Declaration Page (Cover sheet)

Contents

Introduction

Scott Lockie is the CEO at emPOWER Your Mission and Australian Charity Guide which happens to be the one of the leading organizations involved in the Charity area training. It also interlinks many of the Australians with the existing charities daily.

Scott had a vision of creating a networking platform amongst the individuals involved in this field which will make communication and information interchange easier.

The NFP Central is a social networking platform designed and developed with the motive of providing a networking and communication environment. The platform will only comprise of the individuals who are associated in the field of social work and charity. The website will serve as the portal where people from all over the world will be able to connect to each other as there is an absence of such a platform in the Not-For-Profit line of work.

This report will demonstrate the overall goals and plans that were designed as objectives by our team which will lead to the actual implementation providing a fully functional website. All the functionality that is going to be achieved are the requirements that are preferred by the client with minor changes.

Our team has hence been working in developing the fully functional website . The team involved for the design, implementation and development consists of 8 members in total who are working in divided sections of interest for the completion of this project.

Objectives

The main objective involved with this project is to create a platform which will attract more and more users and establish connections between them.

The objectives are represented in a more generalized form as follows:

1. Connection and information interchange within the developed platform.
2. Construction of databases leading to ease in management of the user information within the platform.
3. A short messaging service which will enable the chat functionality between the users.
4. Enlisting and display of the multimedia contents that will elevate the collaboration of the users of the platform.
5. Initial access over Australia and global platform after completion.
6. Search functionality which will be location and interest based. It will provide the user the ability to search for people based on their location and interests.
7. Monetization of the website.

Duration and Completion of the Project

To achieve all the requirements that were put forward by the client, our team has made an estimation of around 60 days for the completion of the project. This includes all the required procedures done to make the website live, prototype implementation on a technical level as well as all the written reports and documentations.

All the tasks have been equally sectioned for each of the group members according to his/her area of expertise. The reason behind doing so is because of the limited timeframe to handover the project to the client.

Team Involved and Tasks

Tasks Category	**Team Members**	**Primary Tasks**	**Secondary Tasks**
Prototype Design	1.	- The entire Prototype design based on the client requirements.	- Updating the design according to the feedback of the client
Documentation	1.	- All the report and documentation involved.	- Testing of the website and Front end.
Frontend Design and development	1.	- Actual Frontend design	- Final editing of the Documentation and proof reading - Database design
Database design	1.	- Creation of the database and Relations	- Backend Testing
Backend Development	1.	- All the Backend development involved in making the website functional	- Overall testing of the website

Implementation

Prototype Design

After all the Requirements gathering that was done at the earliest stage of this project the actual implementation of the project began by the designing of the prototype. The prototype was constructed according to the main requirements of the client.

The Software that was used was Adobe XD. The reason behind using this application was that it had real time collaborative design options which made it very easy to edit the design together. Also, the plugins that were available made the work a lot easier with the application of tools like Wireframe, Reusable design elements, Icons and Grids (Adobe XD | Fast & Powerful UI/UX Design & Collaboration Tool, 2021).

The Prototype snippets are enlisted below:

1. **Landing Page:**

   The idea behind the landing page is to provide an interactive multimedia content preferred by the client to a visitor on the website. Regardless of whether the user is already signed up or not anyone will be able to access this page and watch the contents.

Fig 1 : Landing page NFP Central website

2. Register Page

This page simply is a sign-up style form in which the user will provide the necessary details so that he/she can access the website to its full potential and enjoy the functionalities.

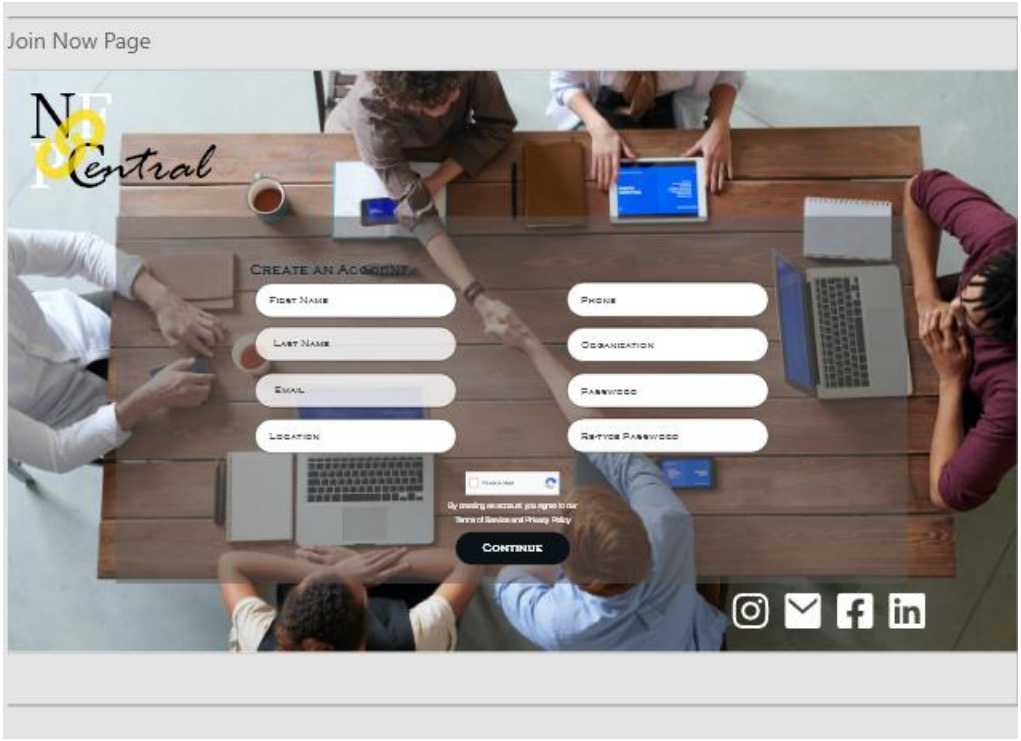


Fig 2 ：Register Page NFP Central website

3. Login Page

After the Registration is complete the user will have the option to Log in as an existing user. The logged in user will have the access to all the other pages except the admin page.

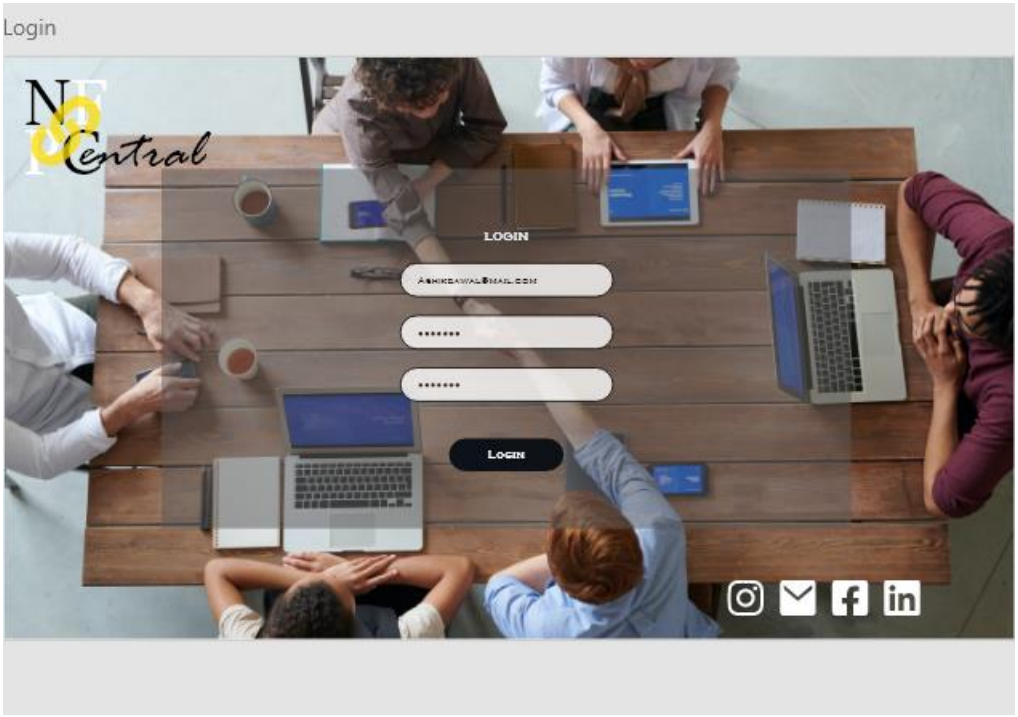


Fig 3 : Login Page website

4. Home Page

It is the page for the logged in user. It will give the user access to the Profile page, Chat, News Feed, Search Bar, and all the other pages. Also, the user can post something.

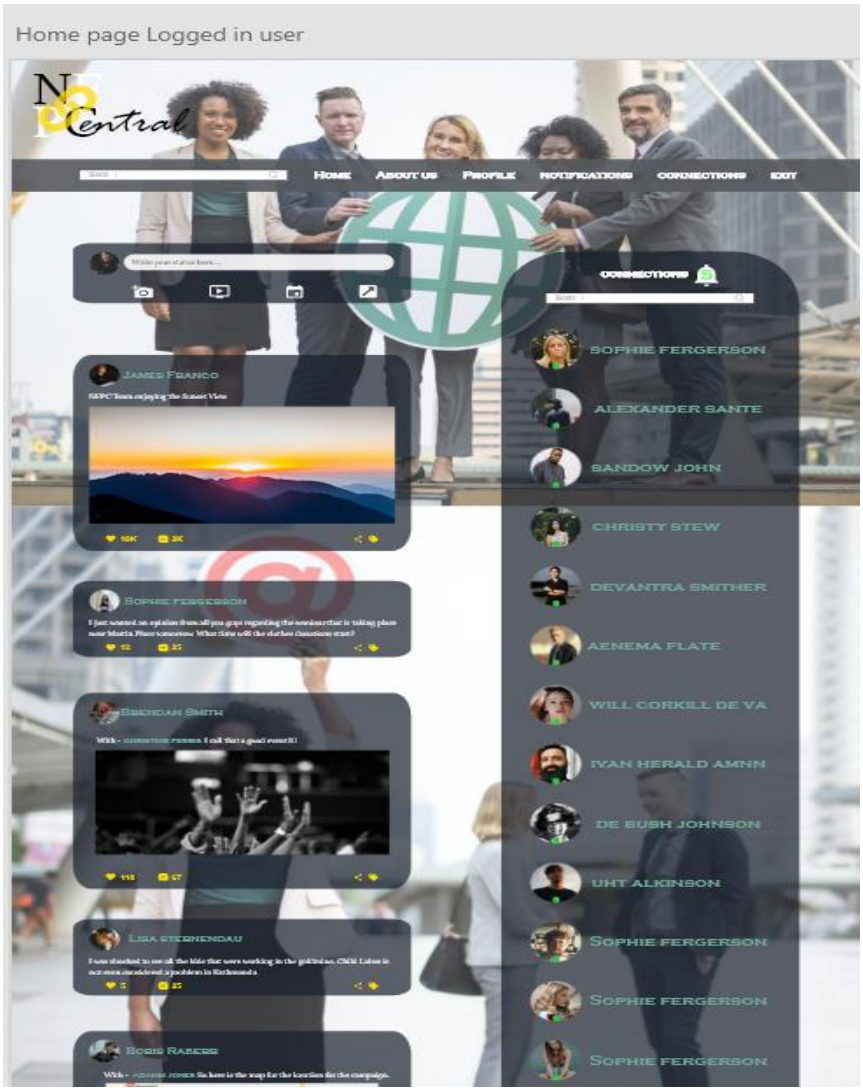


Fig 4 : Home Page NFP Central website

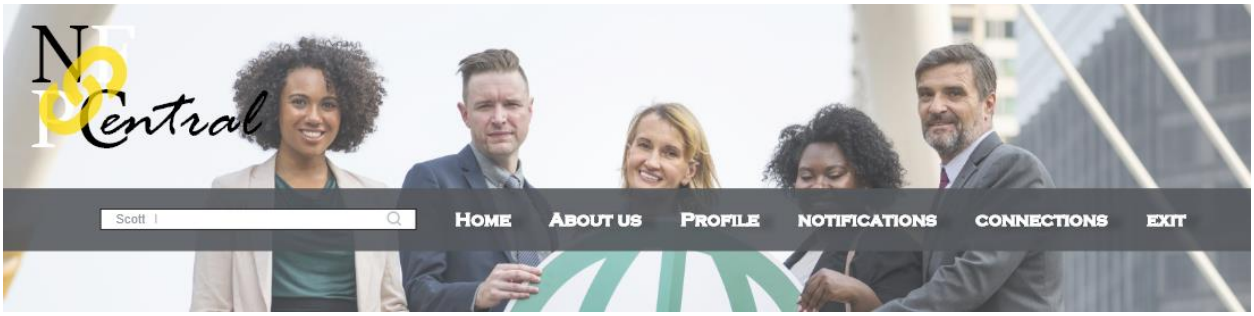


Fig 5 : NFP Central Navigation Panel Image

5. Profile Page

The logged in user can edit details about himself, update it or remove it through the profile page. Also, he/she can post something.

Fig 6 : Profile page NFP Central website

6. Notifications

This panel displays the list of notifications that the logged in user gets on his page.

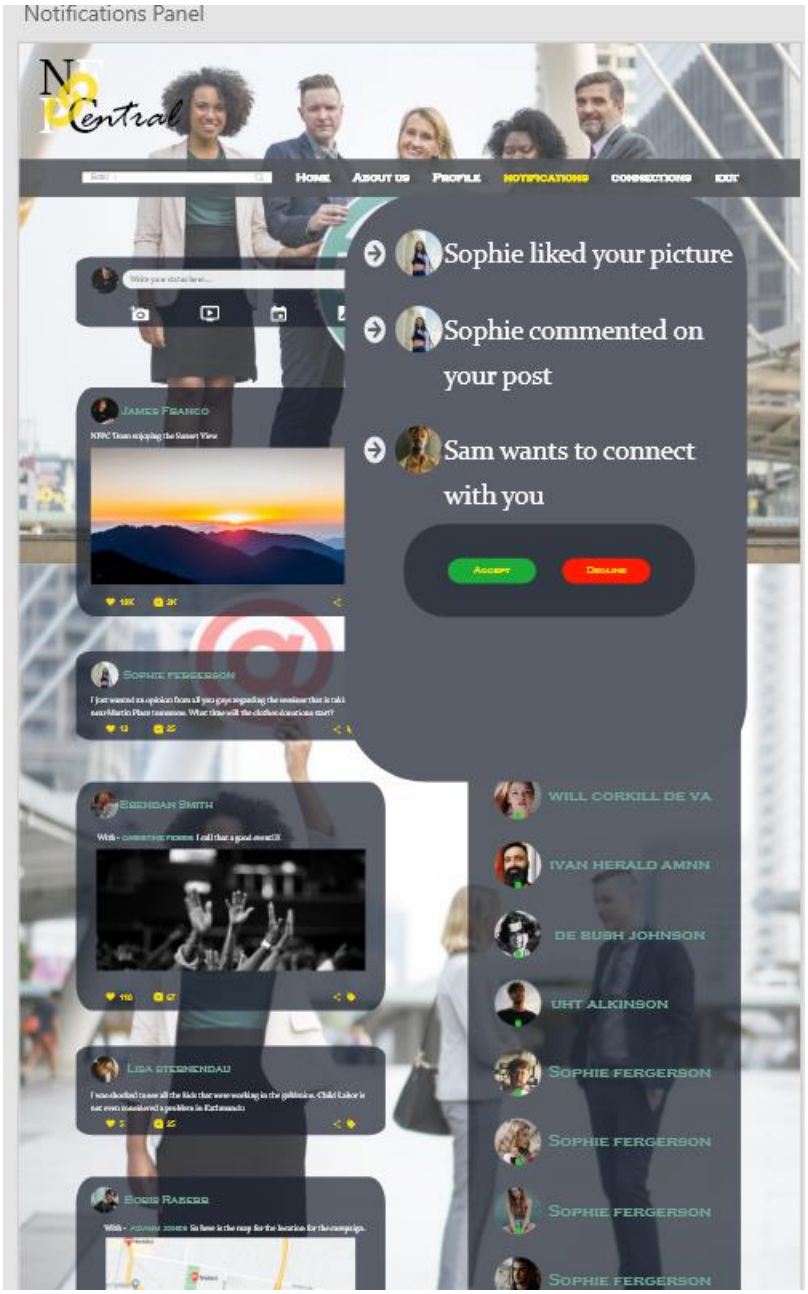


Fig 7 : Notifications Page NFP Central website

7. Chat

The logged in user will also be able to chat with the connections that he/she has

Fig 8 : Chat Page NFP Central website

8. Admin Panel

The admin panel will only be accessible to the client and his team. It will be developed for monitoring the ongoing processes and users. Also, the admin will have the complete access of adding or deleting content.

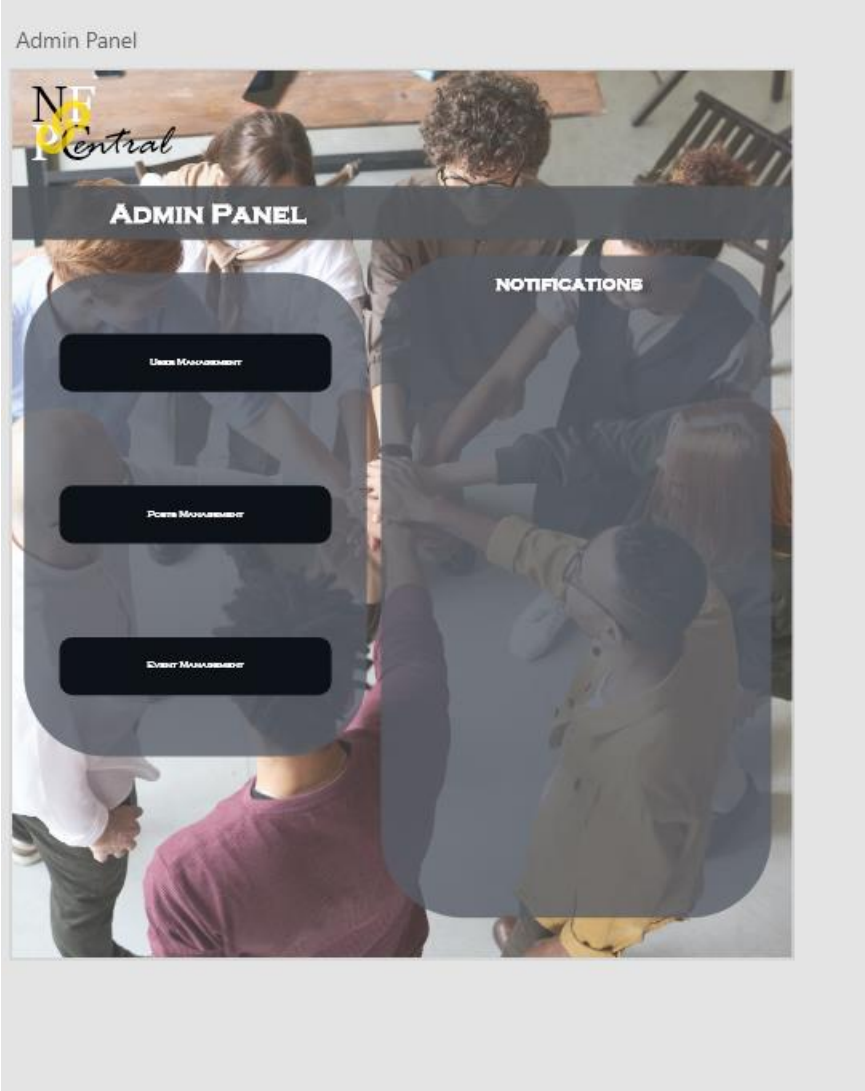


Fig 9: Admin Page NFP Central website

Database Design

Database structure has already been designed during Capstone Project 1. The charity connect applications performance would rely on continuous data leverage and storage in a safe and reliable environment. Since the program is data-driven and requires continuous access to data, a fully functional

database is essential. These functions, as well as indexing all tables and ties, will be provided by the MySQL database development engine. In terms of licensing, MySQL is free open source software that has outstanding management capabilities, the majority of which are freely available (Mishra, 2016). In comparison to other relational DBMS like PostgreSQL, it is quicker and more stable.

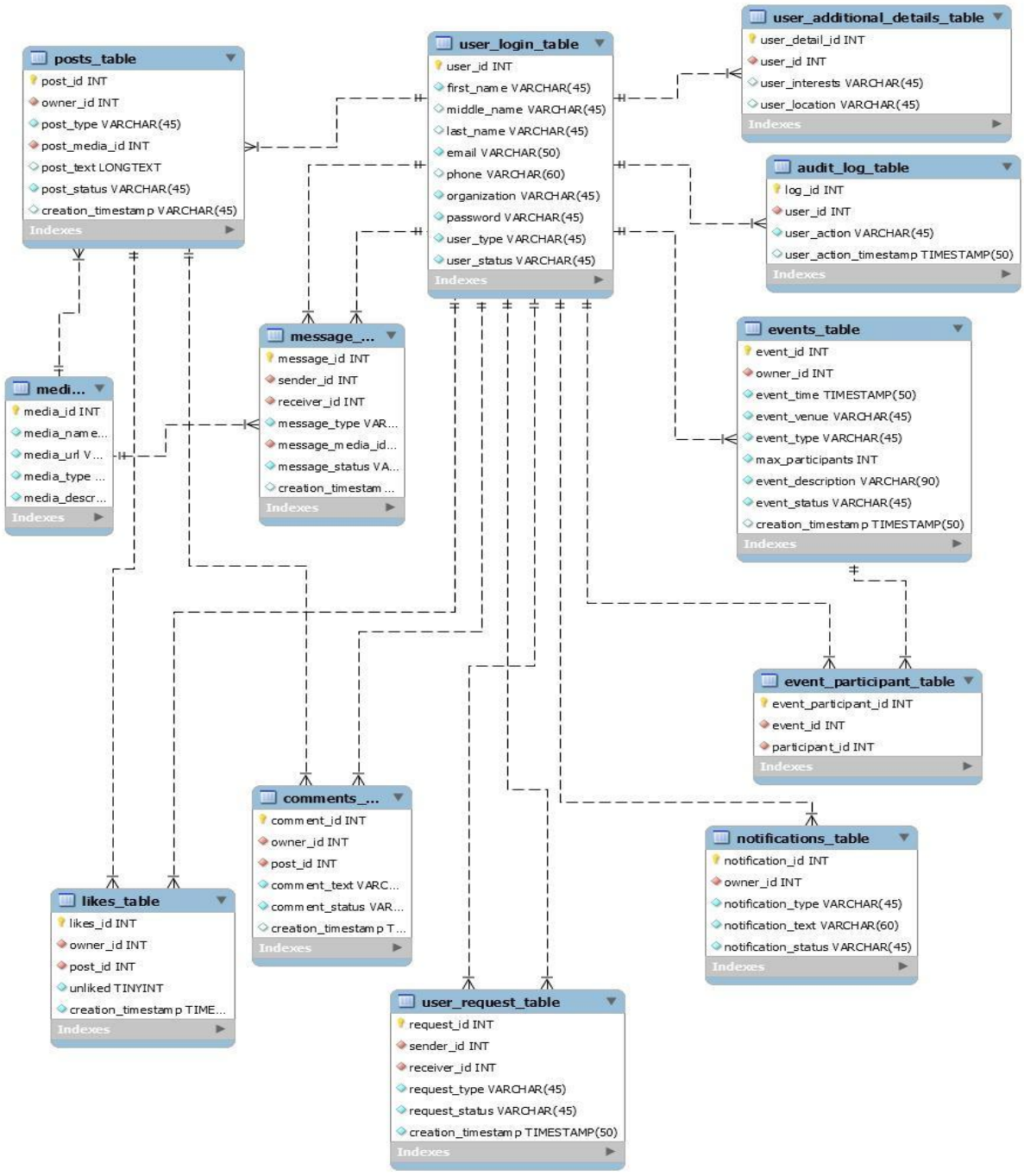


Fig 10 Database ERD Diagram

Reasons for choosing MySQL

There are several widely supported database management systems like mongo dB, firebase, SQLite along with MySQL. There is more than one factor behind opting MySQL over the rest of the database management system. The leading factor for us to choose MySQL is the data security as we are dealing with the personal information of users. The other factor is the unmatched on-demand scalability facility provided by MySQL. MySQL also provides high performance despite millions of queries every single day. Also, the performance on fundamental operation of the database management system like insert, read, update, delete has been known to be superior as compared to the other DBMS like mongo dB(Deari et al., 2018).

Front-End Development

We are using HTML5, CSS3, JS, and bootstrap 4 as the major components of our frontend design. HTML5 is used for structuring the visible elements, CSS is used to style them, JS is a scripting language used for dynamic element behavior and bootstrap is a framework for easy styling of the elements in the browser.

HTML5:

HTML5 is the latest version of HTML that supports audio, video embedding, offline media storage, 2D/3D graphics, better performance with hardware optimization, better access to input/output devices and better styling options for the frontend designer. (HTML5 - Developer guides | MDN, 2021)

HTML is a markup language which makes use of tags to identify different elements in the format shown below:

```
<!DOCTYPE html>
<html>
<head>
<title>This is the title of the page. </title>
</head>
<body>

<h1>This is a big header element. </h1>
<p>A paragraph element. </p>
```

```
</body>
</html>
```

CSS3:

Cascading Style Sheet version 3 is being used to style the HTML of our project. Same HTML can be presented in different ways by using different CSS. Thus, CSS plays a major role to determine how our page looks. CSS can style the position, appearance, color, size, and layout of the HTML elements that we have used in our project. CSS can be used embedded in the HTML file or from an external source. (CSS Introduction, 2021). Below is a code snippet from our landing page:

```
.bgimg {

background-color: rgba(255,255,255,0.3)

}
```

This CSS changes the background color of elements with class bgimg to white with an opacity of 30%.

JS:

JavaScript is a scripting language that helps to make the HTML elements dynamic. We have used JavaScript and jQuery in certain of our frontend designs to make the webpage more interactive. Below is an example of how JavaScript is embedded within HTML code.

```
<script>

function buttonClick() {

Alert (“This is Javascript”);

}

</script>
```

The above JS code will produce a window alert in the browser when the function buttonClick() is called.

Bootstrap 4:

Bootstrap 4 is a very robust styling framework that helps to create responsive layouts of web pages. Responsive web pages change their layout according to the size of the viewport or the screen. We are using bootstrap in our project so that the web page looks good on smaller screens like mobile phones

and tablets. We are using bootstrap 4 CDN (Content Delivery Network) to access bootstrap 4 in our project.

```
<body>
<div class="bgimg main-container">
<div class="top-container w3-display-container">
<div class="w3-content w3-display-container ">
<div class="button-container-small w3-hide-large">
<a href="login.php" class="w3-button  w3-text-white w3-border w3-border-white w3-round-large">Log In</a>
<a href="signup.php" class="w3-button  w3-text-white w3-border w3-border-white w3-round-large">Sign Up</a>
</div>

    <div class="mySlides w3-row w3-padding-64 w3-center" style="width:100%">
  <div class="w3-half"><h1 class="main-heading w3-text-white">One Platform Multiple Connections</h1><br><span class="w3-text-white">Know everything about us<br> through this short introductory
      video</span><br><i class="fa fa-play-circle w3-text-white w3-xlarge w3-hide-large w3-border w3-border-green w3-padding">  Play</i></div>
 <!-- <a href=""> -->
 <div class="w3-half w3-hide-small bgimg2 main-heading w3-display-container w3-padding w3-hover-opacity"><i class="fa fa-play-circle w3-display-middle w3-jumbo w3-text-black"></i></div> </a> -->
 <iframe class="w3-hide-small" width="330" height="215" src="https://www.youtube.com/embed/MaHKVmFWjF8" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope;
     picture-in-picture" allowfullscreen></iframe>
  </div>

<div class="mySlides w3-row w3-padding-64 w3-center" style="width:100%">
  <div class="w3-half"><h1 class="main-heading w3-text-white">Our Services</h1><br><span class="w3-text-white">Watch the video<br> to know more about the system features.</span><br><i class="fa fa
      -play-circle w3-text-white w3-xlarge w3-hide-large w3-border w3-border-green w3-padding">  Play</i></div>
 <!-- <a href=""> <div class="w3-half w3-hide-small bgimg3 main-heading w3-display-container w3-padding w3-hover-opacity"><i class="fa fa-play-circle w3-display-middle w3-jumbo w3-text-black"></i
    ></div> </a> -->
<iframe class="w3-hide-small" width="330" height="215" src="https://www.youtube.com/embed/iv98OFsFoEc" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope;
    picture-in-picture" allowfullscreen></iframe>
  </div>
```

Fig 10.1 : Front end screenshot

```
.top-container{
width: 100%;
height: 315px;
background-color: rgba(0,0,0,0.5);
}

.left-container{
background-color: rgba(255,255,255,0.5);
margin-top: 20px;
padding: 10px;
}
.right-container{
}
.main-heading{
}

.button-container{
position:fixed;
bottom: 20px;
right: 20px;
background-color: rgba(0,0,0,0.1);
padding: 15px;
border-radius: 5px;
}
```

Fig 10.2: Front end screenshot

Back-End Development

We are using PHP for our core programming and MySQL for the database. Both tools are open source and widely used to create web applications around the world.

Laravel (PHP):

We are using Laravel framework of PHP for programming because it has a lot of features for developers:

- Authentication: Laravel handles the authentication part of the web application making the developers task very easy.
- Secure: Laravel being tested and upgraded by developers around the world, is a very secure framework. In addition, it provides protection against SQL injection, cross-site attacks and many other vulnerabilities.
- Laravel framework allows faster application development and execution.
- Laravel is comparatively easy to learn because the documentation is easily available. (Thattil, 2021)

MySQL:

MySQL is an open-source database engine that provides a robust database and supports Structured Query Language (SQL). We are using MySQL as the core database for storage of almost all the user activities and data. Except for files like photos and videos, all the information of our project will be stored in the database.

Architecture:

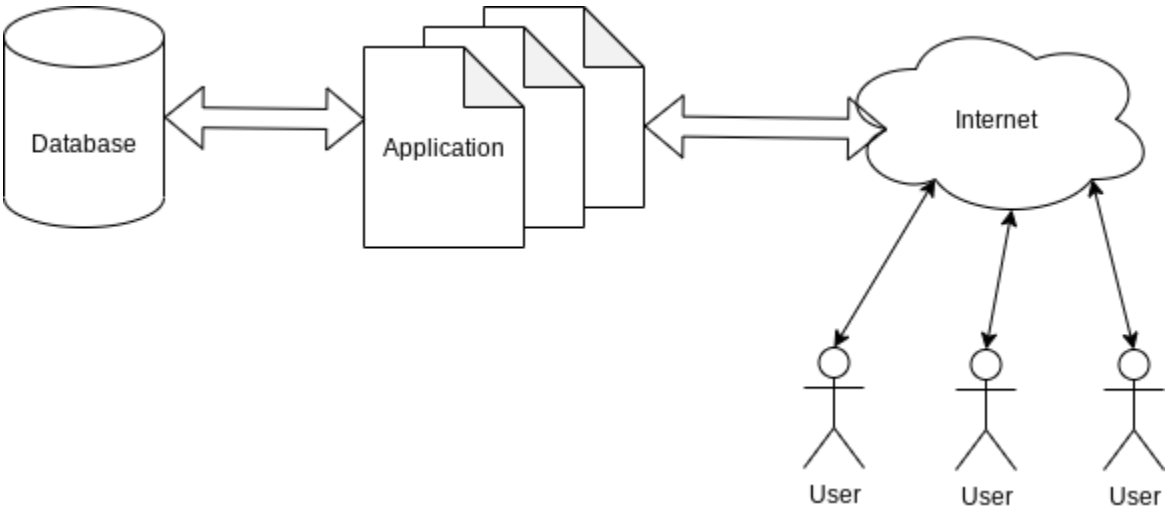


Fig 12 : Web Application Architecture

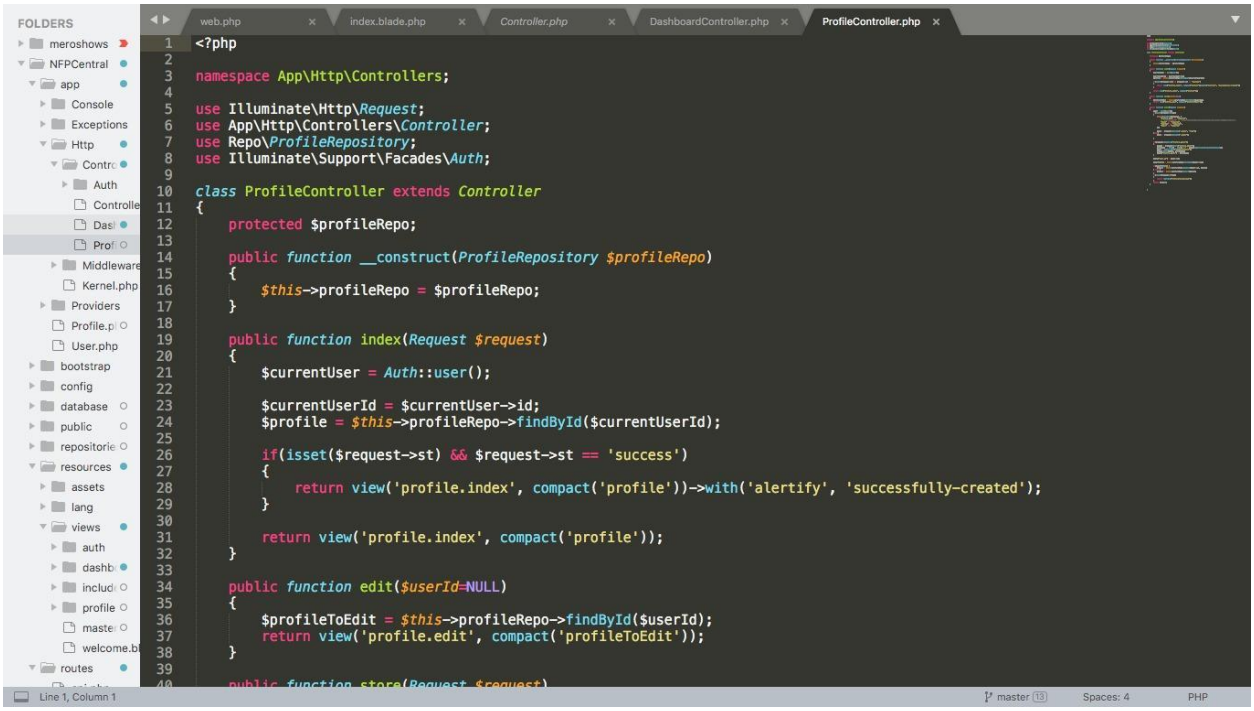


Fig 13.1 : Backend Code

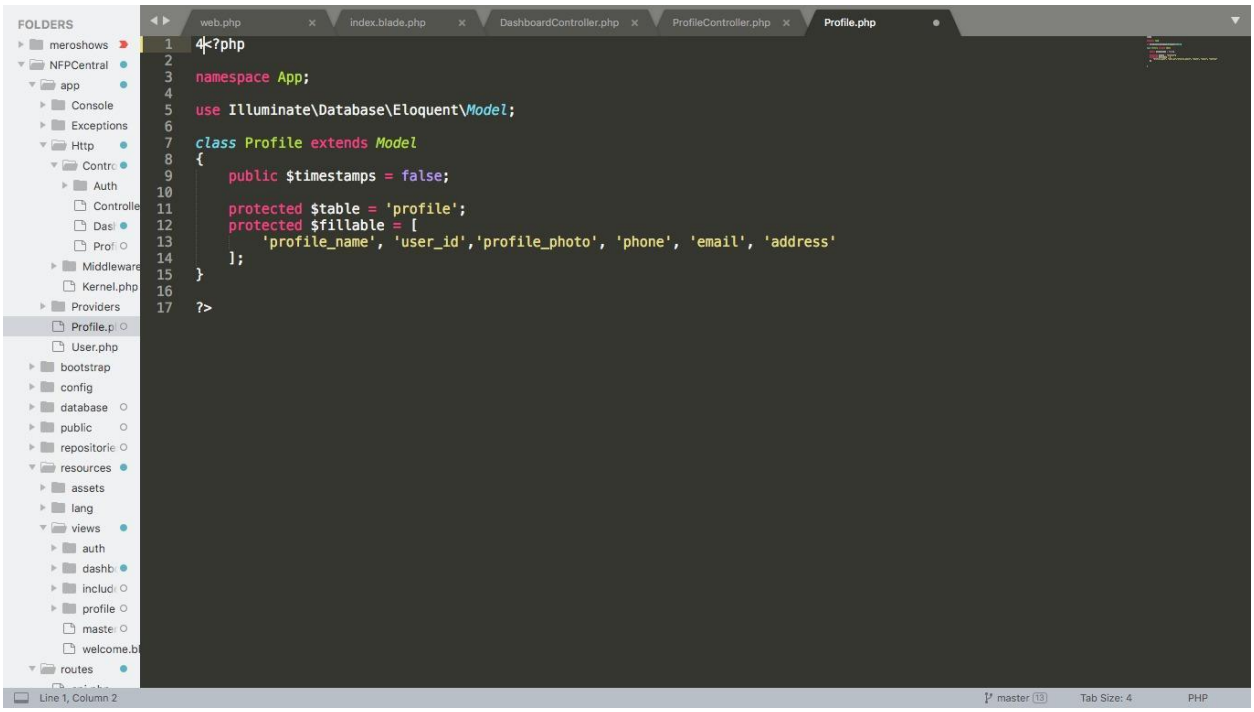


Fig 13.2 : Backend Code

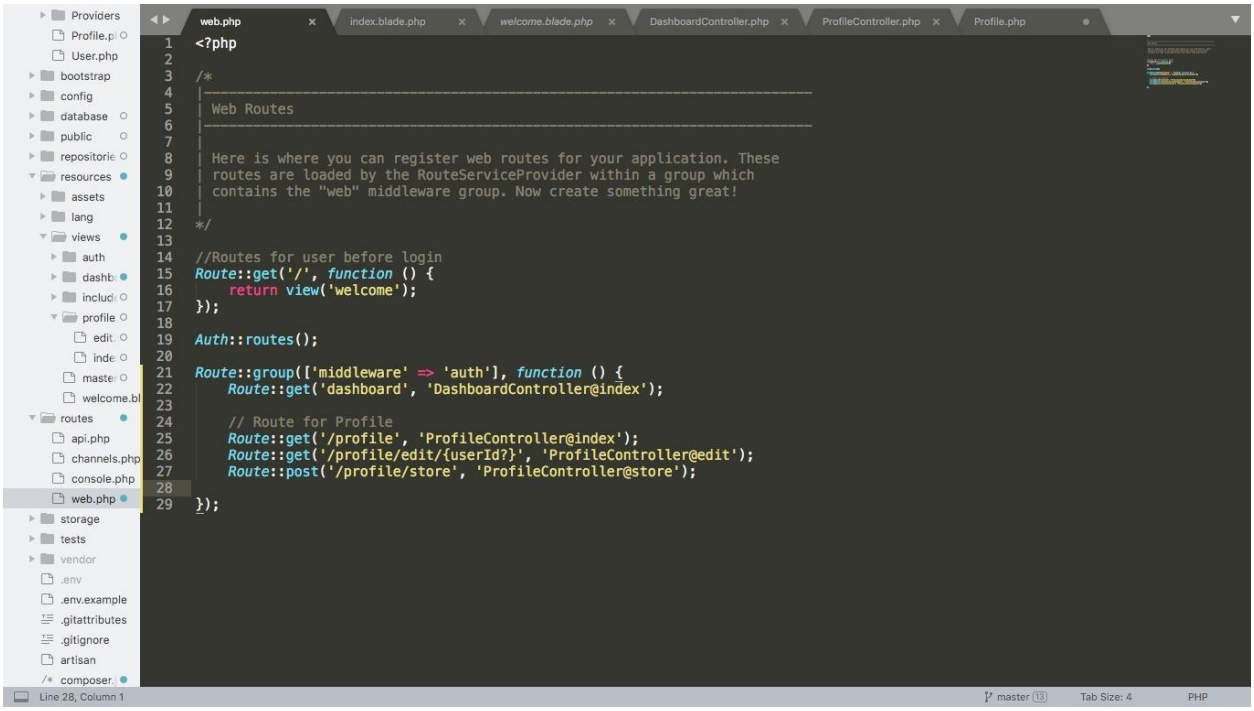


Fig 13.3 : Backend Code

Testing

We will implement 3 major kinds of testing for this application: Unit Testing, Integration Testing and User Acceptance Testing.

Unit Testing: Developer team will test the unit they are working on. After successful completion of module development, each module will be tested by their respective developers to ensure that they are according to the requirements of the project. For example, the chat module and the user authentication modules are two separate units and will be separately tested by the developers.

Integration Testing: After all the units are developed and tested, related modules will be integrated with each other and then tested as a whole. For example, the sign-up module is related with the user profile module and these modules will be tested together after integration.

User Acceptance Testing (UAT): After completion of integration and integration testing, the whole application will be tested by the prospective users in a closed environment. Some random users will be selected, and they will be given the access of the application for testing. A satisfactory result from the UAT will lead the application into deployment in LIVE environment.

Flowchart

The flowcharts that we designed for the NFP Central website are enlisted below. One is the admin page and one for the entire website.

Fig 14.1 : Flowchart for the NFP Central

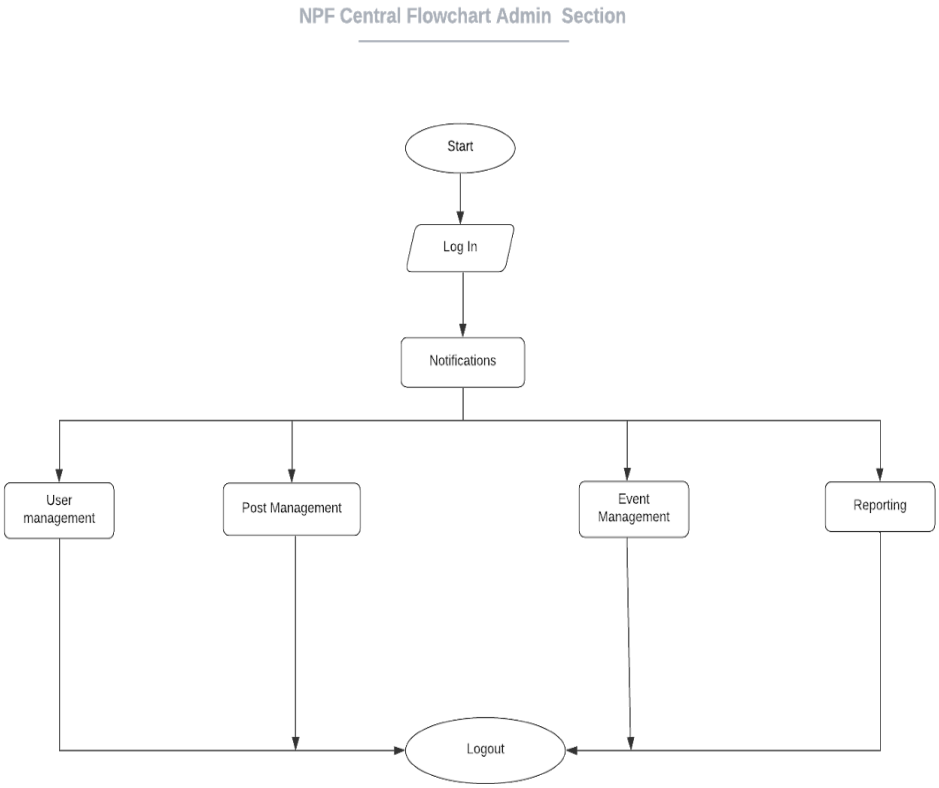


Fig 14.2 Flowchart for the NFP Central Admin page

Work Breakdown Structure

Our project has been divided into seven categories:

- **Project Definition**
- **Requirement Gathering**
- **Database Design**
- **UI design**
- **Development**
- **Iterations**
- **Deployment**

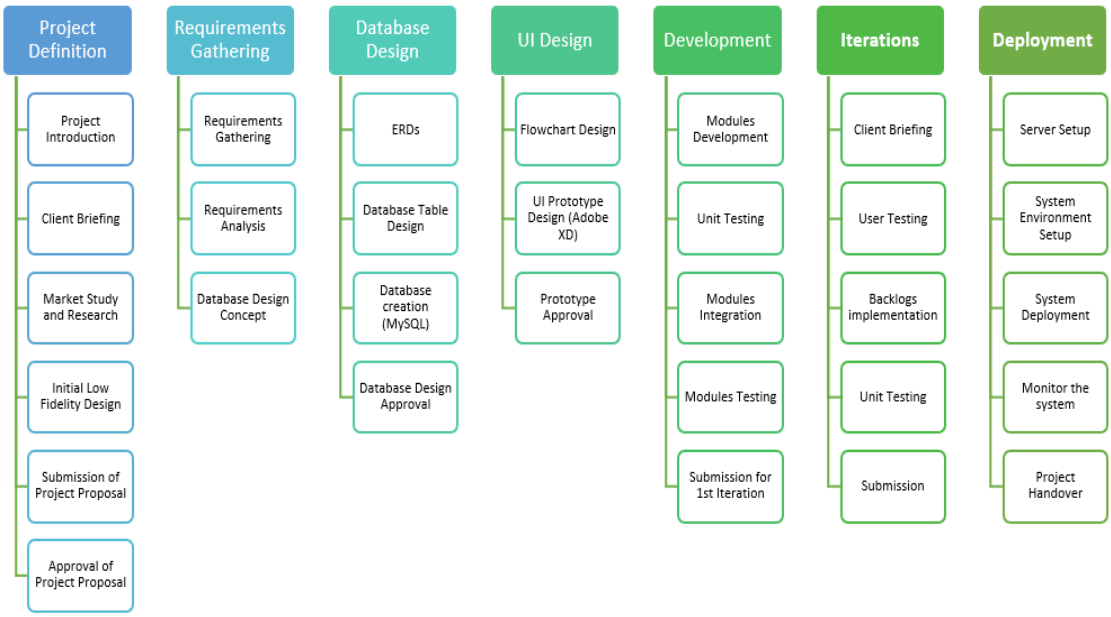
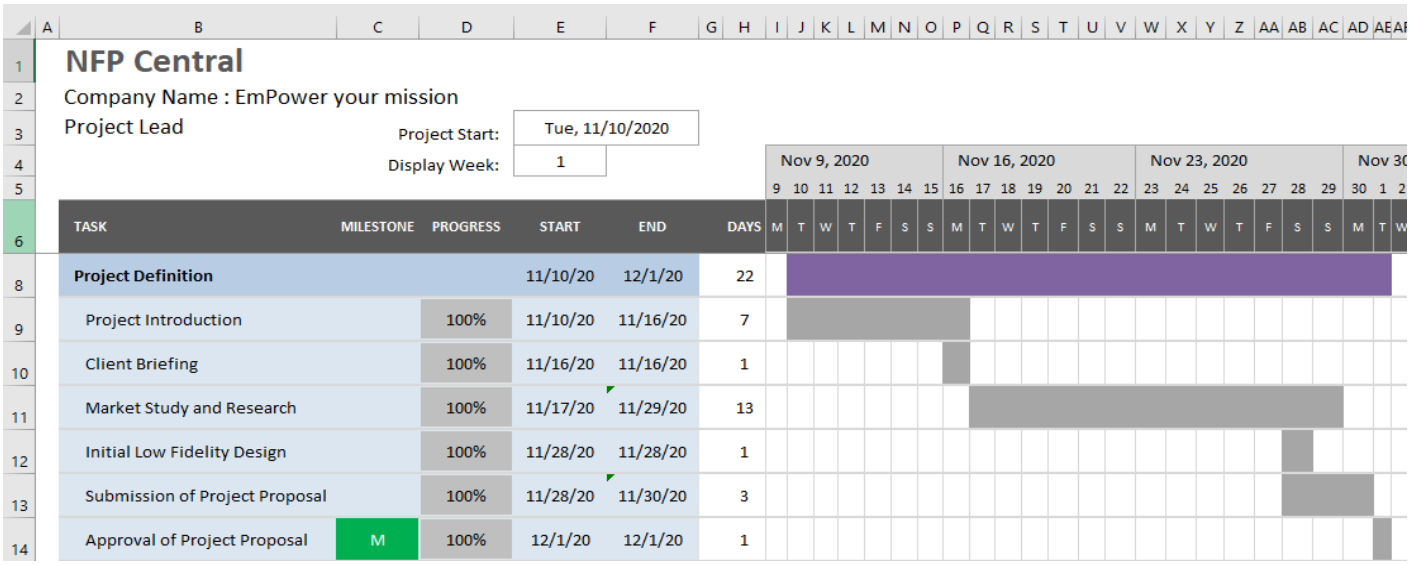


Fig 15: Work Breakdown Structure

The first 4 phases of the WBS have already been completed by the team and currently we are working with development, Iterations and Deployment of the project.

Gantt Chart

The following images of the Gantt Chart demonstrates the completed tasks and the planning of the upcoming tasks for this website.



NFP Central

Company Name : EmPower your mission

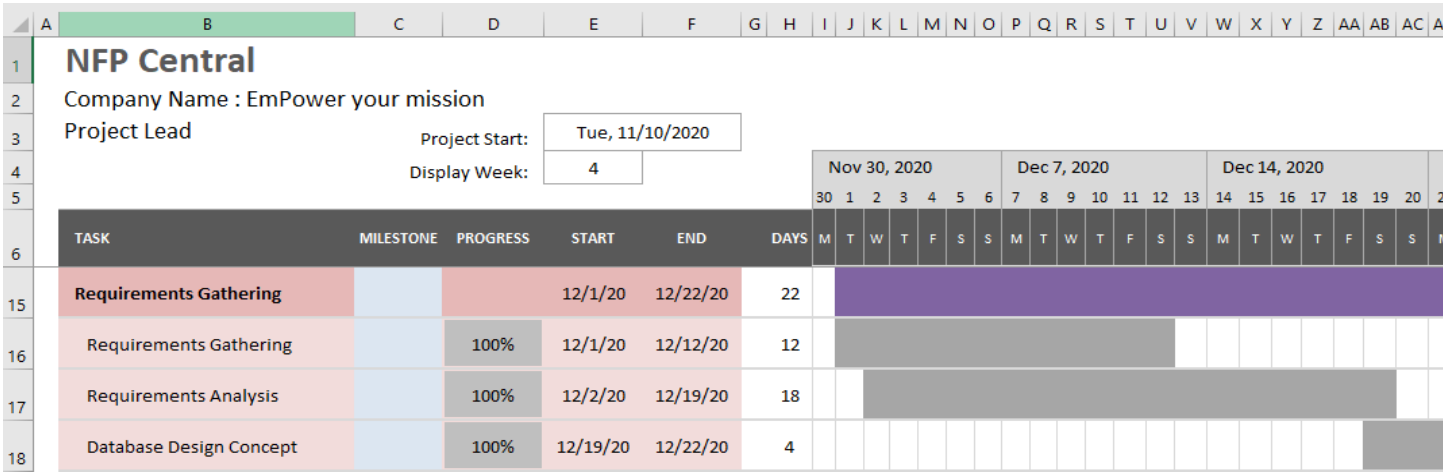
Project Lead

Project Start: Tue, 11/10/2020

Display Week: 1

TASK	MILESTONE	PROGRESS	START	END	DAYS
Project Definition			11/10/20	12/1/20	22
Project Introduction		100%	11/10/20	11/16/20	7
Client Briefing		100%	11/16/20	11/16/20	1
Market Study and Research		100%	11/17/20	11/29/20	13
Initial Low Fidelity Design		100%	11/28/20	11/28/20	1
Submission of Project Proposal		100%	11/28/20	11/30/20	3
Approval of Project Proposal	M	100%	12/1/20	12/1/20	1

Fig 16.1 : Gantt Chart Definition of the project



NFP Central

Company Name : EmPower your mission

Project Lead

Project Start: Tue, 11/10/2020

Display Week: 4

TASK	MILESTONE	PROGRESS	START	END	DAYS
Requirements Gathering			12/1/20	12/22/20	22
Requirements Gathering		100%	12/1/20	12/12/20	12
Requirements Analysis		100%	12/2/20	12/19/20	18
Database Design Concept		100%	12/19/20	12/22/20	4

Fig 16.2 : Gantt Chart Gathering of the requirements

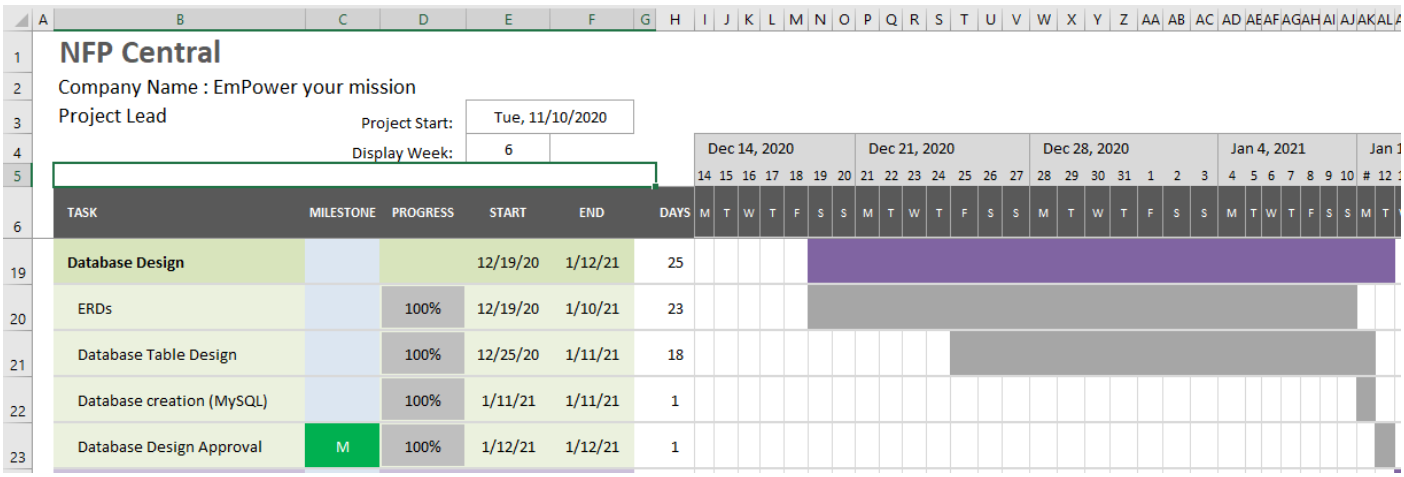


Fig 16.3 : Gantt Chart Design of the Database

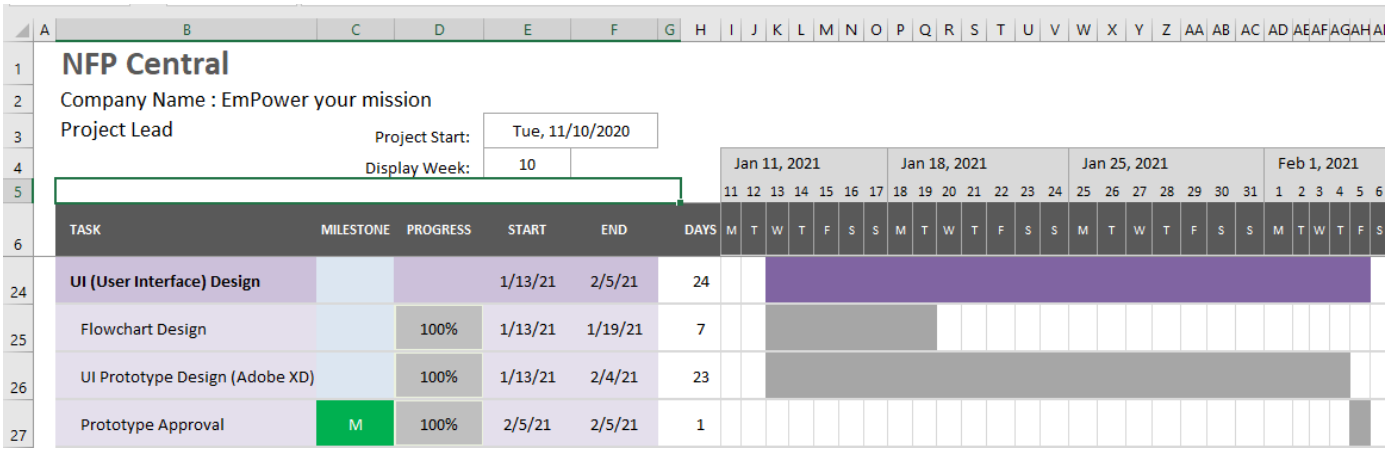


Fig 16.4 : Gantt Chart Design of the Interface

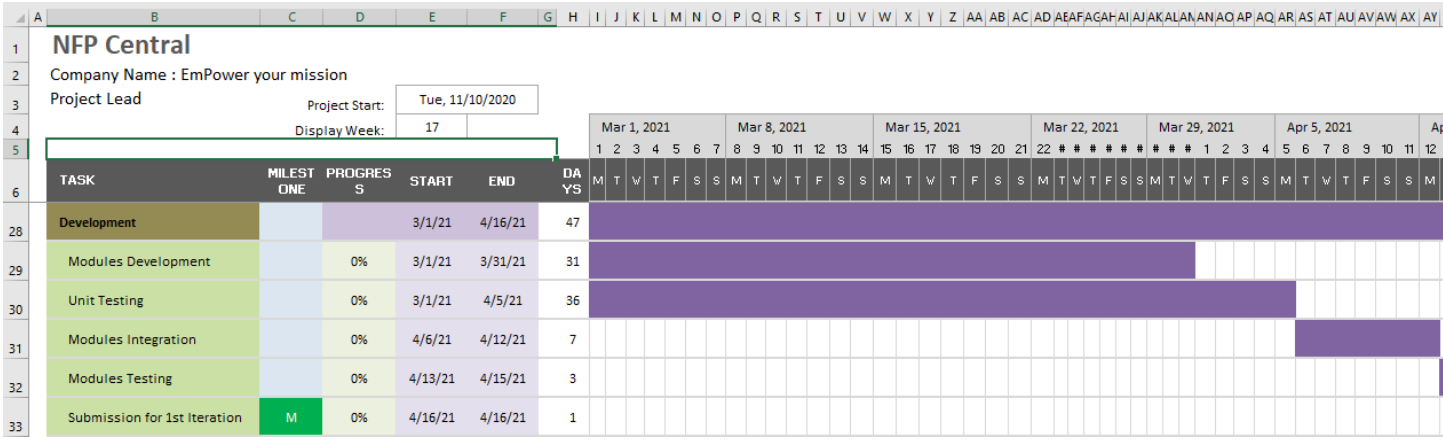
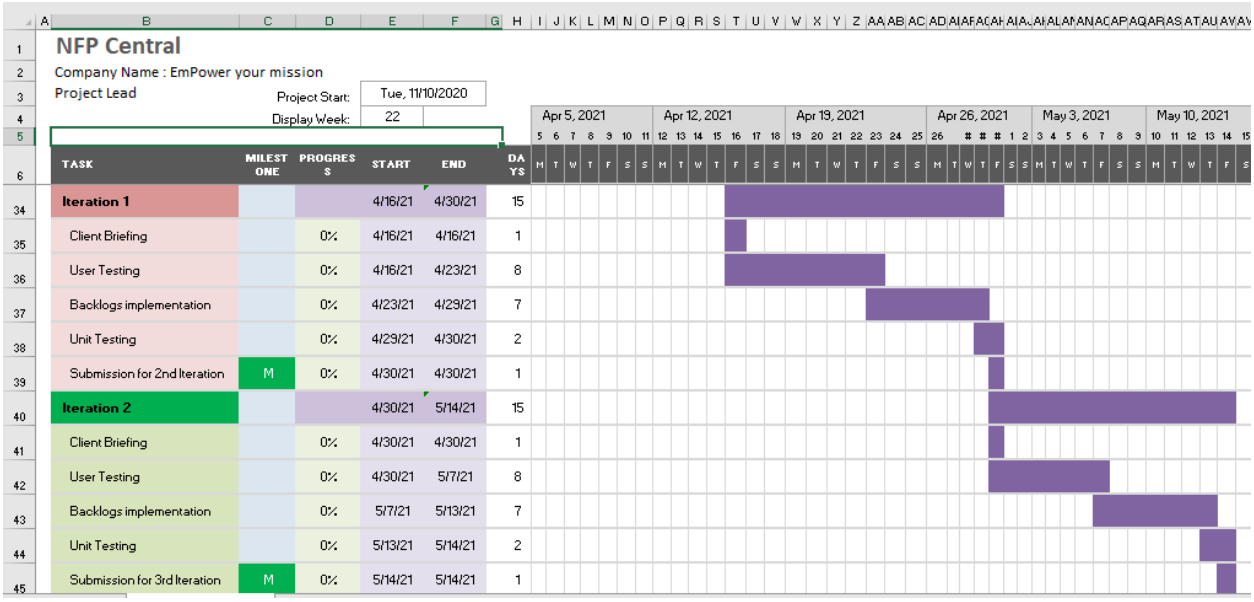


Fig 16.5 : Gantt Chart Development



NFP Central

Company Name : EmPower your mission

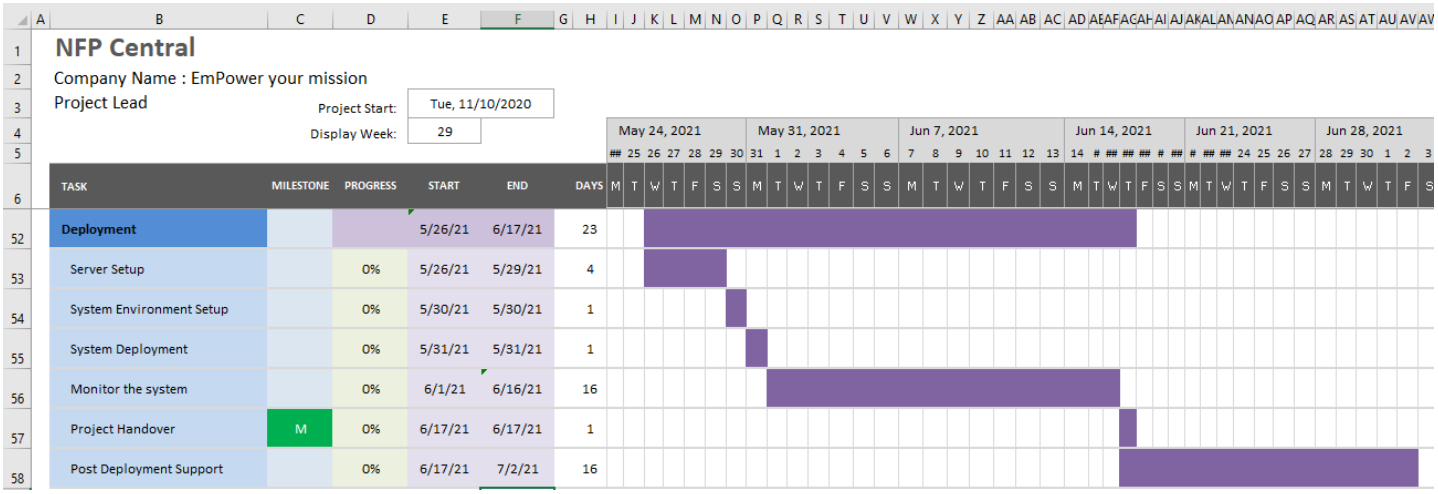
Project Lead

Project Start: Tue, 11/10/2020

Display Week: 22

TASK	MILESTONE	PROGRESS	START	END	DAYS
Iteration 1			4/16/21	4/30/21	15
Client Briefing		0%	4/16/21	4/16/21	1
User Testing		0%	4/16/21	4/23/21	8
Backlogs implementation		0%	4/23/21	4/29/21	7
Unit Testing		0%	4/29/21	4/30/21	2
Submission for 2nd Iteration	M	0%	4/30/21	4/30/21	1
Iteration 2			4/30/21	5/14/21	15
Client Briefing		0%	4/30/21	4/30/21	1
User Testing		0%	4/30/21	5/7/21	8
Backlogs implementation		0%	5/7/21	5/13/21	7
Unit Testing		0%	5/13/21	5/14/21	2
Submission for 3rd Iteration	M	0%	5/14/21	5/14/21	1

Fig 16.6 : Gantt Chart Iteration1



NFP Central

Company Name : EmPower your mission

Project Lead

Project Start: Tue, 11/10/2020

Display Week: 29

TASK	MILESTONE	PROGRESS	START	END	DAYS
Deployment			5/26/21	6/17/21	23
Server Setup		0%	5/26/21	5/29/21	4
System Environment Setup		0%	5/30/21	5/30/21	1
System Deployment		0%	5/31/21	5/31/21	1
Monitor the system		0%	6/1/21	6/16/21	16
Project Handover	M	0%	6/17/21	6/17/21	1
Post Deployment Support		0%	6/17/21	7/2/21	16

Fig 16.6 : Gantt Chart Deployment

Conclusion

As per existing market analysis, the application will be identical to many other social networking sites, with the exception that the user and target audiences will be filtered and focused on individuals who are employing or intending to begin their careers in the charitable sector. The website's content, on the other hand, will mostly focus on the charitable sector and people involved in it.

This report aims to provide a plan for a full-scale social networking site, like Facebook or Twitter and LinkedIn, that includes features such as notification, profiles, friend system, chat system, topic posts, and more. Using proficient PHP, HTML5, JavaScript, and MySQL databases to register and later launch on its own domain name.

Following the vision of the client and adaptation of the enlisted implementation plan our team plans to complete this project within 6 weeks. All of the functionalities that have been agreed upon will be delivered to the client.

References

1. Adobe. 2021. *Adobe XD | Fast & Powerful UI/UX Design & Collaboration Tool*. [online] Available at: <https://www.adobe.com/au/products/xd.html?SDID=KQOYT&mv=search&ef_id=CjwKCAjwpKCDBhBPEiwAFgBzj1L-lMrt0DXEujBphiklFLqZY5xxTnKG4hebpHlY_plkdfwvDydSjRoCY3YQAvD_BwE:G:s&s_kwcid=AL!3085!3!394826879032!e!!g!!adobe%20xd!1643382387!62618984397> [Accessed 3 April 2021].

2. Deari, R., Zenuni, X., Ajdari, J., Ismaili, F., & Raufi, B. (2018). Analysis and comparision of document-based databases with relational databases: MongoDB vs MySQL. *2018 International Conference on Information Technologies, InfoTech 2018 - Proceedings*, *September*, 20–21. https://doi.org/10.1109/InfoTech.2018.8510719

3. Developer.mozilla.org. 2021. *HTML5 - Developer guides | MDN*. [online] Available at: <https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5> [Accessed 1 April 2021].

4. Mishra, N., 2016. *The Crazy Programmer.* [Online]
Available at: https://www.thecrazyprogrammer.com/2016/06/top-database-technologies-php-web-applications.html

5. mysql, 2020. *mysql.* [Online]

Available at: https://www.mysql.com/products/workbench/design/.

6. Thattil, S., 2021. *Advantages and Disadvantages of Laravel*. [online] Medium. Available at: <https://saschathattil.medium.com/advantages-and-disadvantages-of-laravel-224ecc09021a> [Accessed 2 April 2021].
7. W3schools.com. 2021. *CSS Introduction*. [online] Available at: <https://www.w3schools.com/css/css_intro.asp> [Accessed 2 April 2021].

8. w3tech, 2020. *w3tech.* [Online]

Available at: https://w3techs.com/.