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E-QUESTIONS STORE

Thesis
CENTRIA UNIVERSITY OF APPLIED SCIENCES
Information Technology
September 2018

ABSTRACT

Centria University of Applied Sciences	Date September 2018	Author Samundra Dhakal
Degree programme Information Technology		
Name of thesis E-QUESTION STORE		
Instructor Kauko Kolehmainen		**Pages** 35 + 1
Supervisor Kauko Kolehmainen		

The aim of this thesis is to provide the user the information and collection of the entrance exam question papers so that collection of information and exchange of knowledge which helps to practice for upcoming exam and to let them understand how this web pages were being developed. The user who login to this website could get free access to the questions store via the search bar where they can type the description of what they want and can get the questions too. But one must login to this website to get the questions as well as to get the help for those issues which a user does not know. Comment area below the questions can be used so that information from those users would be used. This thesis describes the working mechanism of the frontend and backend of web applications, too. This thesis is being focused on the development of serviceable application.

Front end development is defined as the user end development where user can send and get the data and interact with that data using HTML, CSS and JavaScript whereas back end development is defined as server-side development which includes the programming language, database as well as server architecture. Some of the programming languages that are used in the server-side are C++, c#, Java and PHP. The programming language that is used for making this website in server side is PHP.

Key words
CDN, CSS, HTML, JavaScript, PHP, XAMPP, MYSQL

CONCEPT DEFINITIONS

PNG	Portable Network Graphic
XAMPP	Cross-Platform(X), Apache(A), MySQL(M), PHP(P), Perl(P)
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
WWW	World Wide Web
RGB	Red Green Blue
CDN	Content Delivery Network

ABSTRACT
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1 INTRODUCTION

With the changing world, technology has been changed. Because of innovation in every field, human life has become easier. Now, in this era, people can find everything in the internet whether its resources or the entire work world. In past, attendance at schools/institute were compulsory to achieve the knowledge. Because of technology, now it is easier to achieve the knowledge via internet like an online school. There are different sites where one can use them as lecture and gain the knowledge. For paraphrasing this, let illustrate some e-lectures which are edx, mooc or udemy where all of them were being implemented earlier as an online school. The purpose of making this website is for those users/students who can use the online resources to get some knowledge/practice. The advantage of this website is that the user who registered their account can get access to the questions/materials and can ask for help via commenting on those questions/materials that they do not know. In this website, user must register an account to get access to the information. After they login, they can easily find the information and resources and they can even ask for help for those questions they do not know and get information from other users.

Moving to chapter two, languages that are used for making the website were described in brief. To remind the reader, every language and tools those were described in chapters were not used in this thesis. Some of them were used in these thesis and rest of all were just described for the reader to spread the knowledge to the reader who are accessing this thesis to make the similar website to practice. The structure of the website is paraphrased on chapter three. On chapters four and five, design and construction of the website were described in brief. Furthermore, the thesis presented the advantages and onward there, thesis is being described summarized.

2 WEB TOOLS AND TECHNOLOGIES

Different tools and technologies are being implemented to make new innovations. In this era, people can find different technologies to make an innovation. Human life has become easier due to implementation of these technologies. Due to websites, sending and receiving of information became easier and it is possible because of different tools and technologies that are being used for making the website. Use of internet makes life easier to get knowledge and information in no time. For paraphrasing this, consider, to make this e-questions store, huge different tools and technologies were used. Those tools and technologies used here were programming languages for instance JavaScript and Python, the platform used for making this project was Visual studio code, SQLite on the point of database and style sheet language in CSS (Cascading Style Sheet). (Horton & Horton, 2003.)

2.1 Frontend Web Development

A Frontend web development is used to send and request the queries and get the data from the backend system (techopedia). It refers to the Hypertext Markup Language (HTML), Cascading Style Sheet (CSS) and JavaScript parts. Frontend web development is also known as client end development system. In Frontend development system, one can make the change to the visual elements of the website or application or software. This part coding is viewable to the end user (edx). Below visualized in Figure 1 is the tree structure of the whole frontend development programming language with tools and technologies where one can be professional to make the front-end part of the web development. (Duckett, 2014.)

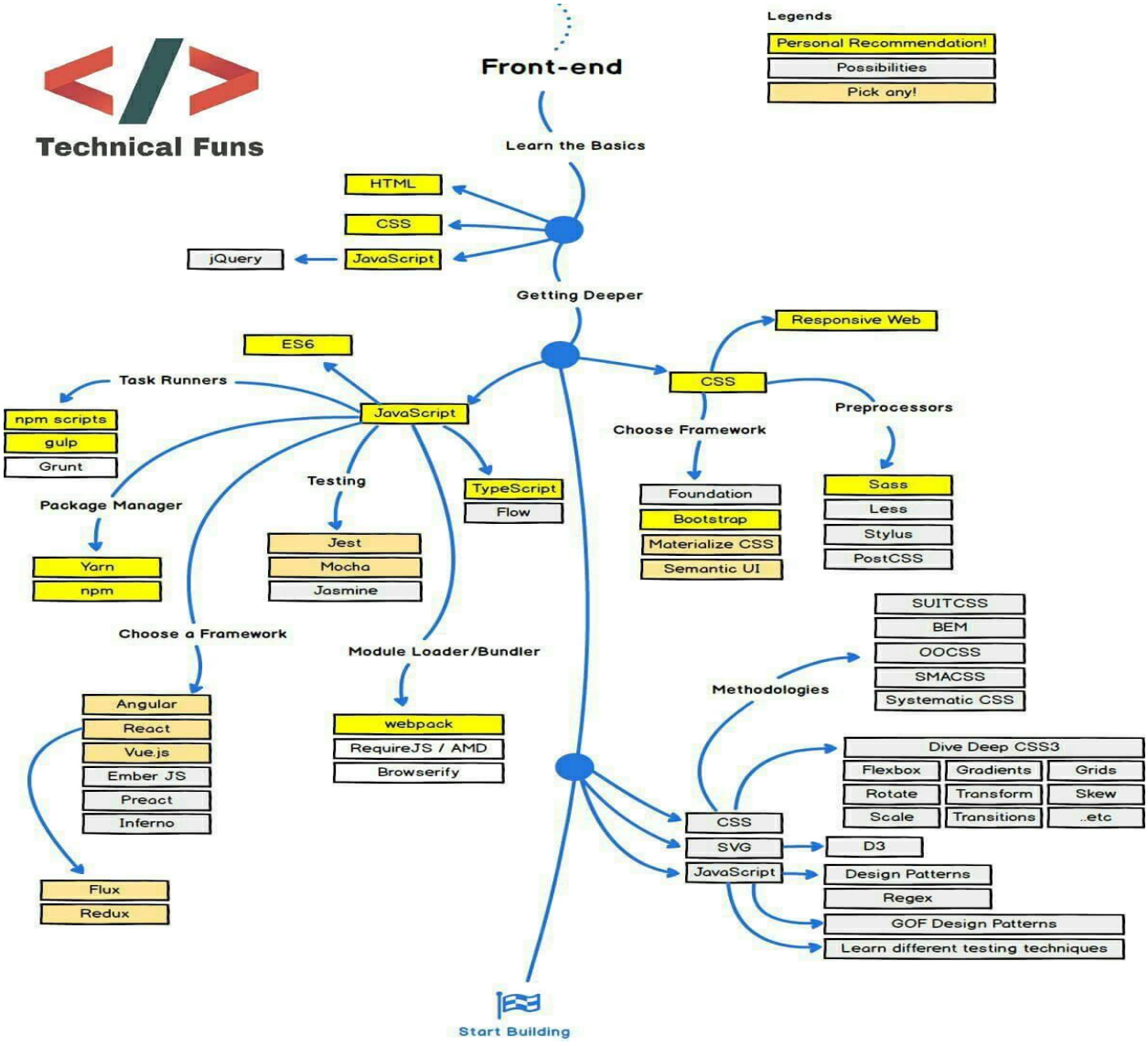

FIGURE 1. Tree-structure of frontend development (Technical FUNS, 2018)

2.1.1 Hypertext Markup Language

HTML is the short form of the Hypertext Markup Language and is very popular in the web pages. Here, HTML5 is being used in this thesis. Maybe, the one who are reading this thesis get confuse about HTML and HTML5. By the way, it's just the updates/change version. HTML is the first of the "magic trio": HTML5/CSS/JavaScript (w3schools 2018). The platform used for coding HTML can also be a simple text editor with the filename followed by *.HTML extension. It contains different markup tags. **<Head>** tags contain **<title>** tags and head tags are used to link up the **<script>** tag which means JavaScript and **<style>** tag which is related to the designing of the web page called Cascading Style Sheet. Inside the

<body>, media, tables are being added(w3schools,2018.). The title of the page should be inside the title tag to display inside the tab of the browser (w3schools 2018.). HTML will not be displayed in the browser but the content which were inside the HTML will be displayed in the browser in the same way as they were placed inside the HTML. Below in Figure 2 is the structure of the HTML page and only the white background was displayed in the browser which means only those elements which are inside the body tag were displayed in the browser. (w3schools 2018.)

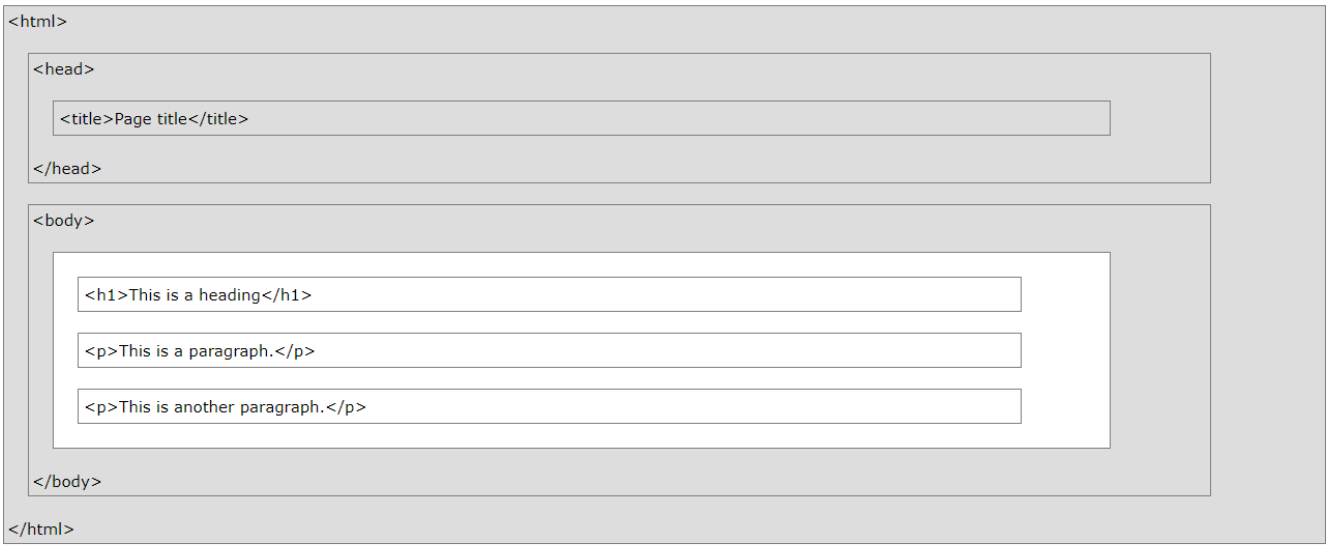

FIGURE 2. HTML page structure (w3schools, 2018)

2.1.2 Cascading Style Sheet

CSS in its short form. This is the language which was firstly introduced in 1994 by Hakon Wium Lie. CSS is the second of the "magic trio". The use of CSS is to design the front-end part. As mentioned earlier in 2.1.1 section, style tag is used inside the head tag in HTML page to link the CSS file, so that it works properly in the browser. There are two ways to write code for it. One way to write the code is inside the head tag in HTML page. Inside the head tag, CSS code can be coded after the opening of the style tag (**<style>)** and close the style tag (**</style>**) after the finishing of the code. After doing this, the code's result of CSS will be displayed in the browser. Another way of coding the CSS is by writing the CSS code in another file with *.CSS extension and link that file inside the head tag as mention below.

```
<link rel="stylesheet" type="text/css" href="questionstyle.css">
```

where questionstyle is the filename and .CSS is the extension of the file. CSS is implemented in every element of the HTML which has a full access to design. Some of its work are mentioned in next page.

design of the display in different form means like mobile display, tablets display or desktop display which can also be called as responsive web design and maintaining position, selecting colors, layout. To maintain the position, color, padding, margin, background-color, and layout, CSS is implemented in this thesis. The sample code of CSS is illustrated below in the Figure 3(w3schools 2018.)

FIGURE 3. Sample code of CSS (w3schools 2018)

The selector in the above figure describe the HTML tag and the code that were coded inside the curly brackets are used for selector(h1). The property of CSS are color and font-size which were used to maintain the color and size of the element inside that selector. (w3schools 2018.)

2.1.3 Bootstrap

Bootstrap was introduced by Mark Otto and Jacob Thornton at Twitter, and later released as an open source product in 2011 August on GitHub (w3schools 2018). It is also a stylesheet which is used in the browser. The use of the bootstrap allowed to build responsive UIs, which adapt their layout to the device on which they are run (e.g. Personal Computers, smartphone, tablet) (George & Christos & Nikolaos, 2018, 12). It is a free front-end framework for the faster and comfortable development of web. It also uses the same design templates as HTML and CSS as well as gives the easier way to make responsive web design and is compatible in all modern browsers. Without downloading and hosting Bootstrap, one can include it from a CDN (Content Delivery Network). Below in Figure 4 is the bootstrap link that are being connected in HTML and one can get Bootstrap link from w3schools in bootstrap4 introduction.

```
<head>
    <title></title>
    <! Instead of CSS, i am doing this with bootstrap 4 which is also used for styling
    just for sample. This one is easier and i copied the link from the w3schools for styling
    which are listed below.. >
    <!-- Latest compiled and minified CSS -->
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">
</head>
<body>
```

FIGURE 4. Bootstrap link (w3schools 2018)

The links that were used inside the header tag were bootstrap 4 which is the new version of the Bootstrap with new component, faster stylesheet and more responsiveness. They support the latest, stable releases

of all browsers and platforms. There is also the link for the script on jQuery and Popper because bootstrap 4 uses jQuery and popper for the JavaScript component. If one wants to use just a CSS part of bootstrap, then there is no need of jQuery and Popper. (w3schools, 2018.)

2.1.4 JavaScript

JavaScript is the third of the "magic trio" and called it 'JS' in short form. In this decade, this is the one of the most popular script languages. JS is the only programming language that a browser can run without installing any plugins and extensions. Brendan Eich was the creator of JavaScript. This language is useful of making different of features differing from beginner to professional on a website. JS can also perform in other environments like on NodeJS interpreter on a remote server, or in scripts run by the operating system. The popularization of modern browsers created a new wave of JavaScript frontend frameworks (Mean Web Development 2014, 5). Like CSS, JS is also being coded inside the head tag of HTML and can also function in two ways same as CSS, but the extension file is different. *.CSS is the extension of the CSS whereas *.js is the extension of the JS. Displayed down is the js file which is linked in HTML file so that it can work in browser.

```
<script type="text/javascript" src="button.js"></script>
```

To directly code inside the HTML file, one just needs to open the script tag (**<script>**) and start writing the script and close the script tag (**</script>**). After this, it works properly in the browser. (w3schools 2018.)

2.2 Backend Web Development

Backend web development is responsible for the server-side web application and the synthesis of the work of frontend web development. Backend coding is never seen by the end user or the client user. Most useful code exists in the backend code and are available in backend web. To say in the simple way, backend web development writes code that cannot be seen directly. A developer working in the backend web development must have a knowledge in C++, C#, Java, PHP: Hypertext Preprocessor or other programming languages. From backend development, coder needs to ensure that the data or services requested by the frontend software or system are delivered through programmatic means. (Dose & Lilja 2015, 4-6.)

Below display in Figure 5 is the tree structure of the whole backend development programming language with tools and technologies. By accessing this knowledge, one can be professional back end developer.

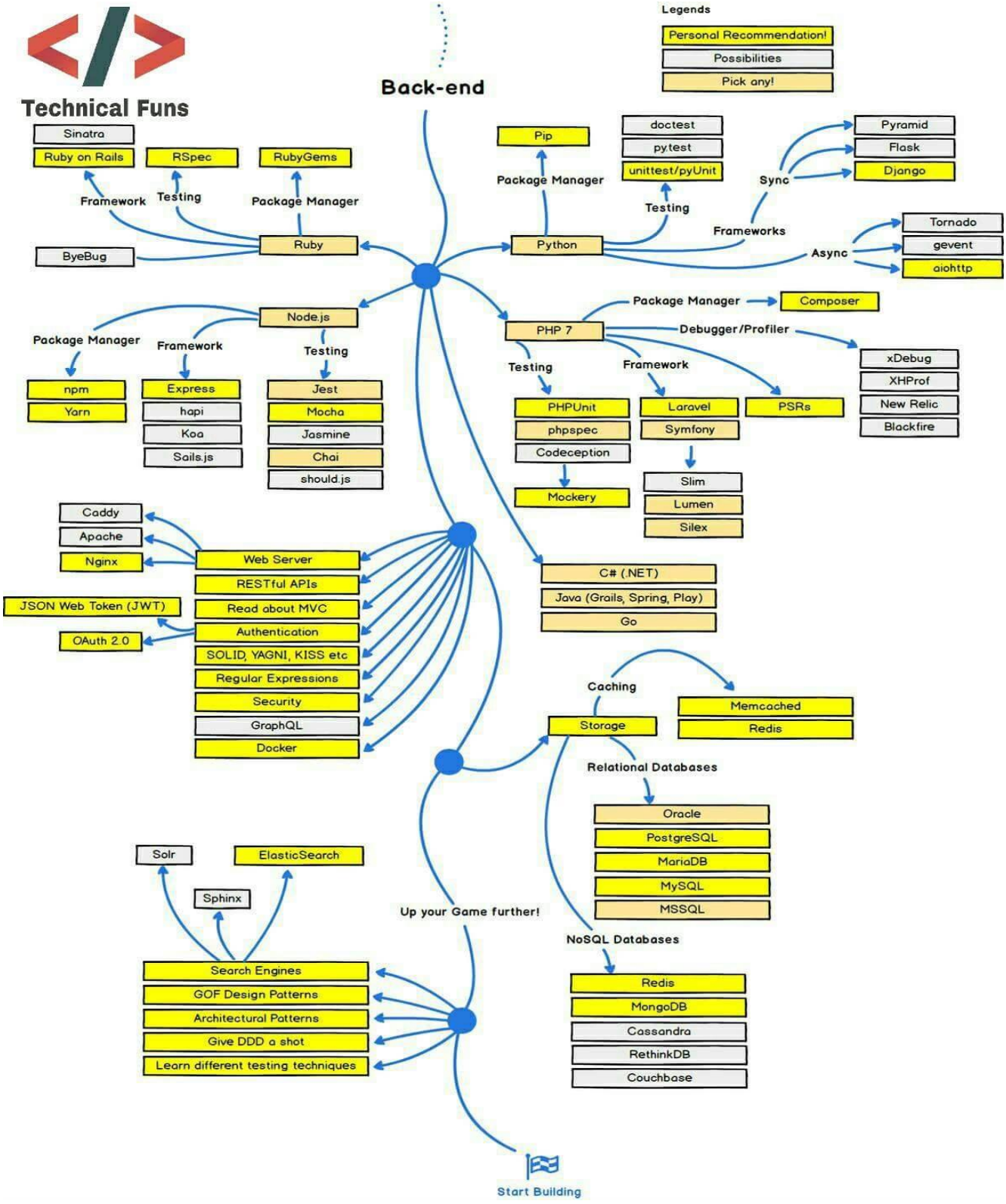

FIGURE 5. Tree-structure of backend development (Technical FUNS, 2018)

2.2.1 PHP

Hypertext Preprocessor is the abbreviation of PHP. It is an HTML-embedded, server-side scripting language designed for web development. Rasmus Lerdorf introduced it in 1994. Php script needs the server to execute its work. In this thesis, XAMPP server were used to execute the PHP script. The file extensions of PHP are *.php. The objectives of PHP are to allow the web developer to create dynamically generated pages quickly. One can makes login form, design a form, create forums, make a website both dynamic or static from PHP. It connects with the database so that it can insert data directly to the tables. (w3schools 2018.)

2.2.2 MySQL

This is the most popular database system used in PHP. It is a most popular open-source relational database management system. Structured Query Language is the elongated form of SQL. Inside the MySQL, data is preserved/stored in a collection of rows and columns. Every website needs to store some useful data for which they need MySQL. In this thesis, login page, registration page and search page were being made and to store the data, MySQL made it possible. (Welling & Thomson 2003.)

2.2.3 Ajax

Asynchronous JavaScript and XML is the elongated form of AJAX. Its main purpose is to update the page content by exchanging the data with a web server. AJAX allows web pages to be updated asynchronously by exchanging data with a web server behind the scenes. This means that it is possible to update parts of a web page without reloading the whole page. below in Figure 6 shows Ajax working mechanism. (w3schools 2018.)

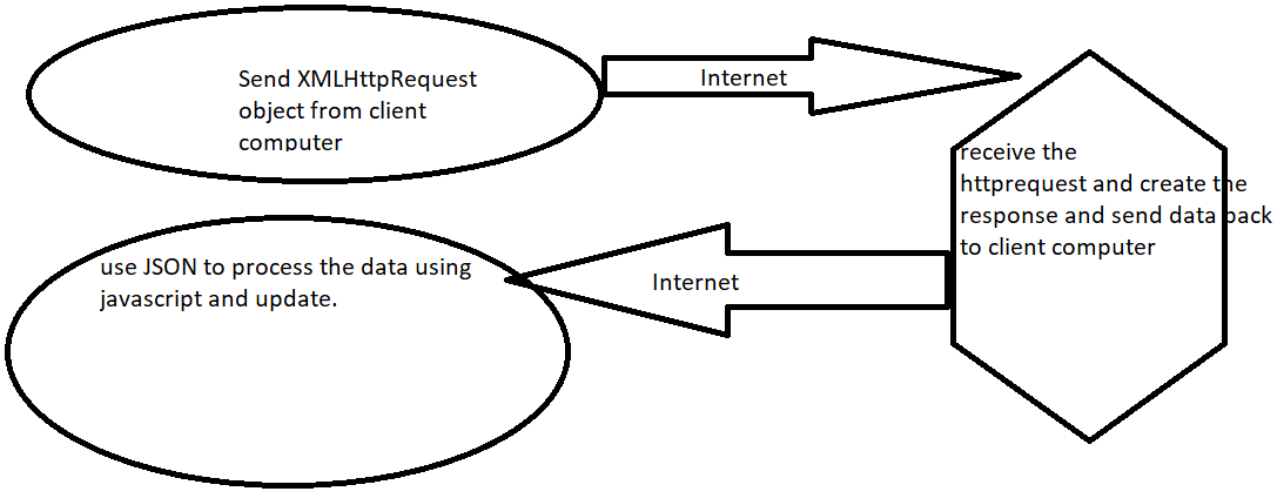

FIGURE 6. Ajax Working Mechanism (w3schools, 2018)

2.3 Content Managment System

The abbreviation of content management system is CMS. It is the utilization of the software application which is used to create and manage the content of the website. It is an application used to provide equipment to edit and add contents in the web pages. It also allows the user to see the code of the web page and to edit the code. The best example of this would be Drupal, Joomla and WordPress. (Patel, Rathod & Prajapati 2011.)

2.3.1 WordPress

It is a free and open-source CMS based on PHP and MySQL which includes the plugin and a template system. This is the most popular web page management system ever in use. It was released in May 2003 by Matt Mullenweg and Mike Little. It looks more professional and is suitable for the small-sized business webpage. WordPress is also called “the dominating force” and had achieved the best of all the content management systems (Henty 2012). WordPress focuses on blogs and needs third party to use. Not only WordPress, all content management systems need third party to work which means CMS works when installed on the web server (Barron 2017). To make WordPress, it must be inside the Xampp folder. (Patel, Rathod & Prajapati 2011.)

2.3.2 Joomla

Joomla is also an open source platform where one can create the web page or application. Object-oriented programming (OOP) technique and PHP is used for writing Joomla. It was introduced in 2005. It was called Mambo which symbolizes its nature as an open source project maintained by a group of people. It can be called “the runner up”. It is the second most popular CMS in the technology world. Joomla is also based on PHP and SQL database. It enables to carry out various work such as editing the meta information directly on the front end of the page and incorporates the automatic mode for data engendered. Joomla offers its own set of security extensions and the coder maintains the lists of known vulnerabilities. In terms of content management and potential, Joomla is slightly weak with WordPress. But still, Joomla is renowned for its complexity. (Mening 2018.)

2.3.3 Drupal

The hardest and most powerful content management system is known as Drupal. The initial version of Drupal was introduced in 2001. On this era, it is ranked as the third most popular content management system in the tech world. Drupal is the choice of the enterprise website. Like other, Drupal coding is written in PHP. It was made for performing faster so that it consumes less hardware than others. (Mening 2018.)

3 WEBSITE DEVELOPMENT

Initially, before starting with the website development, what and why questions must require answer. So that the author as well as the reader will understand the importance of the website. The development of the website was carried out step by step and it is all about the idea which was needed in the preparation of the website. The development phases of the website were needed before and during the making of the website. To make a good website, presentation and planning is needed before starting to build the website. Information gathering, and planning were carried out before starting the practical phase in this project, too. Without planning and research, its hard to complete the project in time which involved frequent errors. Author explained every step in this thesis in brief in this project. (Mugugesan, Deshpande, Hansen & Ginige 2016.)

3.1 Phases

Involvement in the different steps of ladder must require in the proper sequel to complete the formation of the ladder, likewise deployment of different phases is required to complete the required task. Before starting with project, what, why and how questions must be answered so that the project will get the proper startup before starting. What questions will be raised what the project is. Why questions will make the reader understand the purpose of making the project and how questions will make the columnist to gather every detail in the project so that it is easier to go through the project with less errors. New ideas will come out through the what questions followed by why questions which will make the reader understand the importance of the project whereas how questions will help to makes the success because of the planning and information gathering.

Groundwork needs information and without groundwork, one cannot start with the project. That is why collecting information is needed before the development of the project. Information gathering helps to overcome the errors during the project. For elaborates, if the developer is confused in some programming task, then the information that are gathered by him will make the programmer overcome the obstacles that arises in the task. Planning is carried out after the gathering of the information. Like mentioned earlier, formation of the ladder requires each step in proper format, planning of that information should require to step ahead which will make lead the project in good format.

3.2 User Requirements

Only information and planning are not enough for the completion of the project. Requirements are needed to complete the project as well as for visualizing the project. Web programming languages or tools for making the websites are the requirements for the construction of the website. There are various tools and technologies that can help to create the website. Choosing of the tools or technologies must be proper because higher level technologies gives the better website. More requirements will give more focus and help with the website. (Welling & Thomson 2003.) The project is made for the user so that one should meet all the requirement that user need while accessing the system and also planned each step how user will access the system and how to prevent them from getting errors.

3.3 Design

Designing of the website involves different phases like server design, database design and webpages design. These designs make the format for the website in the tech world. A website is the collection of well-structure webpages. Designing the webpages involves the designing of the pages in structured format. Below in Figure 7 is the design of the web pages in a website.

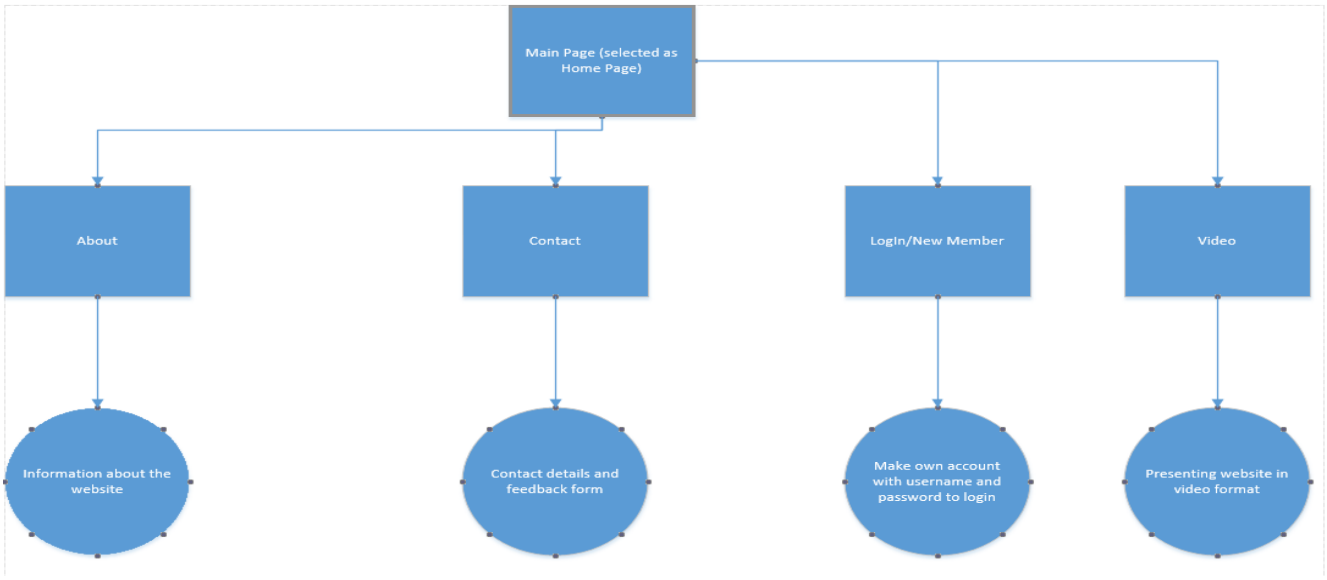

FIGURE 7. Well-Structure Webpages

Firstly, server design is required. To run the website in the real, there must be the server. After designing the server, the website design and database design can be designed. Database is used to store information.

Designing of the database is needed to store the information who are accessing the website. Database design helps to store every detail that the user gives while signing up and it also helps to store the information for the user for which they are accessing the website. Below in Figure 8 is the database design with its attributes.

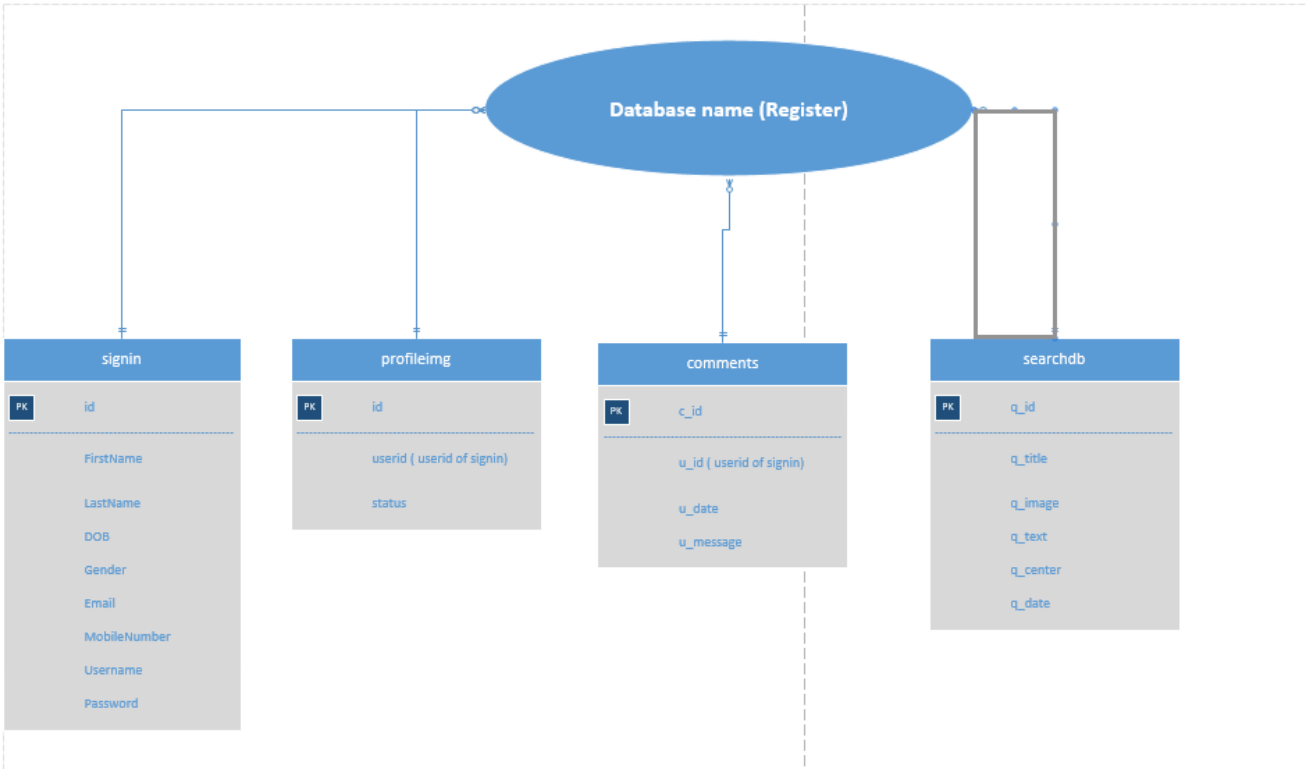

FIGURE 8. Tables and its components

3.4 Implementation

After all the steps that are descries above in this chapter are implemented for the development of the website and is ready to publish. In other words, it can be called performances which are linked with the coding and testing of the website. The word testing itself describes what it is for. Website testing is used to see how the program is working. Time to time testing is required to know about the performance of the website. The developer usually tests the website from time to time while coding to see the result of the code. The implementation of the website development is an important task for the development of

the website. To illustrates, implementation of database design, server design and webpages design in a well-structure way is called as website.

3.5 Publishing

Although publishing the website is the last step on the website development, it involves different factors for uploading in the real internet. Publishing of the website needs domain names so that anyone can get access to the website from their own place which is possible using web server. To have one's domain name, one should buy it online. One should have their own domain name to publish the website. So, with that domain name, one can directly login to the website. Another factor for publishing the website online depends upon what type of website is it. If it is a static website, Microsoft IIS and Apache are the best tools and if it is dynamic, database should also be connected within it. The web server is used to run the website because it configures the domain names and the IP address.

4 MY WEBSITE PROJECT

This thesis is the website for storing questions paper from the past decades. So, the name of thesis is "E-Questions store". In this thesis, Questions of any type are being stored in the database. Till now, only some sample questions from Nepal institute and government had been stored. Later, website can also be upgraded as per the increasing web traffic. After the website is published online, anyone can get access from their own home using their own computers/laptops via internet. After the users type the URL address of this website, the http request will send to the server and after receiving the response from the server, then the user can see the home page of this website.

The author started this project so that students can get access to the old questions collection to practice. Author prefer to make this website for a commercial purpose, too. Which focus on an idea for a business purpose so that it can be also used for e-commerce. As the registration of the users start increasing rapidly, the author had plan to get the sponsor so that it will be used for e-commerce. For example, if a student registers the account and try to search for engineering questions collection, author plan to display the advertisement in the questions so that student will see the information about that advertisement regarding the institute and college about the field.

4.1 User Requirements

Before starting the project, local server needs to be installed so that the developer can test the work from time to time. So, Xampp server is being used to create the local web server for designing and testing the work properly. Xampp is a software packet which contains the web server Apache, database management system called MySQL (also called MariaDB) with scripting language Perl and PHP. To run the local web server, Apache needs to start and to run the database and MySQL needs to run. As the start button is clicked, the button will have blue color in the border of the button and there will appear background color on that module which button is being clicked as well as there will display message in the box at bottom. Below illustrates an initial and running Apache and MySQL in Figure 9.

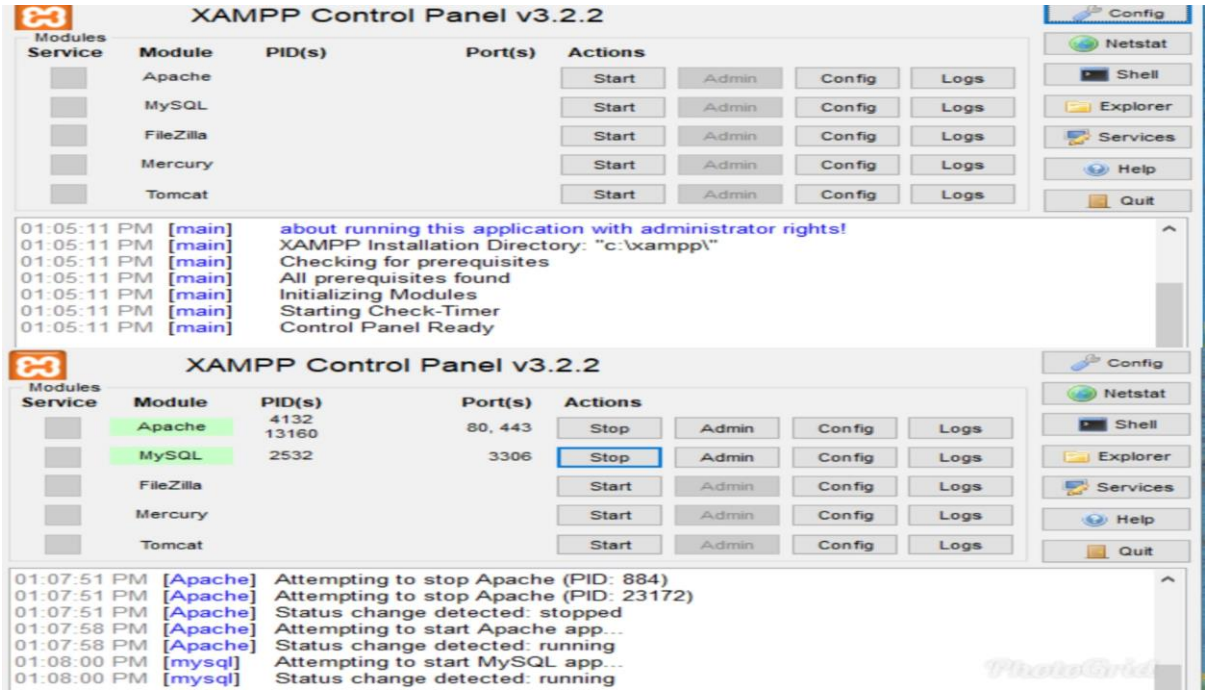

FIGURE 9. Xampp Server

After the installing of the local server, requirements of the users were being tested and check how the user are going to use this system. Below in Figure 10 shows the use-case on what users going to do with the system.

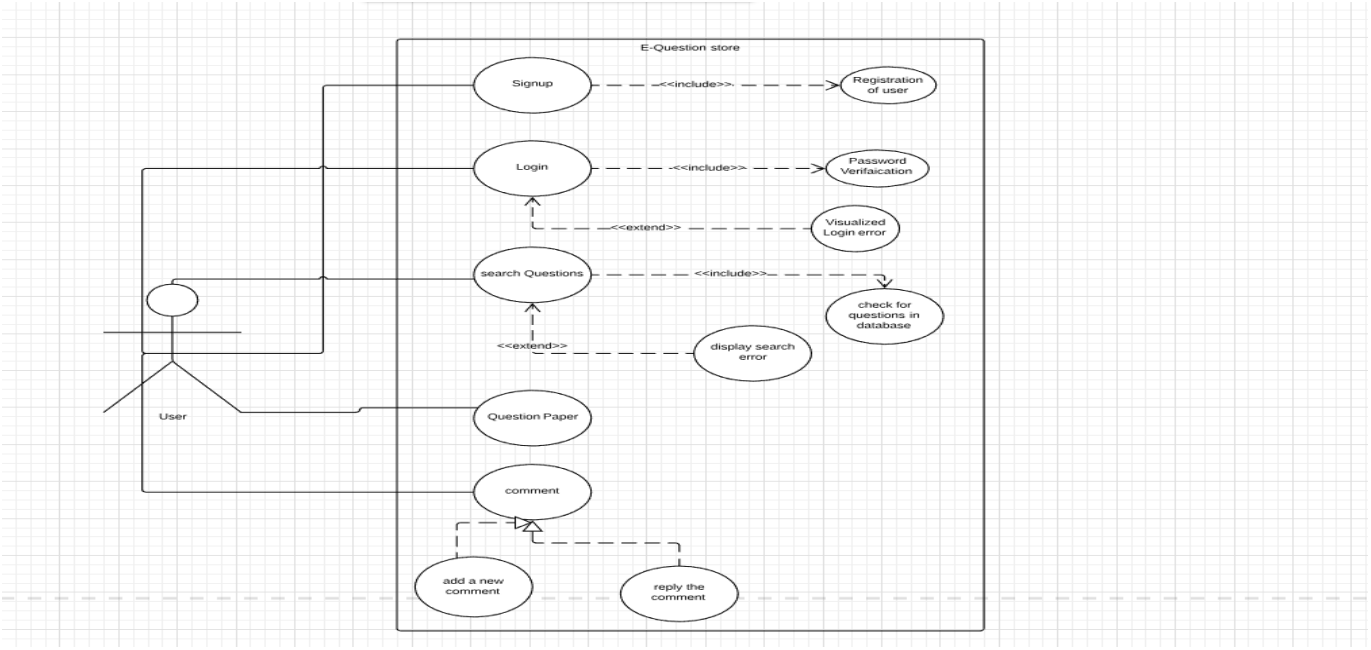

Figure 10. Use-case

Above in Figure 10, there's visualized how the user will be accessing the system. A use-case of Figure 10 is described down in the table in brief.

Use case name	Login
Use case ID	UC-1
Super use case	E-Questions Store
Actor(s)	User
Brief Description	This use case allows user to login into the system to access the relevant functions according to the user's role. To login to the system, all user must submit their unique Username and password which are their keywords to login to the system. If the user submits the wrong Username and password, System will display the login error. If the user submits the correct information, then the system will display the relevant user's home page.
Preconditions	User must sign up their account.
Post-conditions	The System will display the relevant homepage.

Table 1. Login use-case Description

4.2 Design

A design plan was important for speedy and efficient development of the work. Before designing the process, planning, information and requirement are needed to evaluate work smoothly. After that, a design layout of the website was prepared initially. Appearances like server, website design and database design are focused. Server is the one which is needed before the designing part starts and database design. Without server, it is impossible to reach the database as well as it cannot be possible for website testing and modifications. Designing of every part step by step were carried out to perform this project. After the installation of the server, other tasks had been performed.

4.2.1 Webpages Design

The three web pages are home page, contact page and About us page. The home page is selected as default(main) page. Other two pages are displayed as sub-pages inside the main page. The main page is displayed in such a way that when a new user enters the website, there will be a video where one can find what kind of website it is and how is it useful to users. Designing of the subpages were carried out with different styling whereas designing of the main page is done in a way that a user can easily find where and how to login. The flowchart in Figure 10 shows how the main page works for the registration of a new member.

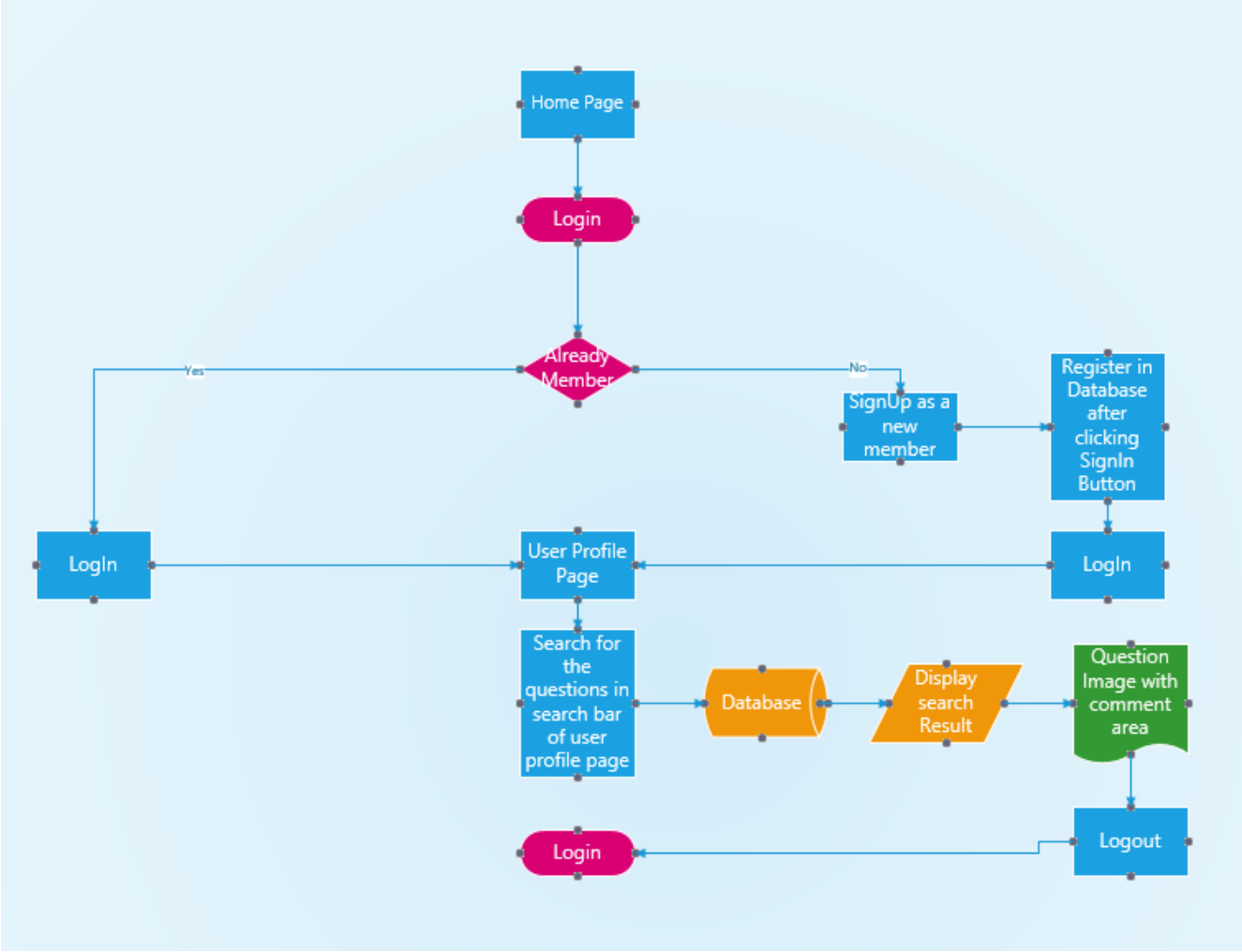

FIGURE 11. Work flow-chart

4.2.2 Database Design

MariaDB is the name of the database that Xampp server used which means the database that is being used in this thesis is MariaDB database. There is only one database named register. In this database, there are four tables with proper name and type so that every data that are being used in the web pages will get stored. Those tables are as follow:

Comments table

This table stores those comments that a user writes to ask for help in those questions which a user's does not know. Userid is being linked to this table so that other users easily know which user has commented. Date is being stored so that everyone knows when the comment is being written.

profileimg table

As like the comments table, the Userid is linked here too, so that when a user uploads the picture, it can be notified. There is status column where it will be notified if a user uploads the picture or not.

Searchdb table

This table is the for storing the questions papers so when user searches for questions they can get questions that match the description of the questions of this table. There are 6 columns in this table. First column is id column which is autoincrement. q_title, q_image, q_text, q_center and q_date are the remaining columns. When a user searches for the questions in the search bar, the text that are typed in the search bar are being checked with the q_title, q_text, q_center and if some part of the text is being matched then it will be displayed in the browser displaying the q_title and q_date. Once a user clicks in any of those, then the whole column data will be displayed in the new browser.

Signin table

This is the table that will need to store the data of the user. This table is the storage of user's information when a user Signin in this website. Ten columns are being inserted to puts details of the user. FirstName, LastName, DOB (i.e. Date of birth), Gender, Email, MobileNumber, Username, Password and advert are the names of columns. This table is used to store the personal information of the user as well as to double check the information at the time of login. If login is being used by wrong username and password, then, it is being proceed to this table via database and code were being coded in such manner that, if the login username and password are not matched to the username and password on this table, then, a user cannot login to his/her own profile.

Staring the MySQL and connecting to the phpMyAdmin, one can modify the table and can do even more. Inserting a new column, deleting the data is possible by using phpMyAdmin. Down display in Figure 11 is local server and phpMyAdmin which works in browser to show the database.

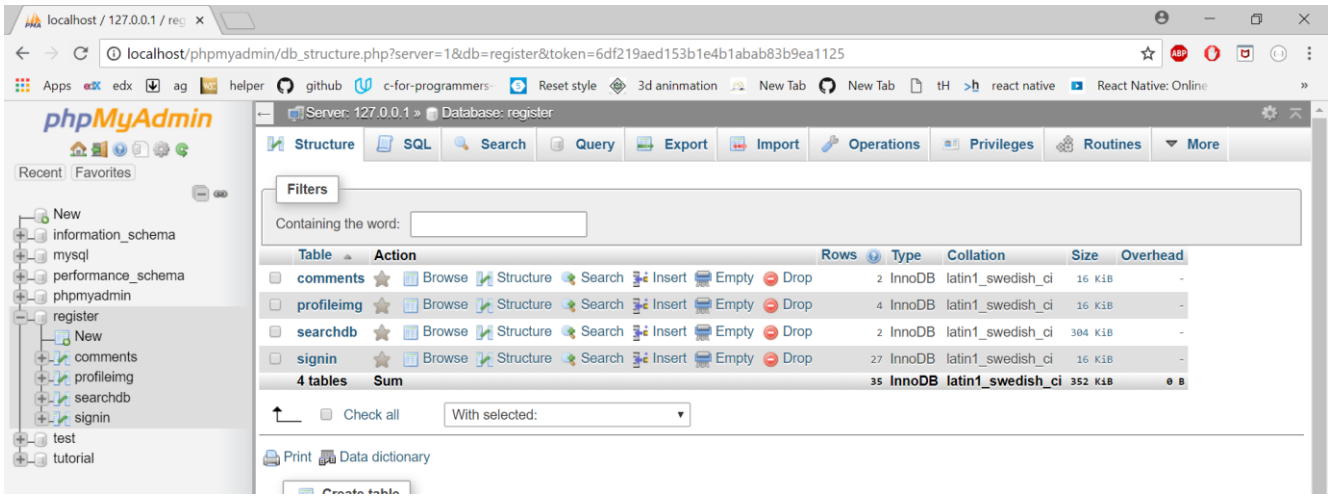

FIGURE 12. Database and tables in phpMyAdmin

4.3 Implementation

In this project, after the designing of server and the database, coding and testing were carried out respectively. Author starts the project initially with the static web page like home page as a main page, contact and about page as the sub-page with respective designs. After setting up everything, the author starts the coding so that it might be usable to the user to get information that they want regarding the past entrance exam papers so that they can practice for the preparation of the entrance exam. Writer had not uploaded the whole database of the entrance exam papers because this project is just a sample project to show how this website runs.

4.3.1 Home and sub-pages

The coding of these pages is displays down below in figure 12,13 and 14 respectively. So that when user login into this website, he can see these pages in the beginning. Video and login button were placed in the home page and contact page includes the contact details as well as feedback and about page describes what is the importance of using the website.

In the home page code, there's mentioned JavaScript function which were coded to get click event listener which means when a user clicks in the sidebar, the JavaScript function was being carried out and display the sub-pages so that user can see those pages. Inside the image tag, the logo of this project was mentioned as an image. There were two buttons, One is for login and another is for video when

clicked, opens respective page by directing the click listener using the ‘href’ to their own location. Description of this paragraph is visualized in the Figure 12 known as home page code.

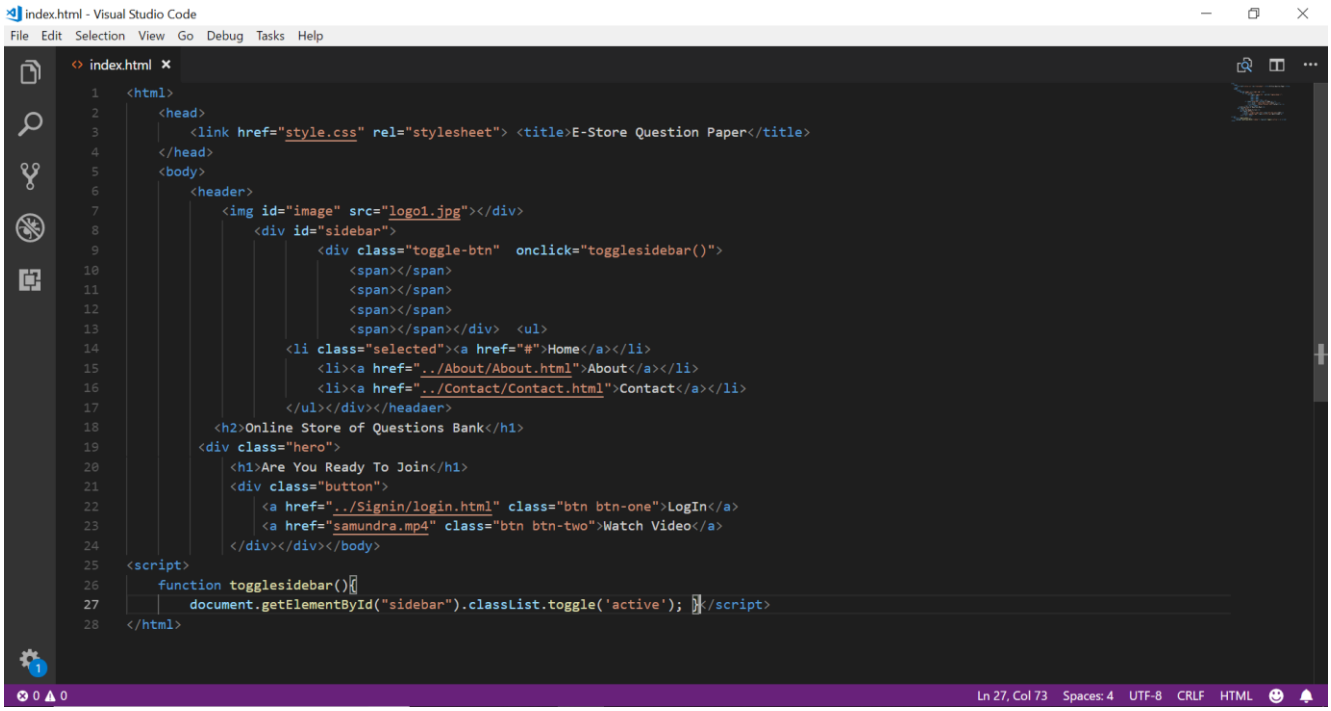

FIGURE 13. Home page code

Contact page itself describes its meaning. Likewise, contact page of this project includes the contact details of the page. On looking in the contact page below in Figure 13, email address for the feedback mail and contact number were mentioned for the help of the user.

```
<body>
        <a href="../home/index.html"><img id="image" src="logo1.jpg"></a>
    <div id="contact">
    <h1> We are here to help- Contact us!</h1>
    <p>Give us a call, send us an <mark>email</mark>. We are always here to help you out in whatever way we can.</p>
    <br>
    <h2>OSQB Pvt Ltd.</h2>
    <h3>Send your feedback by clicking on email address.</h3>
    <img src="emaillogo.jpg" span style="width: 25px" height="25px;">
    <a href="mailto: osqb@gmail.com" mark>osqb@gmail.com</mark></p></a><br>
    <img src="tellogo.jpg" span style="width: 25px" height="25px;">:<mark>(+977)-9849820955.</mark>
</div></body>
</html>
```

FIGURE 14. Contact page code

In this project, the about page describe this page as well as how this website can be used to involves in the business. Every detail of this page were described inside the paragraph tag including the list tag which is visualized below in Figure 14.

```
    </head>
    <body>
                <a href="../home/index.html"><img id="image" src="logo1.jpg"></a>
        <h1>About Our Site.</h1>

        <p>
            This web page is officially opened from <mark>July 2018</mark>. This site is published to help the student where they can find
            that had been in the exam in past so that they can get the paper and practise
            for there exam.
            The main purpose for making this site is to make both hand benefitable for
            students and us.
            <ol>
                <li><mark>For students</mark>
                    <ol>
                        <li>Access to the old questions Collection.</li>
                        <li>Get somethings to practise and can communicate to others
                            to get the information that they doesn't know to solve the paper.
                        </li>
                        <li>Can get the information for where they can find proper knowledge for the entrance.</li></ol></li>
                <li><mark> For Web-makers(us)</mark><ol>
                    <li>Can use advertisment for commerical way to make e-business for schools and college.
                    </li></ol></li></ol></p>
    </body>
</html>
```

FIGURE 15. About page code

4.3.2 Login & Signup pages

These pages were required to login into the user profile so that a user can get access to the questions which this website provides. If the user is a new member, then firstly, a user needs to sign up where information of the user needs to provide including the username and password of the user so that its possible to login to their own profile. Display below is the code for the signup page and this page needs to be connected to the database so that every detail that a user gave were submitted to the database.

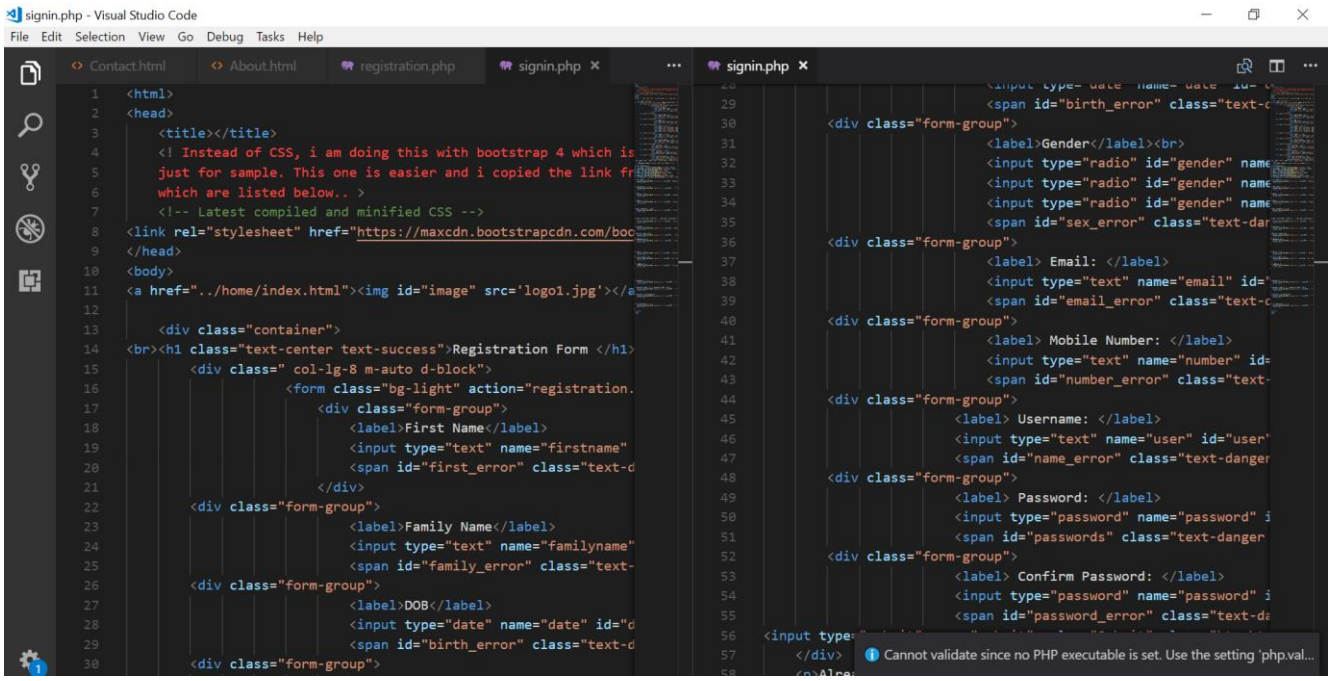

FIGURE 16. Signup page code

For designing this page, the author used Bootstrap and if the reader does not know what a Bootstrap is then, it is possible to get information about the bootstrap from chapter 2 of this project. Each input inside the label were used to provide by the user so that they were stored in the database as the user information. Username and password label were used in the time of login. Below each input there is mentioned the span tag which were used for showing the error so that a user will able to notice they have missed to provides some information which will be found because of message displayed by red color. These all are done using JavaScript inside the signup form which is visualized in Figure 16.

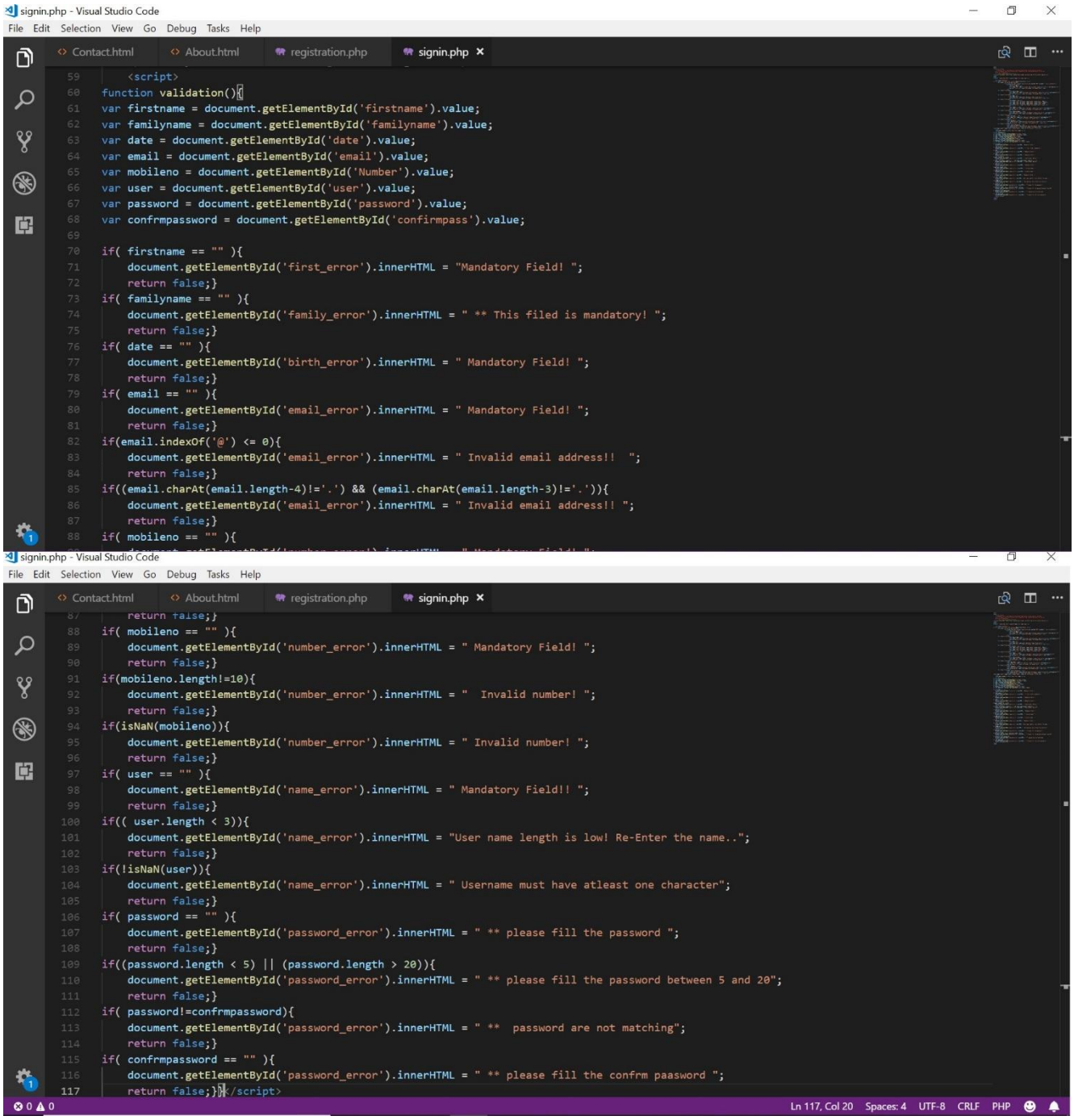

FIGURE 17. JavaScript function in Signin form

Once the user clicks the submit button after filling all the form, the back-end code starts to perform the action where the code is written in such a format that it will store all the input of the user in the database for which there must be the connection in the database. Without the connection to the database,

the information is not able to submit in the database. All these actions were performed by PHP programming language. Visualized below in Figure 17 is the backend code for the registration of a signup form.

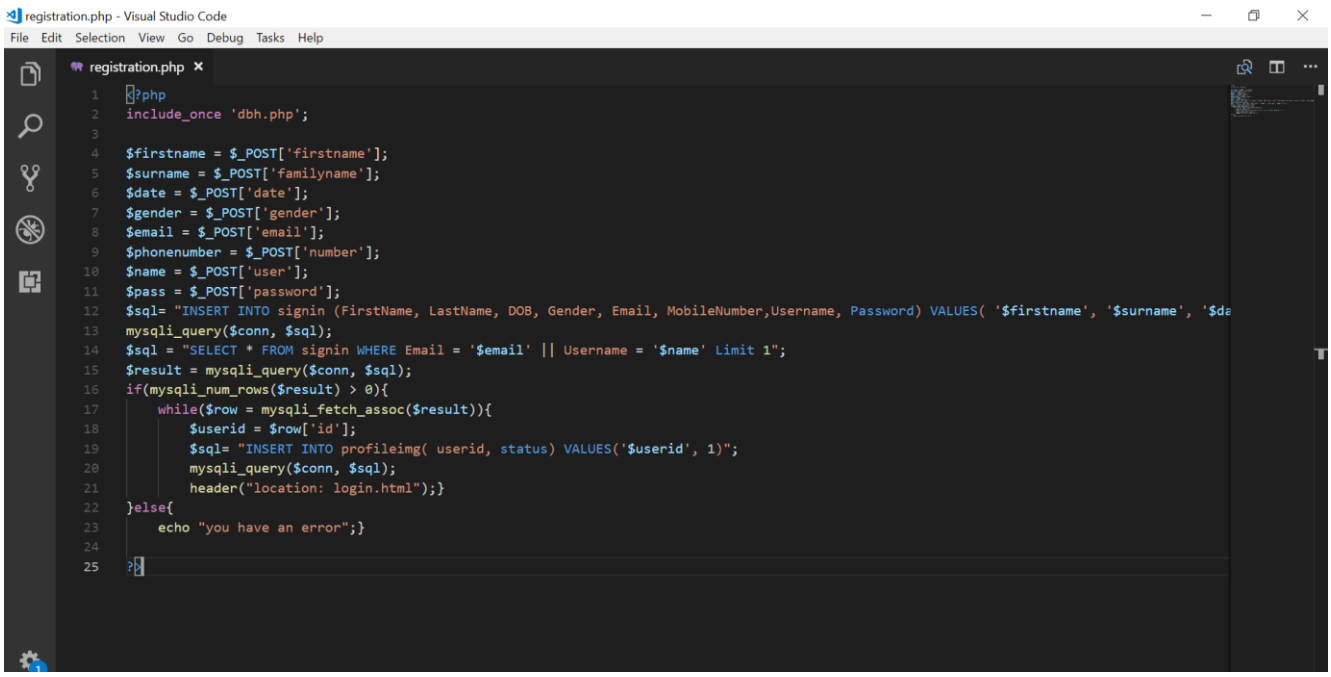

FIGURE 18. Registration code

These registration acts in backend which means the user could not see the performance of these code because it is not a client end part. As soon as, a user clicks the submit button in a signup page, the page was redirected towards the login page where a user needs to input the username and password which the user used at the time of signing up. Once the user clicks the login button, the information which user inputted in the login page were checked in the database in the Signin table. Once the data were matched, the page will be redirected to the user profile. All of these happen after the clicking of the login button in the backend server to check whether the username and password are validated or not. Visualized below in Figure 18 is the login page code whereas Figure 19 is the validation code which works in backend server.

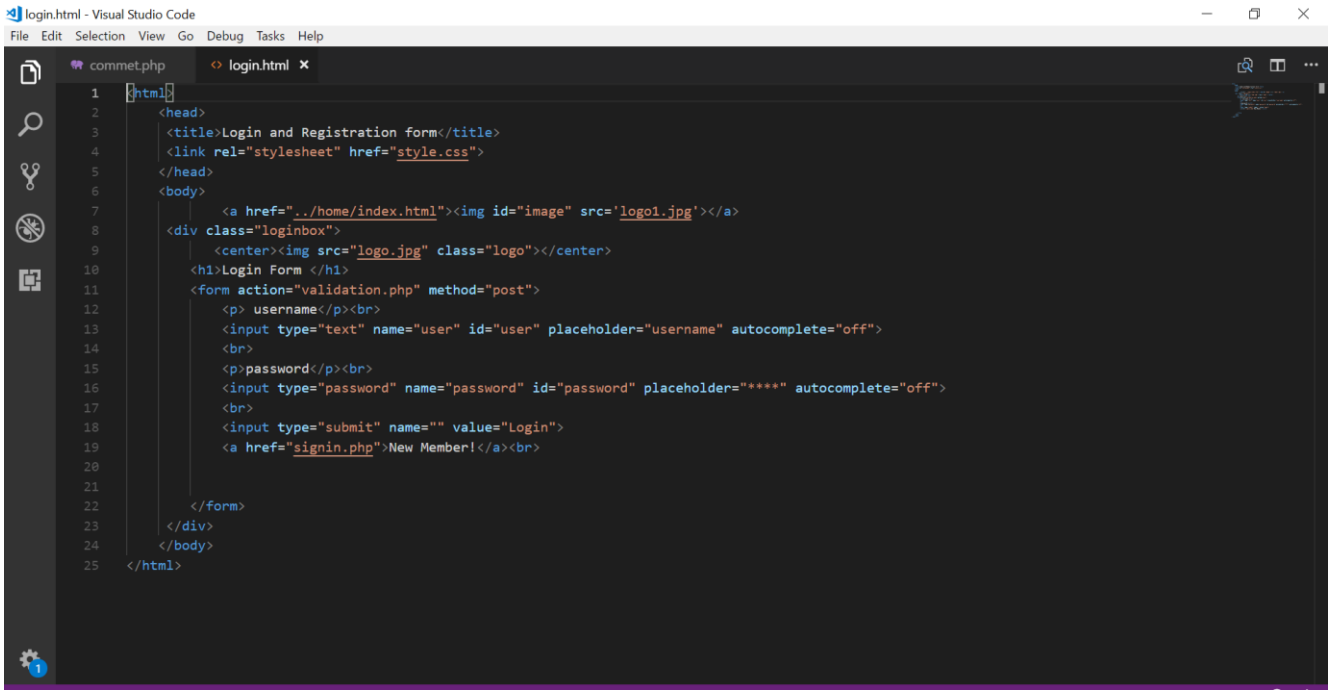

FIGURE 19. Login page code

As the user clicks the login button after filling one's username and password, backend code was used to check whether the details for login is of the user or not which is carried out by the validation page. Once the user clicks the login button, the validation page checks that the user provide information with the information stored in the database. If matches, then it will be directed to the user profile page.

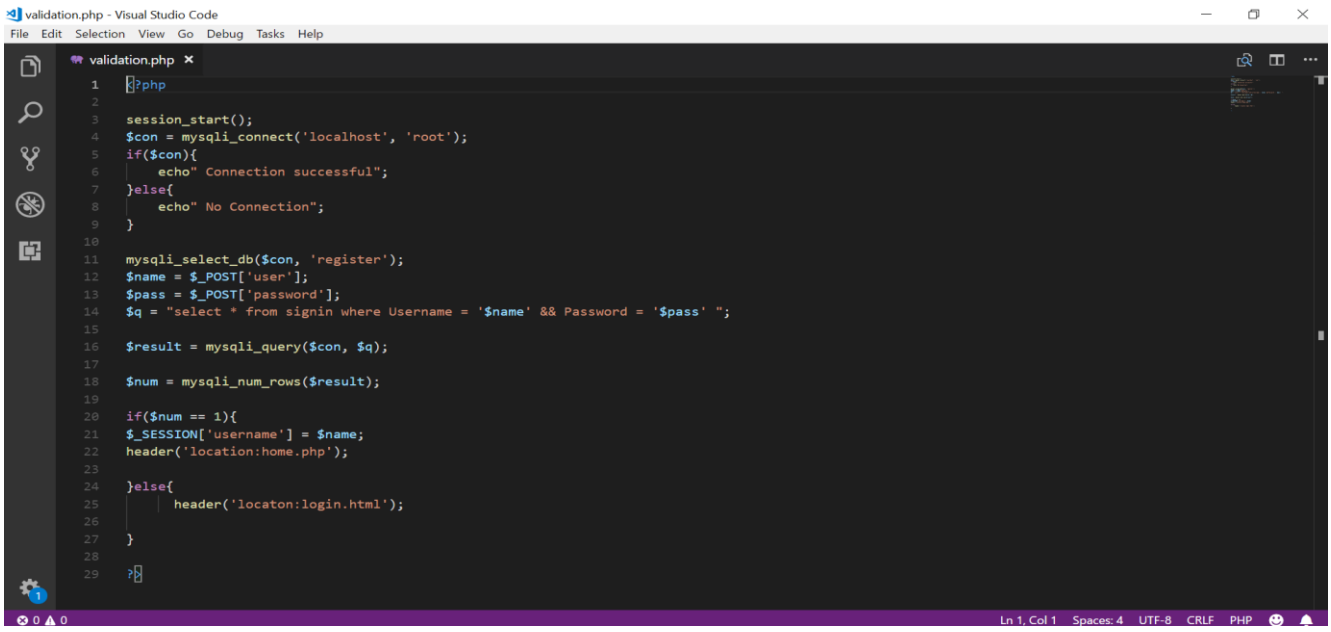

FIGURE 20. Validation code

4.3.3 User Profile

Once the code was validated, the user is directed towards their own profile where there displays the default profile picture of the user with the username. In the user's own profile, there was also a search bar which was used to search for the questions that they want. Because this is just a sample project, there were only few sample entrance papers of the past but to make this for the real website for users, storing of various paper can also be possible but it needs powerful server and big storage database file. Visualized below in Figure 20 is the code of user profile with Php script for backend performance and the backend performances is used to visualize the default profile picture with the username.

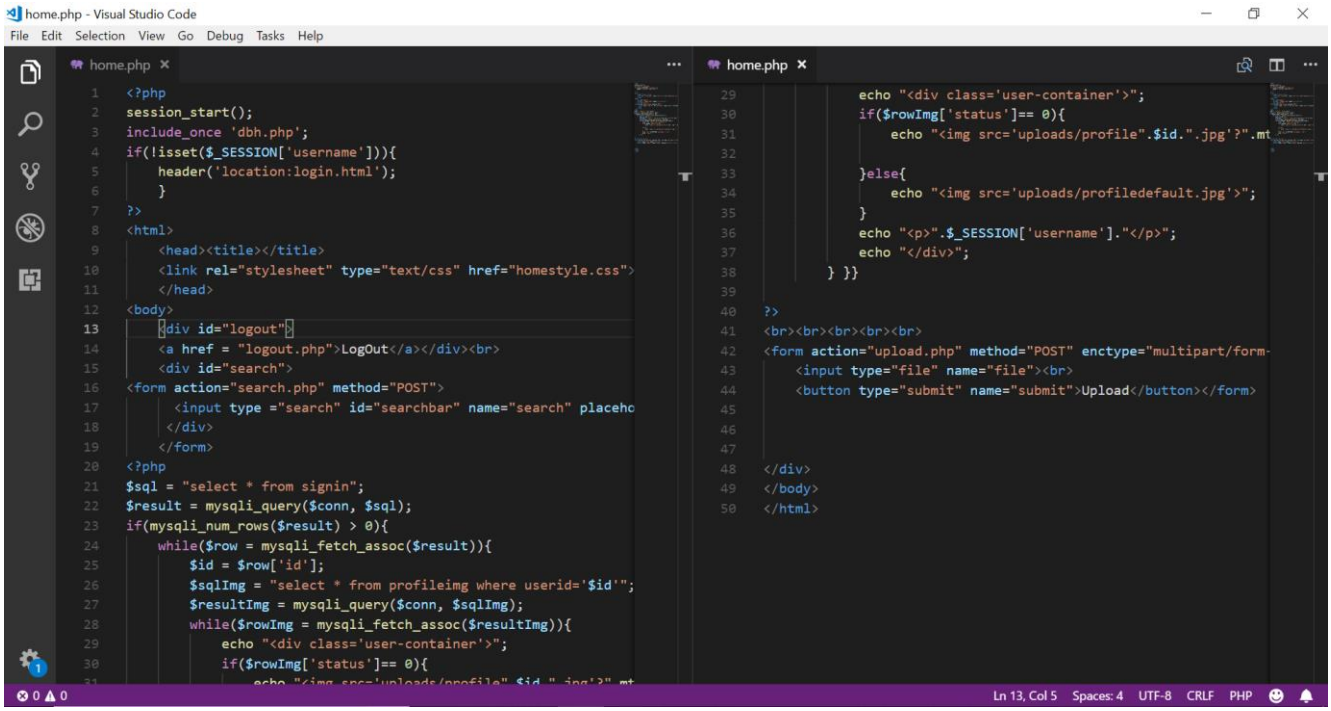

FIGURE 21. User Profile code

4.3.4 Sample Questions page

After the visualization of the user's own profile, user can directly search for the question via search field. Once the search field were used by inputting the user demand, the backend code checks to the database whether there was some question that user wants to access. If there were some, then it will display in the

browser and users can click on that question and can access to that question else the browser will display the message as" no result found". Visualized in Figure 21 was the code for searching the questions from search bar in user profile. In figure 21, php code inside the article-container, there was one SQL query where there is "LIKE" word which will sort the result according to the user input in the search field. For example, when a user inputs the information in the search field and clicks the search button, the backend code compares information of the search field inside the database in the server and check whether the information looks similar with the information that were stored in the database and if there were, then the code will directs that information into the browser so that a user can choose as per the demand.

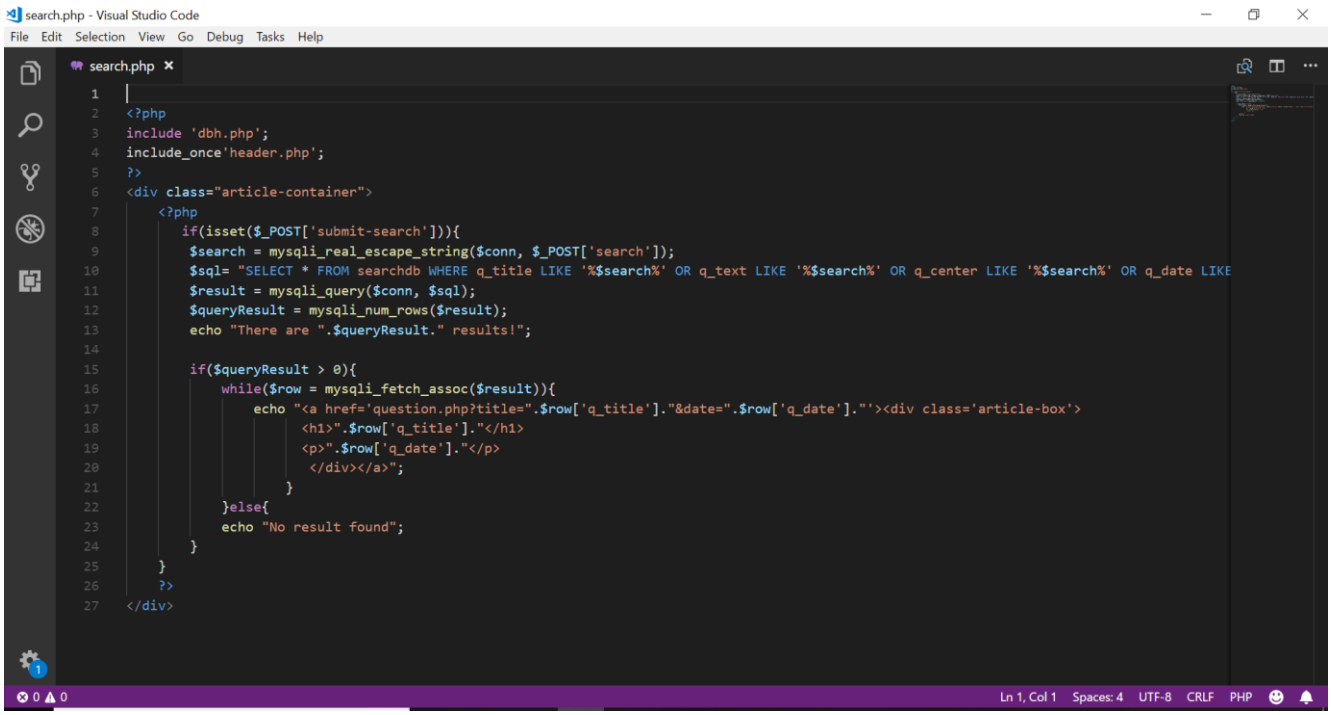

FIGURE 22. Search code for the questions

Once the user clicks the link of the result, the browser was directed to the all format of questions including the details of questions. After this, a user can get access to the questions and can practice questions. The advantage of this website is that a user can also comment on the questions and ask for the help if there were some unknown answers by just commenting in the comment box. If there were, then a user who knows the answer, they can comment back as answer of the question. Figure 22 shows the code for the question's page.

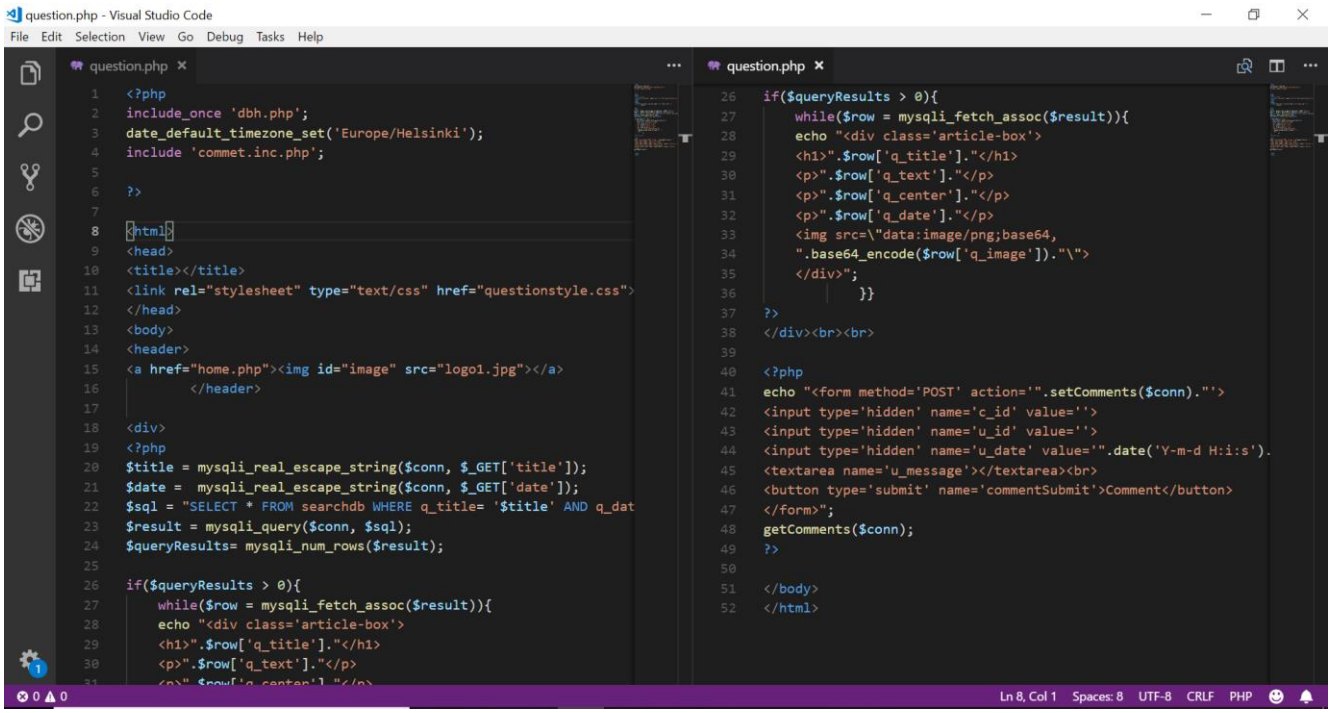

FIGURE 23. Question paper page code

As mentioned earlier, there was the comment box where a user can comment if there were some questions that need help from others. In Figure 22, one can see the code for comment box on the right-hand side inside the Php tag above the closing body tag. Once the user clicks the submit button, Php code will run and store that comment in the database as well as display that comment below the comment box. So, when other user searches for the same questions, comment will display in the question page below the comment box and those users who know the information of that question can help by commenting the information. Figure 23 displays the code for the comment box and display the comment box. In the Figure 23 there are three function for the comment which are setComments, getComments and deleteComments. The function setComments is used to store the comment that a user typed whereas getComments is used to display that comment from the database and inside that function there is a form for deleting the comment and it was named as delete. Function deleteComments were used after the user clicked the delete button which works to delete that comment from the browser as well as from the database.

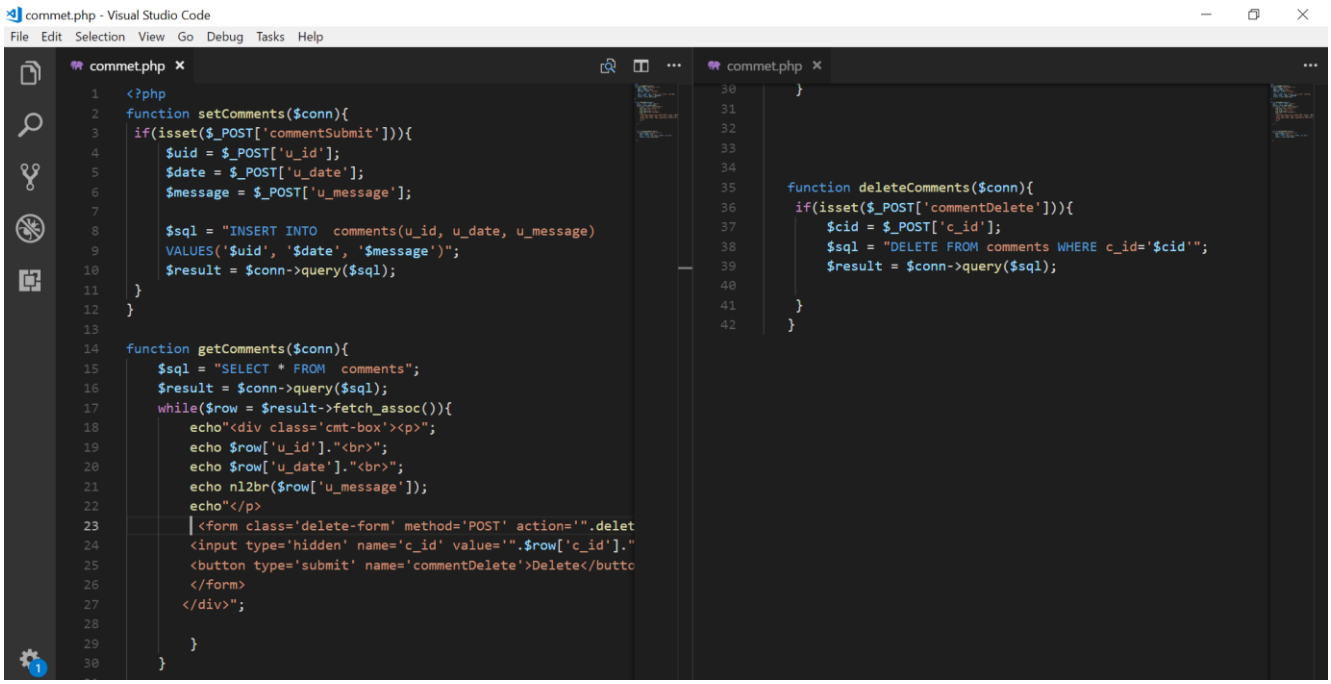

FIGURE 24. Code for the comment

4.4 Visualizing The Final Project

Looking into the code in Figure 12, where it describes the details of code by the author how the main page i.e. home page was being coded. By applying the stylesheet which is used for designing the page to display in the browser, the page looks like the Figure 24. The image at the top is the logo of this website and clicking on that logo returns to this home page from other sub-pages. The side bar down to the image will display the sub-pages after clicking on it and they are Contact page and About page.

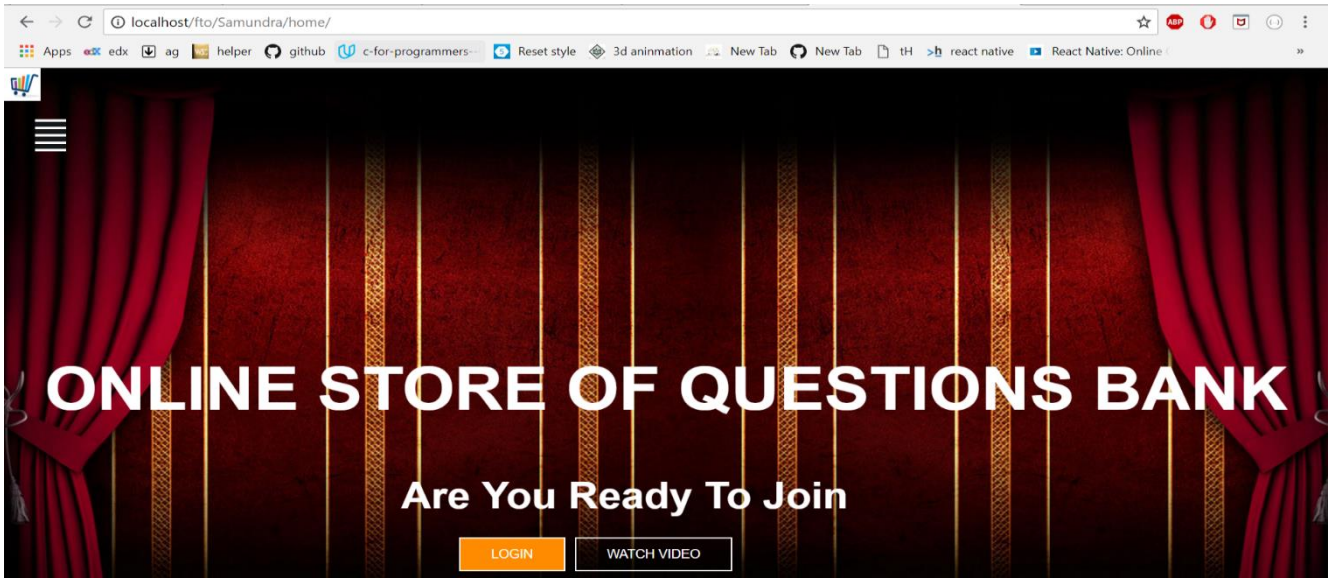

FIGURE 25. Home page

After the coding were implemented which was displayed in Figure 14 and by styling that page the page looks is displayed in Figure 25. The page described about the website. As mentioned earlier, the logo at the top left corner returned to the home page from this page. Styling is different in comparison to the home page and the same goes to the contact page where contact details were displayed with the email address for users to send feedback mail as well as the cellphone number which is in Figure 26.

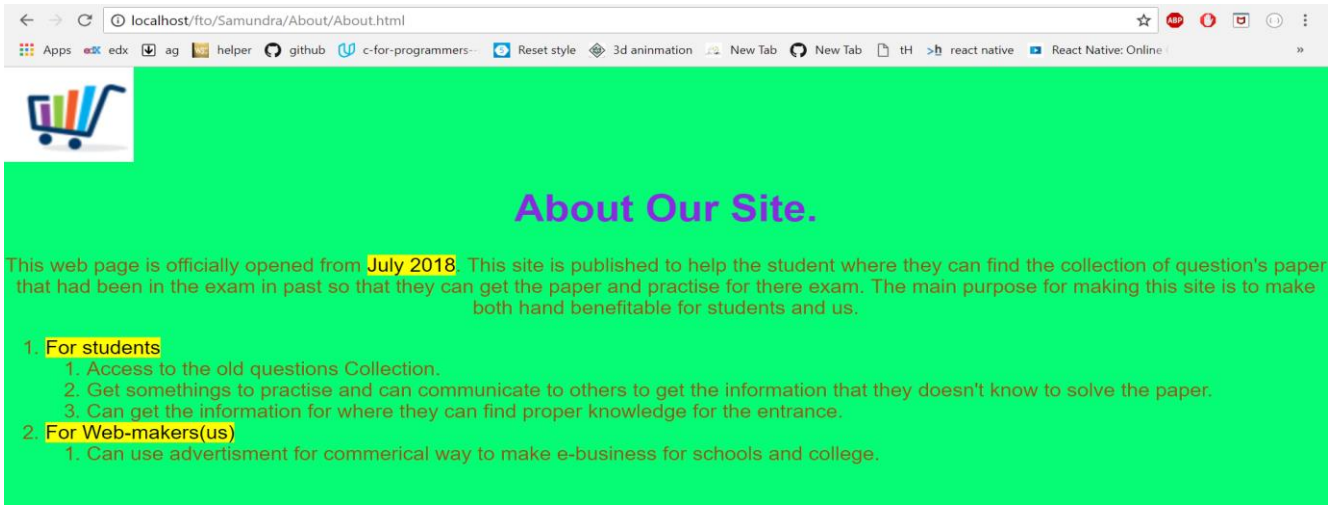

FIGURE 26. About Page.

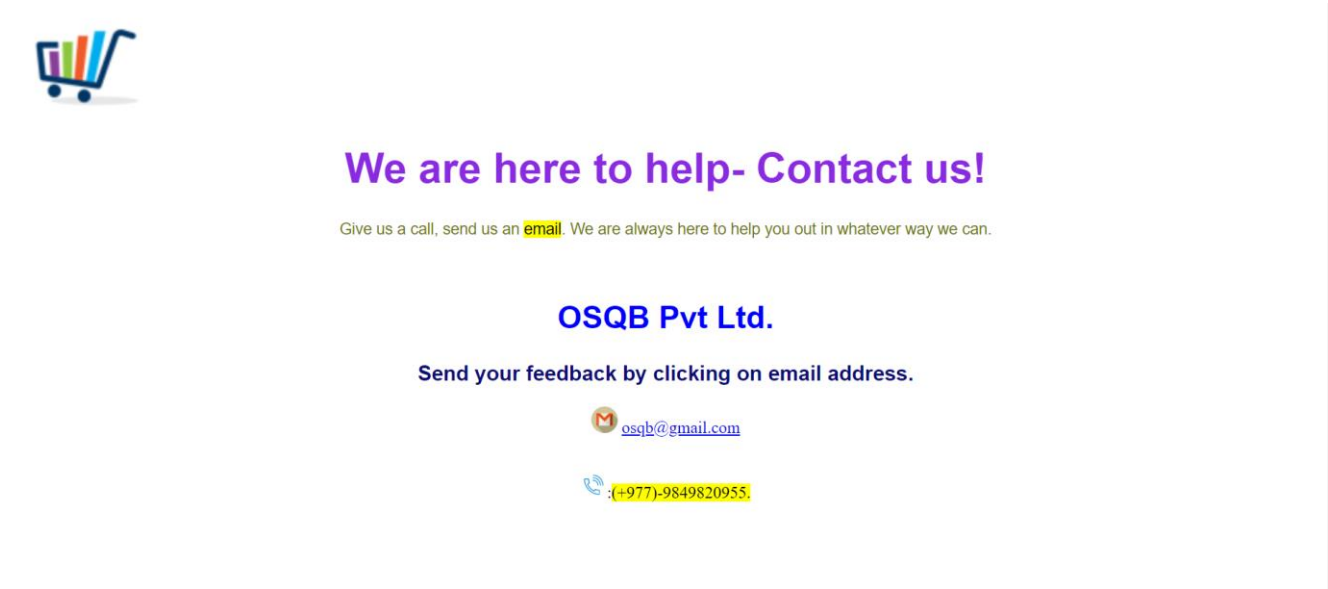

FIGURE 27. Contact Page.

Figure 18 is the code for the login page and by styling that page, the login page looks like this which is displayed in Figure 27 below this paragraph. By clicking on the login button which is displayed in the home page, this page will be shown in the browser. This page is for those users who have their own profile in this website. By submitting their username and password, user will be directed to their own profile like on other social sites.

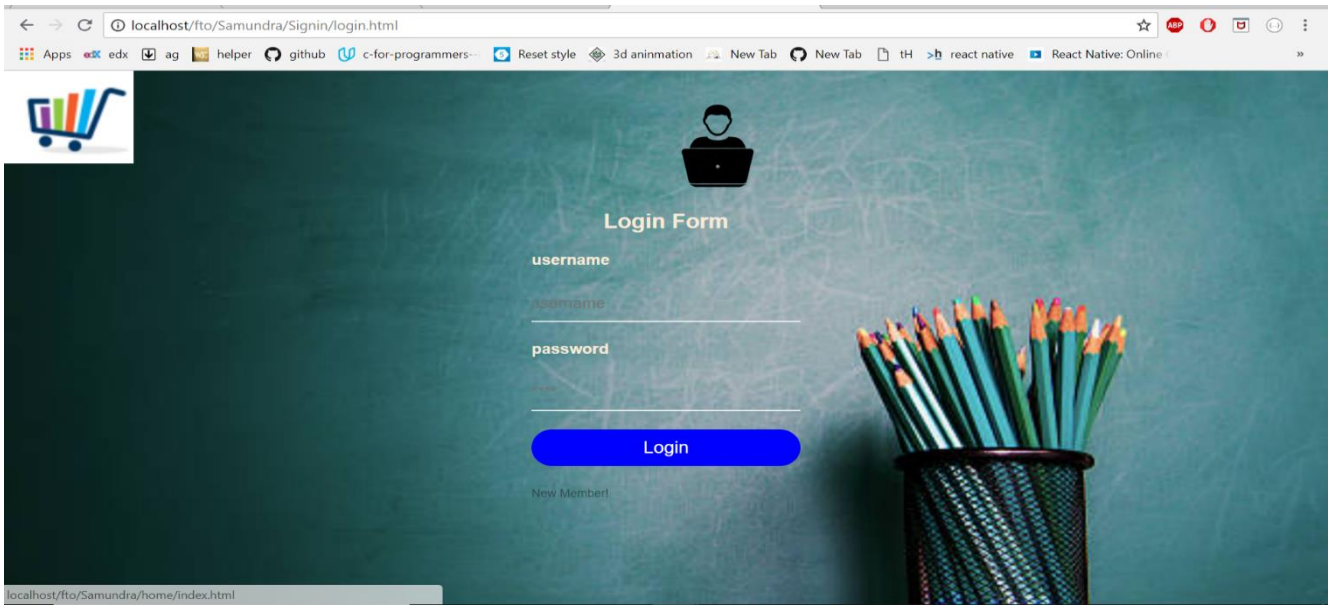

FIGURE 28. Login Page

There is a link at the bottom of this page where a new user can register their account and login via this page. When a new user clicks the link, the registration page will be directed, and the code were being displayed in Figure 15, and they can fulfill the information and can make their own username and password. JavaScript functions were used in the registration page which were also visualized in Figure 16. Below in Figure 28 is the signup page of this project where one can input the information and can get access to their own profile by login via login form which is displayed in figure 27.

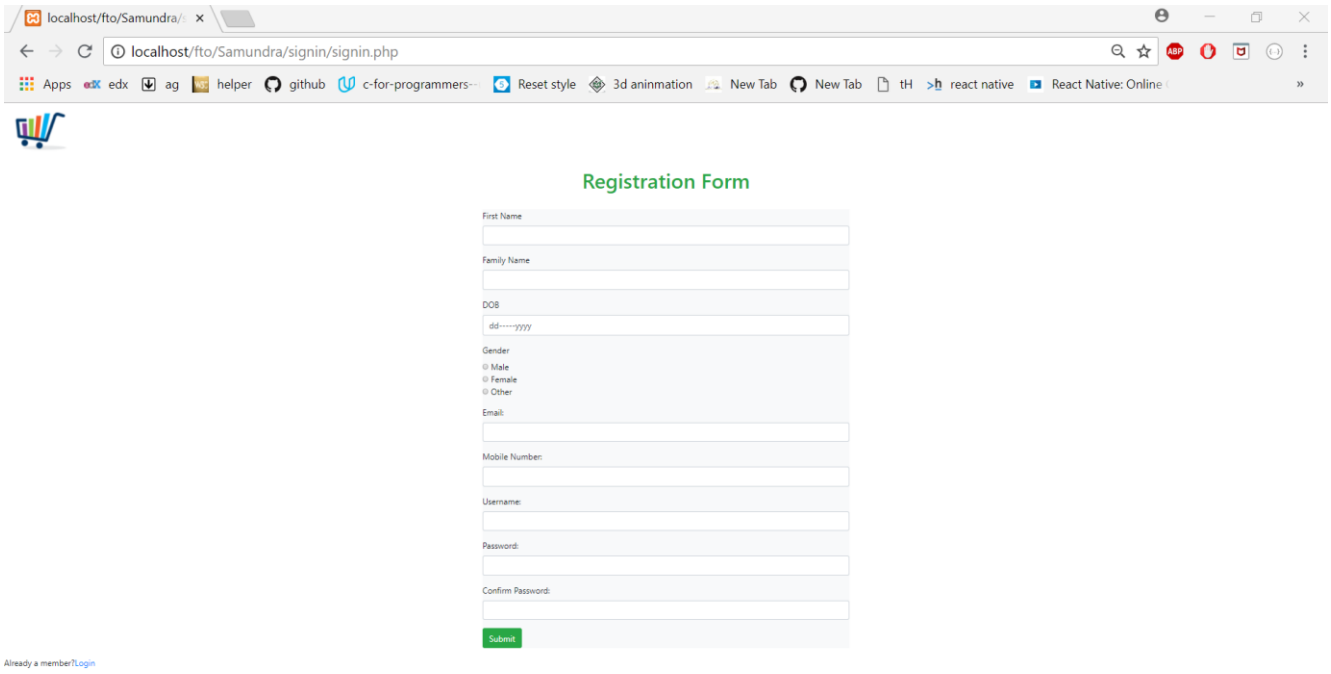

FIGURE 29. Signup page

After clicking submit button in the signup page, the information will be stored in the Signin table in the database which were done by the backend code by using php. At the time of login, the backend code will check for correct username and password in that table and if the data are the same then a user will be directed towards their own profile page which includes their username on the top of their profile on the side of the default profile image. There is the upload button below the profile image from where a user can upload their own profile image. On the top of the profile, there was a search field with search button where user can type those questions which they want. On the right-hand corner, there is a log out button which is used when a user logout from their own profile whenever they want. Below in Figure 29 is the profile page of the user with their username.

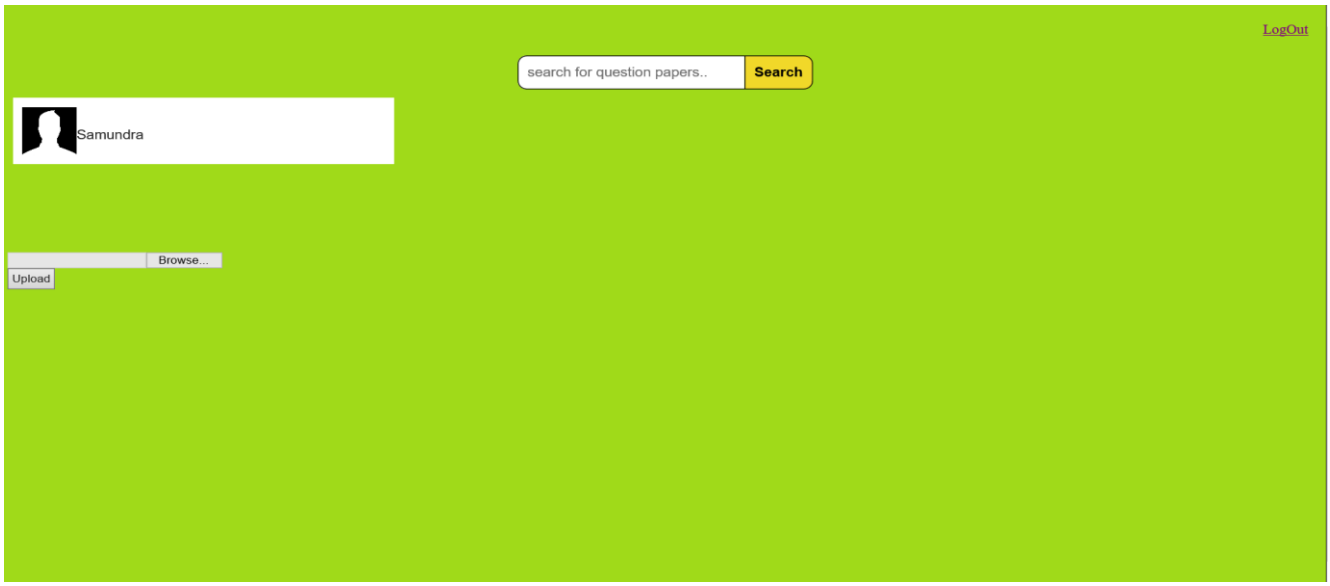

FIGURE 30. User profile

After entering to the profile, the user can search for the question they want via a search field that was mentioned on the top of the page. In this thesis, a test was being carried out to search for the questions as user demand and the test was carried out for searching entrance papers. When the server checks for the questions that look like the user wants then it displayed all similar questions in a new browser window so that the user can choose the proper questions. Visualized in Figure 30 is the sample questions that look like the user wants when a user searched entrance paper in the search field.

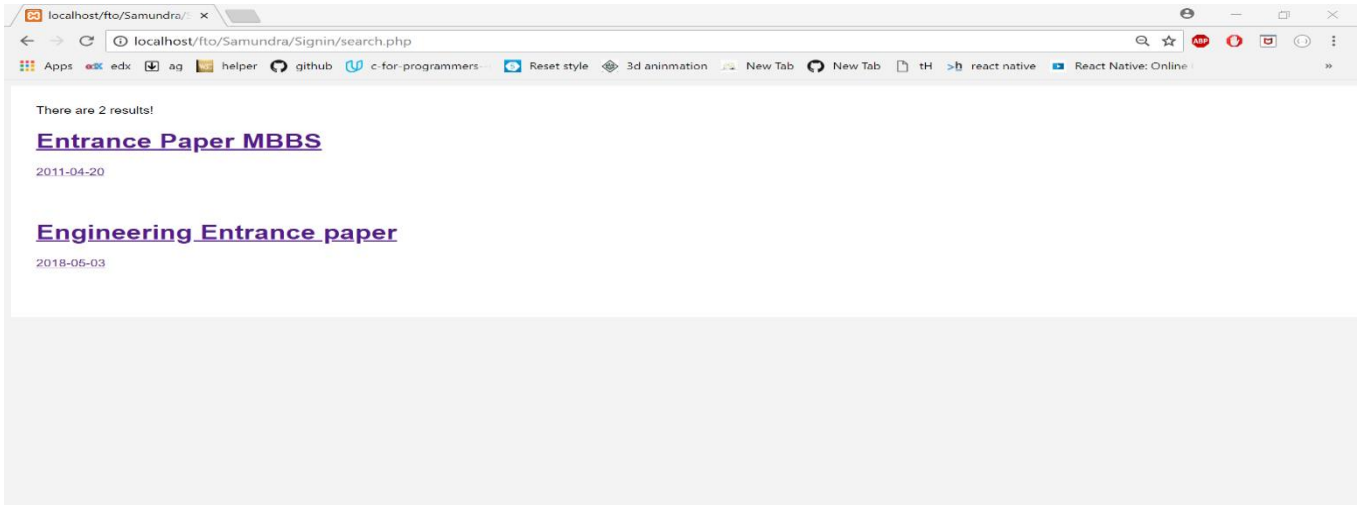

FIGURE 31. Sample questions

As the questions is clicked, the whole description of the question was displayed in the new browser window and the code were displayed in Figure 22. The comment area where the user can also comment and display the comment below it to get help from other user which helps them to solve the problem. Visualized in Figure 31 is the engineering entrance paper with the comment from the user also to help each other.

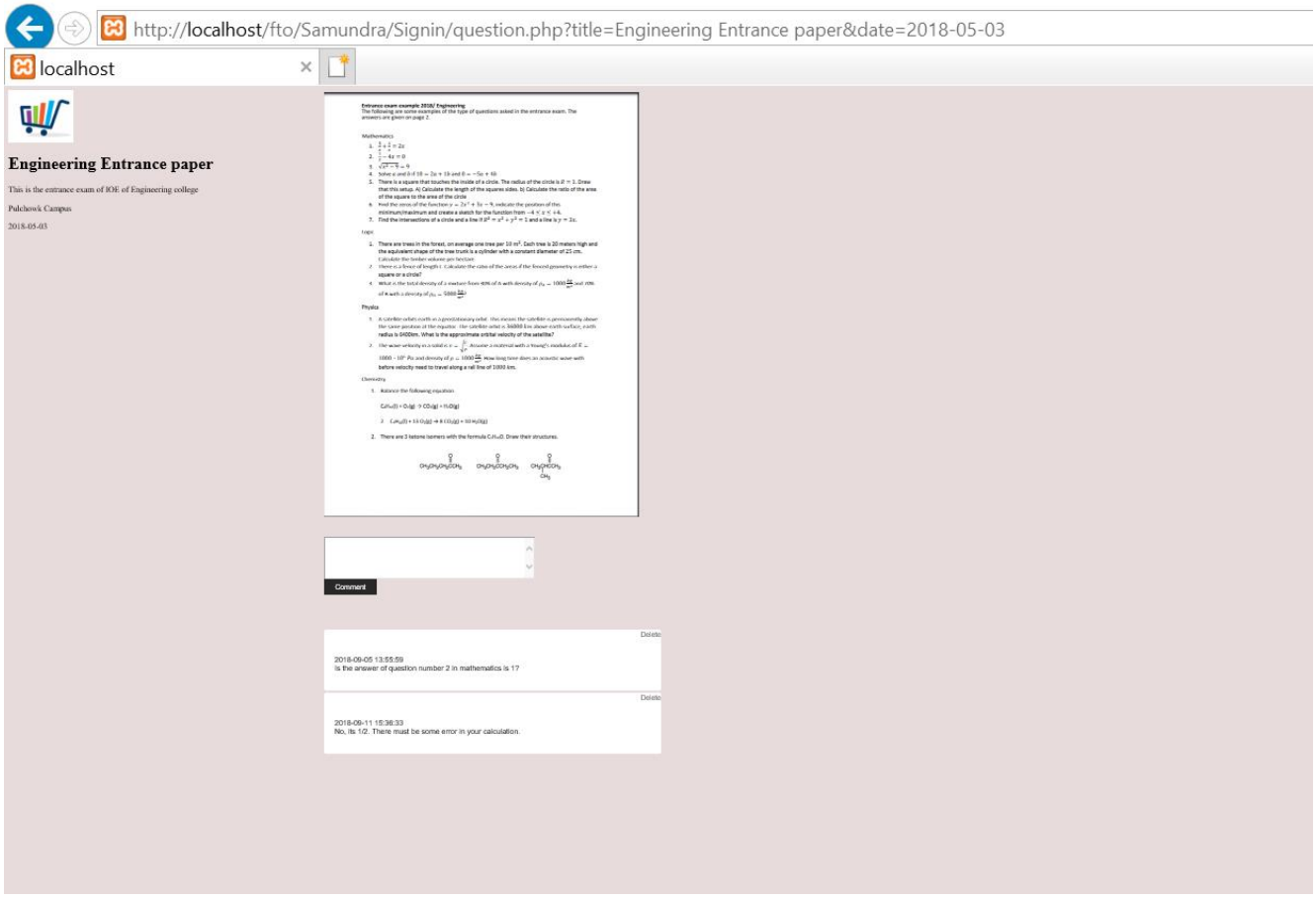

FIGURE 32. Question Paper

4.5 Publishing

Once the project is ready, it is possible to make usable by everyone. There is different site from where a domain name can be taken, and project can be uploaded in that domain. The use of the domain name and the web server were needed to publish the project as real website so that anyone can access to this website from their own place. The site where one can publish the web project as a real website that can be used by everyone in free is visualized below in Figure 32.

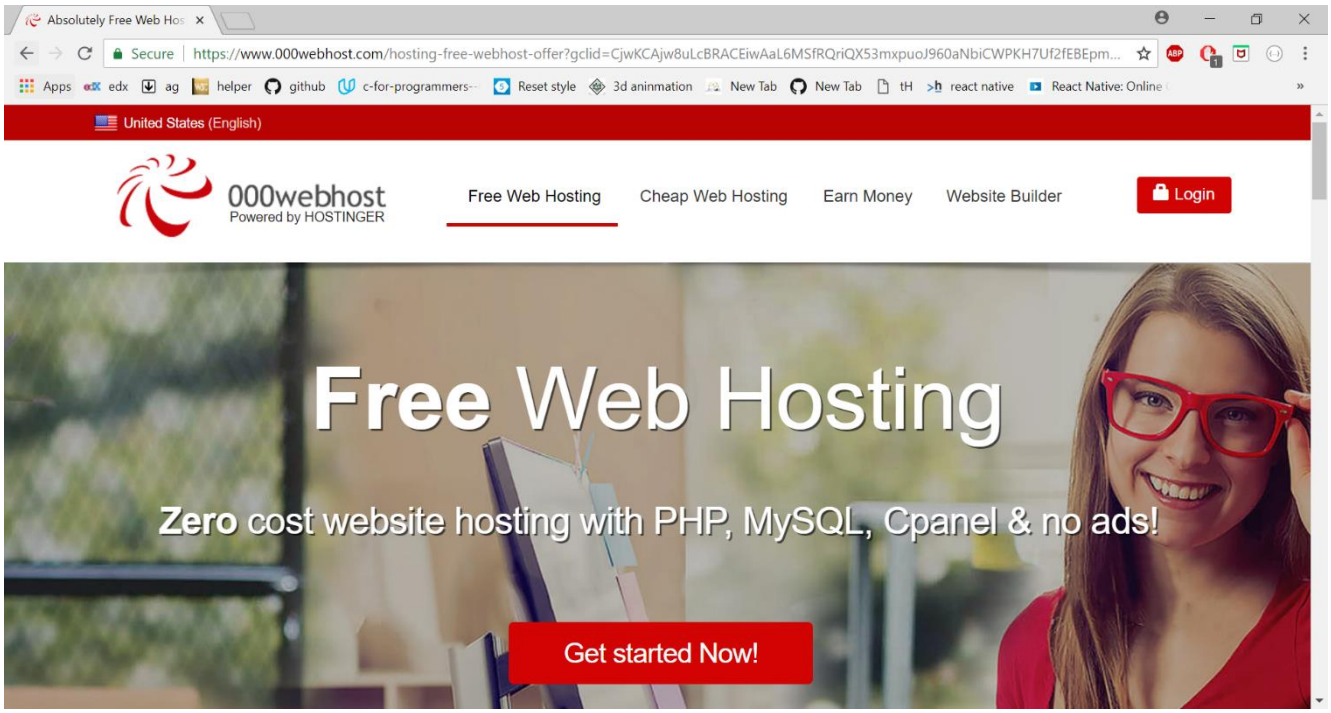

FIGURE 33. Free webhost site (000webhost.com)

5 CONCLUSION

The aim of this thesis was to demonstrate how this thesis works for the users as well as how this website was created. Due to the time limit, focus was given on how this website can be created and how it can be implemented for the users. The project was created from scratch. During the study period, this idea was presented but had not decide on which programming language should this thesis begins. Later, picking the PHP programming language, thesis project was begun. Because PHP was new for the author, coding part took the long time in backend development. Online tuition made easier for learning PHP. There are various online official sites for learning this programming language as well as other programming languages too.

In the beginning of the thesis, static web pages were created using HTML5 not HTML. As mentioned earlier, the main difference between them are that audio and video can be considered as integral parts in HTML5. After the completion of the static page, registration page and login page including the backend development were processed and finalized with the user profile and e-store questions page including comment section for requesting help on related questions. As mentioned earlier, finalized website can also be uploaded in the real web browser via 000webhost for free or buying domain and using it was another way of publishing.

Drastic increasement in the use of internet for learning and practicing can make this thesis useful for the user. E-questions store can be benefitable point depending on the user requirement. Nations with high speed network can be the reliable users for this project. Nowadays, use of internet is rapidly growing over the world. So, every nations people might also be the users for this website. This thesis can also be used for every field so that there will be more users accessing this website. Further research like uploading the question paper from the user can help for more papers. Accepting and requesting of the connection to other users can be possible due to which offline and online chatting with other users like, in messenger, can be developed so that users can communicate to each other which enhances the use of this thesis.

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