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Chapter 1

Project Outline

1.1 Introduction

Every year on June 14, World Blood Donor Day is observed across the world to raise awareness about safe blood and blood products and to thank blood donors for their life-saving gifts. Blood donation has been a major concern of societies, and continues to be so, as blood donors are still scarce, compared to the regular demand for blood transfusions. Every day, all around the globe, many lose their lives due to lack of or delayed blood transfusion. With the rapid expansion of health care facilities, need for safe blood supply is ever growing in order to provide the essential health services in Bangladesh. Compiled reports from blood transfusion centers under public and private sectors revealed that over 600,000 units of blood were collected in 2016 against an estimated demand of 800,000.There are 319 blood transfusion centers in the country providing blood transfusion services covering both the public and private sectors. However, Bangladesh has received only 31 percent of its blood from voluntary donors. This number is very low, compared to other countries in South-East Asia, such as Thailand, India and Sri Lanka, where the number reaches as high as 95 percent. More than two thirds of blood donations come from relatives and friends of the patients.

1.2 Motivation

The main goal of the Blood Management System is to reduce the delayed blood transfusion problem. It is web based application which assists to everyone for finding blood donator within a short amount of time. The main infrastructure is based on three modules are admin panel, user panel and donor panel. Admin can control the website. User panel can send request for specific blood at urgent time. Donor panel is one who is interested to donate the blood. In our web application, user can request for blood within a short time. When user needs blood, he can search the blood group and send request through SMS just one click. It reduces the time for finding the blood donator. It is our inspiration to build this web application. Some information should be noted:

Only about 40% of the blood collected each year is donated in developing countries, which are home to over 80 percent of the worlds population. The average number of blood donations per 1000 population is 12 times higher in high-income countries than in low-income countries. An overwhelming 99% of the 5,00,000 women who die each year during pregnancy and childbirth live in developing countries, with haemorrhagewhich invariably requires blood transfusionthe most common cause of maternal deaths. In Africa, approximately 70% of all blood transfusions are given to children with severe anaemia due to malaria, the leading cause of death among children under the age of five.

Chapter 2

Technology Used

2.1 JavaScript

JavaScript often abbreviated as JS, is a high-level, interpreted programming language. It is a language which is also characterized as dynamic, weakly typed, prototype-based and multi- paradigm. Alongside HTML and CSS, JavaScript is one of the three core technologies of the World Wide Web. JavaScript enables interactive web pages and thus is an essential part of web applications. The vast majority of websites use it, and all major web browsers have a dedicated JavaScript engine to execute it. Initially only implemented client-side in web browsers, JavaScript engines are now embedded in many other types of host software, including server-side in web servers and databases, and in non- web programs such as word processors and PDF software, and in runtime environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets. Although there are strong outward similarities between JavaScript and Java, including language name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design; JavaScript was influenced by programming languages such as Self and Scheme.

2.2 PHP

2.2.1 Introduction

Hypertext Preprocessor (or simply PHP) is a general-purpose programming language originally designed for web development. It was originally created by Rasmus Lerdorf in 1994; the PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive initialism PHP: Hypertext Preprocessor. PHP code may be executed with a command line interface (CLI), embedded into HTML code, or it can be used in combination with various web template systems, web content management systems, and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in a web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP can be used for many programming tasks outside of the web context, such as standalone graphical applications and robotic drone control. The standard PHP interpreter, powered by the Zend Engine, is free software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge.

The PHP language evolved without a written formal specification or standard until 2014, with the original implementation acting as the de facto standard which other implementations aimed to follow. Since 2014, work has gone on to create a formal PHP specification.PHP development began in 1994 when Rasmus Lerdorf wrote several Common Gateway Interface (CGI) programs in C, which he used to maintain his personal homepage. He extended them to work with web forms and to communicate with databases, and called this implementation "Personal Home Page/Forms Interpreter" or PHP/FI.PHP/FI could be used to build simple, dynamic web applications. To accelerate bug reporting and improve the code, Lerdorf initially announced the release of PHP/FI as "Personal Home Page Tools (PHP Tools) version 1.0" on the Usenet discussion group comp.infosystems.www.authoring.cgi on June 8, 1995. This release already had the basic functionality that PHP has today. This included Perl-like variables, form handling, and the ability to embed HTML. The syntax resembled that of Perl, but was simpler, more limited and less consistent.Early PHP was not intended to be a new programming language, and grew organically, with Lerdorf noting in retrospect: "I don't know how to stop it, there was never any intent to write a programming language. I have absolutely no idea how to write a programming language, I just kept adding the next logical step on the way. A development team began to form and, after months of work and beta testing, officially released PHP/FI 2 in November 1997.The fact that PHP was not originally designed, but instead was developed organically has led to inconsistent naming of functions and inconsistent ordering of their parameters. In some cases, the function names were chosen to match the lower-level libraries which PHP was "wrapping, while in some very early versions of PHP the length of the function names was used internally as a hash function, so names were chosen to improve the distribution of hash values.

2.2.2 Necessity of PHP

It provides about 20 modules that can be used based on an application requirement.PHP is now the most famous server-side scripting language that runs on a web server. It givesyou an enhanced flexibility to make dynamic web pages and application. Below are some points that highlight the importance of PHP development in the web development industry.

1. Supports a large number of database management system such as MySQL, Oracle, Sybase, etc.

2. It is compatible with almost all the servers-software like Apache, IIS, etc.

3. PHP runs on all leading platforms like Linux, Windows, etc.

4. The syntax of the language is very simple which makes it easy to write on it.

5. There are a lot of functions available hence you get high degree of flexibility

6. Since it is an open-source, online support is available in its forums for free

7. It is compatible with the most popular software integration's like Drupal, Typo3, Joomla , osCommerce, etc. For a web developer, following are the importance of PHP development:

1. It is open source and the resources are also open source which makes it really cheap to work on.

2. PHP has a short learning curve which means it doesnt take long to learn the language.

3. The language is highly efficient and error detection is also easier in this language.

4. PHP processes the data very fast and is among the fastest languages available.

5. Because of its high usability, it is training and acquiring talent is risk-free. PHP is an open source language which means odds are high that the language is going to evolve in the future too.

2.3 MySql

2.3.1 Introduction

This application uses MySQL as a back end database. MySQL is a fast, open source Relational database management system for developing web-based applications. Since it a relational based database, data is stored in the form of tables and relations are established between tables using primary keys, foreign keys.local web server for testing and deployment purposes. Everything needed to set up a web serverdatabase management system for developing web-based applications. Since it a relational basedMicrosystems, JSP is similar to PHP and ASP, but it uses the Java programming language. To deploy and run Java Server Pages, a compatible web server with a servlet container, such simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web serverdatabase management system for developing web-based applications. Since it a relational based simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web serverdatabase management system for developing web-based applications. Since it a relational based

2.3.2 Necessity of My SQL

The latest version of MySQL is one of the worlds most popular databases. It is open source, reliable, compatible with all major hosting providers, cost-effective, and easy to manage. Many organizations are leveraging the data security and strong transactional support offered by MySQL to secure online transactions and enhance customer interactions. However, enterprises using MySQL are presented with several challenges when their apps experience exponential growth and they need additional scale. Along with understanding why MySQL is the go-to solution for high-growth environments, it is equally important to understand the challenges that can cripple your business operations. Here are 5 major reasons to use MySQL along with its most common challenges: 5 REASONS TO CHOOSE MYSQL:

2.3.2.1 Secure Money Transactions

MySQL transactions work as a single unit, which means unless and until every individual operational stage is successfully completed, the transaction is not cleared. So, if an operation fails at any stage, the entire transaction happening within that group fails. MySQL ensures that financial transactions have data integrity, so customers can make worry-free transactions online. The money is not debited until the entire process is completed and in case of failure, every process is reverted to the previous stage.

2.3.2.2 On-Demand Scalability

MySQL comes with the advantage of unmatched flexibility that facilitates efficient management of deeply embedded applications, even in gigantic data centers that stack tremendous amounts of mission-critical information. It enables complete customization to cater to the unique requirements of eCommerce businesses with a much smaller footprint. MySQL provides ultimate platform flexibility to enterprises who need additional features and functionalities for their database servers.

2.3.2.3 High Availability

Consistent availability is the stalwart feature of MySQL enterprises that deploy it can enjoy round-the-clock uptime. MySQL comes with a wide variety of cluster servers and master-slave replication configurations that enable instant failover for uninterrupted access. Whether you run an eCommerce website or a high-speed processing system, MySQL is designed to process millions of queries and thousands of transactions while ensuring unique memory caches, full-text indexes and optimum speed.

2.3.2.4 Rock-Solid Reliability

Protecting sensitive business information is the primary concern of every enterprise. MySQL ensures data security with exceptional data protection features. Powerful data encryption prevents unauthorized viewing of data and SSH and SSL supports ensure safer connections. It also features a powerful mechanism that restricts server access to authorized users and has the ability to block users even at the man-machine level. Finally, the data backup feature facilitates point-in-time recovery.

2.3.2.5 Quick-Start Capability

You can go from software download to complete installation in just 15 minutes. MySQL is exceptionally quick, regardless of the underlying platform. It features self-management capabilities like auto restart, space expansion and automatic configuration changes for ease of management. It also comes with a comprehensive set of migration tools and a fully loaded graphical management suite. MySQL enables real-time performance monitoring for timely troubleshooting of operational issues from a single workstation. For all of these reasons, organizations are using MySQL to instantly develop and launch apps. From retail and finance, to healthcare and manufacturing, many industries are capitalizing on the cost-effectiveness, efficiency and reliability of MySQL to deliver seamless services and boost their revenue. But when it comes to optimizing MySQL deployments for performance and availability, enterprises face the following challenges, because scaling MySQL needs much more than just a database.

2.4 Web API

2.4.1 Introduction

Before we understand what is Web API, let's see what is an API (Application Programing Interface). As per Wikipedia's Definition of API: In computer programming, an application programming interface (API) is a set of subroutine definitions, protocols, and tools for building software and applications. To put it in simple terms, API is some kind of interface which has a set of functions that allow programmers to access specific features or data of an application, operating system or other services. Web API as the name suggests, is an API over the web which can be accessed using HTTP protocol. It is a concept and not a technology. We can build Web API using different technologies such as Java, .NET etc. For example, Twitter's REST APIsprovide programmatic access to read and write data using which we can integrate twitter's capabilities into our own application.

2.4.2 Necessity of Web API

2.4.2.1 Back End for Native Mobile Applications

If you are looking for a back end to develop native applications for mobile devices that do not support SOAP, ASP.NET Web API can serve your purpose. Almost any native application running on mobile device other than the Windows one can use ASP.NET Web API as backend. Hence, a web API is good for using with native applications which require web services but not SOAP support.

2.4.2.2 Develop AJAX based Web Applications

ASP.NET web API is an ideal choice for development of client web applications that heavily rely on AJAX and do not require extensive configuration settings like WCF REST services.

2.4.2.3 Light Weight and Easy Creation of Services

The Web API supports a light architecture powering HTTP services to reach broader range of clients. As compared to WCF, it is much easier and quicker to create services using ASP.NET Web API.

Hence, Web APIs can be helpful in various significant ways in web application development especially when it is an ASP.NET web application. So, are you looking for ASP.NET web application development based on Web API technology, then look out for experts to help you. At Brainvire, we have experienced .NET developers who rich experience into ASP.NET application development using the latest technologies and tools. Approach us for a free quote and more details about our services. Lerdorf noting in retrospect: "I don't know how to stop it, there was never any intent to write a programming language. I have absolutely no idea how to write a programming language, I just kept adding the next logical step on the way. A development team began to form and, after . ORM (Object Relational Model) is a technique mapping data between an object-oriented model to a relational data model. Hibernate is an ORM framework for Java language. Its primary feature is to map from Java classes to database tables and from Java data types to SQL data types. It also provides data query and retrieval facilities. This reduces the development time spent with writing the native SQL queries and lets developers develop persistent classes using object-oriented principles .

2.5 Xampp

XAMPP (/zmp/ or /ks.mp/) is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible.

XAMPP's ease of deployment means a XAMP or LAMP stack can be installed quickly and simply on an operating system by a developer. With the advantage a number of common add-in applications such as WordPress and Joomla! can also be installed with similar ease using Bitnami.

Transaction Object - allows the application to define a transaction that is units of work, while maintaining abstraction from the underlying transaction implementation. Query Object - Query Object uses object-oriented query language HQL (Hibernate Query Language) for creating objects and retrieving data from the database. Criteria Object Criteria is used to create object- oriented criteria queries for retrieving objects and controls the flow of execution. XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web server server application (Apache), database (MariaDB), and scripting language (PHP) is included in an extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.

2.6 Apache Server

Apache features configurable error messages, DBMS-based authentication databases, content negotiation and supports several graphical user interfaces (GUIs).It supports password authentication and digital certificate authentication. Because the source code is freely available, anyone can adapt the server for specific needs, and there is a large public library of Apache add-ons.

A more detailed list of features is provided below:Loadable Dynamic ModulesMultiple Request Processing modes (MPMs) including Event-based/Async, Threaded and Prefork.Highly scalable (easily handles more than 10,000 simultaneous connections)Handling of static files, index files, auto-indexing and content negotiation.htaccess per-directory configuration supportReverse proxy with cachingLoad balancing with in-band health checksMultiple load balancing mechanismsFault tolerance and Failover with automatic recoveryWebSocket, FastCGI, SCGI, AJP and uWSGI support with cachingDynamic configuration TLS/SSL with SNI and OCSP stapling support, via OpenSSL or wolfSSL.Name- and IP address-based virtual serversIPv6-compatibleHTTP/2 supportFine-grained authentication and authorization access control gzip compression and decompressionURL rewriting Headers and content rewritingCustom logging with rotationConcurrent connection limitingRequest processing rate limitingBandwidth throttling .

Java Server Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types. Released in 1999 by Sun Microsystems, JSP is similar to PHP and ASP, but it uses the Java programming language. To deploy and run Java Server Pages, a compatible web server with a servlet container, such as Apache Tomcat or Jetty, is required.

scalable (easily handles more than 10,000 simultaneous connections)Handling of static files, index files, auto-indexing and content negotiation.htaccess per-directory configuration supportReverse proxy with

cachingLoad balancing with in-band health checksMultiple load balancing mechanisms-Fault tolerance and Failover with automatic recoveryWebSocket, FastCGI, SCGI, AJP and uWSGI support with cachingDynamic configuration TLS/SSL with SNI and OCSP stapling support, via OpenSSL or wolfSSL.Name- and IP address-based virtual serversIPv6-compatibleHTTP/2 supportFine-grained authentication and authorization access control gzip compression and decompressionURL rewriting Headers and content rewritingCustom logging with rotationConcurrent connection limitingRequest processing rate limitingBandwidth throttling .

2.7 Html

2.7.1 Introduction

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.

HTML describes the structure of a page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img/> and <input/> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page. page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

2.7.2 Why we need HTML

2.7.2.1 HTML is easy to use and understand

Almost anyone in the web development business would know HTML be it a freelancer or a large agency. If at any point in time you need to hire the services of a different web design firm or professional for making changes or updates to your website, it would be relatively easy to find cost-effective and affordable solution providers who can make the changes you need to your website.

2.7.2.2 All browsers support HTML

Almost if not all browsers support HTML. Certainly more browsers support HTML than any other web programming language. As a result, when you build a website using HTML, it would show up on most browsers around the world, as long as the programmer takes care to optimize the website for the most commonly used browsers. Optimizing an HTML based website for browser compatibility is neither difficult nor complex.

2.7.2.3 HTML and XML syntax is very similar

Today, XML is increasingly being used for data storage. The similarity of syntax between HTML and XML means that it is easier and seamless working between the two platforms. HTML is free A major advantage of HTML is that it is free. You do not need any software for HTML, no plug-ins are needed and it means that you can save considerably on your website development cost. Even with open source content management systems, all the plug-ins that you may need are not always free.

2.7.2.4 Most development tools support HTML

Whether it is FrontPage, DreamWeaver or any other programming tool, there are more web development tools that allow you to create HTML based websites, than any other web programming language.

2.7.2.5 HTML is most search engine friendly

Of all the web programming languages, HTML is the most search engine friendly. Creating SEO compliant websites using HTML is significantly easier than any other programming language. HTML causes the least SEO complications and provides the greatest flexibility when trying to build an SEO compliant website. As long as you have taken care to ensure your HTML code is clean and validated, an HTML website is easiest to read and access for search engine crawlers. This reduces crawling time and improves page load time, helping your website perform better in search results.

2.8 CSS

2.8.1 Introduction

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content. Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech- based browser or screen reader), and on Braille - basedtactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device. The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable. The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents. In addition to HTML, other markup languages support the use of CSS, including XHTML, plain XML, SVG, and XUL.

2.8.2 Why we need CSS

2.8.2.1 Improves Website Presentation

The standout advantage of CSS is the added design flexibility and interactivity it brings to web development. Developers have greater control over the layout allowing them to make precise section-wise changes.As customization through CSS is much easier than plain HTML, web developers are able to create different looks for each page. Complex websites with uniquely presented pages are feasible thanks to CSS.

2.8.2.2 Makes Updates Easier and Smoother

CSS works by creating rules. These rules are simultaneously applied to multiple elements within the site. Eliminating the repetitive coding style of HTML makes development work faster and less monotonous. Errors are also reduced considerably.Since the content is completely separated from the design, changes across the website can be implemented all at once. This reduces delivery times and costs of future edits.

2.8.2.3 Helps Web Pages Load Faster

Improved website loading is an underrated yet important benefit of CSS. Browsers download the CSS rules once and cache them for loading all the pages of a website. It makes browsing the website faster and enhances the overall user experience.This feature comes in handy in making websites work smoothly at lower internet speeds. Accessibility on low end devices also improves with better loading speeds

2.9 Ajax

Ajax short for Asynchronous JavaScript And XML is a set of Web development techniques using many Web technologies on the client side to create asynchronous Web applications. With Ajax, Web applications can send and retrieve data from a server asynchronously (in the background) without interfering with the display and behavior of the existing page. By decoupling the data interchange layer from the presentation layer, Ajax allows Web pages, and by extension Web applications, to change content dynamically without the need to reload the entire page. In practice, modern implementations commonly utilize JSON instead of XML due to the advantages of JSON being native to JavaScript. Ajax is not a single technology, but rather a group of technologies. HTML and CSS can be used in combination to mark up and style information. The webpage can then be modified by JavaScript to dynamically display and allow the user to interact with the new information. The built- in XMLHttpRequest object within JavaScript is commonly used to execute Ajax on webpages allowing websites to load content onto the screen without refreshing the page. Ajax is not a new technology, or different language, just existing technologies used in new ways.

Chapter 3

Getting Started with PHP & MySQL

Windows, Linux, or Mac OS X. Although the computer lab was great for teaching thesoftware, the course back then did not cover installation-yet it was evidently such ahurdle. The problem is that PHP, Apache, and MySQL are really difficult to set up onWindows. They are much easier to set up on Linux because the major distributionstypically include MySQL, Apache, and PHP packages, but on Windows it is a royalpain in the nether region. Back then, I was somewhat stumped about what to doteaching the installation side of the software could take up a substantial amount oftime on the course. Then, in a fit of pure genius, my colleague and friend Elliot Smith discovered XAMP(www.xamp.org/). XAMP provides a complete PHP, Apache, and MySQL Web-development environment that can be installed by downloading, unzipping, andrunning the software. XAMP makes the installation dramatically easier, and thesoftware also includes a raft of additions and extras that are genuinely useful,including PHP extensions, a Web front-end for MySQL (which is used throughout the"book), and more. XAMP is freely available for Windows, Linux, Mac OS X, andSolaris. It is recommended that you use XAMP for setting up the software if you have neverdone it before. The following sections cover how to set up XAMP on Windows andLinux .

3.1 Setting Up XAMPP

To begin, download the latest XAMPP installer from www.xampp.org/. Double-clickthe installer and follow the instructions. After installation, load the XAMP ControlPanel by clicking Start > Programs > XAMP .

3.2 Getting Started With PHP

PHP and HTML are good friends. Working side by side, the PHP and HTML pals areso reliant on each other that it is virtually impossible to tear them apart. Wheneveryou do any kind of Web development, you use PHP and HTML interchangeably on

the vast majority of scripts that you write. Both your HTML and PHP code will residein any files that end in .php.To begin, you' ll create a simple page that contains some HTML. Create a new file,and call it 1.php. Add the following code in the file:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01

Transitional//EN"

"http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<title>Tough first script</title>

</head>

<body>

<hl>The very first script</hl>

<p>

This is the first script!

</p>

</body>

</html>
```

In this example, you are writing some HTML to construct a simple Web page. ThisHTML first selects a suitable DOCTYPE (the dialect of HTML to use) and then goeson to set the title of the page (the text in the window border) with the <title> tag . Next, a large heading with the <hl> tag is added before then supplying thememorable words This is the first script! inside a paragraph (indicated by the <p> and</p> tags). If you have a burning ambition to change the memorable words tosomething else, so be it.

3.3 Running Code

When you create the files that store your code, make sure to place them in thedirectory that your Web server reads for files. This directory is typically called htdocs.If you are using XAMP, this directory is called /opt/lampp/htdocs on Linux, and inWindows it is the htdocs directory inside the directory where you installed it.

To run code, remember that http://localhost points to this htdocs directory. As such, ifyou want to access l.php, go to http:// localhost/1.php in your Web browser.May have noticed that this code has been stored in a file that has a .php extensioninstead of the .htm or .html extension. This is because all PHP scripts that you willuse are ultimately converted into text that the Web browser can understand. Youshould always remember that the Web browser has no idea what PHP is. The Webbrowser understands text, HTML, and CSS only. It is the Web server that runs PHPthat does the job of processing the PHP before sending the text, HTML, or CSS backto the browser.

Add a PHP block into code:

```
<! DOCTYPE HTML PUBLIC ”-//W3C//DTD HTML 4.01
TransitionaV/EN”
”http://www.w3.org/TR/htm14/loose.dtd”>
<html>
<head>
<title>Tough first script</title>
</head>
<body>
<hl>The very first script</hl>
<p>Tiris is the first script!</p>
<p>
<?php
echo ”This is PHP code”;
?>
</p>
</body>
```

</html>

In this example, you created another paragraph block and added a PHP block inside it.If you run the script again, you will see another line of text that displays Webbrowser.

3.4 Working with Forms

If you do any kind of Web development, you will come across forms in your dailyprogramming. These unsuspecting creatures reside on Web pages, suck informationfrom you through your fingers, and are then processed by a script on the server.Dealing with forms involves two processes. First, the displayed form needs to captureall the relevant information. Second, you read in the form and process it when the userclicks the Submit button.The first step is performed with l-ITML, to use the wide range of l-ITML formelements to produce the form on the page. To get started, add the following code toforml.php:

<form action="forml.php" method="POST">

Usemame <input type="text" name="usemame"><br />

Password <input type="password" name="password"><br />

<input type="submit" name="submitbutt" value="Login! "><br />

</form>

In this example, you create a simple form that contains three different elements. Theseelements work together to create a login form. On the first line, is the opening ¡form¿ tag. This tag takes two primary attributes. The first(action) needs to know the location of the script that will process the form. In this example,the action contains the name of the file with the form in it (fonnl.php), so the code to processthe form is assumed to be in the same file. The second attribute (method) can contain either GET or POST. This refers to how the datawill be transferred to the action script. These two types of method are very different:

POST: When you use the POST method, the data entered into the form istransferred to the action behind the scenes. The user has no visual cue as to what thedata is; it will be transmitted non-visually. Although you cannot see it, there are stillmethods of accessing POSTed data, so it should not be considered 100

GET: When you use the GET method, the data from the form is appended to theend of the URL as a series of variables. For example, if you were to fill in thepreceding form and use the GET method, you would see http://localhost/forml ?usemame=jono&password=secretpass&submitbutt=Login%2 lin the address bar of your browser, assuming you typed jono and secretpass into the

form. When you use the GET method, be careful that no sensitive information isdis- played in the URL, such as a password!After the ¡form¿ tag has been displayed, the next step is to display each formelement. The majority of form elements are added with the ¡input¿ tag and thenrelevant options are selected with the type attribute in the ¡input¿ tag.

The first field added is a normal text box. This provides a single line box in which theuser can type some text. To select this type of element, use the text setting in the typeattribute. You also should give the tag a name attribute. You will use the value of thename attribute to refer to the contents of the box later.

The second field added is a password box. When you use password in the type field ofthe ¡input¿ tag, the box behaves the same as a text box, but it disguises the data theuser enters with stars or circles.The final box added uses the submit type.

This provides a clickable Submit buttonthat can be used when the user has clicked the form. The additional attribute passed tothis tag is value; this pre-fills the widget with data. In the case of the Submit button,the value attribute changes the text displayed on the button.

3.5 ROLLING IN MYSQL

At this point in your adventure into PHP and MySQL, the MySQL side of thebargain has remained errant. Up until now, the focus has been on learning the corefundamental features behind the PHP language, but it is now time to shift this focus.It is now time for MySQL.A typical database consists of a number of different parts. These different partsare outlined in Figure 3.1 .

The top level is the main MySQL Server. The server contains all of the other parts inthe diagram. Many people get confused by the term server and think that it must besome kind of hardware. The word server actually has a dual meaning, referring toboth hardware designed to serve things and software designed to serve things. In thecase of MySQL, we are referring to a software server.

Within the MySQL server, you then may have a number of databases. This is anoth- erarea in which newcomers to database development sometimes get confused. Whenyou use MySQL, you can actually have a number of databases within the same server;you are not limited to just one.

As such, you could run a single MySQL installation ona computer and run databases for your main company, a products database, and yourWeb site.To now shift the focus

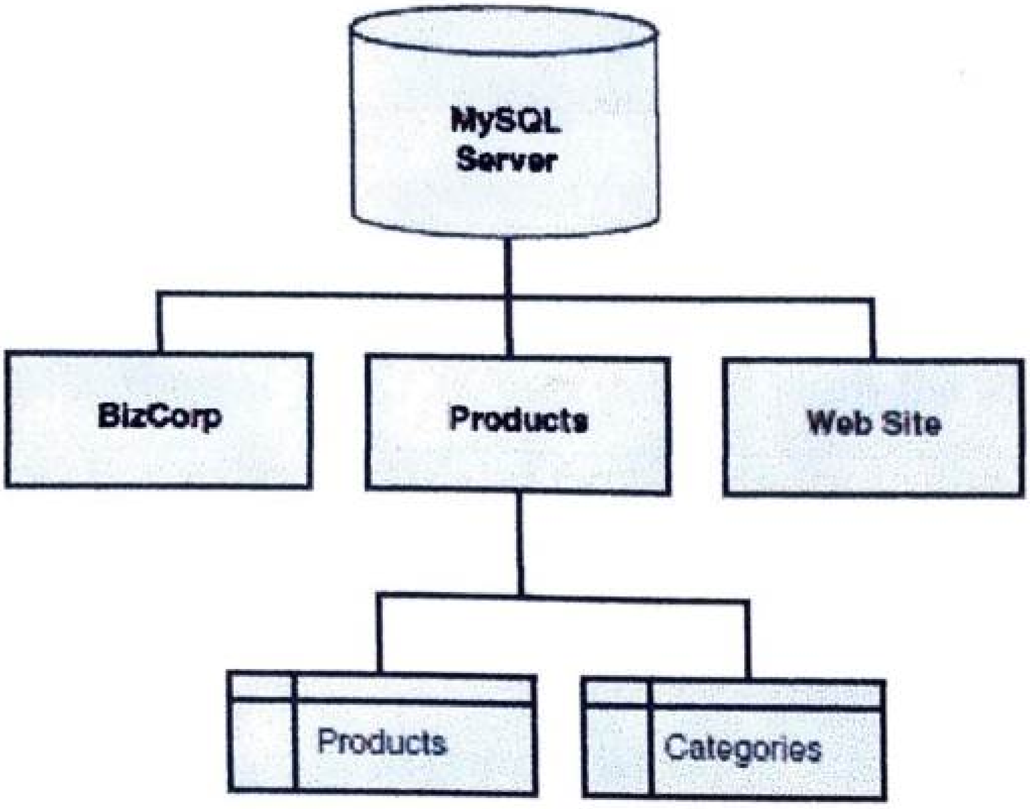


FIGURE 3.1: MySql Server Conncection With WebSite

to a specific database inside the server, you can see a numberof tables. Each database stores its data in a series of tables that can relate to each otherin different ways.

Every table consists of rows and columns. In database parlance, columns are referredto as fields, and rows are referred to as records. When you create database tables, youdefine what kinds of information you want to store in your fields (the columns), andthen each entry in the database is stored as a record (the rows).

3.6 How the Tables Relate to Each Other

With the two tables designed, it now makes sense to discuss how they relate to each other. The relationship that is created between the two tables is performed by matching certain types of information. In these two tables, this match is madebetween the id field in the categories table and the cat_id field in

the products table. If

both fields contain the same number, a relationship exists.When you add records to the products table, instead of adding the text name of thecategory in the

cat_id field, you instead store the id value

associated with the relevantcategory. For example, if the first category in the categories table is Swimming andhas an id of 1, you would store the number l in the

cat_id field of the products tablefor a swimming-related product.

Later,

when you write code to pull information fromthe database, you can make use of these different relationships to pull different typesof information.

At this point, you may be wondering what the benefits are of separating thisinformation into separate tables. Why not just include the name of the category in thefield? There are various practical reasons for this separation, as follows:

The first benefit becomes obvious when you want to change the name of thecategory. If you wanted to broaden the category from Swimming to Water Activities,for example, you would need to go through each record and change the fieldmanually. If you used two tables to separate the data, you would need to change onlya single record to adjust the category, and then the changes would be reflected in allrelated records.

If you use separate tables, you can associate more information with the category.There is no reason you could not add extra fields in the categories table later to addfeatures such as a description of the category, category icon, translated definitions,and more.

A big reason for extracting data into separate tables is ease of use. If you have asingle table with a huge number of fields, it looks a lot more complex and difficult todeal with. It is better to have a number of simple, smaller tables. If you spread your data across a number of smaller tables, your database willperform more efficiently, because it will not need to trudge through endless amountsof irrelevant data .

Separating your information into different tables has a number of benefits, and it iscertainly the right way to develop database-driven applications. You will see manyexamples ofhow this separation of data across tables works throughout the book.

3.7 Creating the Database

The next step is to actually turn this theory into something you can see, touch, andwork with. To do this, you need to make use of your database client. In this example,you will make use of phpMyAdmin, a tool included with XAMP, to create thedatabase.First, open your Web browser and connect to phpMyAdmin by accessmghttp://localhost/phpmyadmin/.

A login screen displays in response. If you have onlyjust installed MySQL, or XAMP, use the usemame root with no password. If you areworking on a shared computer, change your root password by first connecting to theserver with the following command:

mysql -u root mysql Now issue the following SQL query

SET PASSWORD FOR

root@localhost=PASSWORD('chinnyraccoon');

Obviously, replace the password in the parentheses with your own password.After you have logged into phpMyAdmin, you will see a frame on the left side of thescreen that is used to list databases and tables (nothing will be selected currently). Inthe main body of the screen is a box in which you can type a database name to becreated (see Figure 2-2). In this box, type productsdb and click the Create button. Younow see the productsdb database appear in the left frame. Ordinarily, your tables arelisted under the database name on the side, but no tables have been created yet.

3.8 Creating the Tables

In the main body of the screen is a box that you can use to create a table. In this box,type the name products and give it 5 fields. You will then be presented with the tabledesign screen. As shown in Figure 2-3, there are five rows with a number of differentboxes to configure each field in the table. The majority of these boxes will beirrelevant in this simple example.Before you create the fields, it's necessary to discuss the concepts of types in MySQL.

In any kind of database programming, the kind of information you store inside the-database has different characteristics depending on what type of information it is. Forex-ample, if you store a float in a database (a float is a number with a decimal place,such as 21.45), more memory is required to store this type of information than storingan integer (a whole number, such as 35).

In addition to this, different numbers of havedifferent ranges. For example, the TINYINT type in MySQL can store any wholenumber between - 128 and 127. As a contrast, the BIGINT datatype can store anything from - 9223372036854775808 to 9223372036854775807.

In terms of memory usage and performance, there is the difference between storing aI-byte value with TINYINT and storing an 8-byte value with BIGINT. Throughoutthis book, you will be using the major MySQL types extensively, and each examplewill explain why the relevant data type has been selected. This should give you asolid, practical idea ofhow different data types should be used.Without further ado, it's time now create the tables.

In the first row of the Fieldcolumn, add id as the name of the field. In the second column (Type), select the datatype as MEDIUMINT; this will provide access for up to 8388607 products.Remember that this id column requires a unique value for each product, so you needto ensure that the data type is large enough to cater for the potential number ofproducts you will need. Continue along the row, and then select the Extra box andselect auto_increment from it.

This option automatically fills the id field for you whenyou add a record. With this option enabled, each new record is given a value in the idcolumn that is I larger than the id in the previous record. With auto_increment set,you can effectively ignore the id field and it will look afteritself. The final option to set is the first radio button (it has an icon of a small keyand atable). By selecting this option, you are making the field the primary key, and thedatabase will not allow a duplicate value in this field. If you combine this option andauto _increment as done here, you can be assured that you wiU have a reliably uniqueprimary key.Now, go through each row in tum and add the following fields:

cat_id: Add cat_id to the Field column and assign the type of TINYINT. Havingmore than 127 categories is unlikely, so this is a suitable type. You don't need toprovide a length.

product: Add product to the Field column and assign the type of VARCHAR. Youcan use this type when you need to store fewer than 255 letters in the field. You willneed to supply a maximum length for the field when using the VARCHAR type. Add50 as the length; it is unlikely a product title will be longer than 50 letters in size.

description: Add description to the Field column and assign the type TEXT. Youcan use TEXT when you need to store potentially large chunks of text in a field. Youdon't need to supply a length.

price: Add price to the Field column and assign the type FLOAT. You can use thistype when you need to store numbers with a decimal place in them. You don't need tospecify a length.When you have configured your fields, click the Save button, and your table iscreated. One of the most useful benefits of using phpMyAdmin is that the SQL that isgenerated when you do something is always shown to you. This gives you a fantasticidea of how SQL works by just having a casual look at the generated code when youuse phpMyAdmin. This SQL code will not make much sense right now, but have alook over it to get a gist of what SQL looks like. SQL is used extensively in the manyprojects later in the book, so it is advised you get used to reading through SQL assoon as possible.The generated SQL should look fairly similar to this:

CREATE TABLE 'products' ('id' MEDIUMINT NOT NULL AUTO_INCREMENT , 'cat_id' TINYINT NOT NULL , 'product' VARCHAR(50) NOT NULL 'description' TEXT NOT NULL , 'price' FLOAT NOT NULL , PRIMARY KEY ('id'));

If you read the SQL from top to bottom, you will see how it is similar to English.Although you will rarely write SQL manually to create tables (you normally justcreate them in a client such as phpMyAdmin), the syntax to create a table is fairlystraightforward. Now you need to create the second table. To do this, click theperfectproducts link in the left frame. In the main body of the page, you can nowcreate a new table called categories and give it 2 fields. In the table design screen, addthe followingfields: id : Add if to the Field column and assign the type TINYINT. Now selectauto_increment from the Extra box and then select the Primary Key option in thecolumn with the small key icon at the top.

 category: Add category to the Field column and assign the type VARCHAR.Set the length to 30. When you have added these fields, click the Save button. You arefinished.

3.9 Adding Data to the Tables

With the tables complete, you are ready to load them with data You will begin bydoing this manually in phpMyAdmin, but as you work through the book, you willcreate forms to automate how the data is added to different tables.First, you'll add some data to the categories table.

You need to add some categoriesfirst so that you can reference the relevant categories in the products table. To adddata, select the categories table from the tables list in the left frame. You should nowsee a number of tabs appear in the main body of the screen at the top. Click the Inserttab. You are taken to a screen in which you can add data into the table. When adding information, you are given two sets offorms to add two records into thetable at a time. You don't need to use both, but it is handy to have two forms at thesame time when entering test information, as you are doing here.

When you add the data, you don't need to use any of the Function options. Also,remember to not add anything into the id field; auto_increment will deal with that foryou. All you need to do is fill in a category in the Category field. Add the followingcategories one at a time: Swimming Soccer Baseball Cricket

When you have added these records, click the Browse tab in the main body of thepage. you now see the table with the id values automatically filled in, as well as thecategories that you added Now, fill some data in the products table. To do this, click the products table in theleft frame and then click the Insert tab again to add the following information into theform:

 In the first record, add l into the cat_id box (this puts this record in the Swimmingcategory) and then add any swimming-related product that you can think of (Beimaginative; it is always fun add some kind of ludicrous product that gives you achuckle when you deal with the record.) Add the price as a proper price (such as21 .99), but do not add the currency symbol.

For the second record, add 3 to the cat_id box (this puts this record in the Baseball-category). Again, add fun product and add a normal price.Feel free to add some more products, but remember to use the id from the categoriestable in the cat_id field. This will ensure you are relating the two tables properly .

3.10 CONNECTING TO MYSQL IN PHP

With some core PHP experience and a database development behind you, now is thetime to perform the all-important step of hooking the two together and connecting to the database in PHP. This involves you creating the database connection, then issuinga SQL query, and finally dealing with the results of the query in a way that makessense in your Web application.

To actually connect to MySQL, PHP provides built-in support to make theconnection, perform queries, and deal with the results. To do this, a number of PHPfunctions, prefixed with mysql_, make the magic happen. Although these functionsare very useful, there may a case in the future when you want to be able to use anyone of a number of databases with your Web application.

With this requirement, youwould need to use a third-party database abstraction library, such as PEAR::DB orADODB. If you know you will be using MySQL for a specific project, however, themysql_ range of functions is perfectly suitable.

3.11 Making the Connection

The first step is to actually make a connection to the database. This connection is usedto communicate with the database when sending queries and data back and forth. Todo this, you need to write some PHP that will pass the relevant authentication detailsto MySQL and, if you are authorized, give you a connection.Create a new file called dbconnect.php and add the following code:

<?php

dbhost = "*localhost*";

dbuser = "*root*";

dbpassword =′ "′;

dbdatabase = "*brmsdb*";

db = *mysql_connect*(dbhost, *dbuser*,dbpassword);

mysql_select_db(*dbdatabase*,db);

?>

The first four lines in the code create some variables that contain the relevant piecesof information that are required to connect to a database. It is important to rememberthat these four lines literally are just set a bunch of variables; no connection is made atthis point. you can call these variables what you like, but you will need to providelegitimate information for the host, usemame, password, and database that you areusing on the MySQL server.After you set the variables, you can make the connection. This happens with the

$db=mysql_connect($dbhost, $dbuser, $dbpassword) line.

This line uses themysql_connect() function to pass the host, usemame, and password variables to theMySQL server and put the result of the connection in the $db variable.

You then usethe $db variables as a pointer to the main connection. To keep the code simple, thisexample does not involve any error checking; often you would check to see if theconnection is suitable and possibly display a suitable error message. Someprogrammers feel this is unnecessary as you will get a PHP error message anyway ifthe connection is rejected, but if you implement your own errors, you can format andreference your errors in a nicer way.

When the connection has been made, you need to select the database that you want touse (remember, MySQL can have a number of different databases). This is performedwith the mysql_select_ db() on the next line. Here you specify the variable with thechosen database and also specify the connection (db) that the database should beselected fromAt this point, you are now connected. Any other MySQL-related connections on thispage will be applied to the connection that has just been created.

3.11.0.1 Querying the Database

When you want to get, set, or update information in the database, you use SQLqueries. you experimented with SQL a little earlier when you created your tables inphpMyAdmin. Take a deep breath, as now you will be writing specific SQL queriesby hand. Don't worry; that doesn't sound nearly as scary as you may think.Beneath the mysql_select_db line, add the following code (shown in bold):

$db= mysql_connect($dbhost, $dbuser, $dbpassword); mysql_select_db($dbdatabase, $db); $sql = "SELECT "' FROM students;"; $result= mysql_query(Ssql);

The first line (the $sq) line) simply sets another variable, but this one contains theSQL for the query that you want to send to MySQL. SQL is a very simple andeffective language, and you will be using it throughout the book-with each piece ofSQL being fully explained as you go along. In this particular line, you are selecting allthe rows from the products table. You can read the SQL line from left to right tounderstand how it works:

First select (SELECT) everything (*) from (FROM) the students table(students) and then end the query(;).Every SQL statement should end with a semi-colon. Although you do not need toexplicitly add a semicolon in your PHP scripts, it is good form to do so. It just keepsyou in the habit of adding a semi-colon, particularly if you use the commandlineMySQL client.At this point, the SQL has not actually been sent to the server; you have merelycreated a variable that contains the query. The next line actually sends the query to thedatabase. The mysql_query() function is used to send the SQL (in the $sql variable) tothe database, and the results of the query is placed into the $result variable.Iterating Through the ResultsInside $result lies the holy grail, the motherland that is the result of your query.Although $result contains the results, you can think of it as a big conjoined mess ofresults. In its current form, $result is not all that useful, and to be really practical youneed to iterate through each row from the query. If you loop through each row, youcan then display the relevant information on the page. This is the grand plan.Add the following code beneath the mysql_query line in your file: $sql = ”SELECT * FROM students;”; $result= mysql_query($sql); while(Srow = mysql_fetch_assoc(Sresult)) echo $row['students']; In this chunk of code, you are using a while loop to iterate through each row in theresult set. This is performed by adding a loop condition that extracts each row from$result by using mysql_fetch_assoc and then putting the row into the $row variable.

3.11.1 Consistency Across Pages with Sessions

One of the biggest challenges when doing any kind of Web development ismaintaining state across pages in a stateless Web. This grandiose statement basicallytranslates into ”sharing information across different pages.” The reason for thisdifficulty is that each Web page you create essentially functions as an individualprogram. When you build Web applications that span a number of different pages, there is noimplicit means of sharing information across these pages other than using the GETand POST variables. Sessions change all of this.Sessions offer a surprisingly simple and efficient means of literally sharing variablesacross different pages.

This is achieved with a number of PHP functions that give youthe ability to enable a page with sessions, create session variables, and use thesesession variables in your scripts. Sessions can be used to share any PHP variables youlike across different pages.

Creating the Session To use sessions, first add the session_start() function at the very beginning of eachpage for which you want to use sessions. It is critically important that session_ start()is right at the beginning-no fancy HTML, no picture of your Aunt Maud, and noteven white space should come before it.To demonstrate the importance of this, create a new file called sessions.phpand add the following code:

<?php session_start(); ?> When you run the script, you will not see anything; the session support hasbeen happily built into your page. Now adjust the code and put a single white space

before the <?php tag: <?php session startO; ?>

When you make this tiny change, you are given a particularly venomous error message: Warning: session_start() [function.session-start]: Cannot send session cookie - headers already sent by (output started at/opt/lampp/htdocs/sites/startingchapter/sessions.php:1) in/opt/larnpp/htdocs/sites/startingchapter/sessions.php on line 3 The reason it is so important to not have anything before session_startO is that thesessions framework makes use of the HTTP headers that form the mechanics of theWeb page. These special headers are pre-pended to each Web page and as such, if youadd any content before session_start(), the script will be trying to send out content(such as the white space), then the headers, and then the main content. This is not theway the Web works and, hence, PHP will shout at you in the form of the previouswarnmg message.

Using Session Variables Before you use a session variable, you need to register it. This is achieved with therather predictably named session_register() function. To use it, specify the name ofthe variable to create inside the brackets. To demonstrate this, add the following line of code to sessions.php after session_start(): session_register("userid"); This line registers with the session handling system that the userid variable can be shared across pages. The next step is to actually set this variable to something useful. Add this line next: $_SESSION['userid'] = 10;

In this line, you are using the special $_SESSION superglobal to reference the userid variable. The $_SESSION syntax should look fairly familiar, as you used $_GET and $_ POST earlier to access GET and POST variables respectively. To test whether your session variable is accessible on the second page, create a file called sessions2.php, and add the following code: <?php session start(); echo "The userid session variable is: " . $_SESSION['userid']; ?> Remember to visit sessions.php first (so the variable is set) and then visit sessions2.php to see that the variable is shared across the pages. To access the session variables,you simply include session_start() on the page and then refer to the variable with$_SESSION. The session information is available while the browser is open. When the browserwindow is closed, the session information is lost. Although this is often asuitable means of destroying a session, sometimes you need to forcibly destroy thesession data on command. To do this, you can use the following command:session_destroy0;All the session variables are then suitably deleted.

3.12 Summary

This chapter explored some of the core concepts that need to be understood beforeyou can move on and start writing applications. Instead of spending hours coveringevery nuance of PHP and MySQL, you have learned the fundamentals needed tomove on, and each application will present news skills, techniques, and ideas.As with any programming language, or natural language for that matter, practicereally does make perfect. Just reading how to do something in PHP and actuallyunderstanding it are often two separate things. A great way to get accustomed tothe language is to create lots of little scripts that test different aspects of the language.These scripts are useful not only for learning, but also they can be a great referencepoint further down the line when you have forgotten how to do something.

Chapter 4

Feasibility Study

Feasibility is a determination of whether or not a project is worth doing. Feasibility Study is performed for determining the feasibility of a project. The content and recommendations of such a study will be used as a sound basis for deciding to proceed, postpone, or cancel the project. In the conduct of feasibility study, we will usually consider following inter-related type of feasibility.

4.1 Technical feasibility

We concern here with specifying Equipment and software that will satisfy the user requirement. It will run on any platform (machine), since the C is considered platform independent. It will run with minimum system requirements and with minimum system resources acquired during run. It will need a web server, to which it gets from the internet, at run time. Expandability will be maintained in the new system. New modules can be added later on the application, if required in the future.

4.2 Operational feasibility

The system will be easy to use as user interface is GUI based. The system is easy to use so no any special skills will be required to use the system. New user will find it easy to use. So the project will be operationally feasible.

4.3 Economic feasibility

The procedure is to determine the benefit and savings that are expected from the project and compare them with the cost. As internet is the cheapest way of communication, we can perform communication using web. The cost is just the cost of using the internet based on the channel allocation. So the project will be economically feasible.

4.4 Social feasibility

The project will be socially feasible as todays user want quick services in everywhere. With the help of web based shopping we can make business with others instantaneously in just seconds, in a large geographical area.

The project will be socially feasible as todays user want quick services in everywhere, with the help of web based consultation. In feasibility study phase we had undergone through various steps which are describe asunder:

1. Identify the origin of the information at different level.

2. Identify the expectation of user from computerized system.

Chapter 5

System Design

During the course of fulfilling of the system development, many different situations arise that must be understood to facilitate the decisions on the approaches, methods, strategies, technologies and development. The system to be developed may be either simple or complex, where the complex systems can be a collection of the other small systems. Such complex integrated system is developed requiring the operation on the heterogeneous platform of hardware and software. It is quite possible that the system developed may require maintenance to have some additions and modifications. This system may be old in terms of technology, design and lacks flexibility requiring a higher maintenance cost. The system analysis can be defines as:-System analysis is an important activity that takes place when new information systems are being built or existing ones are changed. There are some system elements, given below, which require the system analysis to be performed:

1. System Objective
2. System Boundary
3. System Importance
4. Nature of the System
5. Role of the System as an Interface
6. User Participation
7. Resources

5.1 System Objective

Its defining the centralized, single objective of the system. Such objective must be achieved accurately.

5.2 System Boundary

It is necessary to establish the system boundaries that define the scope of the system. It also helps to identify the inputs and outputs of the system.

5.3 System Importance

It is required to see the system importance and its place as the organizational aspects.

5.4 Nature of the System

It is to decide whether this particular system will open or closed. On the basis of the nature, the designer will make the architecture of the system.

5.5 Role of the System as an Interface

Sometimes it happens that the system we are going to build plays the role of an interface among the various other systems. Working as an interface is a very critical task, because it makes the connectivity among the system.

5.6 User Participation

Basically, any new system is to build requires the complete user participation because the user has to tell its requirements and can see the development of the project.

5.7 Required Resources

Resources may be in any of the form like hardware, people and software etc. so, such resources requirement should be mentioned in the initial phase.

Chapter 6

Requirement Analysis

6.1 Requirement Gathering

In software engineering requirement analysis is the most important aspect to build a strong , bug free, user-friendly WEB APPLICATION . We have started working on determining the functionalities that the web application should provide. We have done a good amount of research on existing some web applications like this and the disadvantages of those. Once the functional requirements are finalized, we did research on the current technologies that are widely used in the industry and decided to use PHP , Laravel .

6.2 Requirement Specifications

6.2.1 Software Requirements

Operating System: Windows 7/ Windows 8/Windows 10 Database: MySQL Front End: HTML5, CSS3, JavaScript, Ajax IDE: IntelliJ IDEA Application Server: Apache Tomcat 8.5.6 Frameworks and APIs: Laravel Browser: Chrome or Firefox or Internet Explorer

6.2.2 Hardware Requirements

Processor: Intel core i3 Processor

speed: 1.9 GHz

RAM: 2 GB

Chapter 7

Database Design

The database that is used to design the web application is MySQL. MySQL and Laravel is used to create tables and run queries. In this application development, we have used MySQL to store blood group table, Contact table , donorregistration table , donation table , request table , users table . Hence, we have identified six tables to achieve desired functionality.

1. Blood group table: Holds the Blood Group and Their corresponding mapping .

2. Contact table: The users who tried to contact with admin , their data will accumulate here.

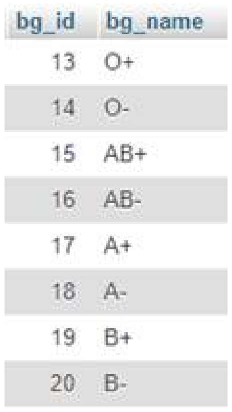
3. Donor registration table: If a donor register his data store here .

4. Donation table: Hold donors donations details

5. Resquest table: Holds user request details .

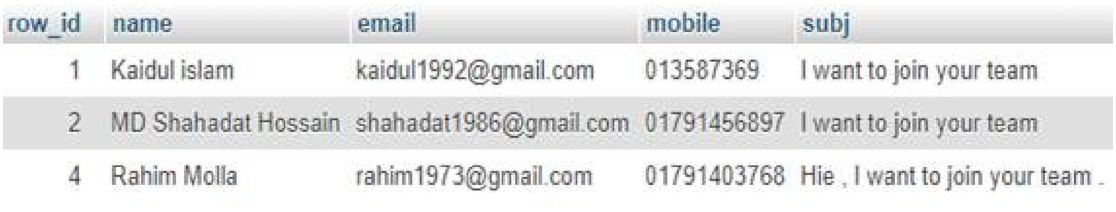
6. Users details: Holds Admin Panel Data .

When a user wish to be a donor , He register as donor and his data will insert into donorregistration table . When a user search for specific blood group , we retrieve the data from donorregistration table . When an user send request , data store on the request table . When a request is hit the database , an automated system triggered which draw the api from api.greenweb.com . This API sends automated text message to the all donor for correspodning blood . Api run a sql query which retrieve data from donorregistration table . When a donor login with his id , he insert donation details on BLOOD DONATED section , This details store on the donation table . When an user update his profile this data changes on donor registration table . Here are the diagram of the Database of our application:



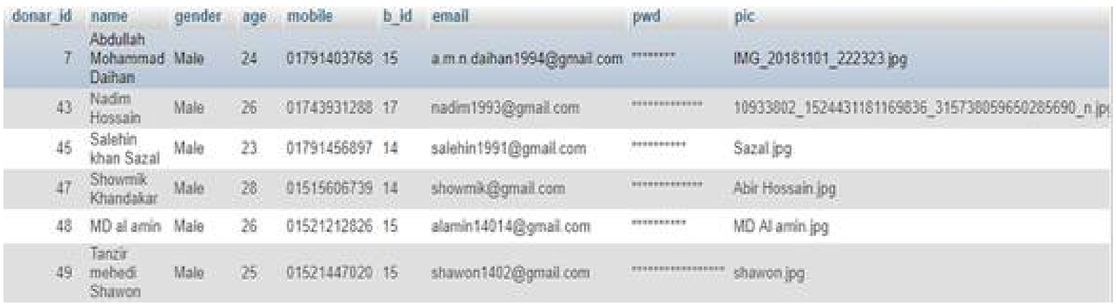
bg_id	bg_name
13	O+
14	O-
15	AB+
16	AB-
17	A+
18	A-
19	B+
20	B-

Figure 7.1: Blood group table



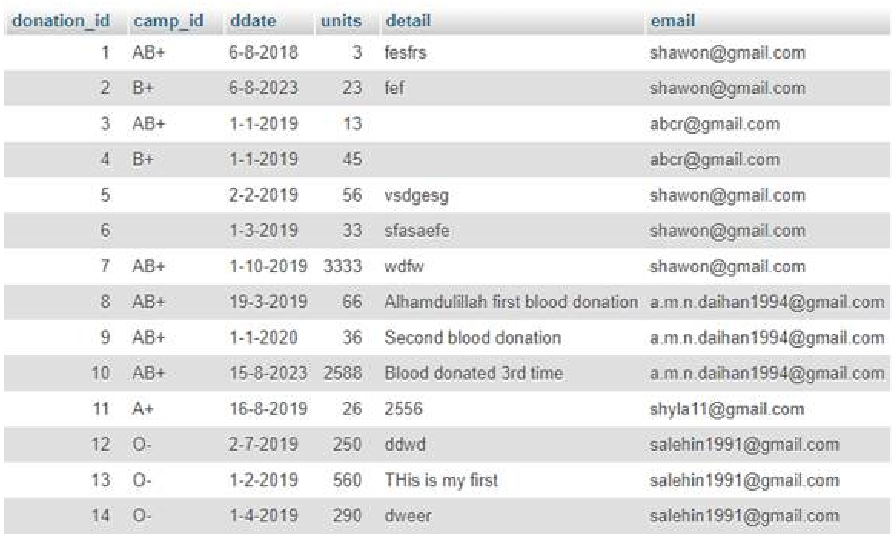
row_id	name	email	mobile	subj
1	Kaidul islam	kaidul1992@gmail.com	013587369	I want to join your team
2	MD Shahadat Hossain	shahadat1986@gmail.com	01791456897	I want to join your team
4	Rahim Molla	rahim1973@gmail.com	01791403768	Hie , I want to join your team .

Figure 7.2: Contact table



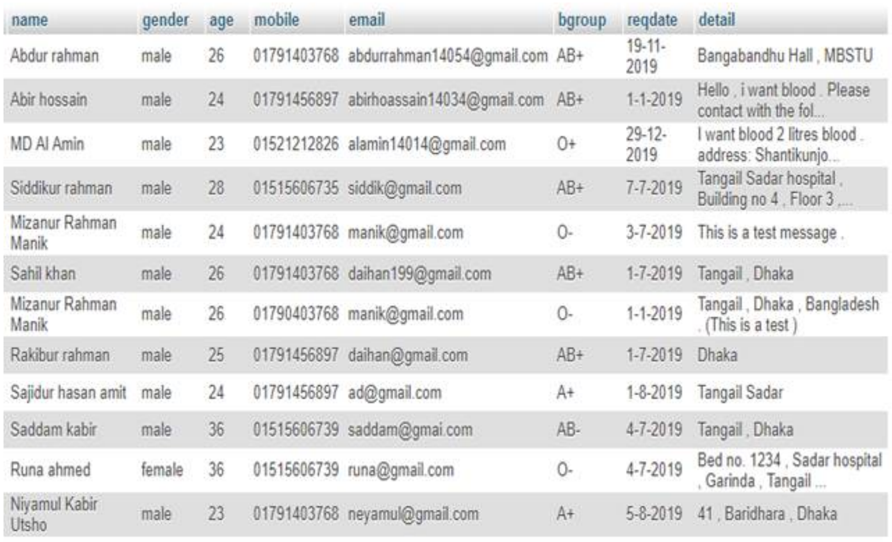
donar_id	name	gender	age	mobile	b_id	email	pwd	pic
7	Abdullah Mohammad Daihan	Male	24	01791403768	15	a.m.n.daihan1994@gmail.com	********	IMG_20181101_222323.jpg
43	Nadim Hossain	Male	26	01743931288	17	nadim1993@gmail.com	**************	10933802_1524431181169836_315738059650285690_n.jp
45	Salehin khan Sazal	Male	23	01791456897	14	salehin1991@gmail.com	***********	Sazal.jpg
47	Showmik Khandakar	Male	28	01515606739	14	showmik@gmail.com	**************	Abir Hossain.jpg
48	MD al amin	Male	26	01521212826	15	alamin14014@gmail.com	***********	MD Al amin.jpg
49	Tanzir mehedi Shawon	Male	25	01521447020	15	shawon1402@gmail.com	******************	shawon.jpg

Figure 7.3: Donor registration table



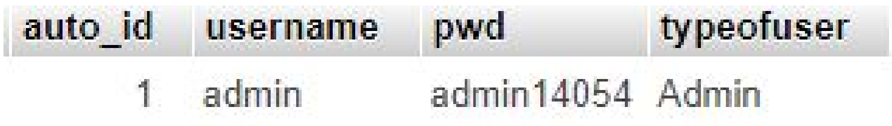
donation_id	camp_id	ddate	units	detail	email
1	AB+	6-8-2018	3	fesfrs	shawon@gmail.com
2	B+	6-8-2023	23	fef	shawon@gmail.com
3	AB+	1-1-2019	13		abcr@gmail.com
4	B+	1-1-2019	45		abcr@gmail.com
5		2-2-2019	56	vsdgesg	shawon@gmail.com
6		1-3-2019	33	sfasaefe	shawon@gmail.com
7	AB+	1-10-2019	3333	wdfw	shawon@gmail.com
8	AB+	19-3-2019	66	Alhamdulillah first blood donation	a.m.n.daihan1994@gmail.com
9	AB+	1-1-2020	36	Second blood donation	a.m.n.daihan1994@gmail.com
10	AB+	15-8-2023	2588	Blood donated 3rd time	a.m.n.daihan1994@gmail.com
11	A+	16-8-2019	26	2556	shyla11@gmail.com
12	O-	2-7-2019	250	ddwd	salehin1991@gmail.com
13	O-	1-2-2019	560	THis is my first	salehin1991@gmail.com
14	O-	1-4-2019	290	dweer	salehin1991@gmail.com

Figure 7.4: Donation table



name	gender	age	mobile	email	bgroup	reqdate	detail
Abdur rahman	male	26	01791403768	abdurrahman14054@gmail.com	AB+	19-11-2019	Bangabandhu Hall , MBSTU
Abir hossain	male	24	01791456897	abirhoassain14034@gmail.com	AB+	1-1-2019	Hello , i want blood . Please contact with the fol...
MD Al Amin	male	23	01521212826	alamin14014@gmail.com	O+	29-12-2019	I want blood 2 litres blood . address: Shantikunjo...
Siddikur rahman	male	28	01515606735	siddik@gmail.com	AB+	7-7-2019	Tangail Sadar hospital , Building no 4 , Floor 3 ,...
Mizanur Rahman Manik	male	24	01791403768	manik@gmail.com	O-	3-7-2019	This is a test message .
Sahil khan	male	26	01791403768	daihan199@gmail.com	AB+	1-7-2019	Tangail , Dhaka
Mizanur Rahman Manik	male	26	01790403768	manik@gmail.com	O-	1-1-2019	Tangail , Dhaka , Bangladesh . (This is a test)
Rakibur rahman	male	25	01791456897	daihan@gmail.com	AB+	1-7-2019	Dhaka
Sajidur hasan amit	male	24	01791456897	ad@gmail.com	A+	1-8-2019	Tangail Sadar
Saddam kabir	male	36	01515606739	saddam@gmai.com	AB-	4-7-2019	Tangail , Dhaka
Runa ahmed	female	36	01515606739	runa@gmail.com	O-	4-7-2019	Bed no. 1234 , Sadar hospital , Garinda , Tangail ...
Niyamul Kabir Utsho	male	23	01791403768	neyamul@gmail.com	A+	5-8-2019	41 , Baridhara , Dhaka

FIGURE 7.5: user request table



auto_id	username	pwd	typeofuser
1	admin	admin14054	Admin

FIGURE 7.6: Admin details Table

Chapter 8

Embodiment

The BLOOD MANAGEMENT SYSTEM is a Web Application is changes the Blood transfursion for the patient by instant messaging to donors . The application provides a flexible and easy to use environment on desktops as well as portable devices like smart phones/tablets for the users to achieve their respective objective.

1) Admin

2) Donor

3) User

8.1 Admin

Laravel Security provides the Admin login. The Admin module provides various functionalities. The Admin can see the list of users who tried to contact with admin . Donor List , Requests are also accessible by admin .

8.2 Donors

Donors will be able to perform functions such as registering with the application and creating an account by providing the details of Donor Name, Donor Age, Email, Mobile Number and Password that are stored in the Donor registration table of MySQL database. Once the account is activated, this module allows Donors to post donation details , and it will be stored in donation table of MySql . The donors will also be given privilege to Update his profile. He/she can Change his name , password , Age . He/she can also view the donor list , User requests that have stored in the database.

8.3 User

The patients dont required any registration to send blood transfusion request . They will be able to watch donor list and their details information , search for specific blood . If specific blood not found there will be a message that this blood has no data . User can easily send message to all the donors who has the blood group which patient need . If an user wish to contact with admin , he simply fill up the contact us form and instantly a message sent to the admin By using MySql.

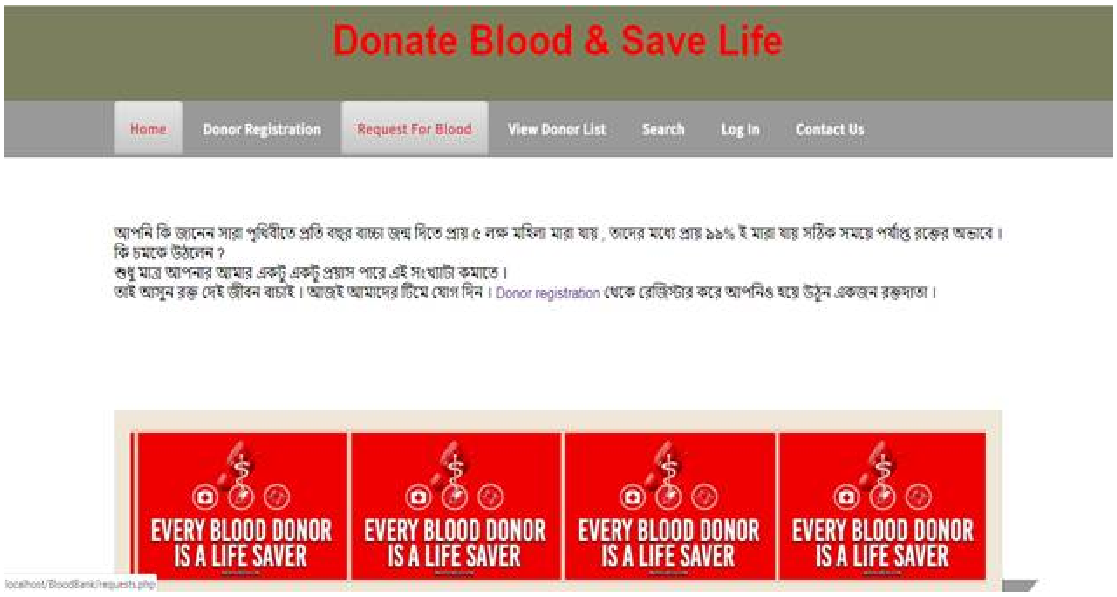
Chapter 9

Running The Project

Hence our project is completed . It is high time to run the project . Our projects Graphical User Interface (GUI) are developed using HTML5, CSS, JavaScript, Ajax and Bootstrap to provide an easy to understand interactive screens. Various screens and the navigation between screens are discussed below .

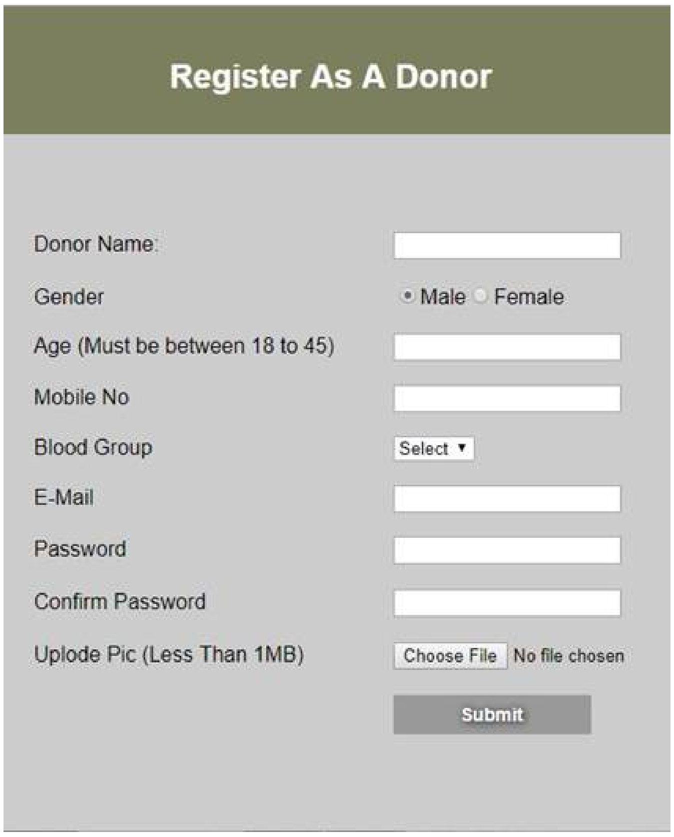
9.1 Home Page

The home page appears on the start of the application. The screen will provide various functionalities like Donor Registration , Request for blood , View Donor List , Search , Log In , Contact Us .



আপনি কি জানেন সারা পৃথিবীতে প্রতি বছর বাচ্চা জন্ম দিতে প্রায় ৫ লক্ষ মহিলা মারা যায় , তাদের মধ্যে প্রায় ৯৯% ই মারা যায় সঠিক সময়ে পর্যাপ্ত রক্তের অভাবে ।
কি চমকে উঠলেন ?
শুধু মাত্র আপনার আমার একটু একটু প্রয়াস পারে এই সংখ্যাটি কমাতে ।
তাই আসুন রক্ত দেই জীবন বাচাই । আজই আমাদের টিমে যোগ দিন । Donor registration থেকে রেজিস্টার করে আপনিও হয়ে উঠুন একজন রক্তদাতা ।

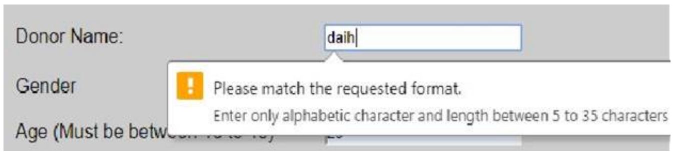
Figure 9.1: Home Page



Register As A Donor

Donor Name:	
Gender	● Male ○ Female
Age (Must be between 18 to 45)	
Mobile No	
Blood Group	Select ▾
E-Mail	
Password	
Confirm Password	
Uplode Pic (Less Than 1MB)	Choose File No file chosen

FIGURE 9.2: Donor Registration form



Donor Name: daih

Gender

Age (Must be betw

Please match the requested format.
Enter only alphabetic character and length between 5 to 35 characters

FIGURE 9.3: Donor name error pop up

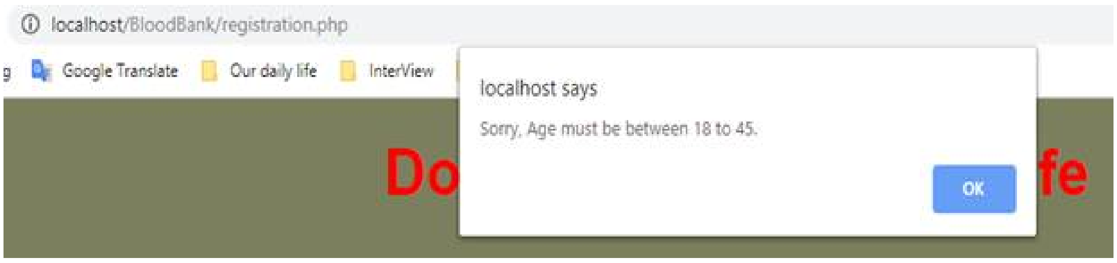
9.2 Donor Registration

If an user wish to be a donor , then he simply fill up a form and register himself as a donor . His/her data will stored in the mySQL donorregistration table . His details will be saved there .

Here are some constraints that we have set , name length should be greater than 5 and less than 35 . If he input a name which length is does not adhere to the constraint than a message will pop up like figure 9.3

Age must be greater than 17 and less than 46 . Because it is recommended by doctors that a donors age must be between 18 to 45 . If it is not followed then database will not store the data and a pop up will appear like figure-9.4

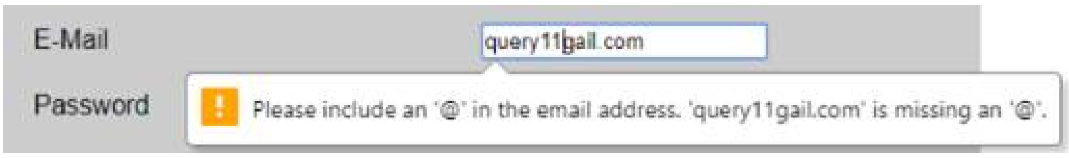
If an user input an invalid email our system automatically detect and pop up the message like figure-9.5



localhost says

Sorry, Age must be between 18 to 45.

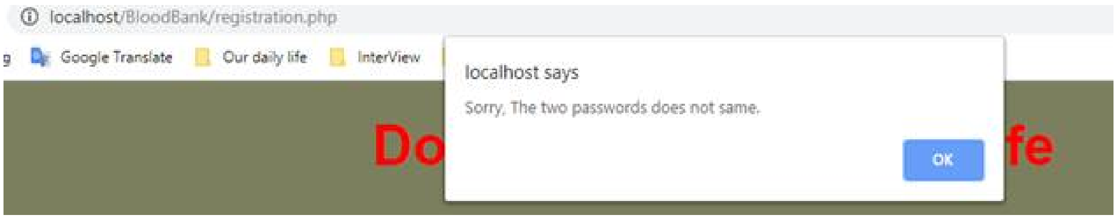
FIGURE 9.4: Age error pop up



query11gail.com

Please include an '@' in the email address. 'query11gail.com' is missing an '@'.

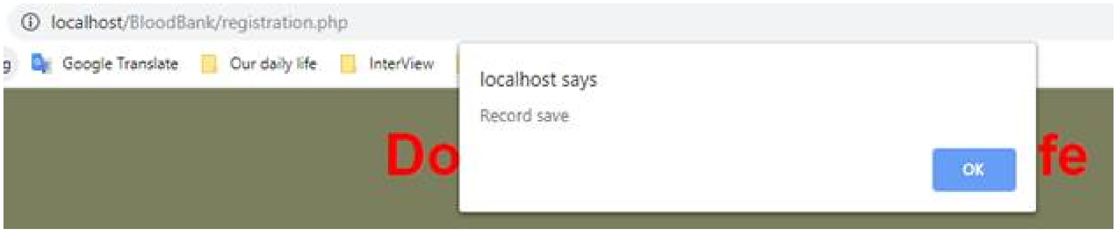
FIGURE 9.5: Email error pop up



localhost says

Sorry, The two passwords does not same.

FIGURE 9.6: Password error pop up



localhost says

Record save

FIGURE 9.7: Image error pop up

If two password are not same , pop up will be like figure 9.6

Image must be less than 1MB .

After successful registration , following message will pop up like figure 9.7

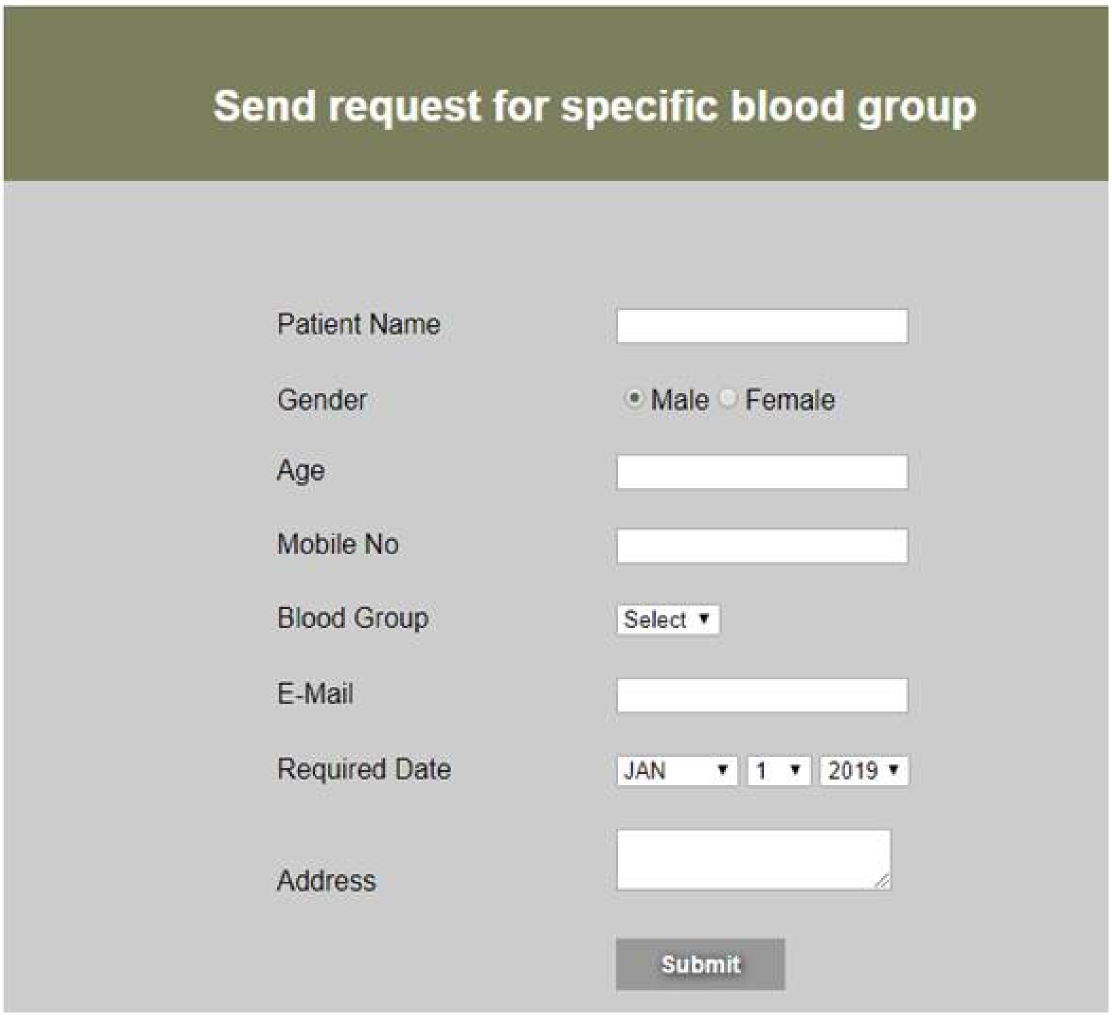
, After pressing ok record will be sent to MySql DataBase .

9.3 Request For blood Page

This page is for sending message to the donors at a glance .fig- 9.8

Patient name must be between 5 to 35 length figure - 9.9 .

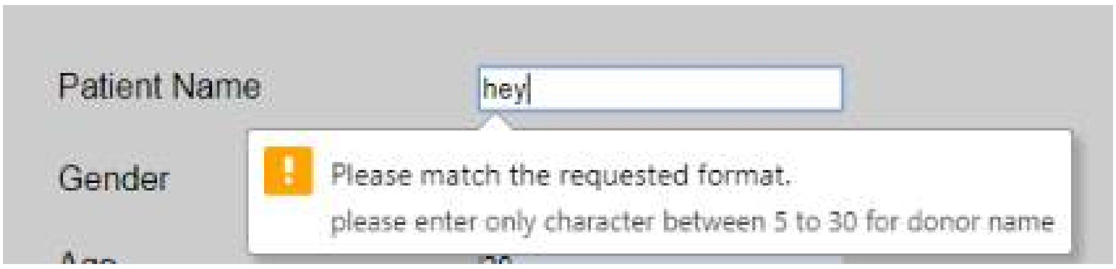
After Successful request message will be sent to the corresponding donor .



Send request for specific blood group

Patient Name	
Gender	[✓ Male] Female
Age	
Mobile No	
Blood Group	Select
E-Mail	
Required Date	JAN 1 2019
Address	

FIGURE 9.8: Patient Request Page

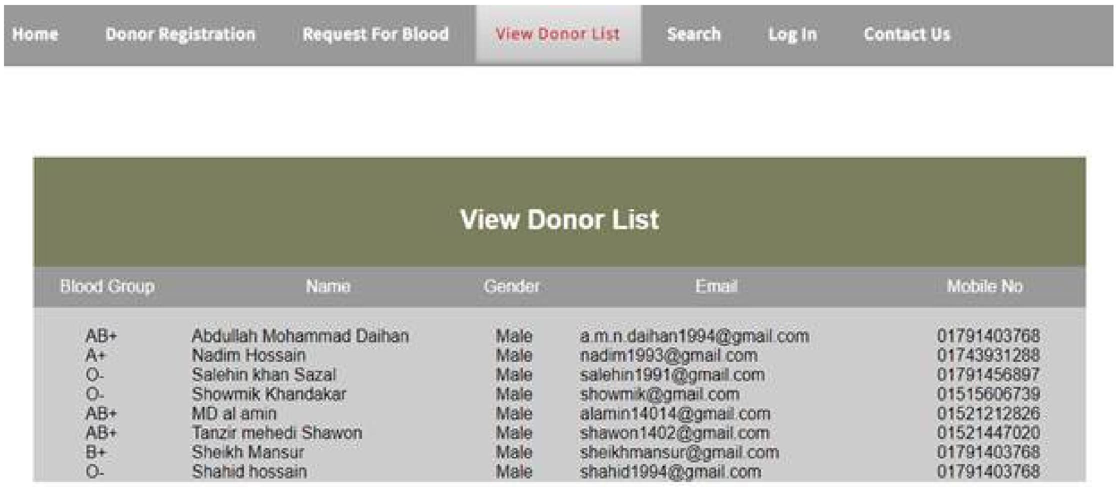


Patient Name hey

Gender

Please match the requested format.
please enter only character between 5 to 30 for donor name

FIGURE 9.9: Patient name error



View Donor List

Blood Group	Name	Gender	Email	Mobile No
AB+	Abdullah Mohammad Daihan	Male	a.m.n.daihan1994@gmail.com	01791403768
A+	Nadim Hossain	Male	nadim1993@gmail.com	01743931288
O-	Salehin khan Sazal	Male	salehin1991@gmail.com	01791456897
O-	Showmik Khandakar	Male	showmik@gmail.com	01515606739
AB+	MD al amin	Male	alamin14014@gmail.com	01521212826
AB+	Tanzir mehedi Shawon	Male	shawon1402@gmail.com	01521447020
B+	Sheikh Mansur	Male	sheikhmansur@gmail.com	01791403768
O-	Shahid hossain	Male	shahid1994@gmail.com	01791403768

FIGURE 9.10: View Donor List Page

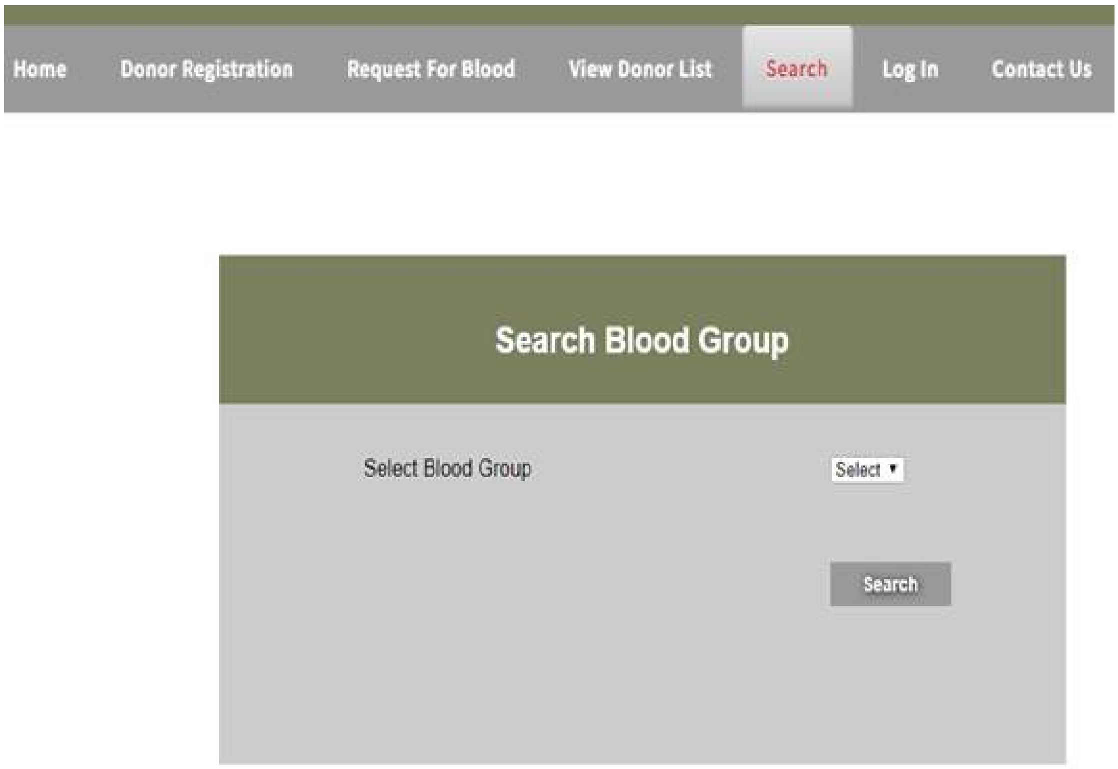


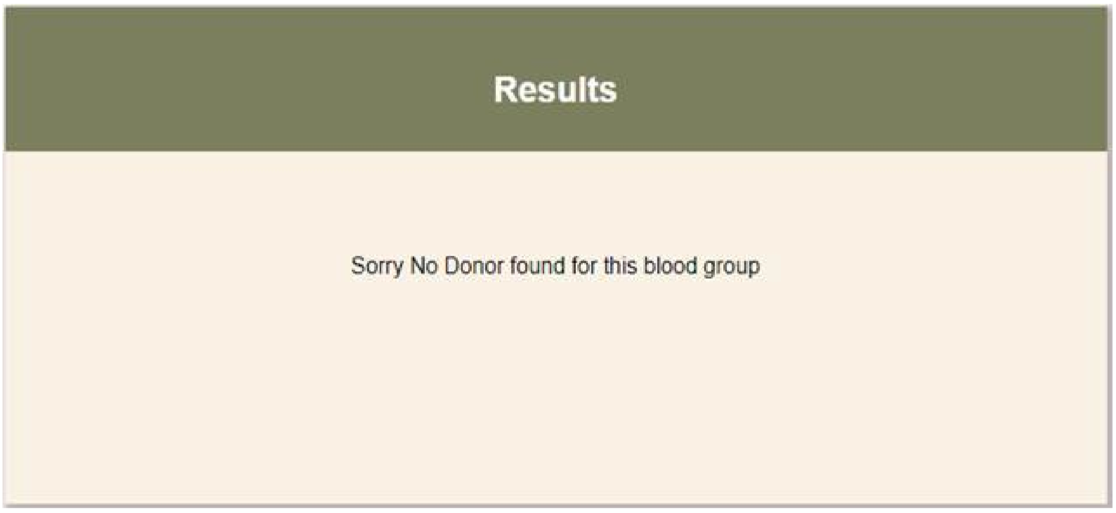
FIGURE 9.11: Search Page

9.4 Search Blood

This page is used searching donor for specific blood.

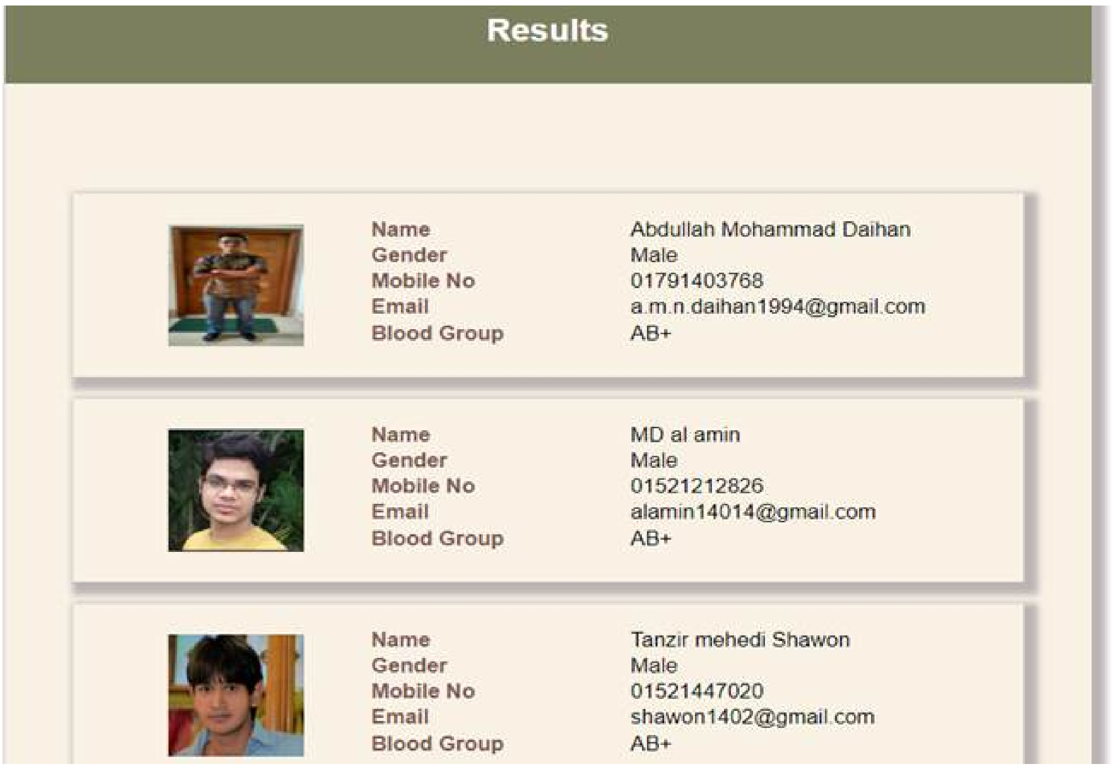
If no donor is found for specific blood group then a message will pop up like fig-9.12

If donor found , then following result will be shown . For instance user search for AB+ figure-9.13


Results

Sorry No Donor found for this blood group

FIGURE 9.12: No Donor Found Page

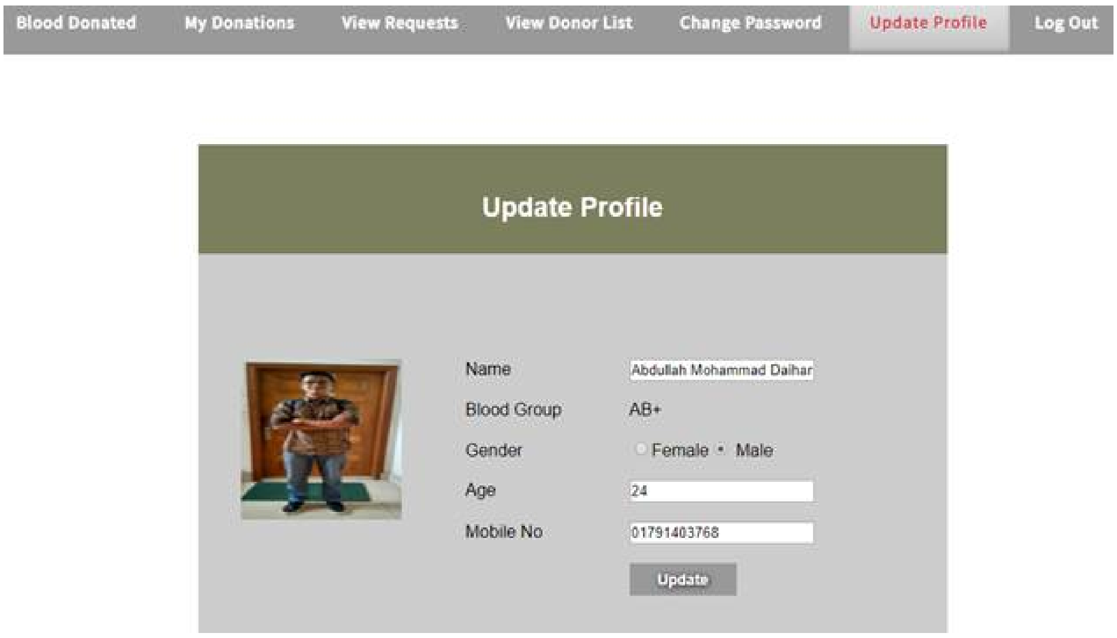

Results

Name	Abdullah Mohammad Daihan
Gender	Male
Mobile No	01791403768
Email	a.m.n.daihan1994@gmail.com
Blood Group	AB+

Name	MD al amin
Gender	Male
Mobile No	01521212826
Email	alamin14014@gmail.com
Blood Group	AB+

Name	Tanzir mehedi Shawon
Gender	Male
Mobile No	01521447020
Email	shawon1402@gmail.com
Blood Group	AB+

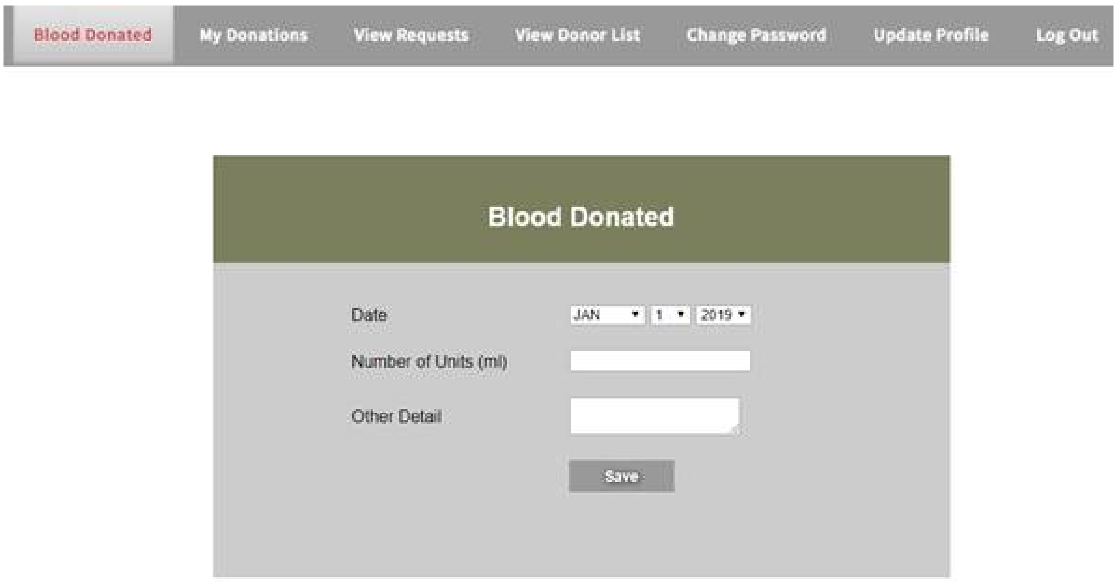
FIGURE 9.13: Result Page



Update Profile

Name	Abdullah Mohammad Daihan
Blood Group	AB+
Gender	Female [✓ Male]
Age	24
Mobile No	01791403768

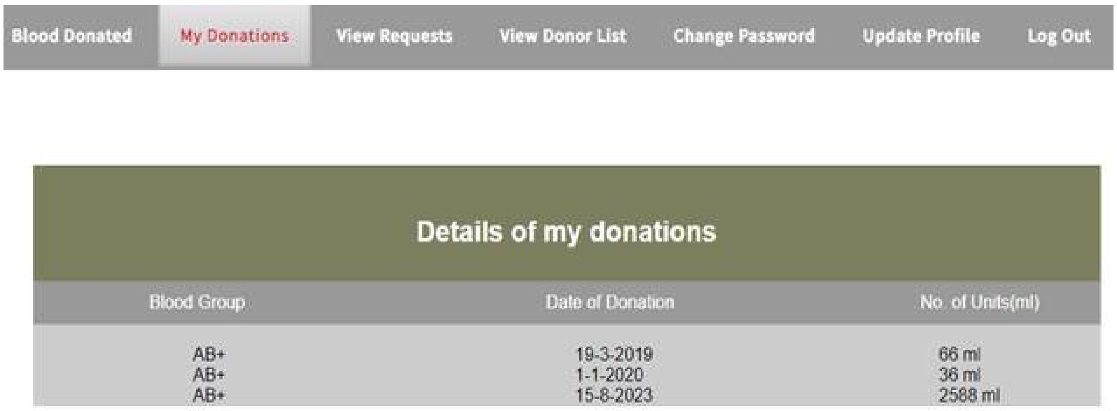
FIGURE 9.14: Login Page



Blood Donated

Date	JAN ▾ 1 ▾ 2019 ▾
Number of Units (ml)	
Other Detail	

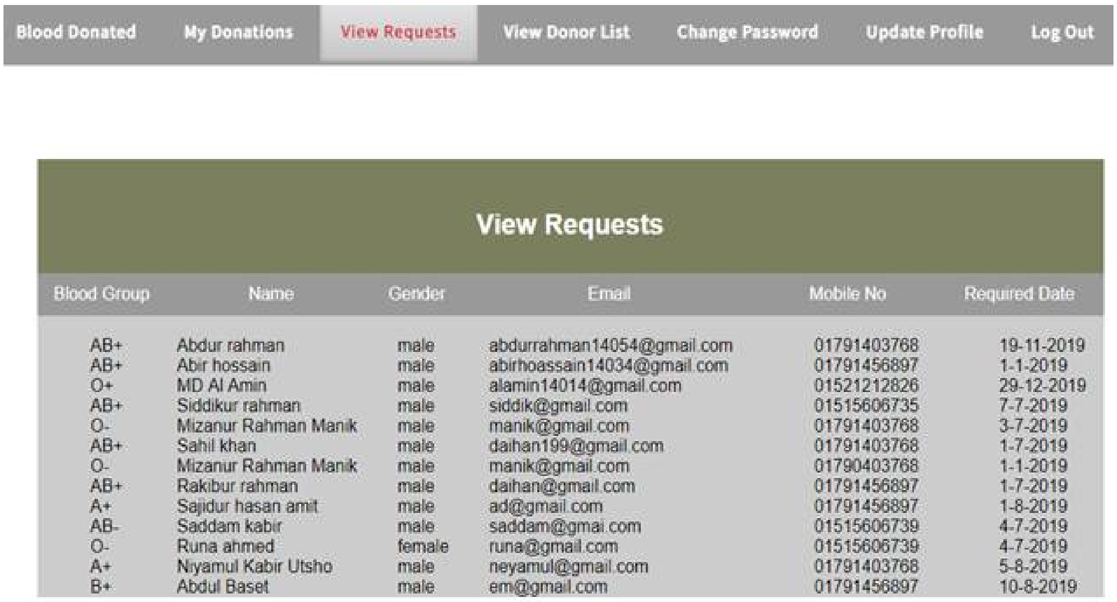
FIGURE 9.15: Blood Donated Page



Details of my donations

Blood Group	Date of Donation	No. of Units(ml)
AB+	19-3-2019	66 ml
AB+	1-1-2020	36 ml
AB+	15-8-2023	2588 ml

FIGURE 9.16: My Donation Page



View Requests

Blood Group	Name	Gender	Email	Mobile No	Required Date
AB+	Abdur rahman	male	abdurrahman14054@gmail.com	01791403768	19-11-2019
AB+	Abir hossain	male	abirhoassain14034@gmail.com	01791456897	1-1-2019
O+	MD Al Amin	male	alamin14014@gmail.com	01521212826	29-12-2019
AB+	Siddikur rahman	male	siddik@gmail.com	01515606735	7-7-2019
O-	Mizanur Rahman Manik	male	manik@gmail.com	01791403768	3-7-2019
AB+	Sahil khan	male	daihan199@gmail.com	01791403768	1-7-2019
O-	Mizanur Rahman Manik	male	manik@gmail.com	01790403768	1-1-2019
AB+	Rakibur rahman	male	daihan@gmail.com	01791456897	1-7-2019
A+	Sajidur hasan amit	male	ad@gmail.com	01791456897	1-8-2019
AB-	Saddam kabir	male	saddam@gmai.com	01515606739	4-7-2019
O-	Runa ahmed	female	runa@gmail.com	01515606739	4-7-2019
A+	Niyamul Kabir Utsho	male	neyamul@gmail.com	01791403768	5-8-2019
B+	Abdul Baset	male	em@gmail.com	01791456897	10-8-2019

FIGURE 9.17: Request History Of Patient

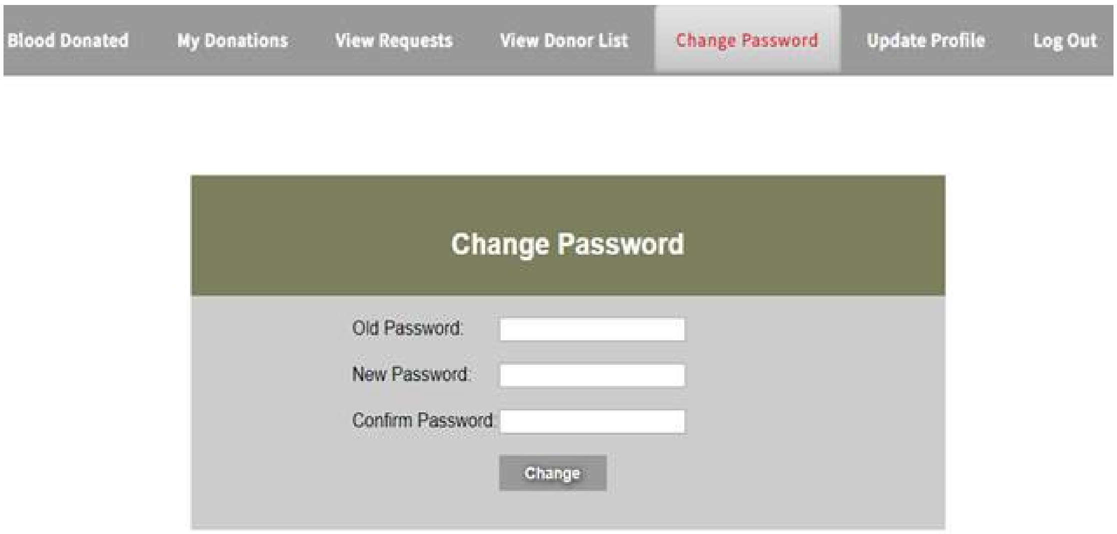


FIGURE 9.18: Change Password

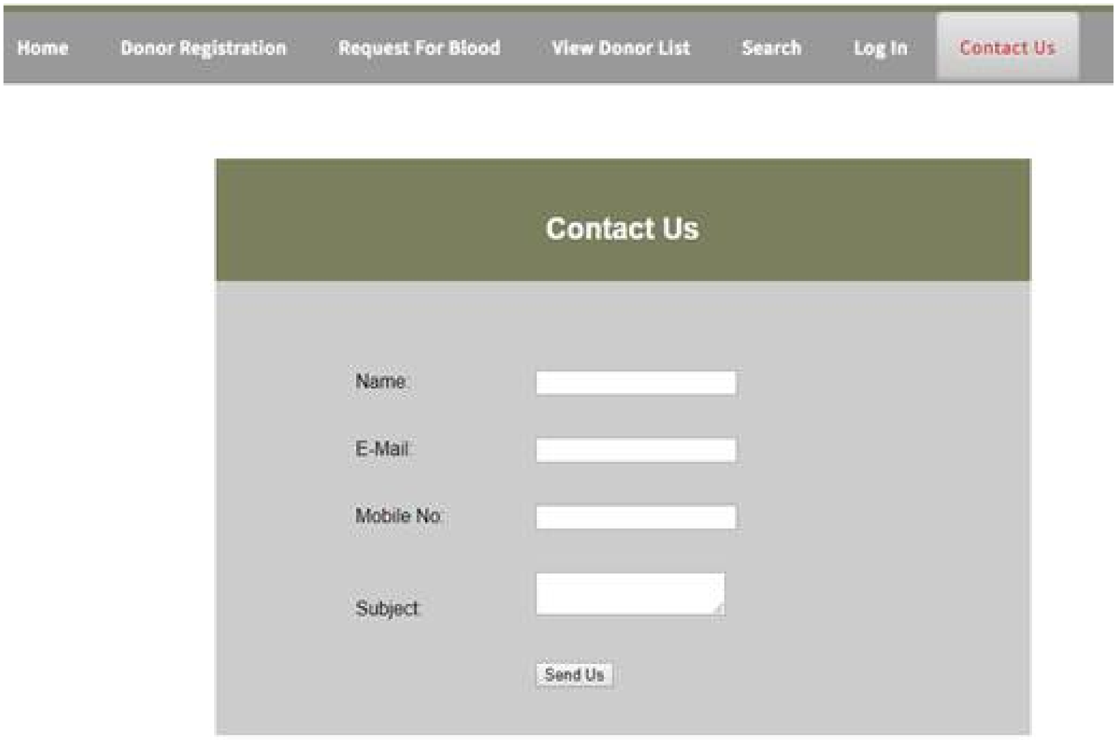
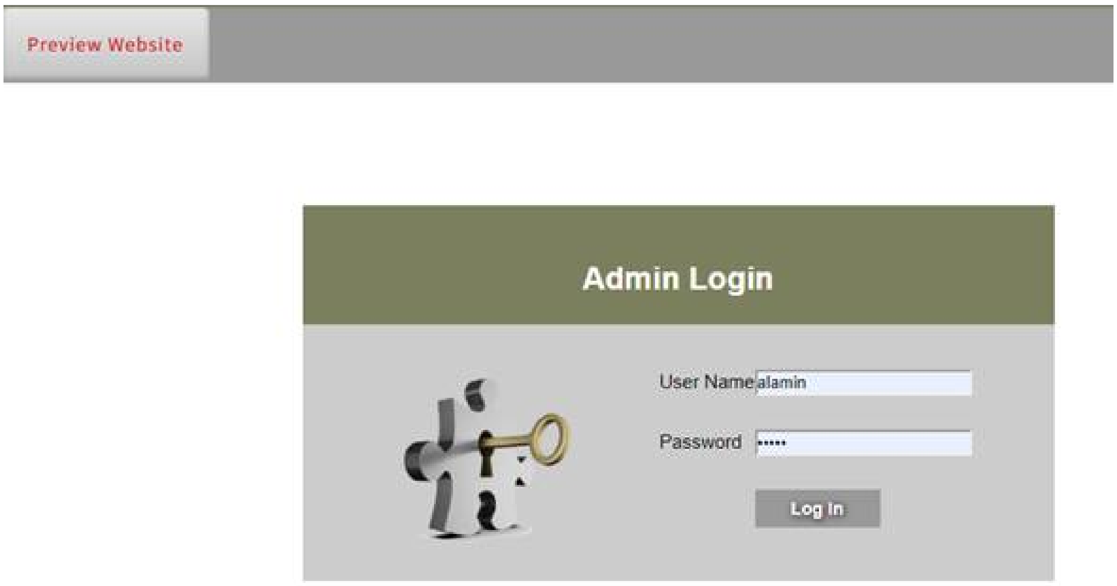
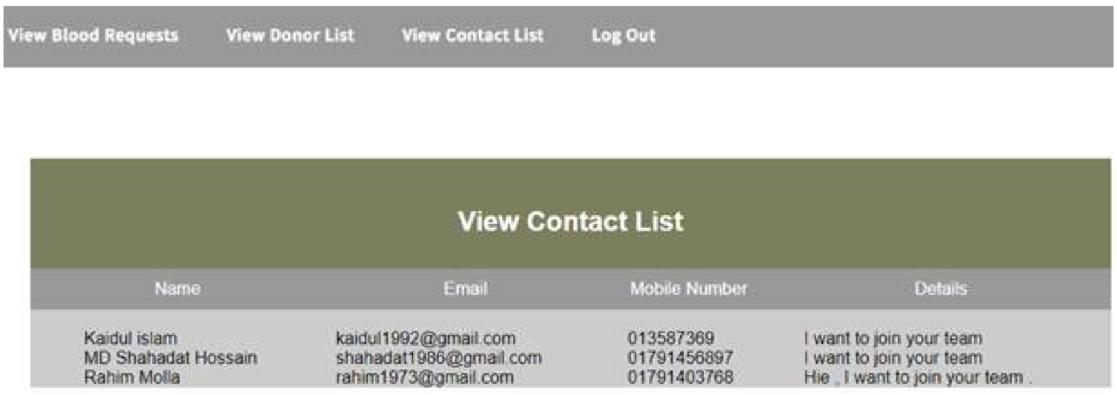


FIGURE 9.19: Contact Us Page



User Name alamin
Password •••••

FIGURE 9.20: Admin Login Page



View Contact List

Name	Email	Mobile Number	Details
Kaidul islam	kaidul1992@gmail.com	013587369	I want to join your team
MD Shahadat Hossain	shahadat1986@gmail.com	01791456897	I want to join your team
Rahim Molla	rahim1973@gmail.com	01791403768	Hie , I want to join your team .

FIGURE 9.21: Contact List page

Chapter 10

Assessment

Assessment is a process of executing a program with the intent of finding bugs that makes the application fail to meet the expected behavior. Regardless of the development methodology, the ultimate goal of assessment is to make sure that what is created does what it is supposed to do. Assessment plays a critical role for assuring quality and reliability of the software. I have included assessment as a part of development process. The test cases should be designed with maximum possibilities of finding the errors or bugs. Various level of testing are as follows.

10.1 Assessment Levels

10.1.1 Unit testing

Unit testing tests the functionality of individual units of source code. It is the smallest component of a testable software that works in isolation with other parts of the code. I have done unit testing for various individual components of the source code to uncover errors within the boundary of the application.

10.1.2 Integration testing

Integration testing focuses on the design and construction of the software. Here the individual components that are tested using unit tests are combined and tested as a group. Its primary purpose is to expose the defects associated with the interfacing of modules. It checks if the modules perform the desired functionality when integrated together.

10.1.3 System testing

System testing is performed on a completely integrated system to see if it meets the requirements.

10.1.4 Regression testing

Regression testing aims at verifying the functionality of the software that is previously tested and to which changes are made. It is to ensure the old software still works with new changes.

10.1.5 Acceptance testing

Acceptance testing is conducted to verify if the system compliance the business requirements.

Adhering to the levels of testing, Unit testing is performed on individual components of the system ensuring the expected behavior. Later, we have integrated t various components together and performed Integration testing. Once the integration testing is done, we have performed System testing and ensured the application works as per the requirements. Finally, acceptance testing is performed to check if the client accepts the system .

Chapter 11

Conclusion and Future Work

11.1 Conclusion

Finally we have tried to develop Blood Management System web application. Our application will give the opportunity to donor and patient to solve health issues and also provides finding donor of required blood group and requesting for blood. The completion of the project work, we have got the confidence to ensure built up a project in Bangladesh.

11.1.1 Future work

Finally we have tried to develop Blood Management System web application. Our application will give the opportunity to donor and patient to solve health issues and also provides finding donor of required blood group and requesting for blood. Now we have tried to develop the application for only our University members. In near future we will develop the application for large scale of people. In near future we also add the e-mail confirmation and spamming detection feature . Spamming Feature will help us to detect ddos attack , and after detecting a ddos attack we will immediately block that ip address .

- Ian Summerville, Software Engineering, 6th Edition
- PHP for beginner ”Lynda softw php video tutorials.
- PHP for advance ”Lynda soft php mysql” video tutorials.
- https://www.w3schools.com/
- https://www.w3schools.com/php/
- https://www.learn-php.org/
- www.phpexamples.net
- www.microsoft.com/net
- PHP Tutorials on ’www.youtube.com’
- Addition Wesley, 2000.
- Stored Procedures, Wikipedia, Available’ at
- https://en.wikipedia.org/wiki/Stored_procedure
- http://www.codeproject.com
- http://www.codingforums.com
- http://www.welovecss.com
- http://www.devnetwork.net/
- http://forums.phpfreaks.com/
- http://www.wampserver.com/
- http://www.w3schools.com/