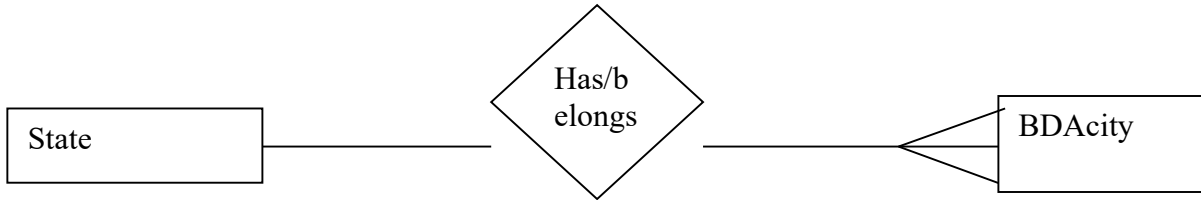
ER diagram for User Role and Blood User account



UserRole:
RoleID
RoleName
RoleDesc
Active

User Account:
AccountID
Username
Password
User Desc
Hint Question
Answer
Role ID

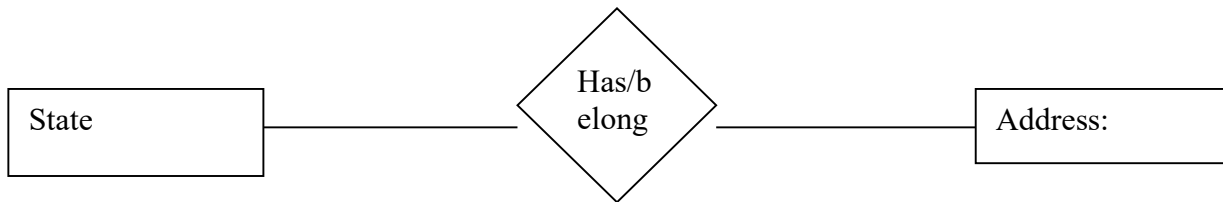
diagram for State and BDA City



BDASState:
StateID
StateName
StateCode
StateDesc
CountryID
Active

BDACity:
CityID
CityName
CityDesc
CityCode
StateID
Active

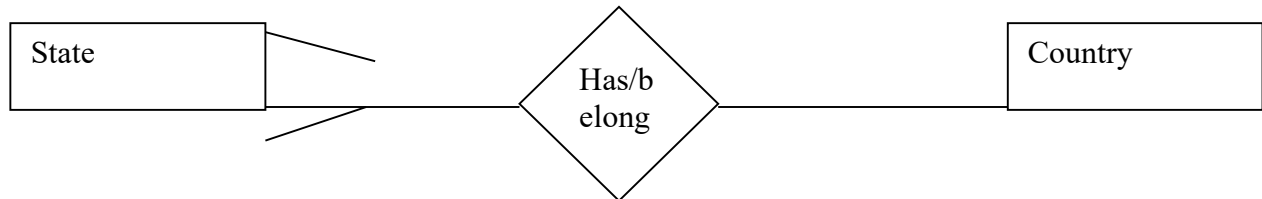
ER diagram for State and Address



BDASState:
StateID
StateName
StateCode
StateDesc
CountryID
Active

dBDA_Address
AddressID
AddressLine1
LocationID
CityID
StateID
CountryID
CountryID
Zipcode
Active

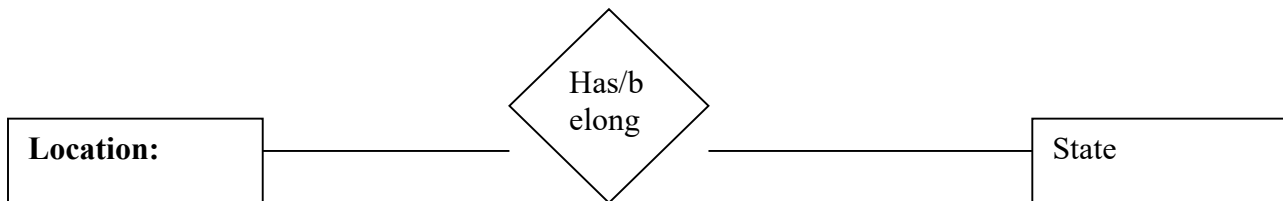
ER diagram for State and Country:



BDASState:
StateID
StateName
StateCode
StateDesc
CountryID
Active

Country:
CountryID
CountryName
CountryDesc
CountryCode
Active

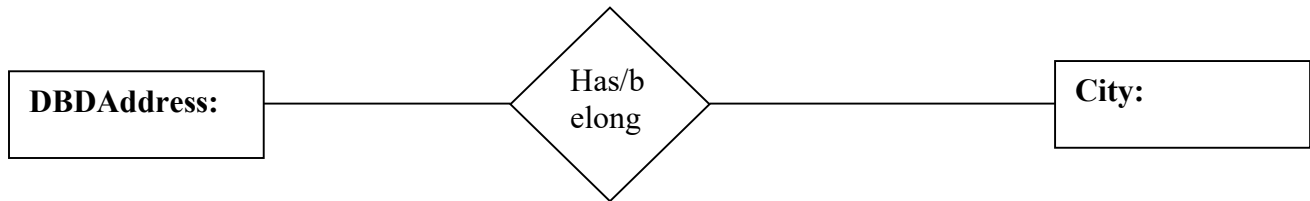
ER diagram for Location and City



BDALocation:
LocationID
LocationName
LocationDesc
LocationCode
CityID
Pin code
Active

BDASState:
StateID
StateName
StateCode
StateDesc
CountryID
Active

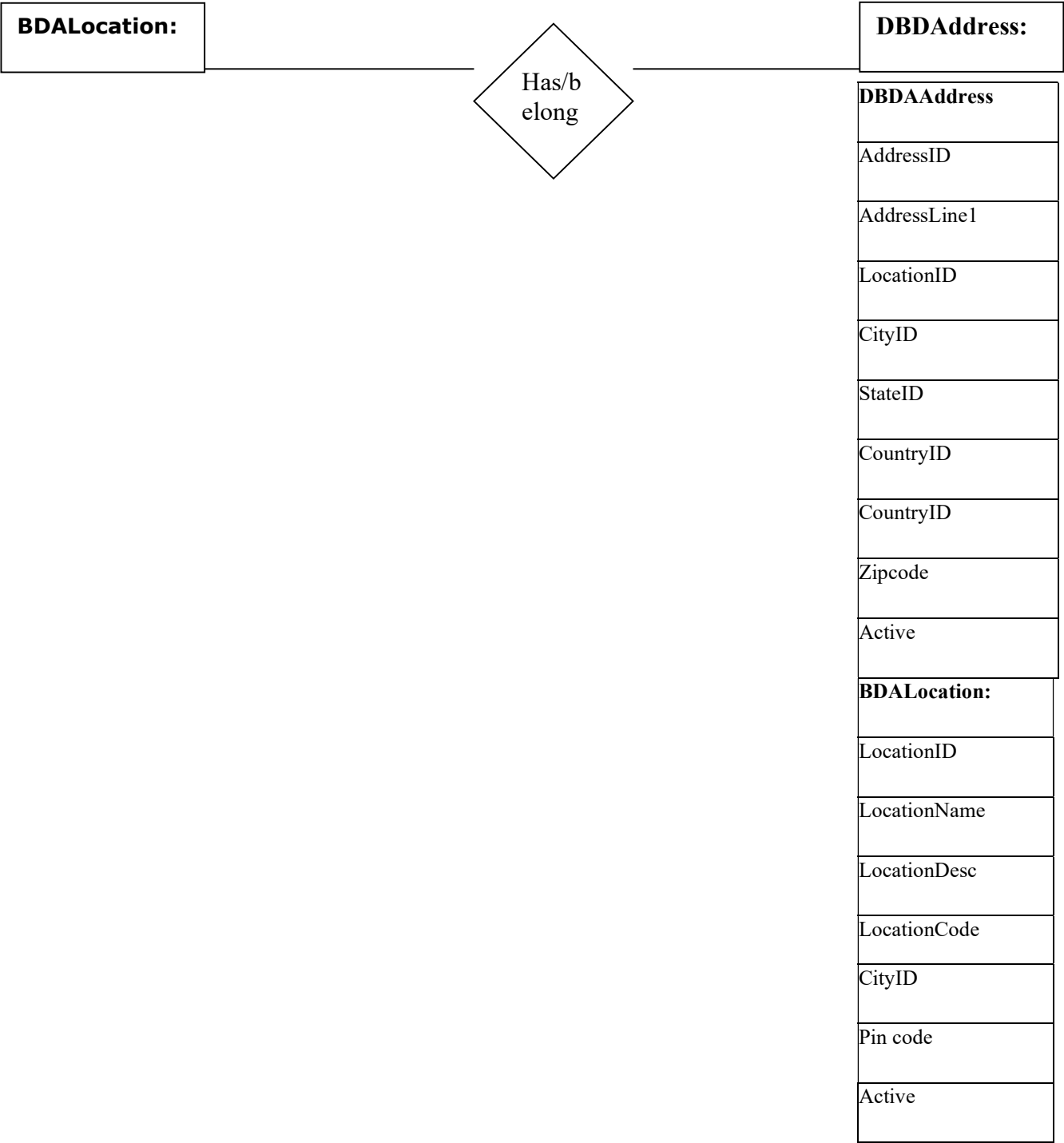
ER diagram for Location and City



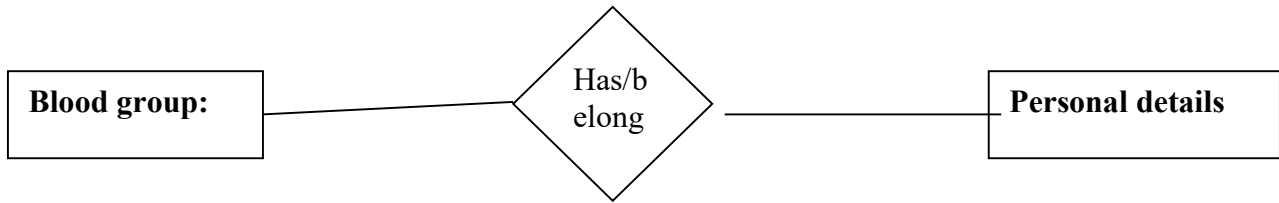
dBDA_Address
AddressID
AddressLine1
LocationID
CityID
StateID
CountryID
CountryID
Zipcode
Active

BDACity:
CityID
CityName
CityDesc
CityCode
StateID
Active

ER diagram for Location and Address



ER diagram for Blood group Personal details

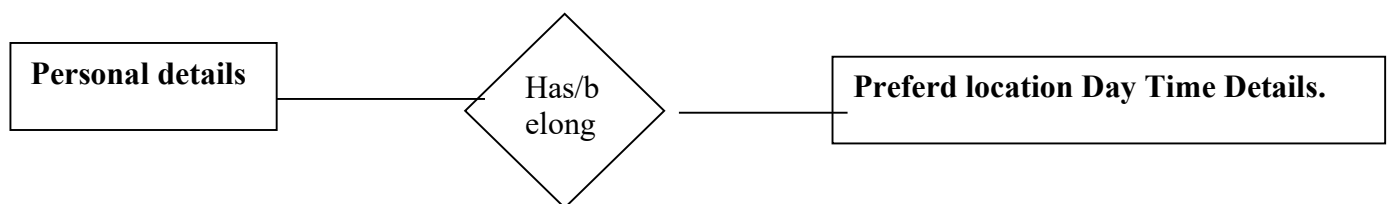


BloodGroup:
BloodGroupID
BloodGroup
Description
Active

Personal details:
UserAccountID
FirstName
MiddleName
LastName
Email
DOB
Weight
Gender
ImageURL
BloodGroupID
BloodType

AddressID
ContactNo_Office
ContactNo_Residence
MobileNo
Active

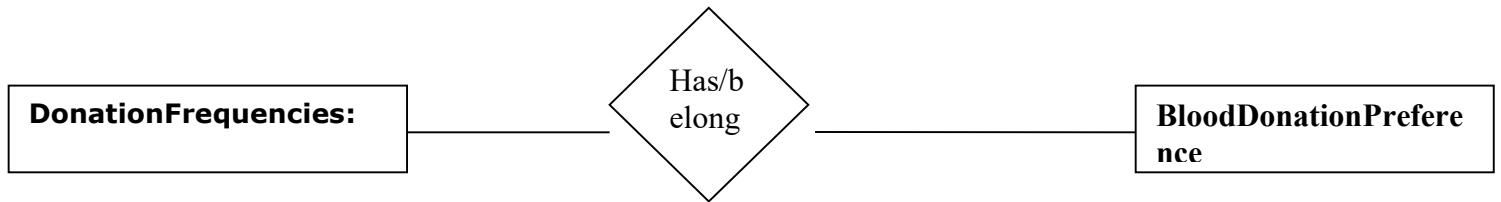
ER diagram for Personal details and Blood Donation preferences



Personal details:
UserAccountID
FirstName
MiddleName
LastName
Email
DOB
Weight
Gender
ImageURL
BloodGroupID
BloodType
AddressID
ContactNo_Office
ContactNo_Residence
MobileNo
Active

PreferredDonationDayTime
DonorPreferenceID
WeekDay
TimeFrom
TimeFrom
TimeUpto
UserAccountID
Comment
Active

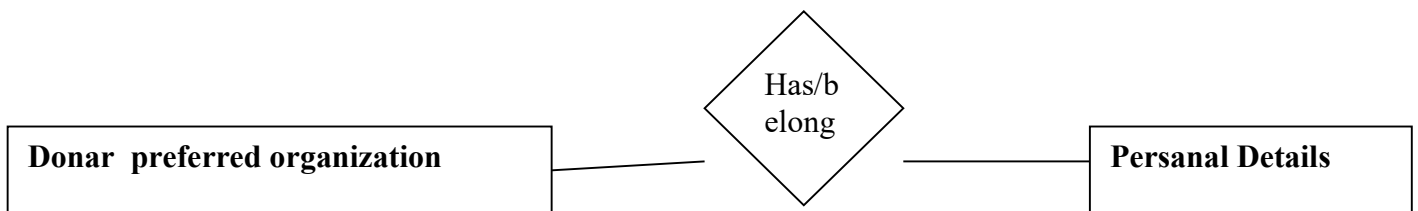
ER diagram for Donor Frequencies and Blood Donation Preferences



DonationFrequencies:
FrequencyID
Frequency
Description
Active

BloodDonationPreference:
PreferenceID
UserAccountID
DonationFrequencyID
WantToDonateWhitecells
Active

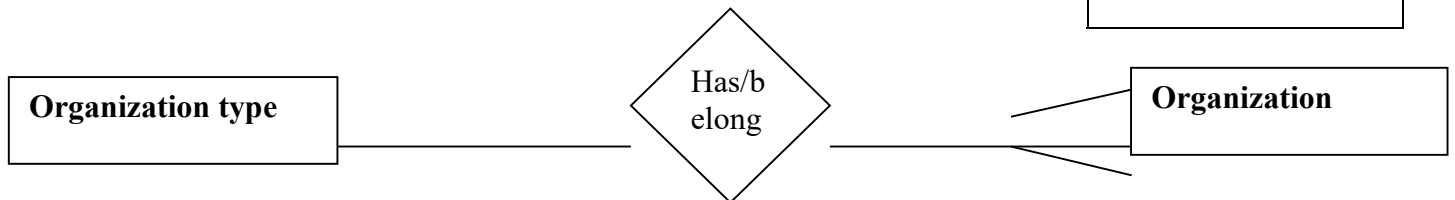
ER diagram for Donor preferred organization and personal details



DonorPreferredOrganisation:
UserAccountID
OrganisationID
Active

Personal details:
UserAccountID
FirstName
MiddleName
LastName
Email
DOB
Weight
Gender
ImageURL
BloodGroupID
BloodType
AddressID

ER diagram for Organization type and Organization .



ContactNo_Office
ContactNo_Residence
MobileNo
Active

OrganisationType:
TypeID
TypeName
TypeDescription
OrgImage
Active
Organisation:
OrgID
OrgName
OrgType
Email
OrgAddrID
OrgImageURL
OrgDescription
ContactNo
MobileNo
Active
Comment

5.5. Database Tables

1.Entities

- BDA_BloodDonationDetails
- BDA_BloodDonationPreference
- BDA_BloodGroup
- BDA_BloodRequest
- BDA_BloodType
- BDA_City
- BDA_Country
- BDA_DonationFrequencies
- BDA_DonorPreferredOrganisation
- BDA_EmployeeDetail
- BDA_FAQ
- BDA_Location
- BDA_Organisation
- BDA_OrganisationType
- BDA_PersonalDetails
- BDA_PREFERREDDonationDayTime
- BDA_State
- BDA_UserAccount
- BDA_UserRole

2.Entities with Attributes

1. BDA_Address
 - AddressID
 - AddressLine1
 - LocationID
 - CityID

- StateID
- CountryID
- Zipcode
- Active

2. BDA_BloodDonationDetails

- ID
- DonorID
- DonationDate
- TakerID
- OrgID
- Quantity
- Comment
- Active

3. BDA_BloodDonationPreference

- PreferenceID
- UserAccountID
- DonationFrequencyID
- WantToDonateWhitecells
- Active

4. BDA_BloodRequest

- RequestID
- DonorId
- OrgId
- Name
- Email
- Phone
- Country
- State
- City
- Location

- BloodRequireAddress
 - BloodType
 - BloodGroup
 - AppDate
 - ReqDate
 - Status
 - RequestType
5. BDA_BloodGroup
- BloodGroupID
 - BloodGroup
 - Description
 - Active
6. BDA_BloodType
- BloodTypeID
 - TypeName
 - TypeDesc
 - Active
7. BDA_City
- CityID
 - CityName
 - CityDesc
 - CityCode
 - StateID
 - Active
8. BDA_Country
- CountryID
 - CountryName
 - CountryDesc
 - CountryCode
 - Active

9. BDA_DonationFrequencies

- FrequencyID
- Frequency
- Description
- Active

10. BDA_DonorPreferredOrganisation

- UserAccountID
- OrganisationID
- Active

11. BDA_EmployeeDetail

- EmpId
- Name
- Address
- Phone
- Email
- Active

12. BDA_FAQ

- FaqID
- Question
- Answer
- Active

13. BDA_Location

- LocationID
- LocationName
- LocationDesc
- LocationCode
- CityID
- Pincode

- Active

14. BDA_Organisation

- OrgID
- OrgName
- OrgType
- Email
- OrgAddrID
- OrgImageURL
- OrgDescription
- ContactNo
- MobileNo
- Active
- Comment

15. BDA_OrganisationType

- TypeID
- TypeName
- TypeDescription
- OrgImage
- Active

16. BDA_PersonalDetails

- UserAccountID
- FirstName
- MiddleName
- LastName
- Email
- DOB
- Weight
- Gender
- ImageURL

- BloodGroupID
- BloodType
- AddressID
- ContactNo_Office
- ContactNo_Residence
- MobileNo
- Active

17. BDA_PREFERREDDonationDayTime

- DonorPreferenceID
- WeekDay
- TimeFrom
- TimeUpto
- UserAccountID
- Comment
- Active

18. BDA_State

- StateID
- StateName
- StateCode
- StateDesc
- CountryID
- Active

19. BDA_UserAccount

- AccountID
- Username
- Password
- UserDesc
- HintQuestion
- Answer
- RoleID

- Active

2.Data Dictionary

BDA_ Address

Sno	Column name	Data type	Constraint	reference
1	AddressID	Bigint	Primary Key	
2	AddressLine1	varchar(512)	Not null	
3	LocationID	Bigint	Foreign key	BDA_Location
4	CityID	Bigint	Foreign key	BDA_City
5	StateID	Bigint	Foreign key	BDA_state
6	CountryID	Bigint	Allow Null	BDA_Country
7	Zipcode	varchar(10)	Allow Null	
8	Active	Bit	Not Null	

BDA_BloodDonationDetails

Sno	Column name	Datatype	Constraint	reference
1	ID	Bigint	Primary Key	
2	DonorID	Bigint	Foreign key	BDA_BloodRequest
3	DonationDate	Datetime	Notnull	
4	TakerID	Bigint	Foreign key	BDA_UserAccount
5	OrgID	Bigint	Foreign key	Bda_Organisation
6	Quantity	varchar(10)	Allow Null	
7	Comment	varchar(1024)	Allow Null	
8	Active	Bit	Notnull	

BDA_BloodDonationPreference

Sno	Columnname	Datatype	Constraint	Reference
1	PreferenceID	bigint	Primary key	
2	UserAccountID	bigint	Foreign key	BDA_UserAccount
3	DonationFrequencyID	tinyint	Foreign key	BDA_Donation Frequencies
4	WantToDonateWhitecells	bit	AllowNull	
5	Active	bit	AllowNull	

BDA_BloodGroup

Sno	Columnname	Datatype	Constraint	reference
1	BloodGroupID	tinyint	Primary Key	
2	BloodGroup	varchar(10)	Not Null	
3	Description	varchar(1024)	Allow Null	
4	Active	bit	Not Null	

BDA_BloodRequest

Sno	Columnname	Datatype	Constraint	Reference
1	RequestID	int	Primary Key	
2	DonorId	bigint	Foreign key	BDA_UserAccount
3	OrgId	bigint	Foreign key	BDA_Organisation
4	Name	varchar(50)	Allow Null	
5	Email	varchar(50)	Allow Null	
6	Phone	varchar(20)	Allow Null	

7	Country	varchar(50)	Allow Null	
8	State	varchar(50)	Allow Null	
9	City	varchar(50)	Allow Null	
10	Location	varchar(50)	Allow Null	
11	BloodRequireAddress	varchar(100)	Allow Null	
12	BloodType	varchar(50)	Allow Null	
13	BloodGroup	varchar(50)	Allow Null	
14	AppDate	datetime	Allow Null	
15	ReqDate	datetime	Allow Null	
16	Status	varchar(10)	Allow Null	
17	RequestType	varchar(50)	Allow Null	

BDA_City

Sno	Columnname	Datatype	Constraint	Reference
1	CityID	bigint	Primary key	
2	CityName	varchar(100)	Not null	
3	CityDesc	varchar(1024)	allownull	
4	CityCode	varchar(5)	Allownull	
5	StateID	bigint	Foreign key	BDA_State
6	Active	bit	notnull	

BDA_BloodType

Sno	Columnnames	Datatypes	Constraint	reference
1	BloodTypeID	tinyint	Primary Key	
2	TypeName	varchar(50)	Not null	
3	TypeDesc	varchar(1024)	AllowNull	
4	Active	bit	Notnull	

BDA_Country

Sno	Columnname	Datatype	Constraint	Reference
1	CountryID	bigint	Primary key	
2	CountryName	varchar(100)	Not null	
3	CountryDesc	varchar(1024)	Allow Null	
4	CountryCode	varchar(5)	Allow Null	
5	Active	bit	Not null	

BDA_DonationFrequencies

Sno	Columnname	Datatype	Constraint	Reference
1	FrequencyID	tinyint	Primary key	
2	Frequency	varchar(50)	Not null	
3	Description	varchar(255)	Allow null	
4	Active	bit	Allow null	

BDA_DonorPreferredOrganisation

Sno	Columnname	Datatype	Constraint	Reference
1	UserAccountID	bigint	Primary key	
2	OrganisationID	bigint	Not null	
3	Active	bit	Allow null	

BDA_EmployeeDetail

Sno	Columnname	Datatype	Constraint	reference

1	EmpId	bigint	Primary Key	
2	Name	varchar(60)	Allow Null	
3	Address	varchar(150)	Allow Null	
4	Phone	varchar(20)	Allow Null	
5	Email	varchar(25)	Allow Null	
6	Active	tinyint	Allow Null	

BDA_FAQ

Sno	Columnname	Datatype	Constraint	reference
1	FaqID	bigint	Primary key	
2	Question	varchar(300)	Allow null	
3	Answer	varchar(1000)	Allow null	
4	Active	bit	Allow null	

BDA_Location

Sno	Columnname	Datatype	Constraints	reference
1	LocationID	bigint	Primary Key	
2	LocationName	varchar(100)	Not Null	
3	LocationDesc	varchar(1024)	Allow null	
4	LocationCode	varchar(5)	Allow null	
5	CityID	bigint	Allow null	
6	Pincode	varchar(10)	Allow null	
7	Active	bit	Allow null	

BDA_Organisation

Sno	Columnname	Datatype	Constraint	reference
1	OrgID	bigint	Primary key	
2	OrgName	varchar(100)	Not null	
3	OrgType	tinyint	Foreign key	BDA_Organisation Type
4	Email	varchar(50)	Allownull	
5	OrgAddrID	bigint	Foreign key	BDA_Address
6	OrgImageURL	varchar(155)	Allownull	
7	OrgDescription	varchar(1024)	Allownull	
8	ContactNo	varchar(20)	Allownull	
9	MobileNo	varchar(20)	Allownull	
10	Active	bit	Allownull	
11	Comment	varchar(512)	Allownull	

BDA_OrganisationType

Sno	Columnname	Datatype	Constraint	Reference
1	TypeID	tinyint	Primary key	
2	TypeName	varchar(50)	Not null	
3	TypeDescription	varchar(50)	Allow null	
4	OrgImage	varchar(300)	Allow null	
5	Active	bit	Allow null	

BDA_PreferredDonationDayTime

Sno	Columnnames	Datattype	Constarint	Reference
1	DonorPreferenceID	bigint	Primary Key	
2	WeekDay	varchar(10)	Not null	
3	TimeFrom	varchar(10)	Allow null	
4	TimeUpto	varchar(10)	Allow null	
5	UserAccountID	bigint	Allow null	
6	Comment	varchar(1024)	Allow null	

7	Active	bit	Not null	
8				

BDA_PersonalDetails

Sno	Columnname	Datatype	Constraint	Reference
1	UserAccountID	bigint	Primary Key	
2	FirstName	varchar(50)	Not Null	
3	MiddleName	varchar(50)	Allow Null	
4	LastName	varchar(50)	Allow Null	
5	Email	varchar(100)	Allow Null	
6	DOB	datetime	Notnull	
7	Weight	float	Allow Null	
8	Gender	varchar(6)	Not Null	
9	ImageURL	varchar(155)	Allow Null	
10	BloodGroupID	tinyint	Foreign key	BDA_Bloodgroup
11	BloodType	tinyint	Foreign key	BDA_BloodType
12	AddressID	bigint	Foreign key	BDA_Address
13	ContactNo_Office	varchar(20)	Allow Null	
14	ContactNo_Residence	varchar(20)	Allow Null	
15	MobileNo	varchar(20)	Not Null	
16	Active	bit	Allow Null	

BDA_UserRole

Sno	Columnname	Datatype	Constraint	Reference
1	RoleID	tinyint	Primary key	
2	RoleName	varchar(50)	Not null	
3	RoleDesc	varchar(1024)	Allow null	
4	Active	bit	Not null	

BDA_State

Sno	Columnname	Datatype	Constraint	Reference
1	StateID	bigint	Primary key	
2	StateName	varchar(100)	Not null	
3	StateCode	varchar(5)	Allow null	
4	StateDesc	varchar(1024)	Allow null	
5	CountryID	bigint	Foreign Key	BDA_Country
6	Active	bit	Not null	

BDA_UserAccount

Sno	Columnname	Datatype	Constraint	Reference
1	AccountID	bigint	Primary key	
2	Username	varchar(100)	Not null	
3	Password	varchar(100)	Not null	
4	UserDesc	varchar(1024)	Allow null	
5	HintQuestion	varchar(155)	Allow null	
6	Answer	varchar(155)	Allow null	
7	RoleID	tinyint	Foreign key	BDA_UserRole
8	Active	bit	Not null	

Software Development Environment

6.1. Introduction Angular Framework

Angular (commonly referred to as "Angular 2+" or "Angular CLI")[4][5] is a TypeScript-based free and open-source web application framework led by the Angular Team at Google and by a community of individuals and corporations. Angular is a complete rewrite from the same team that built AngularJS.

Angular is used as the frontend of the MEAN stack, consisting of MongoDB database, Express.js web application server framework, Angular itself (or AngularJS), and Node.js server runtime environment.

Google designed Angular as a ground-up rewrite of AngularJS.

Angular does not have a concept of "scope" or controllers; instead, it uses a hierarchy of components as its primary architectural characteristic.[6]

Angular has a different expression syntax, focusing on "[]" for property binding, and "()" for event binding[7]

Modularity – much core functionality has moved to modules

Angular recommends the use of Microsoft's TypeScript language, which introduces the following features:

Static typing, including Generics

Annotations

TypeScript is a superset of ECMAScript 6 (ES6), and is backwards compatible with ECMAScript 5 (i.e.: JavaScript).

Dynamic loading

Asynchronous template compilations

Iterative callbacks provided by RxJS.

Support for Angular Universal, which runs Angular applications on servers.

NestJS Framework

Introduction

Nest (NestJS) is a framework for building efficient, scalable Node.js server-side applications. It uses progressive JavaScript, is built with and fully supports TypeScript (yet still enables developers to code in pure JavaScript) and combines elements of OOP (Object Oriented Programming), FP (Functional Programming), and FRP (Functional Reactive Programming).

Under the hood, Nest makes use of robust HTTP Server frameworks like Express (the default) and optionally can be configured to use Fastify as well!

Nest provides a level of abstraction above these common Node.js frameworks (Express/Fastify), but also exposes their APIs directly to the developer. This gives developers the freedom to use the myriad of third-party modules which are available for the underlying platform.

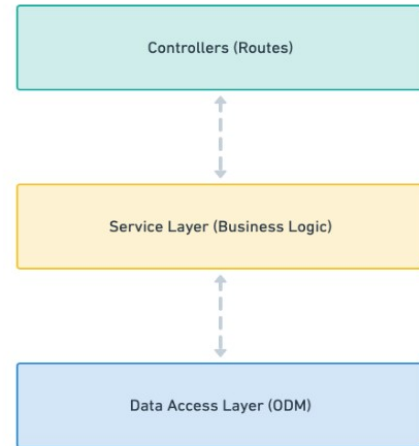
Nest.js — Architectural Pattern

It's based on three tier architecture

1. **Controllers:** A controller's sole purpose is to receive requests for the application and deal with routes.

2. **Service Layer:** This part of the block should only include business logic. For example, all the **CRUD operations and methods to determine** how data can be created, stored and updated.

3. **Data Access Layer:** This layer takes care and provides logic to access data stored in persistent storage of some kind. For example an ODM like Mongoose.



CLIENT APPLICATION DEVELOPMENT

SQL SERVER

A database management, or DBMS, gives the user access to their data and helps them transform the data into information. Such database management systems include dBase, paradox,

IMS, SQL Server and SQL Server. These systems allow users to create, update and extract information from their database.

A database is a structured collection of data. Data refers to the characteristics of people, things and events. SQL Server stores each data item in its own fields. In SQL Server, the fields relating to a particular person, thing or event are bundled together to form a single complete unit of data, called a record (it can also be referred to as raw or an occurrence). Each record is made up of a number of fields. No two fields in a record can have the same field name.

During an SQL Server Database design project, the analysis of your business needs identifies all the fields or attributes of interest. If your business needs change over time, you define any additional fields or change the definition of existing fields.

SQL Server Tables

SQL Server stores records relating to each other in a table. Different tables are created for the various groups of information. Related tables are grouped together to form a database.

Primary Key

Every table in SQL Server has a field or a combination of fields that uniquely identifies each record in the table. The Unique identifier is called the Primary Key, or simply the Key. The primary key provides the means to distinguish one record from all other in a table. It allows the user and the database system to identify, locate and refer to one particular record in the database.

Relational Database

Sometimes all the information of interest to a business operation can be stored in one table. SQL Server makes it very easy to link the data in multiple tables. Matching an employee to the department in which they work is one example. This is what makes SQL Server a relational database management system, or RDBMS. It stores data in two or more tables and enables you to define relationships between the table and enables you to define relationships between the tables.

Foreign Key

When a field in one table matches the primary key of another field is referred to as a foreign key. A foreign key is a field or a group of fields in one table whose values match those of the primary key of another table.

Referential Integrity

Not only does SQL Server allow you to link multiple tables, it also maintains consistency between them. Ensuring that the data among related tables is correctly matched is referred to as maintaining referential integrity.

CODING

WEBCONFIG FILE:(Design Code)

Used to set the connections of each page.

```
<?xml version="1.0"?>
<!--
    Note: As an alternative to hand editing this file you can
    use the
    web admin tool to configure settings for your application.
    Use
    the Website->ASP.NET Configuration option in Visual Studio.
    A full list of settings and comments can be found in
    machine.config.comments usually located in
    \Windows\Microsoft.Net\Framework\v2.0.50727\Config
-->
<configuration>
  <appSettings>
    <add key="ConnStr" value="data source=RAMYA-
2DCA5B123;database=BloodBequeathFederalAgent;integrated
security=sspi"/>
  </appSettings>
  <connectionStrings>
    <add name="BloodDonationAgentConnectionString"
connectionString="Data Source=RAMYA-2DCA5B123;Initial
Catalog=BloodDonationAgent;integrated security=sspi"
providerName="System.Data.SqlClient" />
  </connectionStrings>
  <system.web>
    <!--
      Set compilation debug="true" to insert debugging
      symbols into the compiled page. Because this
      affects performance, set this value to true only
      during development.
    -->
  </system.web>
</configuration>
```

```

-->
    <compilation debug="true">
        <assemblies>
            <add assembly="System.Design,
Version=2.0.0.0, Culture=neutral,
PublicKeyToken=B03F5F7F11D50A3A"/>
            <add assembly="System.Web.Extensions,
Version=1.0.61025.0, Culture=neutral,
PublicKeyToken=31BF3856AD364E35"/>
            <add assembly="System.Web.Extensions.Design,
Version=1.0.61025.0, Culture=neutral,
PublicKeyToken=31BF3856AD364E35"/>
            <add assembly="System.Windows.Forms,
Version=2.0.0.0, Culture=neutral,
PublicKeyToken=B77A5C561934E089"/></assemblies></compilation>
    <!--
        The <authentication> section enables configuration
        of the security authentication mode used by
        ASP.NET to identify an incoming user.
    -->
    <authentication mode="Windows"/>
    <!--
        The <customErrors> section enables configuration
        of what to do if/when an unhandled error occurs
        during the execution of a request. Specifically,
        it enables developers to configure html error pages
        to be displayed in place of a error stack trace.

        <customErrors mode="RemoteOnly"
defaultRedirect="GenericErrorPage.htm">
            <error statusCode="403" redirect="NoAccess.htm" />
            <error statusCode="404" redirect="FileNotFound.htm"
/>
        </customErrors>
    -->
</system.web>
</configuration>

```

User Login Form

```

using System;
using System.Data;
using System.Configuration;
using System.Collections;
using System.Web;
using System.Web.Security;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;

```

```

using System.Web.UI.HtmlControls;
public partial class Login : System.Web.UI.Page
{
    CheckUser user = new CheckUser();
    UserAccountBusinessLayer account = new UserAccountBusinessLayer();
    OrganizationAccountBusinessLayer org = new
OrganizationAccountBusinessLayer();
    protected void Page_Load(object sender, EventArgs e)
    {
        txtUsername.Focus();
    }

    protected void btnLogin_Click(object sender, EventArgs e)
    {
        try
        {
            user.Username = txtUsername.Text;
            user.Password = txtPassword.Text;
            //Check User

            if (user.GetUser() == true)
            {
                account.Username = txtUsername.Text;
                DataSet ds = new DataSet();
                ds = account.GetAccountId();
                string AcId = ds.Tables[0].Rows[0][0].ToString();
                Session["username"] = txtUsername.Text;
                Session["Acid"] = AcId;
                DataSet ds1 = new DataSet();
                account.Accountid =int.Parse(AcId);
                ds1 = account.GetAddressId();
                Session["addid"] = ds1.Tables[0].Rows[0][0].ToString();
                Response.Redirect("~/Donor/DonorHome.aspx");
            }
            else
            {
                Image2.Visible = true;
                lblMsg.Text = "Your Login Attempt Is Failed Plz try Again....!";
                txtPassword.Text = "";
                txtUsername.Focus();
                //Checking Organization
                if (user.GetOrganization() == true)
                {
                    account.Username = txtUsername.Text;
                    DataSet ds = new DataSet();
                    ds = account.GetAccountId();
                    string AcId = ds.Tables[0].Rows[0][0].ToString();
                    Session["username"] = txtUsername.Text;
                    Session["Acid"] = AcId;
                    DataSet ds1 = new DataSet();
                    org.Orgid =int.Parse(AcId);
                    ds1 = org.GetOrgAddressId();
                    Session["addid"] = ds1.Tables[0].Rows[0][0].ToString();
                    Response.Redirect("~/Organization/OrganizationHome.aspx");
                }
                else
                {
                    Image2.Visible = true;
                    lblMsg.Text = "Your Login Attempt Is Failed Plz try Again....!";
                }
            }
        }
    }
}

```

```

txtPassword.Text = "";
txtUsername.Focus();
//Employee Checking
if (user.CheckEmployee() == true)
{
    account.Username = txtUsername.Text;
    DataSet ds = new DataSet();
    ds = account.GetAccountId();
    string AcId = ds.Tables[0].Rows[0][0].ToString();
    Session["username"] = txtUsername.Text;
    Session["Acid"] = AcId;
    Response.Redirect("~/CallCenter/CallCenterHome.aspx");
}
}
}

```

Testing

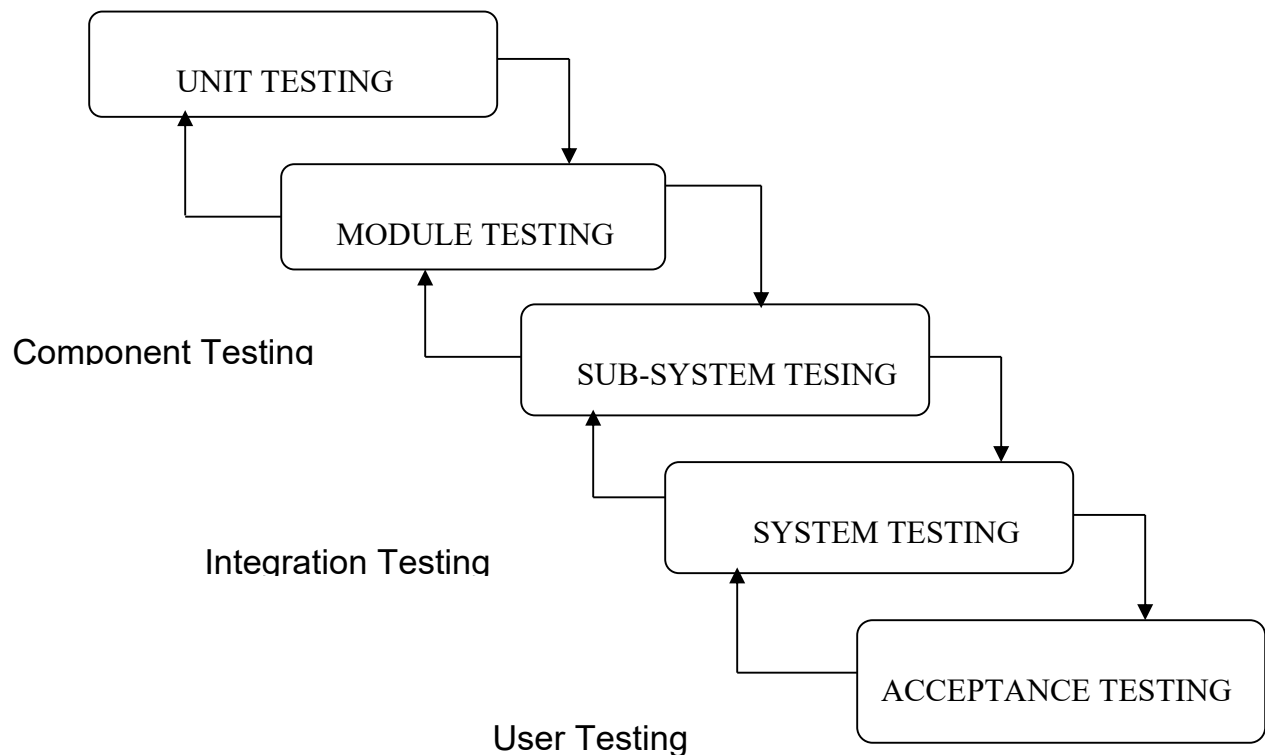
7.1. INTRODUCTION

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. In fact, testing is the one step in the software engineering process that could be viewed as destructive rather than constructive.

A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software. Testing is the set of activities that can be planned in advance and conducted systematically. The underlying motivation of program testing is to affirm software quality with methods that can economically and effectively apply to both strategic to both large and small-scale systems.

7.2. STRATEGIC APPROACH TO SOFTWARE TESTING

The software engineering process can be viewed as a spiral. Initially system engineering defines the role of software and leads to software requirement analysis where the information domain, functions, behavior, performance, constraints and validation criteria for software are established. Moving inward along the spiral, we come to design and finally to coding. To develop computer software we spiral in along streamlines that decrease the level of abstraction on each turn.



7.3. Unit Testing

Unit testing focuses verification effort on the smallest unit of software design, the module. The unit testing we have is white box oriented and some modules the steps are conducted in parallel.

1. WHITE BOX TESTING

This type of testing ensures that

- All independent paths have been exercised at least once
- All logical decisions have been exercised on their true and false sides
- All loops are executed at their boundaries and within their operational bounds
- All internal data structures have been exercised to assure their validity.

To follow the concept of white box testing we have tested each form .we have created independently to verify that Data flow is correct, All conditions are exercised to check their validity, All loops are executed on their boundaries.

2. BASIC PATH TESTING

Established technique of flow graph with Cyclomatic complexity was used to derive test cases for all the functions. The main steps in deriving test cases were:

Use the design of the code and draw correspondent flow graph.

Determine the Cyclomatic complexity of resultant flow graph, using formula:

$$V(G)=E-N+2 \text{ or}$$

$$V(G)=P+1 \text{ or}$$

$$V(G)=\text{Number Of Regions}$$

Where $V(G)$ is Cyclomatic complexity,

E is the number of edges,

N is the number of flow graph nodes,

P is the number of predicate nodes.

Determine the basis of set of linearly independent paths.

3. CONDITIONAL TESTING

In this part of the testing each of the conditions were tested to both true and false aspects. And all the resulting paths were tested. So that each path that may be generate on particular condition is traced to uncover any possible errors.

4. DATA FLOW TESTING

This type of testing selects the path of the program according to the location of definition and use of variables. This kind of testing was used only when some local variable were declared. The *definition-use chain* method was used in this type of testing. These were particularly useful in nested statements.

5. LOOP TESTING

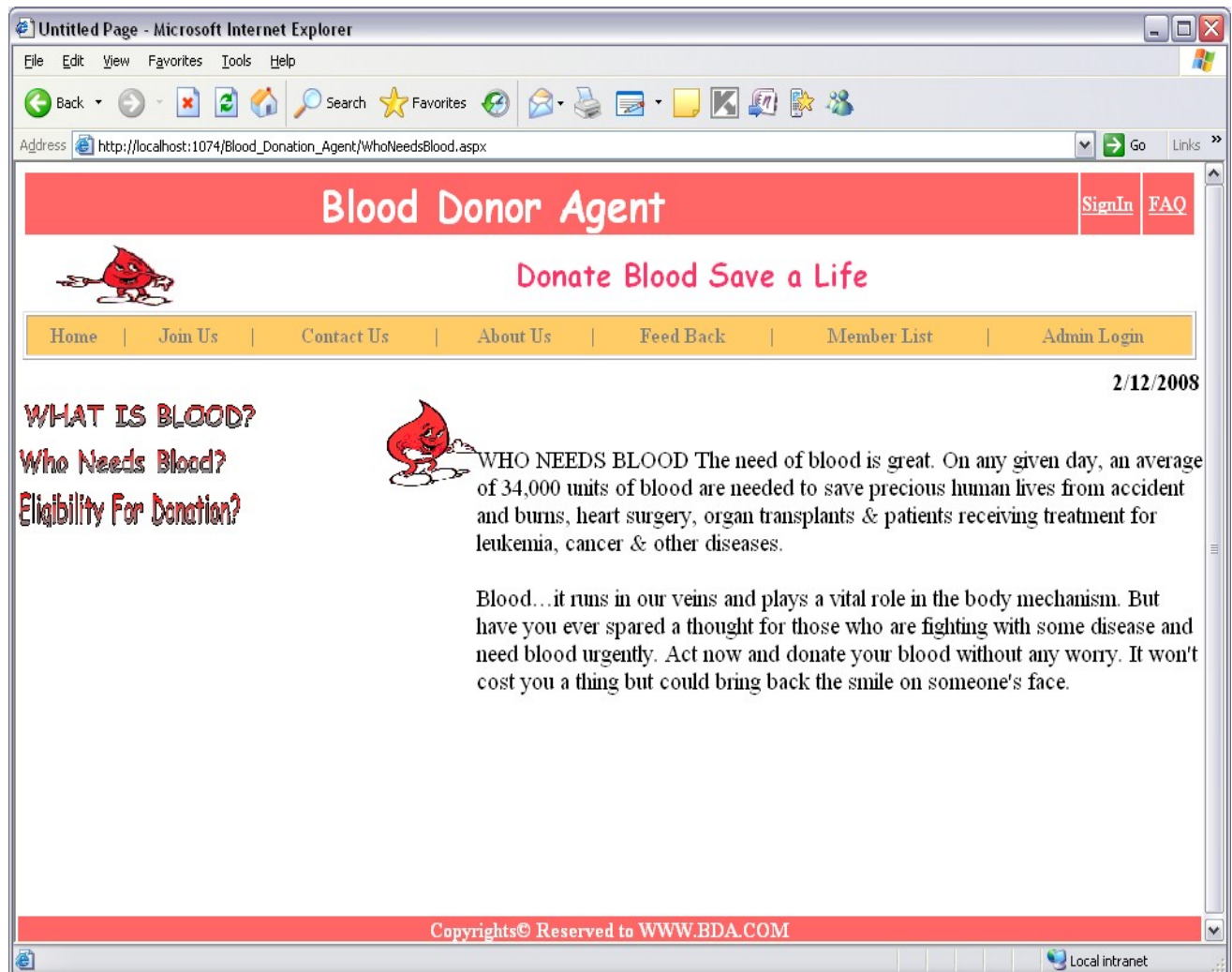
In this type of testing all the loops are tested to all the limits possible. The following exercise was adopted for all loops:

- All the loops were tested at their limits, just above them and just below them.
- All the loops were skipped at least once.
- For nested loops test the inner most loop first and then work outwards.
- For concatenated loops the values of dependent loops were set with the help of connected loop.
- Unstructured loops were resolved into nested loops or concatenated loops and tested as above.

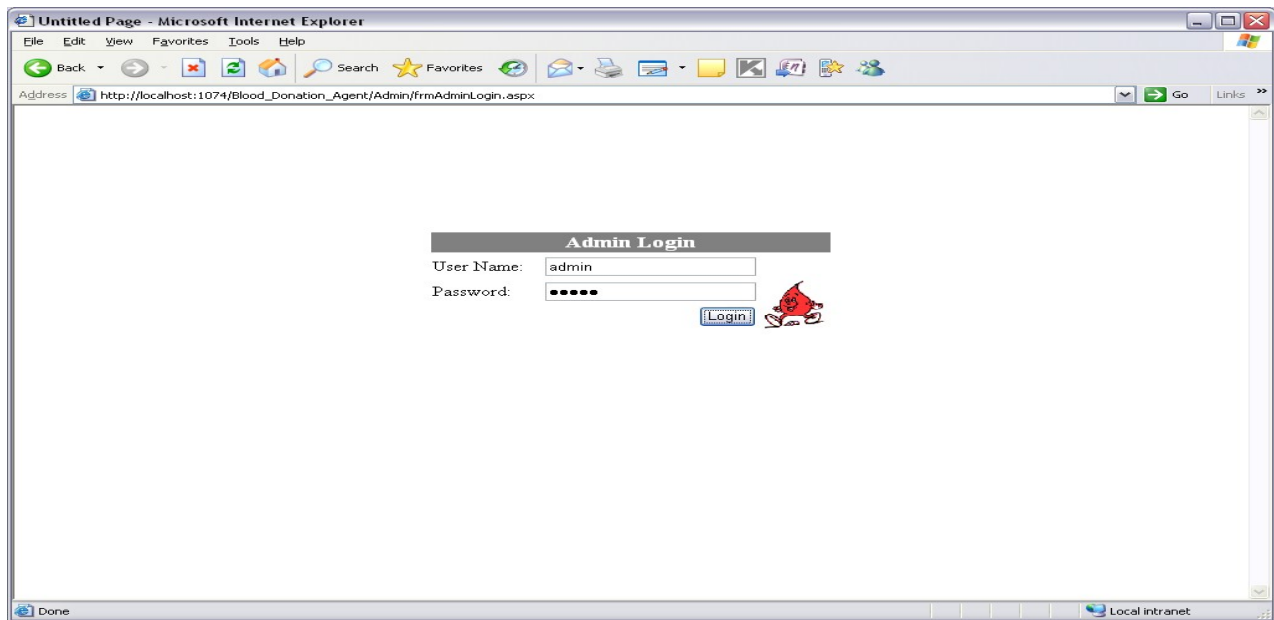
Each unit has been separately tested by the development team itself and all the input have been validated.

Output Screens

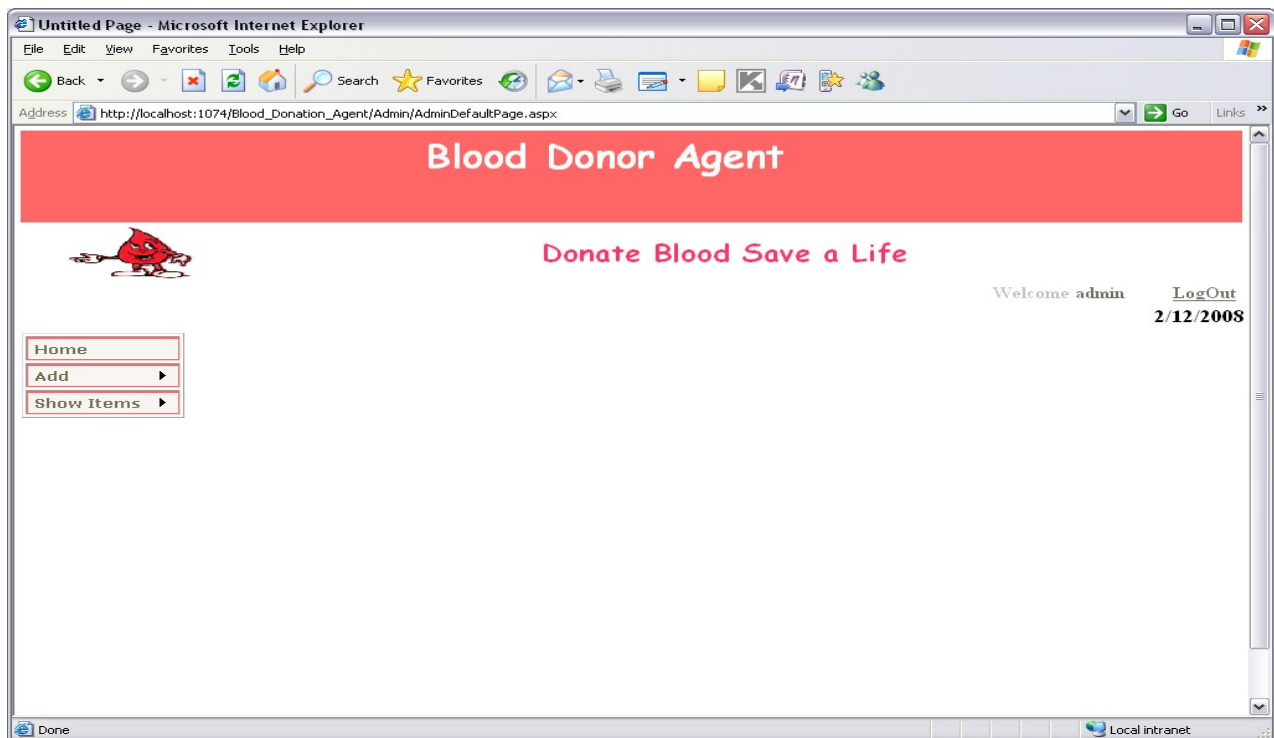
Home Page



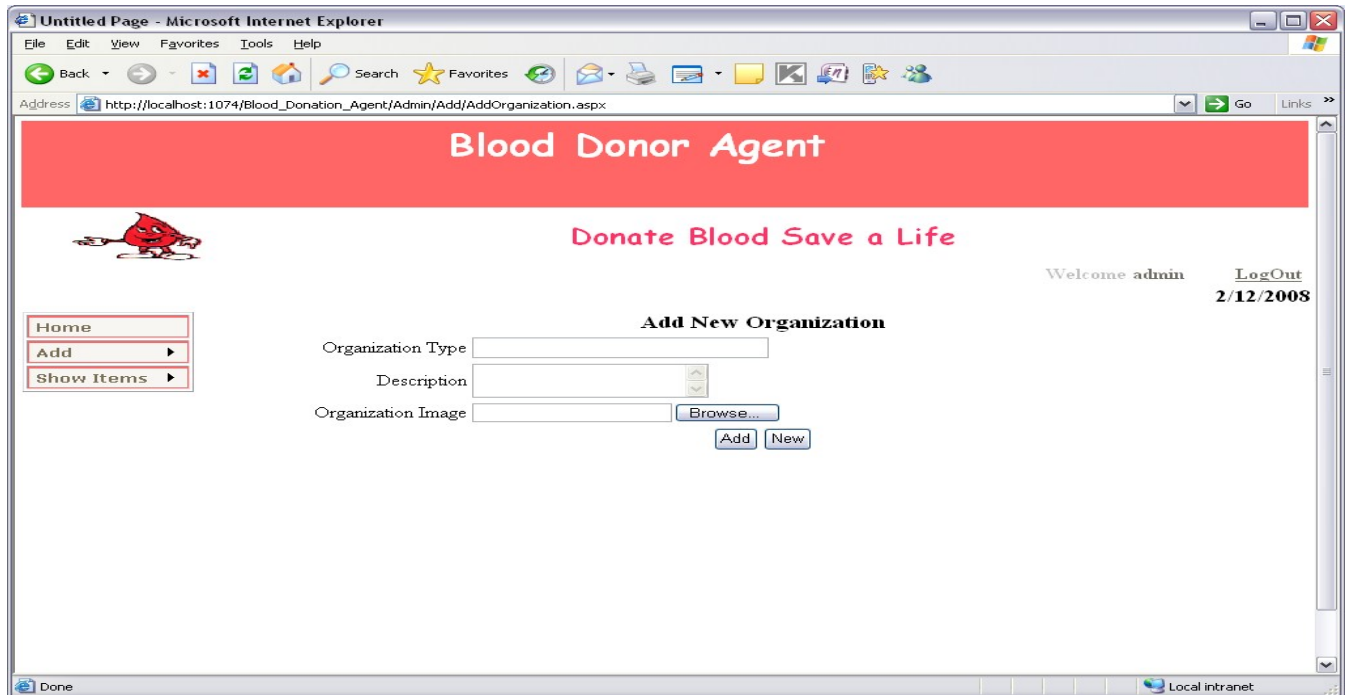
Admin Login



Admin Home



Add new Organization



The screenshot shows a Microsoft Internet Explorer window titled 'Untitled Page - Microsoft Internet Explorer'. The address bar displays 'http://localhost:1074/Blood_Donation_Agent/Admin/Add/AddOrganization.aspx'. The page has a red header with the text 'Blood Donor Agent'. Below the header, there is a cartoon blood drop character on the left and the text 'Donate Blood Save a Life' in the center. On the right, it says 'Welcome admin' and 'LogOut 2/12/2008'. The main content area is titled 'Add New Organization' and contains three input fields: 'Organization Type', 'Description', and 'Organization Image'. The 'Organization Image' field has a 'Browse...' button next to it. Below these fields are 'Add' and 'New' buttons. On the left side of the page, there is a navigation menu with links: 'Home', 'Add', and 'Show Items'.

Address: http://localhost:1074/Blood_Donation_Agent/Admin/Add/AddOrganization.aspx

Blood Donor Agent

Donate Blood Save a Life

Welcome admin [LogOut](#)
2/12/2008

Add New Organization

Organization Type

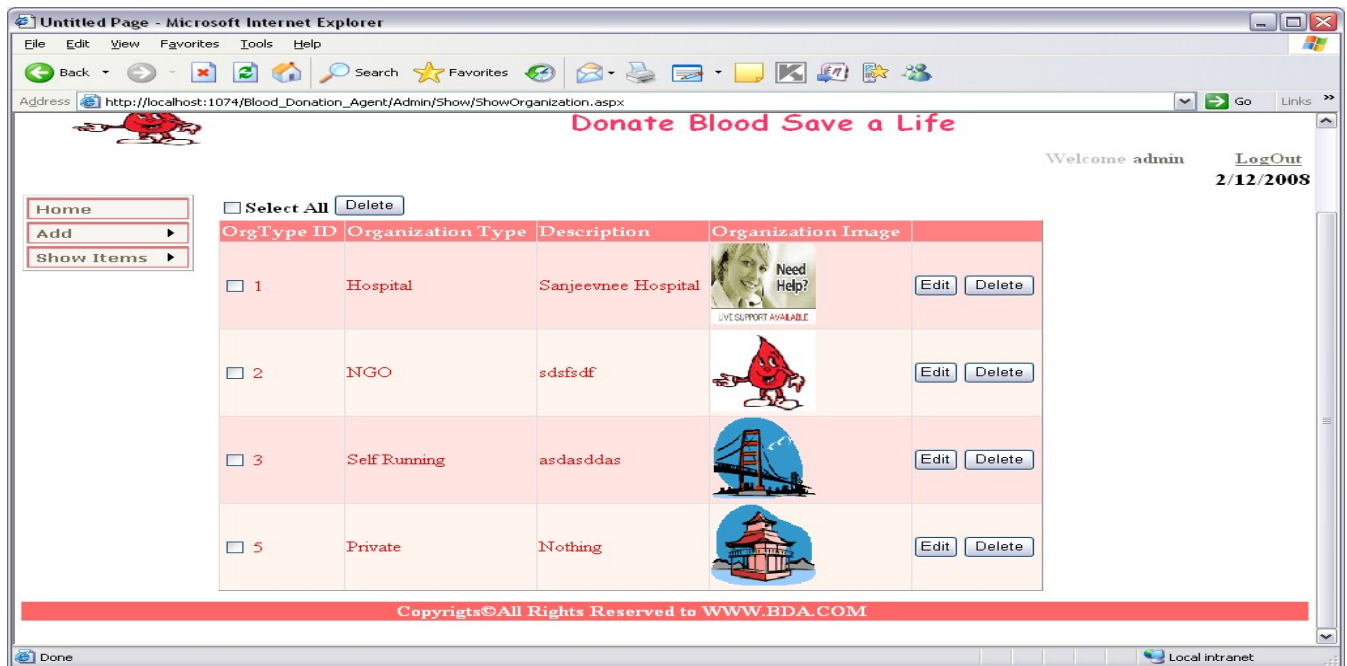
Description

Organization Image [Browse...](#)

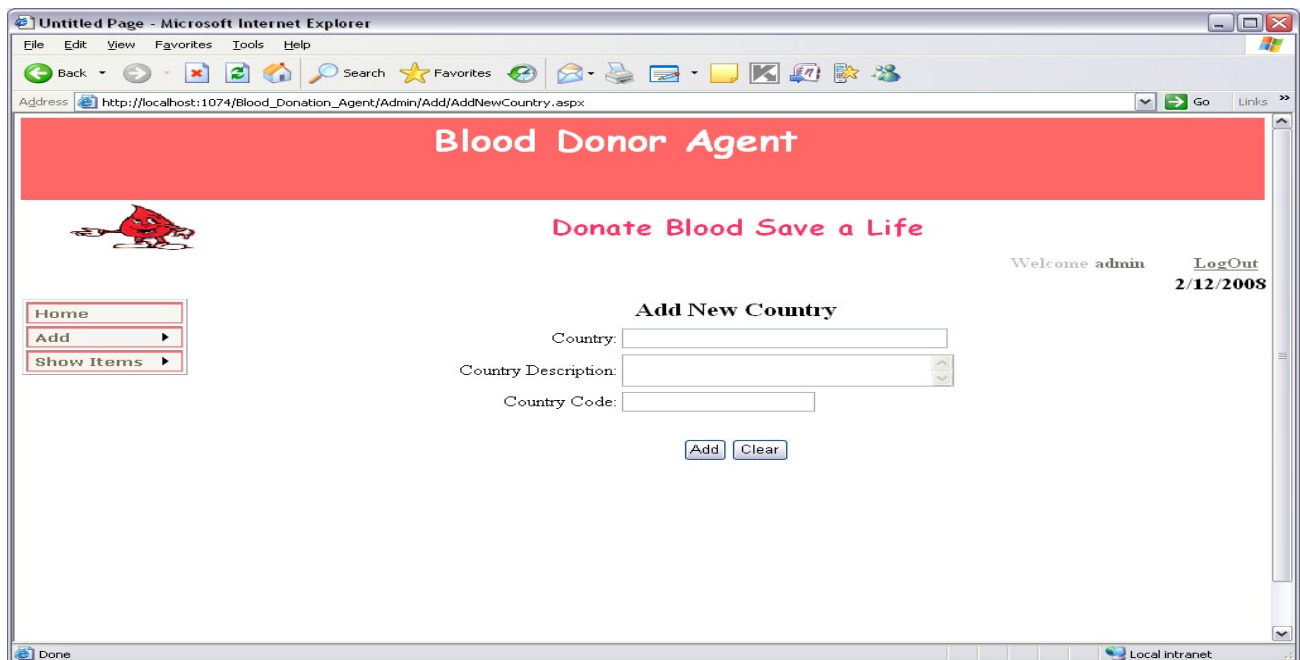
[Add](#) [New](#)

Home
Add
Show Items

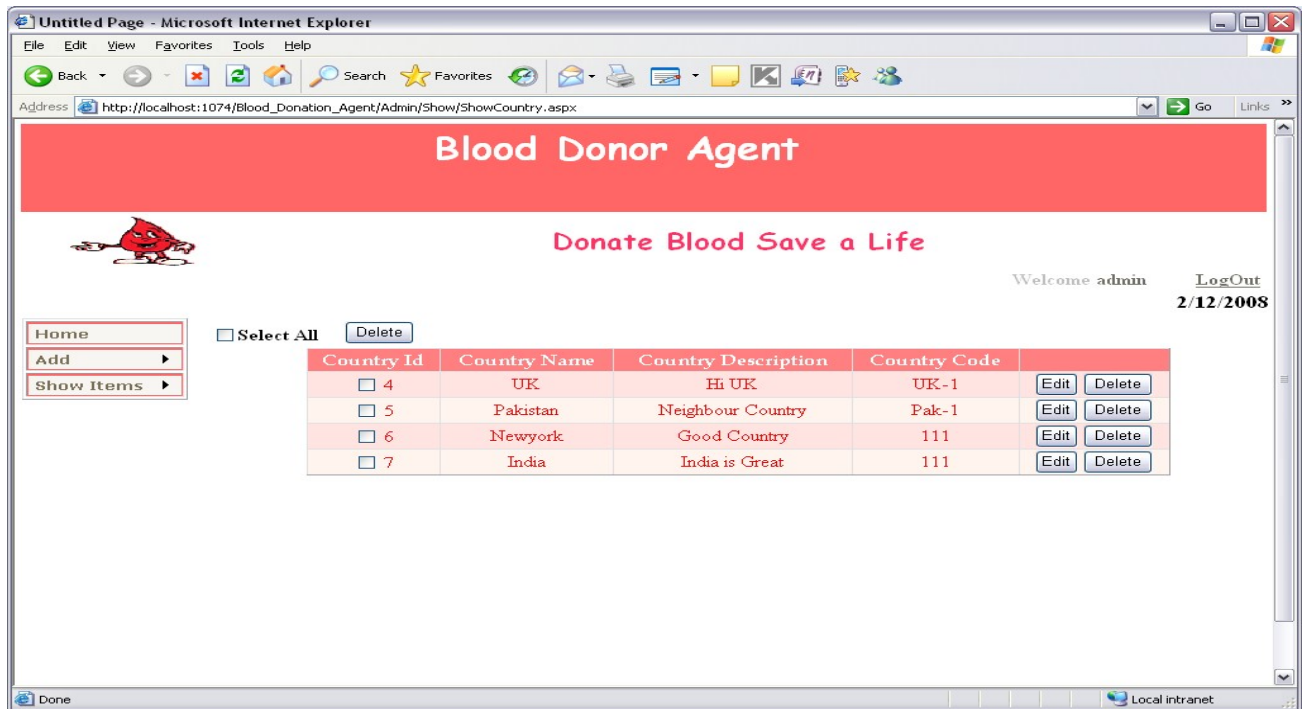
Retrieving Organization information



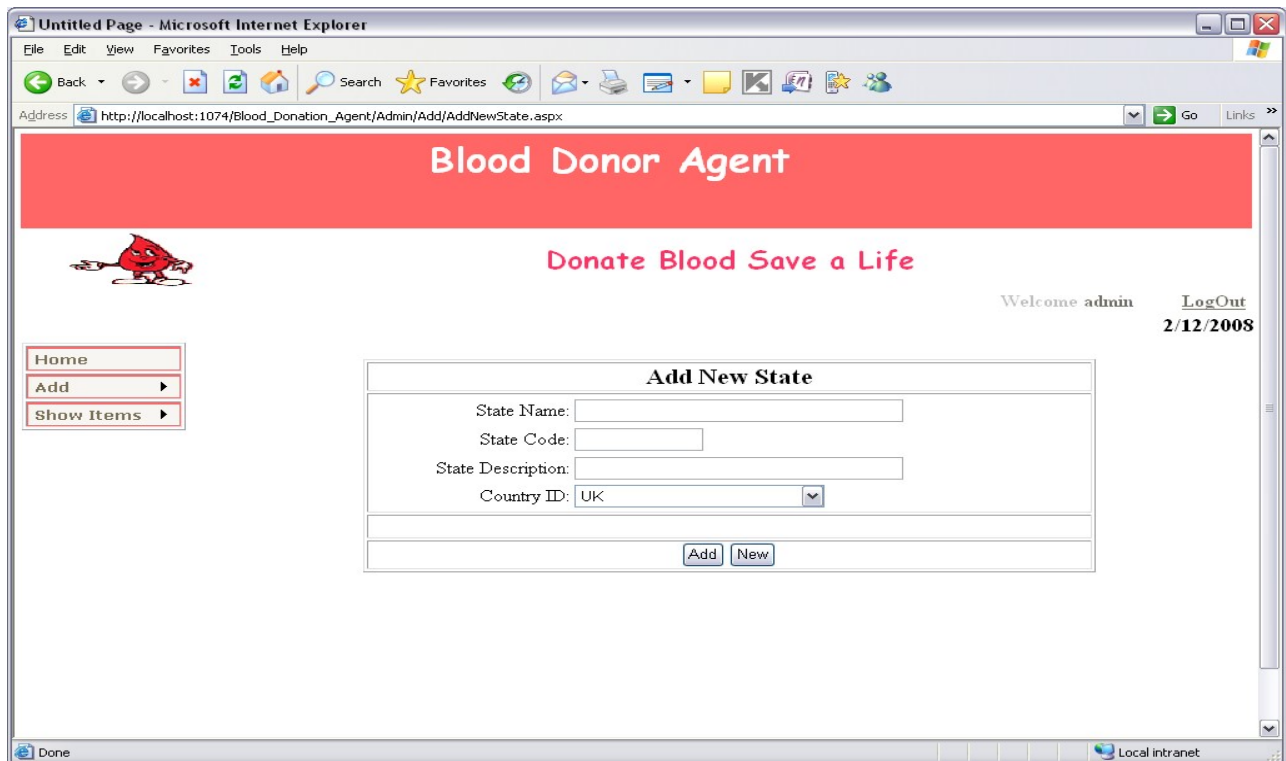
ADD NEW COUNTRY



Country Information



ADD NEW STATE



State Information


Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Print Mail News RSS Feeds

Address http://localhost:1074/Blood_Donation_Agent/Admin/Show/ShowState.aspx Go Links

Blood Donor Agent

 Donate Blood Save a Life

Welcome admin [LogOut](#)
2/12/2008

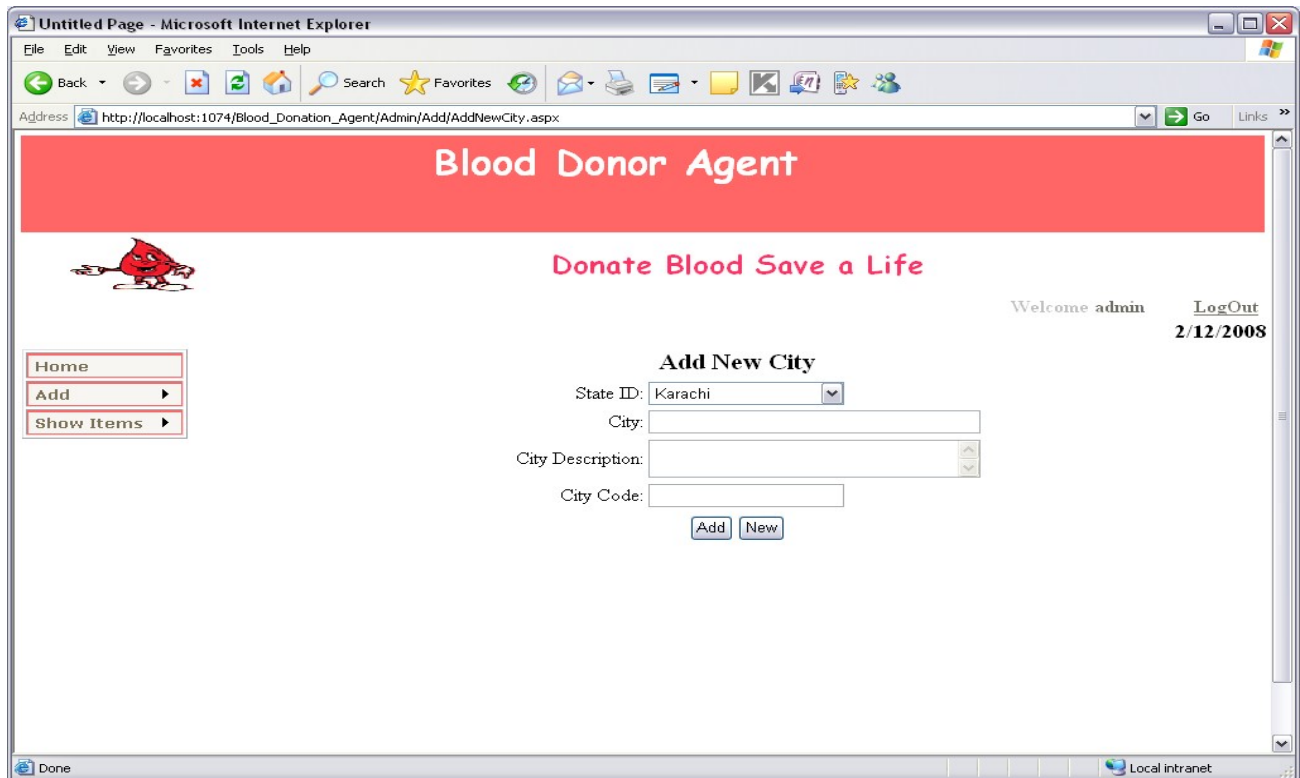
[Home](#)
[Add](#)
[Show Items](#)

☐ Select All [Delete](#)

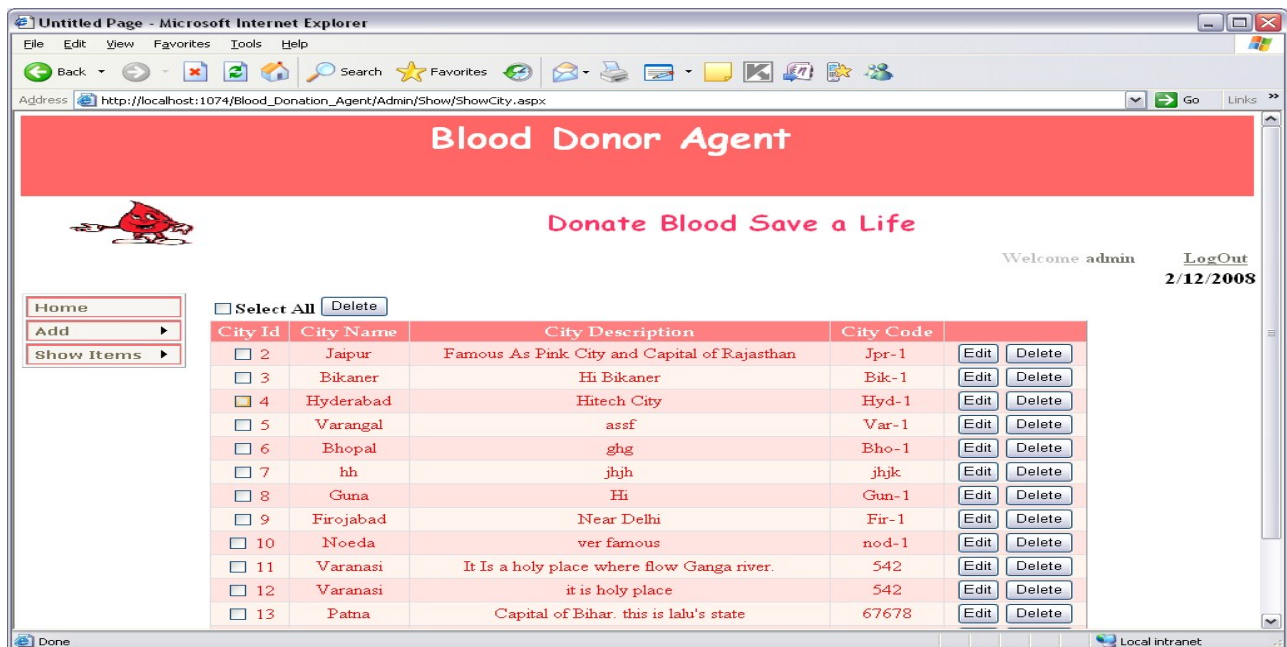
State Id	State Name	State Code	State Description		
<input type="checkbox"/> 2	Karachi	Kar-1	State Of Pakistan	Edit	Delete
<input type="checkbox"/> 3	Rajasthan	Raj-1	This Is My State.It is having popular cities	Edit	Delete
<input type="checkbox"/> 4	AP	Ap-1	I Live In Andhra Pradesh	Edit	Delete
<input type="checkbox"/> 5	MP	Mp-1	Madhya pradesh	Edit	Delete
<input type="checkbox"/> 6	Kerala	Ker-1	jkjk	Edit	Delete
<input type="checkbox"/> 7	Maharashtra	Mah-1	Bollywood	Edit	Delete
<input type="checkbox"/> 8	Bangalore	3	asdasd	Edit	Delete
<input type="checkbox"/> 9	Delhi	Del-1	hjhk	Edit	Delete
<input type="checkbox"/> 10	Lahore	Lah-1	kjkjkj	Edit	Delete
<input type="checkbox"/> 11	UttarPradesh	212	Nothing	Edit	Delete
<input type="checkbox"/> 12	UttarPradesh	010	Nothing	Edit	Delete
<input type="checkbox"/> 13	Bihar	040	nothing	Edit	Delete

Done Local Intranet

ADD NEW CITY



City Information



ADD NEW LOCATION

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Print Mail News RSS Feeds

Address http://localhost:1074/Blood_Donation_Agent/Admin/Add/AddNewLocation.aspx Go Links

Blood Donor Agent

Donate Blood Save a Life

Welcome admin [LogOut](#) 2/12/2008

Home Add Show Items

Add New Location

City Name: Jaipur

Location:

Location Description:

Location Code:

Pin Code:

Add New

Done Local intranet

Location Information

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Print Mail News RSS Feeds

Address http://localhost:1074/Blood_Donation_Agent/Admin/Show/ShowLocation.aspx Go Links

Blood Donor Agent

Donate Blood Save a Life

Welcome admin [LogOut](#) 2/12/2008

Home Add Show Items

☐ Select All

Location ID	Location Name	Location Description	Location Code	Pincode	Edit	Delete
<input type="checkbox"/> 1	DadaBari	Near Chnabl Garden	Da-1	324009	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/> 2	Vigyan Nagar	Very Popular area	Vig-1	324005	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/> 3	Talwandi	Hi All	Tal-1	324004	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/> 4	RajaPark	Famous Area	Raja-	324007	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/> 5	BaniPark	Nothing	Ban-1	1233	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/> 6	Varuna and Assi river	means VARanasi	542	221010	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Done Local intranet


Registration Form For All Users

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help


Back Forward Stop Home Search Favorites Print Mail Address http://localhost:1418/Blood%20bequeath%20federal%20agent/DonaorRegistration.aspx Go Links

BLOOD BEQUEATH FEDERAL AGENT [SignIn](#) [FAQ](#)

 **Donate Blood Save a Life**

Home | Join Us | Contact Us | About Us | Feed Back | Member List | Admin Login

WHAT IS BLOOD?
Who Needs Blood?
Eligibility For Donation?

 **Please Fill The Following Form** 5/2/2010

Please Enter *Value

Personal Details

First Name

Middle Name

Last Name

Email

DOB

Weight

Gender ☒ Male ☐ Female

Upload Image [Browse...](#)

Blood Group

Blood Type

Contact No(Office)

Done

start BlooddonationAgentT... ravi.k [Compatibility ... Blood bequeath Feder... Untitled Page - Micros...

Local intranet 3:20 PM


Login form

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help


Back Forward Stop Home Search Favorites Print Mail Address http://localhost:1595/Blood_Donation_Agent/Login.aspx Go Links

Blood Donor Agent [SignIn](#) [FAQ](#)

 **Donate Blood Save a Life**

Home | Join Us | Contact Us | About Us | Feed Back | Member List | Admin Login


WHAT IS BLOOD?
Who Needs Blood?
Eligibility For Donation?

 **Sign In** 3/11/2008

User Name:

Pssword:

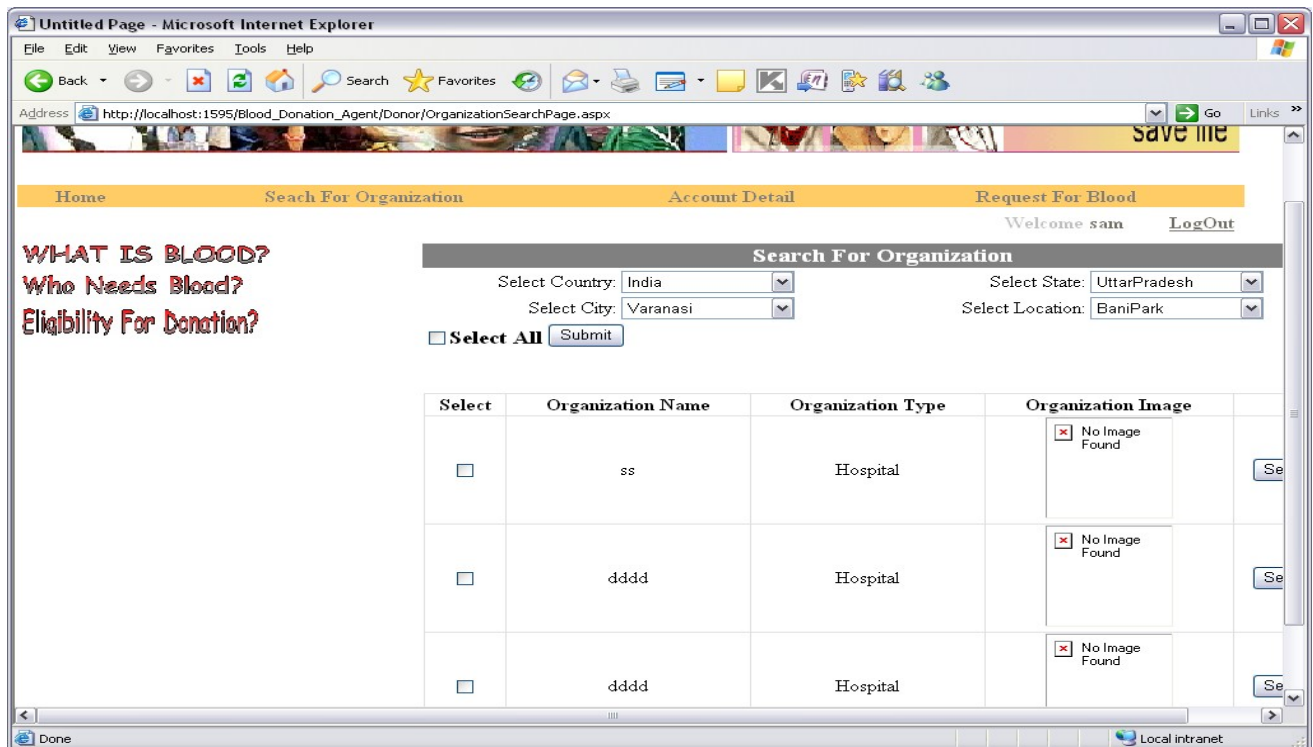
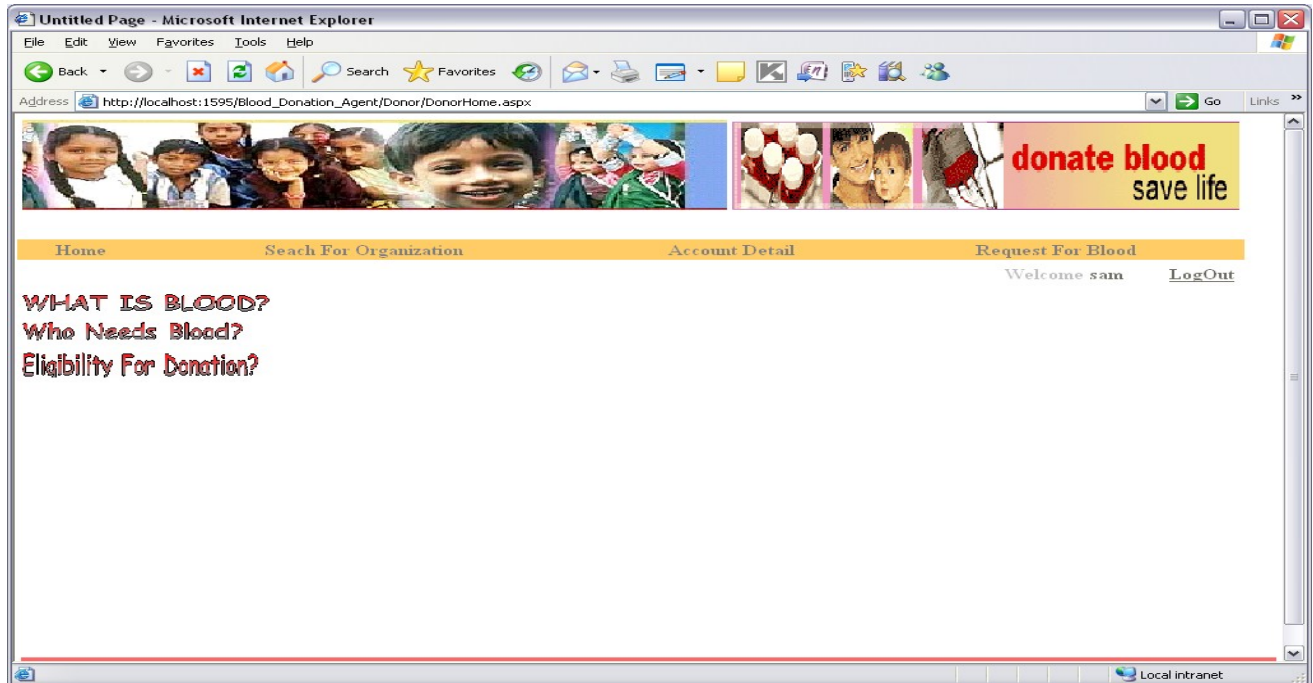
[Login](#)



Copyrights© Reserved to WWW.BDA.COM

Local intranet

User Home



SearchForDonor


Update Account Details

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Print Mail News RSS Feeds

Address http://localhost:1595/Blood_Donation_Agent/Donor/DonorAccountDetail.aspx Go Links



Home Search For Organization Account Detail Request For Blood

Welcome sam [LogOut](#)

WHAT IS BLOOD?
Who Needs Blood?
Eligibility For Donation?

Account Detail	Personal Detail	Address De
Please Enter *Value		
User Name	<input type="text" value="sam"/>	
Old Password*	<input type="password"/>	
New Password*	<input type="password"/>	
Confirm Password*	<input type="password"/>	
<input type="button" value="Change Password"/>		

javascript:WebForm_DoPostBackWithOptions(new WebForm_PostBackOptions("ctl00\$ContentPlaceHolder1\$LinkButton1", "", true, "", "",

Local intranet

Untitled Page - Microsoft Internet Explorer

Address: http://localhost:1595/Blood_Donation_Agent/Donor/MakeRequestForBlood.aspx

Home Search For Organization Account Detail Request For Blood

Welcome sam LogOut

WHAT IS BLOOD?
Who Needs Blood?
Eligibility For Donation?

Please Fill The Following Form
Please Enter * Value

Name: sam
Email: sam@yahoo.com
Phone: 2342
Country: India
State: UttarPradesh
City: Varanasi
Location: BaniPark
Blood Require Address*:
Blood Type: AA
Blood Group: A+
Request Date: 3/11/2008
Blood Required Date: 3/11/2008

Submit Request

Allrights Reserved to WWW.BDA.COM

Request for blood

CONCLUSION

It has been a great pleasure for me to work on this exciting and challenging project. This project proved good for me as it provided practical knowledge of not only programming in ASP.NET and VB.NET web-based application and no some extent Windows Application and SQL Server, but also about all handling procedure related with **“Blood Bequeath Federal”**. It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

BENEFITS:

The project is identified by the merits of the system offered to the user. The merits of this project are as follows: -

- It's a web-enabled project.

- This project offers user to enter the data through simple and interactive forms. This is very helpful for the client to enter the desired information through so much simplicity.
- The user is mainly more concerned about the validity of the data, whatever he is entering. There are checks on every stages of any new creation, data entry or updating so that the user cannot enter the invalid data, which can create problems at later date.
- Sometimes the user finds in the later stages of using project that he needs to update some of the information that he entered earlier. There are options for him by which he can update the records. Moreover there is restriction for his that he cannot change the primary data field. This keeps the validity of the data to longer extent.
- User is provided the option of monitoring the records he entered earlier. He can see the desired records with the variety of options provided by him.

- From every part of the project the user is provided with the links through framing so that he can go from one option of the project to other as per the requirement. This is bound to be simple and very friendly as per the user is concerned. That is, we can sat that the project is user friendly which is one of the primary concerns of any good project.
- Data storage and retrieval will become faster and easier to maintain because data is stored in a systematic manner and in a single database.
- Decision making process would be greatly enhanced because of faster processing of information since data collection from information available on computer takes much less time then manual system.
- Allocating of sample results becomes much faster because at a time the user can see the records of last years.
- Easier and faster data transfer through latest technology associated with the computer and communication.
- Through these features it will increase the efficiency, accuracy and transparency,

9.1 LIMITATIONS:

- The size of the database increases day-by-day, increasing the load on the database back up and data maintenance activity.
- Training for simple computer operations is necessary for the users working on the system.

BIBLIOGRAPHY

- **FOR .NET INSTALLATION**

www.support.mircosoft.com

- **FOR DEPLOYMENT AND PACKING ON SERVER**

www.developer.com

www.15seconds.com

- **FOR SQL**

www.msdn.microsoft.com

- **FOR ASP.NET**

www.msdn.microsoft.com/net/quickstart/aspplus/default.com

www.asp.net

www.fmexpense.com/quickstart/aspplus/default.com

www.asptoday.com

www.aspfree.com

www.4guysfromrolla.com/index.aspx

