SAMAJIK COLLEGE

Affiliated To

Tribhuvan University

Institute of Science and Technology

Internship Report

On

Clinical Skills

At

Neolinx Pvt. Ltd.

In partial fulfilment of the requirements for the Bachelor's Degree in Computer Science and Information Technology

Submitted to

Department of Computer Science and Information Technology

Samajik College

Institute of Science and Technology

Tribhuvan University

Under the Supervision of

Mr. Ram Krishna Dahal

Submitted by

Puja Poudel (3639/070)

MENTOR'S RECOMMENDATION

I hereby recommend that this report has been prepared under my supervision by **Puja Poudel** on **"Back End Web Development of Clinical Skills"** in partial fulfillment of the requirements for the degree of BSc. in Computer Science and Information Technology, be processed for evaluation.

.....

Mr. Shashi Shrestha
Technical Director
Internship Mentor
Neolinx Pvt. Ltd., Kathmandu

SUPERVISOR'S RECOMMENDATION

I hereby recommend that this report has been prepared under my supervision by Puja Poudel in partial fulfillment of the requirements for the degree of BSc in Computer Science and Information Technology be processed for evaluation.

……..…….

Mr. Ram Krishna Dahal

Faculty, Samajik College

(Supervisor)

CERTIFICATE OF APPROVAL

We certify that we have read this dissertation work and in our opinion, an internship report submitted by Puja Poudel is satisfactory on the scope and quality as a dissertation in the partial fulfillment for the requirement of Bachelors of Science in Computer Science and Information Technology.

Evaluation Committee

Mr. Ram Krishna Dahal Faculty, Samajik College	Mr. Shital Thapaliya Head Of Department, Computer Science and Technology
Internal Examiner	External Examiner

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This intern report is prepared in the partial fulfillment of the requirements for the degree of Bachelor in Computer Science and Information Technology. The satisfaction and success of completion of this task would be incomplete without heartfelt thanks to people whose constant guidance, support and encouragement made this work successful.

Firstly, I would like to give my gratitude towards my mentor **Mr. Shashi Shrestha,** senior Web developer, for his unquestionable support. Without his support and encouragement, it would have been difficult to work on.

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At the end, I would like to express my sincere thanks and appreciation to all my colleagues and seniors who have helped me directly or indirectly during this internship period. I would like to make them the part of my success.

Puja Poudel

T.U. Exam Roll No: 3639/2070

ABSTRACT

Clinical Skills is website that delivers just clinical education for healthcare professionals mainly nurses through the means of skills training. It is run by highly qualified and experienced health professionals. It gives the information about the clinical academy, various workshops and trainings organized by the academy and is also a learning management system. It is an eLearning Platform that was developed especially for the Aged Care Sector, which also allow their staffs to perform Mandatory Training and all their Continuing Professional Development (CPD) Courses.

This report provides an insight on the internship work carried out as the back end developer of Clinical Skills. This Clinical Skills project was originally developed in Code Igniter framework and thus the report includes the project re-written in Laravel.

Keywords: *Clinical Skills, Mandatory Training, CPD Courses, Code Igniter, Learning Management System, Laravel*

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LIST OF ABBREVIATIONS

BSc CSIT	Bachelor in Science in Computer Science and Information Technology
CPD	Continuity Professional Development
CSS	Cascading Style Sheet
CMS	Content Management System
DFD	Dataflow Diagram
ER	Entity Relationship
HTML	Hypertext Markup Language
MVC	Model View Controller
MT	Mandatory Training
PHP	Hypertext Pre Processor
RDBMS	Relational Database Management System
SEO	Search Engine Optimization
TU	Tribhuvan University
XML	Extended Markup Language

CHAPTER 1

INTRODUCTION

1.1 Introduction to Internship

An “internship” is defined by the National Society for Experiential Education (NSEE) as: “a carefully monitored work or volunteer experience in which an individual has intentional learning goals and reflects actively on what he or she is learning throughout the experience”. Internship can simply be described as the transition from study to work which is necessary component in order to develop a student's skill, making them more advanced and diligent when they finally have the opportunity to be a part of working world. An internship program is quite different to a job as the main objective of intern is to look for "hand on" work experience in the real world aligned to the academic studies of students. The only goal of internship is to fulfill the missing link between academic studies and work experience.

1.1.1 Introduction to Project

According to WHO “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (WHO, 2018). It is a general condition where mind and body of a person is free from illness and pain. Field related to health sector is very sensitive so people even after entering the health field need to take some health related courses for their professional development. CPD (Continuing Professional Development) courses provides current evidence based courses to upgrade skills and knowledge of the health personnel. Due to reasons like time and accessibility, many of them don’t get chance to take courses and are thus unaware about current courses and trainings. Therefore, there is a need of learning platform that will provide the best courses and knowledge, which are easily accessible too. ‘Clinical Skills Online’ is the online learning platform developed in order to improve practice and/or develop new skills. The main focus of ‘Clinical Skills’ is to provide CPD courses to nurses. It also provide some mandatory training to other health professionals. It provides the courses such as Controlled Drugs, Wound care management products, dealing with difficult people, Stress Management, Fire Safety and Response and basic life support for other staffs, Infection Prevention and Control, Care of people with cognitive impairment etc.

I worked as an intern at Neolinx Pvt. Ltd, Kathmandu and during the internship period, I was introduced to the organizational structure, professional world, and real–world working environment etc.

1.1.2 Scope of Project

This project has a great scope to the health sector as every nurses need professional growth with time. It not only helps in the professional growth of nurses, but is also applicable for other health related professionals to get mandatory trainings.

1.1.3. Limitation of Project

A software solution is never 100% perfect and error free. Like other software systems, this system is also not perfect. Since, the system is re-written the changes in features and modules varies accordingly and it needs to be modified according to the client requirements. Currently, the system is in developing phase and is not live yet. The system still consists of some bugs and flaws that can be seen which needs further research to make it more functional and accurate than the current.

1.1.4. Brief Introduction of Organization

1.1.4.1. Introduction

Neolinx is a global professional services company, providing a broad range of services and solutions in strategy, consulting, digital and technology since 2004. It is situated in Buddhanagar, Kathmandu. Neolinx believe in empowering with information, building relationships and taking social responsibilities. To make software easier for people to use and operate, it performs a huge level of testing and debugging through qualified professionals and native users. The main strategy is to discover and analyze the project to find the best possible solution for a product that contains all the possible current technologies and methodologies and test them in developer and user level.

Neolinx mission is to provide a digital solution for website, CMS, e-commerce, web application and SEO. For each of the solution the Neolinx focuses on making it efficient, user friendly as well as cost effective. Neolinx works with languages and technologies like Angular, Node.js, Java, PHP with Laravel, MySQL, WordPress and some other development tools.

Neolinx follows industry standards of software development approach to deliver the highest level of satisfaction to the client. The team keep themselves updated with new tools and technologies available in the market.

1.1.4.2 Contact Information

Following are the contact details of the Neolinx Pvt. Ltd.

Table 1.1: Contact Details of an Organization

Address	Bhibuti Marg, Buddhanagar, Kathmandu
Phone No:	01-4781149
Email	info@neolinx.com.np
Website	www.neolinx.com.np

1.1.5 Internship Duration and Planning

As per the requirement of the curriculum of B. Sc. CSIT. 8th Semester, the minimum requirement of internship period is 10 weeks/180 hours. It consists of different phase of training or tasks performed with a specific objective for each phase. Each phase shows the progress of intern in internship. It also consists of information about how and when interns will accomplish objectives of each task. Here is my internship duration in table 1.2.

Table 1.2 Internship Duration

Office Hour	10:00 am – 5:00 pm
Working Hour	7 Hours per day
Working Days	6 days a week
Position	Web Developer
Total Duration	3 months
Mentor	Mr. Shashi Shrestha

1.2 Statement of Problem

There's a popular proverb in English "Health is wealth" that signifies we should be healthy enough to carry out every actions and activities we deal with. Nowadays, having the sound knowledge about health and care only is not sufficient, we need to have proper training for being fit and healthy. So, it's necessary to provide trainings to all the health professionals. Though many healthcare professionals get medical trainings and guidance on health related areas, some are still deprived of it due to reasons like time, accessibility, their skills and practices and because of this the general people do not get the necessary guidance for staying healthy. Clinical Skills is one of the e-learning platform that provides all the health care professionals with mandatory training courses to enhance the quality services of the care recipient.

1.3 Objective

The internship program was done to fulfill the academic requirement of B. Sc. CSIT 8th Semester. An internship provides a variety of benefits for the young workers who want to broaden their chances for landing in a job and jump-starting their careers. The main objectives of the internship project were to understand how the application works in real time.

The following are the internship objectives that were to be achieved:

1.3.1 Objectives of Internship

- To assist students in focusing their interests, thus aiding in their professional career.
- To give students the opportunity to re-examine their career objectives and explore the variety of opportunities in the field of computer networking.
- To be technically and organizationally eligible to work in the future after the completion of academic degree.
- To be able to work in team, maintain good public relation and develop strategic problem solving skills.

1.3.2 Objectives of Project

- To enhance the CPD for healthcare professionals by creating a platform that can be accessible from anywhere at any time.
- To provide courses with current evidence-based best practices through e-learning and make it available online.
- To develop an expertise in skills for the benefit of the care of their recipient.

1.4 Roles and Responsibility

The three-month internship at Neolinx Pvt. Ltd involved various activities and tasks as per the requirement of both the organization and the project. Various responsibilities had been assigned to us such as designing forms, components and modules and perform necessary modifications and upgrades, and small bug fixing. All these task were done using Php framework (Laravel Framework). The responsibilities of individual were not specified only to complete project, along with phases of software development life cycle, the responsibilities were varied. I worked as a Web Developer and was assigned to create users, define the user's role, and perform related database operations and validations in user creation and user roles, for the project. The respective views were then provided according to the validation of user role like either super admin, admin, manager or the learner. While my, colleague Miss Rojina Karki developed the remaining modules for the course and package, the frontend design to the project was done by Miss Subechchha Acharya.

1.5 Motivation

1.5.1 Motivation for choosing Neolinx Pvt. Ltd.

Neolinx is a global professional services company, providing a broad range of services and solutions in strategy, consulting, digital and technology since 2004. It is a privately held company based in Kathmandu, Nepal, offering offshore partnership to clients in information management systems to local and international clients. It provides a digital solution for website, CMS, e-commerce, web application and SEO and works with languages and technologies like Angular, Node.js, Java, PHP, WordPress and other developmental tools (Neolinx, 2018). It's a group of young, motivated, and skilled people whose main goal is to provide their clients with an innovative solution regarding web development and software development. Whether it's a mobile application, a content-rich responsive website, its work is built for scale, performance and longevity.

As per the requirement of the Tribhuvan University (TU), the final year students of B.Sc. CSIT are required to complete a six credit (minimum ten weeks/180 hours long) internship as a part of the course requirement. Internship is one of medium that helps to break down the bars between the professional and the student life. Since, an internship is the course curriculum of TU, every student perusing BSc. CSIT need to do the internship in any area of their interest. So, the first motivation for choosing Neolinx was to fulfill my academic requirements. Besides

this, working as an intern in the organization I also got the opportunity to work in real-time projects which motivated me to work more towards my area of interest.

1.5.2 Motivation for choosing Web Development on Laravel

Web development is a smoothing path to develop an application. It's not just about one thing, to start with the web development one needs to have good hand in HTML, CSS, and JavaScript along with other programming language like PHP, JAVA, etc. Laravel is one of the open source Php framework that is popularly used by the web developers because of its simplicity, beautiful and expressive syntax which is easy to learn and maintain for the developers developing innovative products and increasing their service quality. There are a lot of off-the-shelf solutions for web development but among them laravel is the one that gives the solution for scalable web application with unique interface and functionality that can be easily classified. It also supports the MVC (Model, View, Controller) architecture which helps in improving the overall performance, better documentation and offer multiple functionalities.

1.6 Report Organization

Chapter 1: Introduction puts emphasis on Overview, Problem Statement, Objectives, Scope and Limitation of the project.

Chapter 2: Requirement and Feasibility Analysis the important sections such as, Requirement Analysis and Feasibility Analysis. Requirement Analysis explains Functional and Non-functional requirements of the project, and Feasibility Analysis explains why/how the project is practical to be implemented.

Chapter 3: System Design gives the design of the system developed so that it can be used during the project implementation.

Chapter 4: Implementation provides an indication of how the system is implemented, what tools / platforms have been used.

Chapter 5: Testing clarifies the system workflow.

Chapter 6: Conclusion marks an end to the document by summing up the entire project and also opening the door further for research in improving the developed system. The lesson learnt is also included in this chapter.

CHAPTER 2

SYSTEM ANALYSIS

Generally, System development comprises of two major phases: System Analysis and System Design. In System Analysis, the details of the existing system or proposed one is understood and decided whether proposed system is desirable or not and decided whether the existing system needs improvements. System analysis helps to understand the proposed system architecture, working and goals. Thus, System Analysis can be summarized as the process of investigating a system, identifying problems and using the gathered information to improve existing system or develop the proposed one.

By interacting with clients, studying the documents provided by the clients, discussing with the senior developers and studying the existing system we analyze the requirements of the system to be developed for the clear view of how the system should be and how it should be working so as to fulfill user requirements.

2.1 Requirement Analysis

This section presents complete set of functional and nonfunctional requirements. Functional requirements are listed first according to their relationship to the overall system. The non-functional requirements are listed after functional requirements. The functional requirements have been specified using natural language description using UML analysis model.

2.2.1 Functional Requirements

Functional Requirements defines what the system must do. It defines the behaviors or functions of a system, flows, business rules and other requirements of a system along with its output. The functional requirements are discussed below:

- The users must login/register into the system.
- Details of all the available CPD courses are displayed.
- An online examination are conducted.
- An access to the records and certificates are provided.

2.2.1.1. Use Case Diagram

Use case diagram is representation of user's actions or interaction with system which can perform in collaboration with one or more external users of the system. In this application, the super admin adds and manages the admins, the added admins will then add manager, course and packages then access the records and certificates, the manager then manages the learner and access records and certificates, the learners view course details, purchase the package, take exams and then access records.

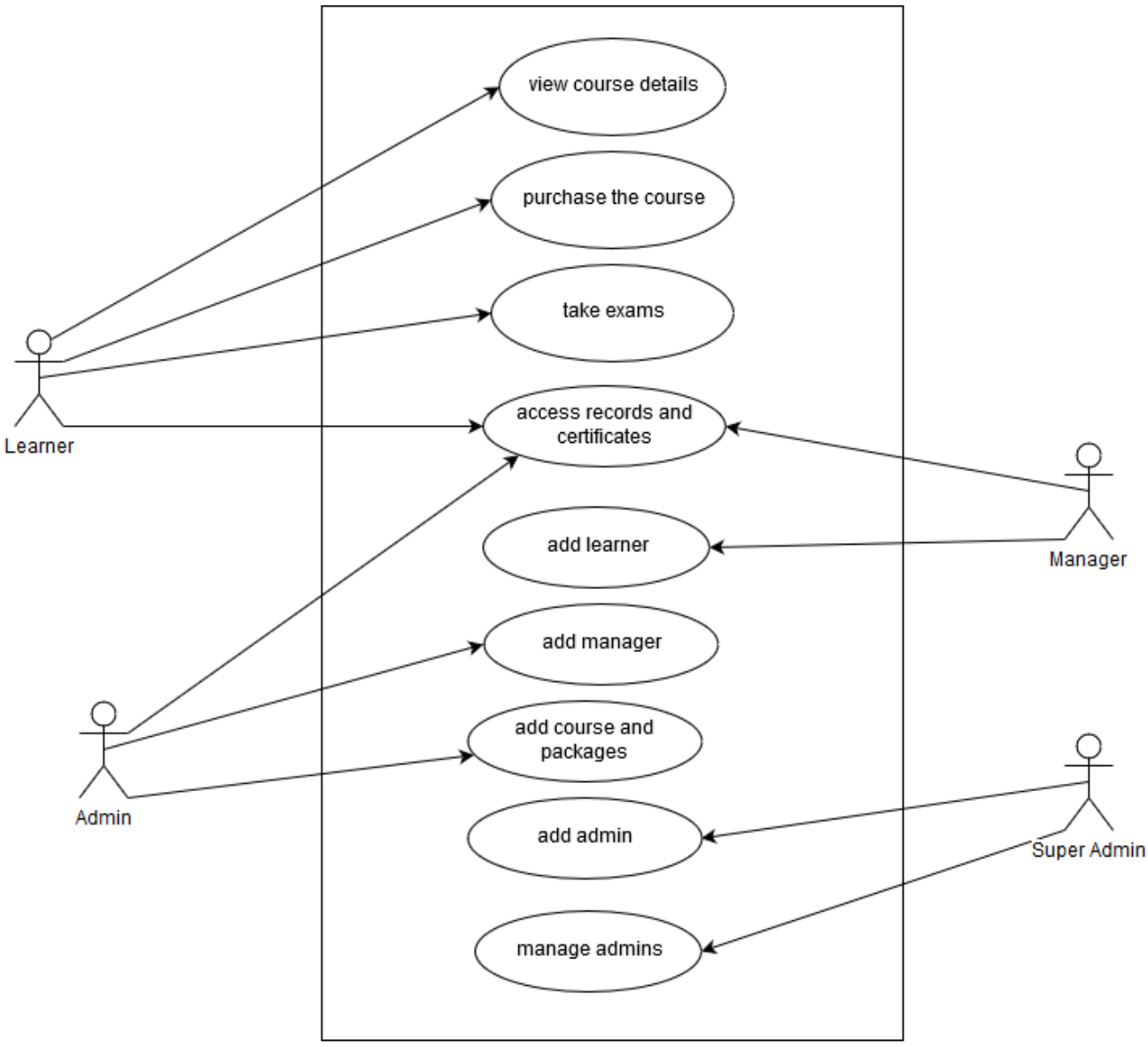

Figure 2. 1: Use Case Diagram of the Project

2.2.2 Non Functional Requirements

Non-functional requirements define how the system should be. It covers all the remaining requirements which are not covered by functional requirements. Clinical Skills website is easy to use and works without downgrading the performance. It follows some of the properties like scalability, reliability, user-friendly, maintainability and usability

2.2 Feasibility Analysis

Feasibility Study is used to determine the viability of an idea. It is often used before the actual implementation of the project. The objective of such a study is to ensure a project is legally and technically feasible and economically justifiable. It tells us whether a project is worth the investment.

2.2.1 Technical Feasibility

Technical feasibility involves evaluation of the hardware and the software requirements of the proposed system. This application is developed using Sublime text editor or Php Storm IDE, XAMPP, and MYSQL for database. Google Chrome and Mozilla Firefox are used to run the application for facilitating user interface. So this system is technically feasible. All the necessary hardware and software required for developing and installing the system are available.

2.2.2 Operational Feasibility

Operational feasibility is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. Our system makes the maximum use of available resources including people, time and flow of forms. Our system provides reliable services to the potential users and the user needs to be familiar with using the application. This will enhance reduction in cost and increase in benefits for the learners.

2.2.2 Economic Feasibility

Economic feasibility is the cost and logistical outlook for a business project or endeavor. We considered various factors affecting the systems economic value and performance and implemented the best one. The application is an e-learning platform and so it is economically

feasible which means we can make the use of it at feasible cost and get much more benefit from it. It requires not many resources except what we already have along with our knowledge.

2.3 ER Diagram

ER-diagram represents how actually the database is designed. The relationships among several existing entities are represented by means of E-R diagram. ER are also used in conjunction with the Data Flow Diagrams (DFDs) in order to map out the information flow of the system.

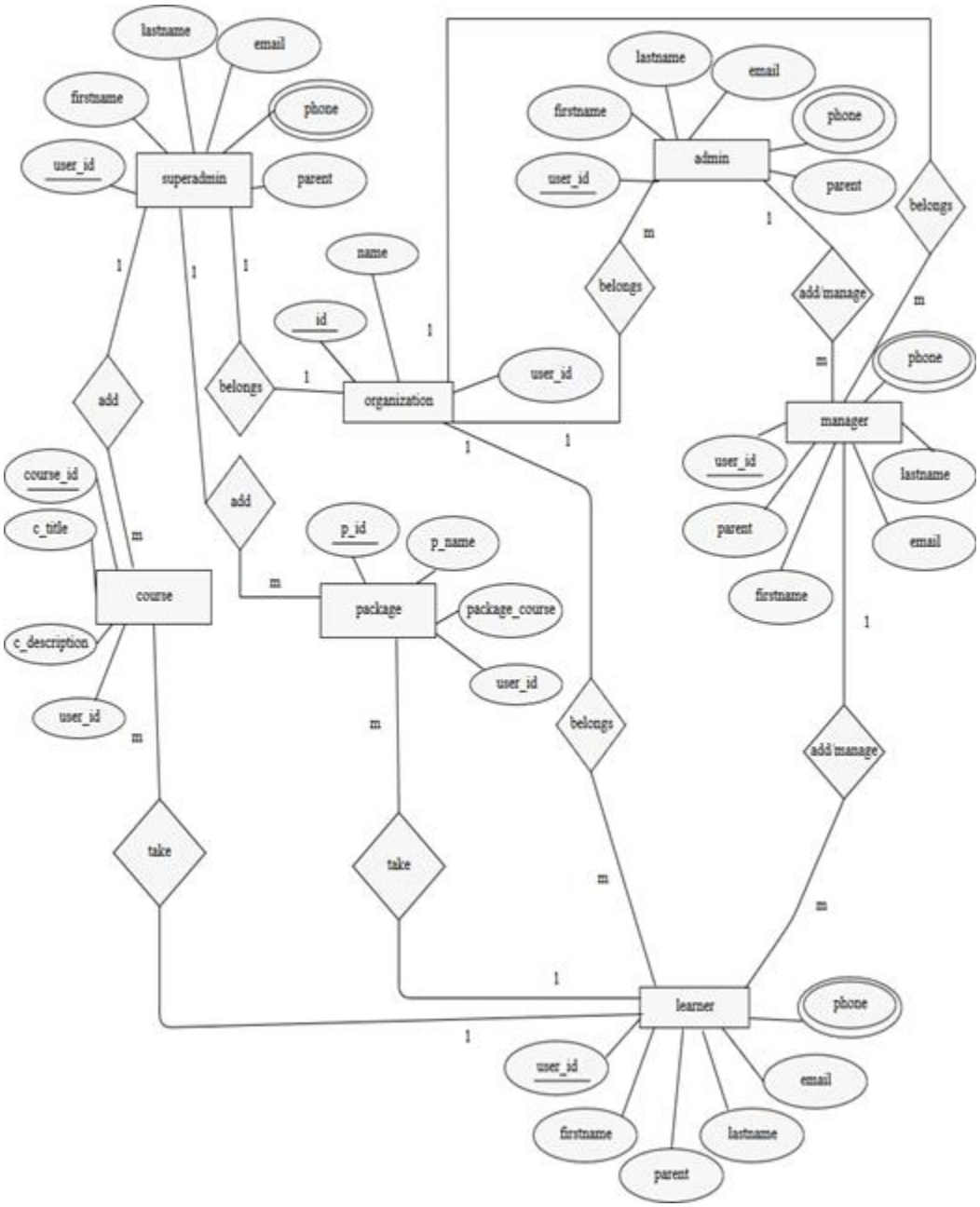

Figure 2. 2: ER Diagram of Clinical Skills

2.4 Dataflow Diagram

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects .A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated.

- **Process**: A process takes data as input, execute some steps and produce data as output.
- **External Entity**: Objects outside the system being modeled, and interact with processes in system.
- **Data Store**: Files or storage of data that store data input and output from process.
- **Data Flow**: The flow of data from process to process.

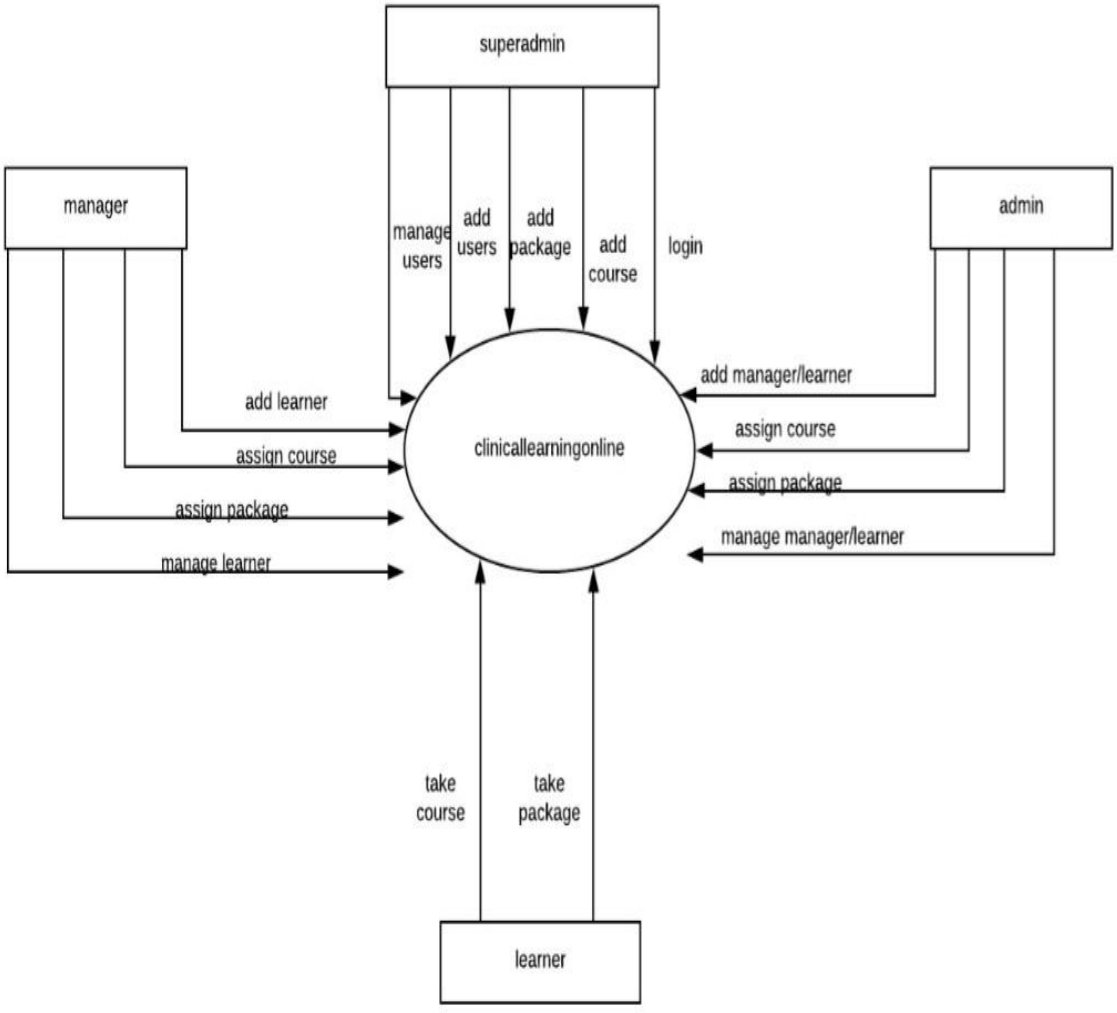

Figure 2. 3: Context Diagram of Clinical Skills

The figure 2.3 shows the context diagram of the system. Different functionalities for various users are represented. The users here are superadmin, admin, manager, and learners. Every users are assigned with the specific and designated tasks. For example, the superadmin is

responsible for the management of admins, admins manage the course/packages, and managers assign courses to the learners added by them. The learners then take the assigned courses. Similary, Figure 2.4 shows the level-1 DFD of Clinical Skils where the data stores and processes make up the system along with the types of user.

2.5 Technical Requirements

2.5.1. Hardware Requirements

- The standard input devices like keyboard and mouse are to get input. The outputs are generated and displayed on the screen.

2.5.2. Software Requirements

- Platform : Windows /Linux
- Programming Language : PHP
- Front End : Bootstrap/HTML/CSS/JavaScript,
- Back End: MySQL, Laravel

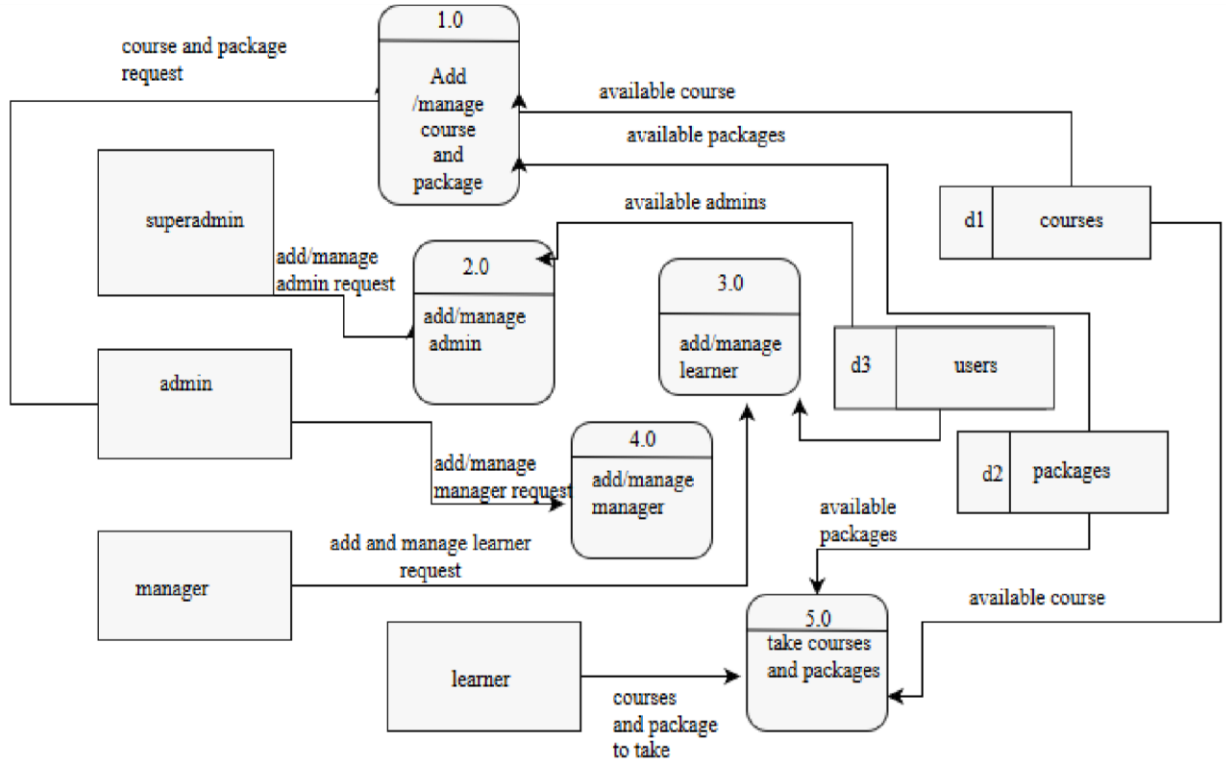

Figure 2. 4: Level-1 DFD of Clinical Skills

CHAPTER 3

SYSTEM DESIGN

Systems design is the process of defining elements of a system like modules, architecture, components and their interfaces and data for a system based on the specified requirements.

3.1 Architectural Design

The system architectural design is shown below:

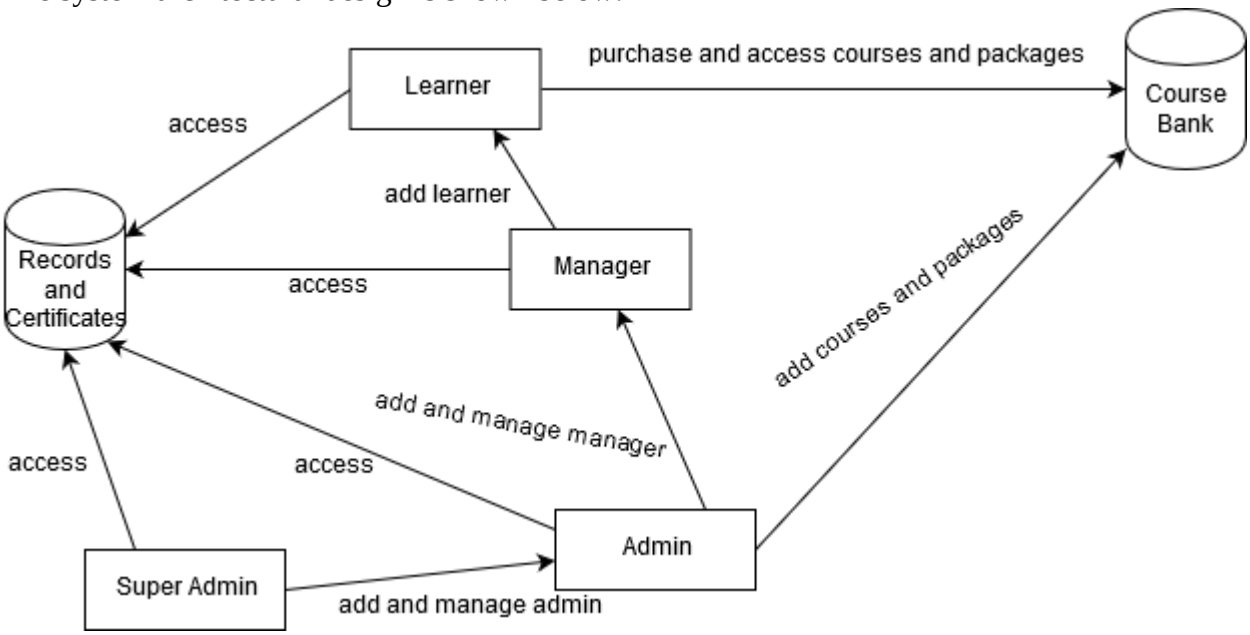

Figure 3. 1: Architectural Design of the System

The architectural design of the system as shown above describes the view, models, behavior, and structure of the overall system. The system follows a 3-tier architecture which is composed of presentation tier, logical tier and data tier and for this, we have used MVC pattern.

3.2 Database Design

Database design is the part of system development. The database design is divided into 3 steps:

- Conceptual database design
- Logical database design
- Physical database design

(Auer, 2006)

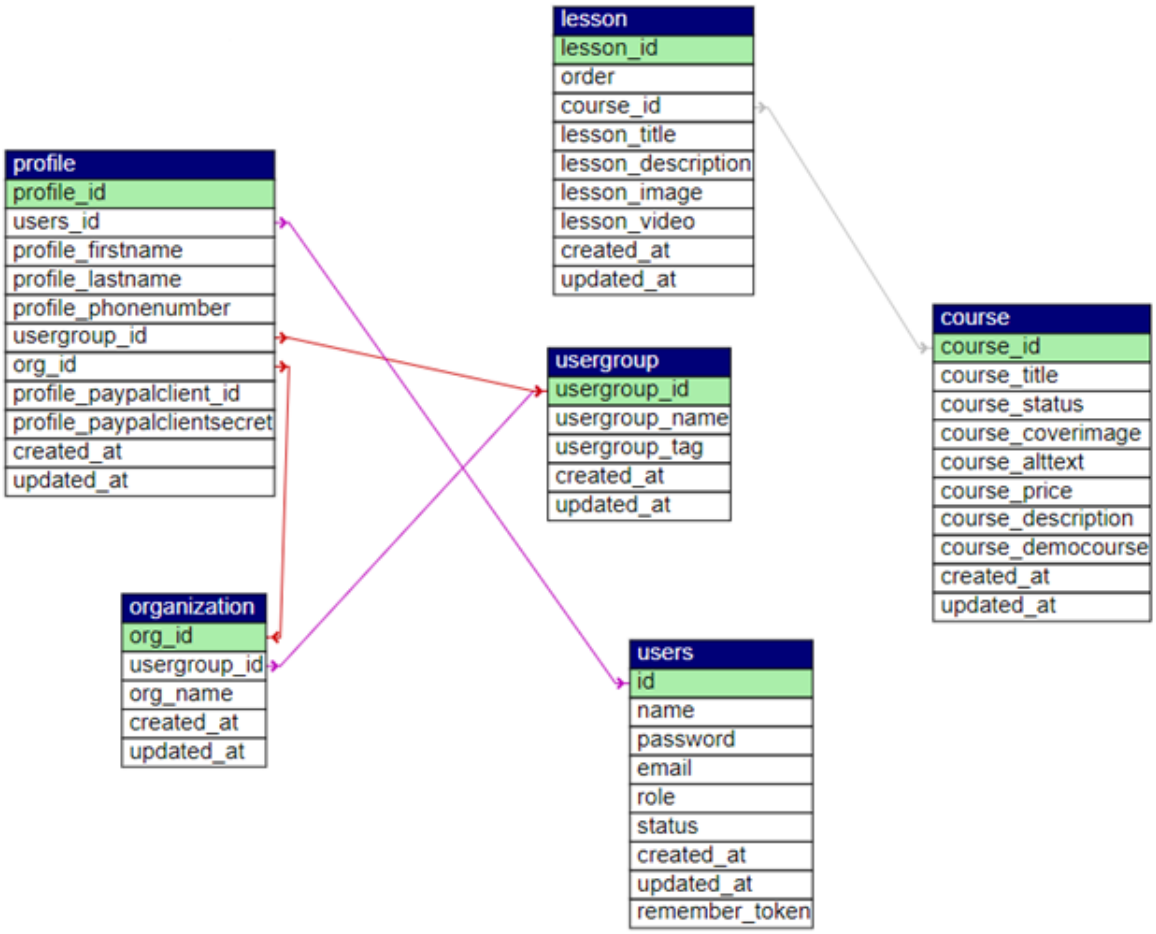

Figure 3.2: Database Schema for Clinical Skills

The figure 3.2 represents all the tables and data structure along with the relationship between them that are used in the project.

3.3 Process Design

Figure 3.3 shows the flow chart of the project. It shows that the users first login to the system then according to their roles, they perform various activities.

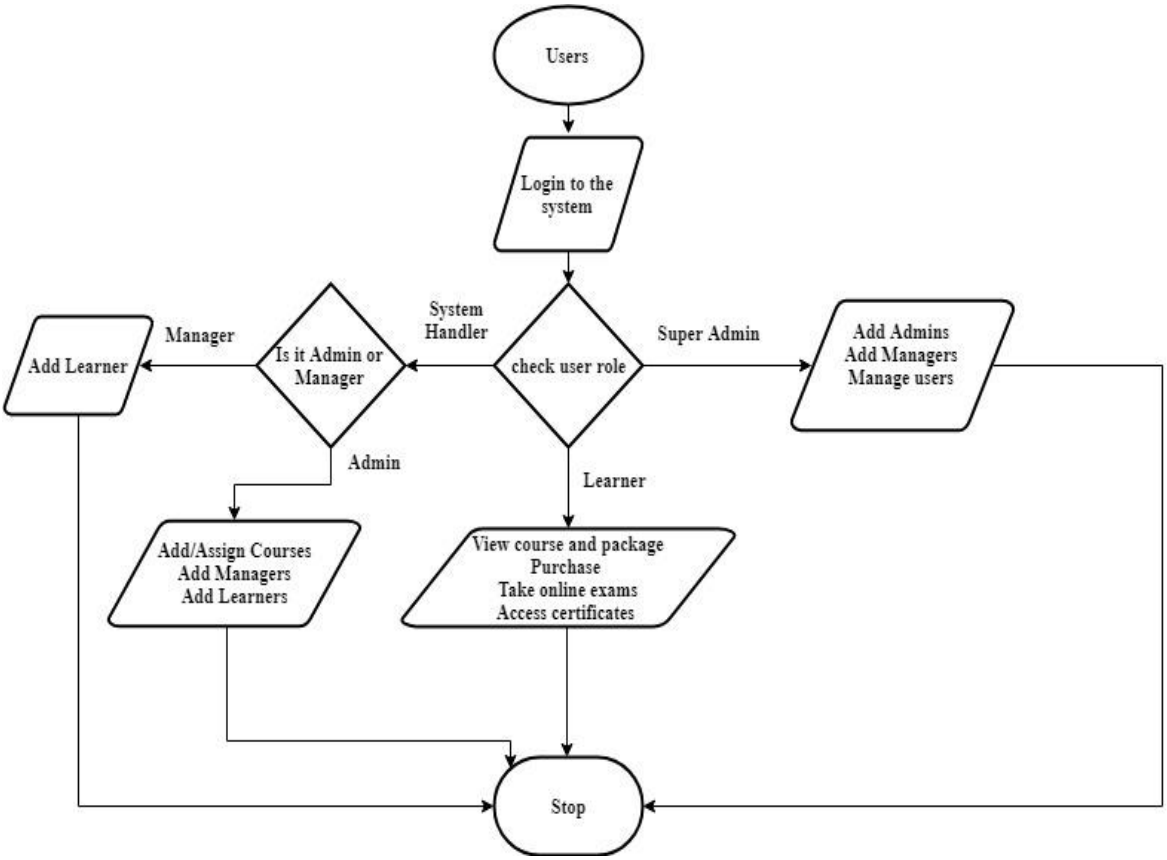

Figure 3.3: System Workflow

CHAPTER 4

IMPLEMENTATION

The logical design of the system had to be built in the physical working system in the implementation phase. MySQL is used as the backend database technology for implementing the Html, CSS and Bootstrap are used for the front design of the system whereas the Laravel framework is used as the programming part of the application.

4.1 Tools Used

4.1.1 Front End Tools

Front end development, also known as the client side development is the practice of producing HTML, CSS and JavaScript for the website or web application so that a user can see and interact with them directly. I was involved in the web development using PHP framework Laravel as a backend tool, MySQL as a database, HTML as a markup, CSS as a stylesheet, and Bootstrap as the CSS framework. The user interface was made more dynamic by using client side script JavaScript

- **HTML**

HTML or the Hypertext Markup Language, is the standard markup language used to create the web pages. HTML tags mostly come in pairs consisting of the start tag (<head>) and the end tag (</head>) within the angle brackets. HTML documents are read by the web browsers and are composed into audible or visible web pages. The browser does not display the HTML tags but used the tags to interpret the contents of the pages. It forms the building blocks for all the websites.

In this project, the HTML is used to create forms for users, profile, organization and usergroup, its edition and update. The navigation bars for the respective models are also made using the HTML.

- **CSS**

Cascading Style Sheet (CSS) is a style sheet language that is used to format the layout of the web pages. CSS separates the document contents written in HTML or similar markup languages from the document presentation including elements such as color, font, layouts, etc. Such separation of documents provides more flexibility and control in the specification of the presentation and improve content accessibility. Multiple style sheets can also be imported.
In this project, the navigation, header and footer sections are given the custom designs using different CSS class and its properties.

- **JavaScript**

JavaScript (sometimes abbreviated JS) is a prototype-based scripting language that is dynamic, weakly typed. JavaScript is a client side scripting language meaning that JavaScript code is written into an HTML page. When a user requests an HTML page with JavaScript in it, the script is sent to the browser and it's up to the browser to do something with it. It is used to make webpage more interactive, check or modify the contents of forms, change images, open new windows and write dynamic page content.
In the project Clinical Skills, JavaScript is used for the dynamic function like responses of buttons clicks.

- **JQuery**

JQuery is fast and feature rich JavaScript library that makes the traversal of HTML document and manipulation, event handling, animation and Ajax interactions, simple for rapid web development. JQuery simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation but it takes a lot of common tasks that requires many line of JavaScript codes to accomplish and wraps them into methods that you can call with a single line of code.

- **Bootstrap**

Bootstrap is a free and open-source collection of tools for creating websites and web applications (About, 2017). In this project Bootstrap is used to make the website responsive to run on all type of devices. Bootstrap gives CSS and JavaScript to control the presentation of content in HTML. I implemented Bootstrap CSS framework as it contains HTML- and CSS-

based design templates for typography, forms, buttons, and navigation and other interface components

4.1.2 Back End Tools

The back end of a website consists of a server, an application, and a database. A back-end developer builds and maintains the technology that powers those components which, together, enable the user-facing side of the website to even exist in the first place.

- **PHP**

PHP is a server side scripting language designed for the web development. It is an open source general purpose scripting language that is nowadays widely popular among the web developers. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management system and web frameworks.

- **Laravel**

Laravel is free, open-source and one of the more popular PHP web framework based on model–view–controller (MVC) architectural pattern. It is created by Taylor Otwell, intended to reduce the cost of initial development and improve quality of your code by defining industry standard design practices (Nilanchala, 2017). Some of the features of Laravel are a modular packaging system with a dedicated dependency manager, different ways for accessing relational databases, utilities that aid in application deployment and maintenance, and its orientation

- **MySQL**

MySQL is an open source relational database management system (RDBMS) which has become one of the leading database choice for the web application due to its ease of use, performance and reliability. For the implementation of our web application, we used it to store user's information along with other required information for the successful execution of the system.

- **XAMPP server**

XAMPP is an open source cross-platform solution stack released by Apache. XAMPP comprises of Apache HTTP server, Maria DB or MySQL for database purpose, and the programming language such as PHP and Perl (Linux help, 2016). The Web Application is

completely tested using XAMPP server. The demonstration of the web application is done through XAMPP server.

4.2 Development Methodology

Waterfall model is followed for developing the system. The different phases that are required in this development methodology are requirement analysis, system design, implementation, testing, development and maintenance. The Project Manager and senior developers analyze all the functional and non-functional requirement of the system that needs to be developed. Knowing the requirements for the system we get a clear understanding and view about what the system is supposed to be.

After knowing the requirements for the system, now we define the overall architecture of the system through designs like, ERD, DFD, Database schemas, etc. Php laravel framework is used for the implementation and testing of the system. For the data storage MySQL is used while XAMPP server for deployment.

CHAPTER 5

TESTING

Testing is the process of validating and verifying the program or application. System testing begins with initial testing by the developer himself/herself. It helps to ensure that the system meets the given specifications. Different test data are provided and tested to know about the correctness of the system. The system is tested in series by different individuals developing the system with different sets of test data. After a successful completion of testing from the individuals it has been deployed in the existing system.

5.1 Unit Testing

Unit Testing concentrates on each unit of software as implemented in the source code. It only tests the functionality of the units themselves. A unit test targets a small unit of code. External dependencies should be removed from unit tests, e.g. by replacing the dependency with a test implementation or an object created by a test framework. Typically, unit tests are created in a separate project or separate source folder to keep the test code from the real code.
Following is the test case design for Clinical Skills.

5.1.1 Test Case for Login

Table 5.1 Test Case for Login

Case Id	Scenario	Step	Test Data	Expected Result
Tl_U_01	Check user's input for login	• Go to the site • Enter email • Enter password	Email: superadmin1@gmail.com Password: superadmin123	Successful login and redirect to dashboard
Tl_U_02	Check for user's input for login with partial data	• Go to the site • Enter email • Enter password	Email: superadmin1.com	Error message "Invalid

			Password: superadmin123	username" and redirect to login
Tl_U_03	Check user's input for login	• Go to the site • Enter email • Enter password	Email: learner1@gmail.com Password: learner123	Successful login and redirect to dashboard
Tl_U_04	Check for user's input for login with partial data	• Go to the site • Enter email • Enter password	Email: learner1@gmail Password: learner123	Error message "Invalid username" and redirect to login

5.2 Test Execution

Table 5.2 Test Result for Login

Case Id	Scenario	Test Data	Expected Result	Remarks
Tl_U_01	Check user's input for login	Email: superadmin1@gmail.com Password: superadmin123	Successful login and redirect to dashboard	Success
Tl_U_02	Check user's input for login with partial data	Email: superadmin1.com Password: superadmin123	Error message "Invalid username" and redirect to login	Success

Tl_U_03	Check user's input for login	Email: learner1@gmail.com Password: learner123	Successful login and redirect to dashboard	Success
Tl_U_04	Check user's input for login with partial data	Email: learner1@gmail Password: learner123	Error message "Invalid username" and redirect to login	Success

Table 5.3 Test case for adding user

Case Id	Scenario	Step	Test Data	Expected Result
Tl_U_01	Check user's input for registration	• Login to the system • Navigate to users in navbar • Enter username, email, user type • Enter first and last name • Enter phoneno, usergroup, organization, clientId and password	Username: learner Email: learner@gmail.com User Type: learner First name: abc Last name: xyz Phone no: 1234567 UserGroup: Royal Organization: Neolinx ClientId: abc@neolinx.com Password: learner123	User added
Tl_U_02	Check for user's input for login with existing email	• Login to the system • Navigate to users in navbar • Enter username, email, user type	Username: learner Email: learner@gmail.com User Type: learner First name: abc	Error message "The email has already been taken"

		• Enter first and last name • Enter phoneno, usergroup, organization, clientId and password	Last name: xyz Phone no: 1234567 UserGroup: Royal Organization: Neolinx ClientId: abc@neolinx.com Password: learner123	and redirect to users page

5.3 System Testing

System testing is performed to ensure that all modules and programs work together without error. Entire system test has been done and the results have been verified to see if all the modules are working.

Table 5.4 System Testing

S. No	Test Case	Expected Result	Actual Result	Remarks
1	User registration	Registers users	Register users	No error
2	Adding users	Users are added	Users added	No error
3	Creating Organization	Organizations for usergroup are created	Organizations added to usergroup	No error

CHAPTER 6

CONCLUSION

6.1 Conclusion

In current context, the increasing information Technology has built up the software development trend. So to follow the trend internship provides a bridge for the industrial environment for the undergraduate to learn and experience the real world. Internship has helped in adapting well to working under pressure. Working with multiple features in a single week long sprint and handling immediate and urgent bugs have assisted in enhancing professionalism to meet deadlines. The technical tasks that were undertaken during the internship period have helped the intern in improving software development and debugging skills. It has helped in gaining knowledge about various technical tools and frameworks used in software development and the process that should be followed for proper development completion. Working as an intern in one of the popular IT companies of Nepal, has boosted the confidence and has polished the professional as well as soft skills of the intern in the IT sector. As whole, this report includes project and the internship experiences, findings, knowledge and the technical skills.

6.2 Lessons Learnt

Through the internship from Neolinx, the lessons learnt were:

- Importance of time management and working with multiple features under pressure to meet deadlines.
- Immediate handling of urgent bugs and fixing them.
- Understanding the differences between theoretical and practical knowledge.
- Working in team with coordination and cooperation to make quality decisions.
- Working as software developer can be considered as a potential career

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Appendix: Screenshots

1. Login Page

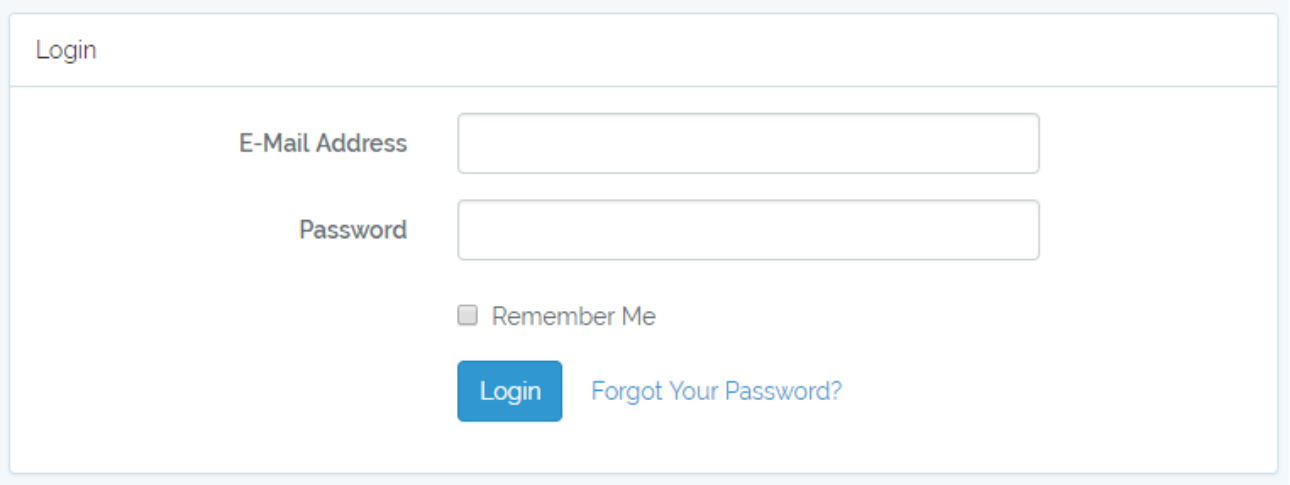

Figure 3. 4: Login Page

2. Organization Page

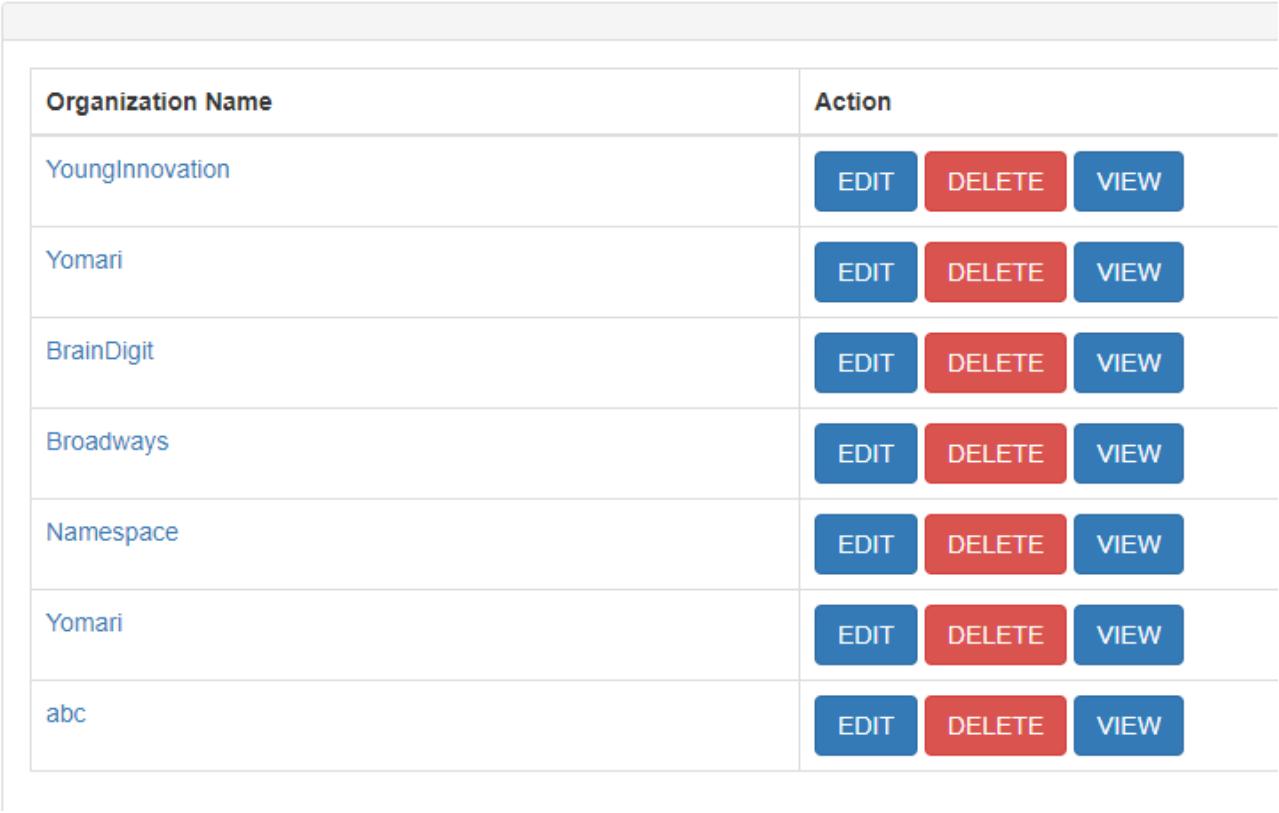

Figure 3. 5: Organization Page

3. Usergroup Page

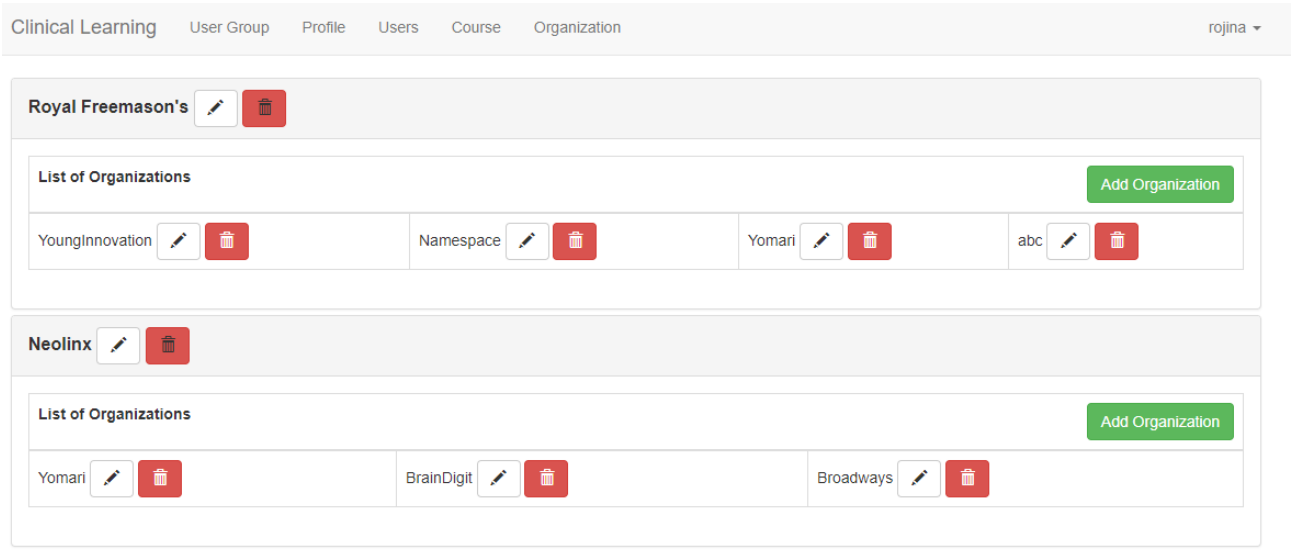

Figure 3.6: User Group Page

4. Add User

Form for adding users is shown as below:

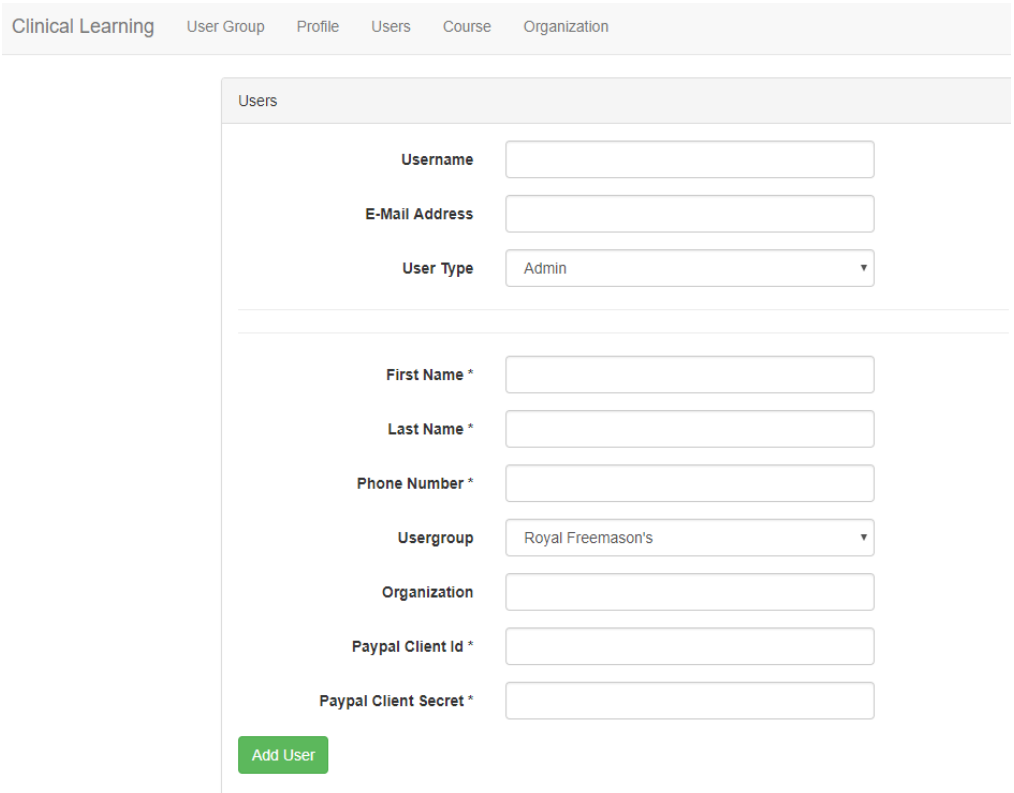

Figure 3.7: Add User Page

4. Update User Group

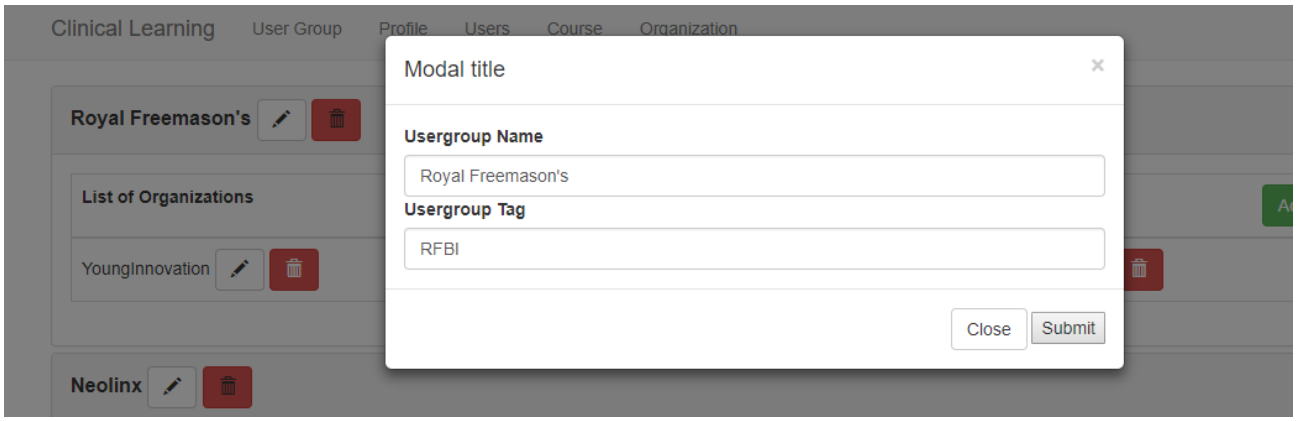

Figure 3.8: User Group Page