

UNIVERSITY OF BUEA

COLLEGE OF TECHNOLOGY

REPUBLIC OF CAMEROON

PEACE-WORK-FATHERLAND



THE COLLEGE OF TECHNOLOGY

DEPARTMENT OF COMPUTER ENGINEERING

INDUSTRIAL EXPERIENCE REPORT FOR INTERNSHIP
CARRIED OUT AT NEXINCH LLC, BAMENDA

FROM 1ST AUGUST TO 1ST OCTOBER

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MATRICULE: CT20A111

COURSE TITLE AND CODE: INDUSTRIAL EXPERIENCE II COT310

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ACADEMIC YEAR 2021-2022

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DECLARATION OF AUTHORSHIP

I hereby declare that this internship report is entirely the work
MBIYBEE PRINCE-CHARLES BERINYUY with matriculation
number **CT20A111** of the department of computer engineering,
College of Technology University of Buea, under the supervision of
the undersigned.

Date: _____

DR MIH THOMAS

Date: _____

ENGR JUSTUS PENN

ABBREVIATIONS AND ACRONYMS

HTTPS	HYPertext Transfer Protocol Secure
HTTP	HYPertext Transfer Protocol
JSON	JAVASCRIPT OBJECT NOTATION
CRUD	CREATE - READ - UPDATE - DELETE
HTML	HYPertext Markup Language
PHP	HYPertext Preprocessor
LLC	LIMITED LIABILITY COMPANY
MVC	MODEL - VIEW - CONTROLLER
CSS	CASCADING STYLE SHEET
UX/UI	USER EXPERIENCE / USER INTERFACE
JS	JAVASCRIPTS
CEO	CHIEF EXECUTIVE OFFICER
CTO	CHIEF TECHNOLOGY OFFICER
COO	CHIEF OPERATING OFFICER
CIO	CHIEF INFORMATION OFFICER
COT	COLLEGE OF TECHNOLOGY, BUEA
ENGR	ENGINEER
COLTECH	COLLEGE OF TECHNOLOGY, BAMENDA

EXECUTIVE SUMMARY

This report is about my internship program with Nexinch LLC. In this comprehensive report, I have discussed about every major aspect as well as a few minor activities that took place during the internship.

In this report, you will find the details about Nexinch LLC right from its creation to its current position. Along with their goals, organizational structure and previous partners.

During my internship, I mainly worked as a backend developer on projects, with the use of Laravel, which is a php framework.

As the main purpose of this internship is to learn by working in a practical environment and to apply the knowledge acquired during these studies in real world scenarios in order to tackle problems using knowledge and skill learned during the academic process.

This internship report covers the weekly progression of my activities at the company as a junior developer, and as well holds processes, concepts, practices and procedures which I have undergone through and learned during my internship program

ACKNOLEDGEMENT

The internship opportunity I had with Nexinch LLC was an extraordinary opportunity for learning so many new and useful skills. In this way, I view myself as however an extremely fortunate person as I seemed to be given a chance to be a part of this amazing organization. I'm likewise thankful for getting an opportunity to meet such great individuals and experts who inspired me during this internship period.

I would like to use this chance to offer my most unimaginable thanks and gratitude to Mr Momene Vigal, C.E.O of Nexinch, whom disregarding being uncommonly occupied with his obligations, made time to hear, guide and keep me on the right way and permitting me to complete my undertaking at their organization.

I extremely grateful to my Academic Supervisor for Internship, Dr Mih Thomas who guided me throughout the structural editing and the copy editing of this document.

I express my deepest thanks to my parents for their support and care, most especially to my dad for taking time out of his busy schedule to acquire a location for me stay in during my internship period in Bamenda.

Also, most profound gratitude goes to Engr Justus Penn, a senior developer and intern supervisor, Engr Gharla Samuel, also senior developer at Nexinch, for their cautious and valuable directions which were amazingly significant for my study both theoretically and practically.

I see this internship as a major achievement and advancement in my field of study. I will endeavour to utilize the acquired abilities and information in the most ideal manner. I will continue to work on improving these abilities, in order to attain desired career objectives.

Sincerely,

GENERAL INTRODUCTION

This internship report is a series of activities carried out by MBIYBEE PRINCE-CHARLES BERINYUY, a computer software engineering intern from College of Technology, University of Buea in Nexinch LLC Bamenda, as part of the projects related to his profession.

This internship program is meant to introduce young graduates into field works, and also bring under graduates a sense of responsibility. An awaken spirit to visualize the future and to start working through exposure in projects and apprenticeship under experienced professionals. it entails of professional training in order to allow young Cameroonians adapt to new technologies and to be competitive in the labour market, especially to fight against unemployment which has become today, a new challenge for developing countries.

It is with this reason in mind, that the undergraduate internship program was invented.

Objectives:

- ❖ The objectives of this internship are to make the students or interns to become familiar with the structure of the organization (institution), organizational goals and objectives.
- ❖ To make an identifiable contribution in the computer engineering domain within the organization.
- ❖ To gain experience in the non-academic managerial and business activity of the organization and to be aware of the interaction between the technological and the business world.

The internship lasted for two months, starting from **1st of August** to the **1st of October of 2022**

1 CHAPTER I: PRESENTATION OF ORGANISATIONAL STRUCTURE

The name of my Host Institute is **NEXINCH**.



Fig 1.1: Logo of NEXINCH.

1.1 NEXINCH LLC AND STAFF:

Nexinch LLC is a Cameroon based tech start up, it was founded in 2019 by 4 young entrepreneurs (ENGR. MOMEN VIGAL, Eng. SAMUEL GHARLA, Eng. PENN JUSTUS AND Eng. NDIAMBEI FABRICE), who at the time called the group White Hat (Legal Hackers) Nerds. One of the founder's rooms was used as their office space. The system build was the complaint system where students can complain about their problems faced in school.

They have a mission to use technology to define, design, develop and deliver high quality, systems which are specific to solving human day to day problems.

The organization Nexinch currently has 4 active staff members that manage the organization onsite. They are:

THE CEO : ENGR MOMEN VIGAL

THE CIO : ENGR PENN JUSTUS

THE CTO : ENGR SAMUEL GHARLA

SENIOR DEVELOPER : ENGR NGU PAULA

Each with many years of experiences thereby ensuring a high level of professionalism in the company.

This resulting structure gives the organization a great potential, allowing it to be a highly recommended institution for freshmen carrying out internship.

However, one of the greatest assets Nexinch possesses is the highly trained and experienced team which play a very important role as they carry out the one-on-one training of their interns

1.2 LOCATION OF COMPANY:

NEXINCH LLC is located on the 2nd floor of the Quiferou building at “WAY-IN NKWEN MARKET” BAMENDA/ CAMEROON. The building is very easy to spot when moving from Mobile towards hospital roundabout on the left side of the road.

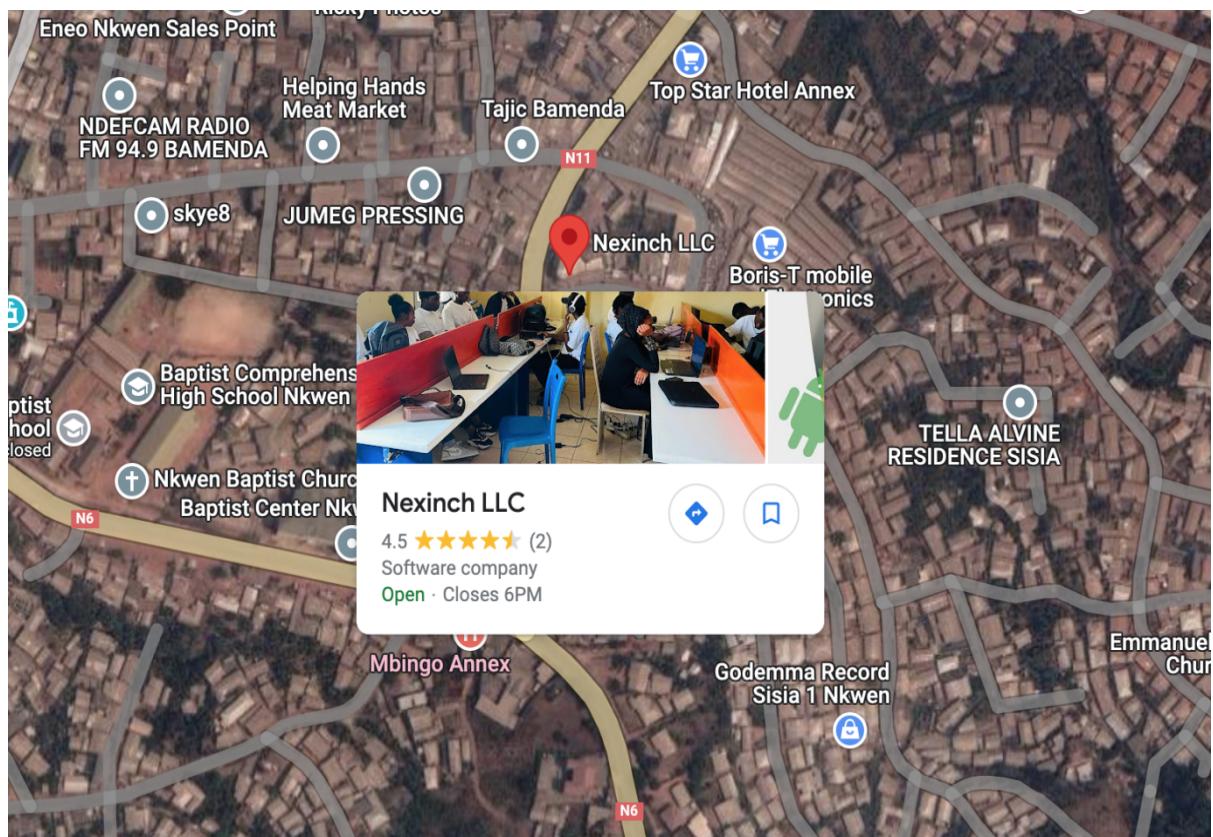


Figure 1.2: Picture showing the location of Nexinch LLC

1.3 COMPANY GOALS:

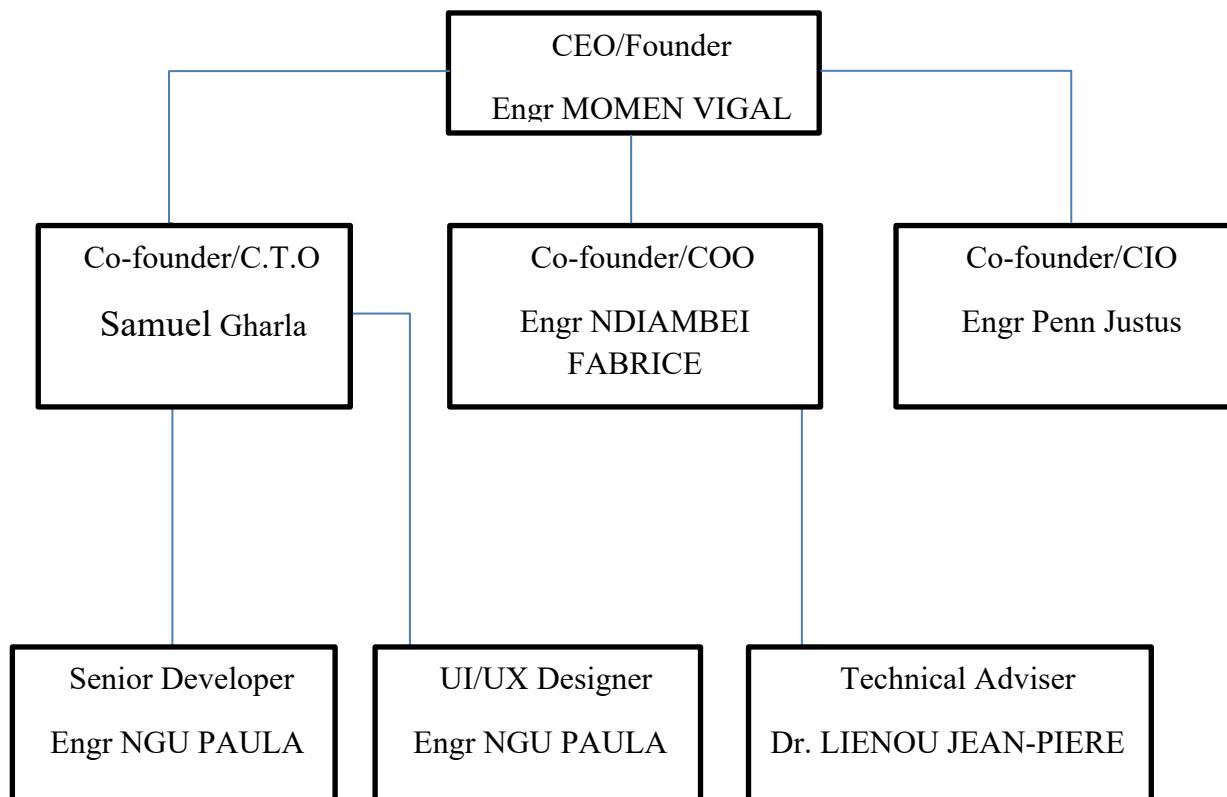
Every successful organization has objectives and of course there has to be a means for their achievement, which lies in the strategies and/or policies that are implemented by that organization. **Nexinch** is no exception, as it has the following objectives;

- To provide end users software-based solutions to ease the execution of their day-to- day activities.
- To satisfy their clients and serve them with the care and respect they deserved.

Nexinch LLC aims to use technology to define, design, develop and deliver high quality, systems which are and specific to solving human day-to-day problems. Also, it educates, facilitates and develops the young engineers.

Nexinch LLC, having bagged over 7 projects with big establishments both private and public such as (**COLTECH Bamenda, University of Bamenda and Institut Universitaire Royal de Baboutcha Nintchen**) is now a leading Software company in Bamenda.

1.4 COMPANY ORGANOGRAM:



2 CHAPTER 2: ACTIVITIES AND OBSERVATIONS.

This chapter lays down the level of accomplishment of tasks, duties, responsibilities assigned, lessons learnt and most importantly the experiences and skills acquired during the internship session at Nexinch. In addition, it also portrays the challenges we faced both as individuals and as a team during academic studies and activities.

2.1 WEEK ONE: PRESENTATION, COMMUNICATION AND TEAMWORK SKILLS

The earliest parts of the first week was used for self-introductions of the interns and the Nexinch team, we had a one-on-one interaction with each worker for the first time. After getting acquainted to fellow interns, we were all given specific topics to prepare a presentation on, during that week and present it to the other interns, during that period, I was assigned to present on:

- ✓ COMMUNICATION AS AN ENTERPRISE SKILL
- ✓ TEAMWORK AS AN ENTERPRISE SKILL
- ✓ PRESENTATION AS AN ENTERPRISE SKILL

Our presentations were required to be effective, time efficient, targeted and planned.

(UPLOADED TO GITHUB)

We also revised our HTML and CSS skills to ensure that all interns had a good grasp on it, Mr Justus Penn ‘Interns Supervisor of Nexinch’ gave us some short exercises to replicate, such as an HTML form and a calculator design (Figure 2.1). We recreated the exercises, helping the younger interns where needed, and contributing to the growth of their skills.

The figure consists of two rectangular boxes side-by-side. The left box contains a numeric keypad grid with 4 rows and 4 columns. The first row has a large empty box at the top-left and a single-cell box at the top-right. The second row contains boxes labeled 1, 2, 3, and /. The third row contains boxes labeled 4, 5, 6, and -. The fourth row contains boxes labeled 7, 8, 9, +, and . Below the keypad is a box labeled 0. To the right of the keypad are boxes labeled = and *. The right box is a registration form. It has three input fields: 'Name' with placeholder 'Entername', 'Password' with placeholder 'Password', and 'Phone'. Below these is a 'Gender' section with radio buttons for 'Male' and 'Female'. At the bottom is a large green rectangular button labeled 'Login'.

Figure 2.1: Calculator and Form Exercise

2.2 WEEK TWO: INTRODUCTORY PORTFOLIO EXERCISES

During the second week, Mr. Samuel Gharla instructed each and every one of the interns to draw a mock-up of their portfolios which they would develop during the week. This exercise was to be done on an A4 sheet and submitted to his office. After that, we were required to recreate the mock-up of 7 pages using only HTML and CSS.

But, since I was more advanced than most of the other interns, I was instructed to recreate my portfolio using HTML, CSS and JS in order for them to test my skills as a web developer.

(UPLOADED TO GITHUB)



Figure 2.2: My Portfolio With HTML, CSS and JS

Getting towards the end of this week, I was given the task of studying Git, GitHub and Git Pages which will be presented the following week, and in order to give me some practice on GitHub and Git Pages, i was given an exercise to remodel my portfolio in another design format and publish it using GitHub Pages. and I hosted and presented it to the other interns the following week.

At the end of this week, I was awarded intern of the week.

Portfolio:



Figure 2.3: My Third Portfolio With HTML, CSS and JS

2.3 WEEK THREE: GIT, GITHUB, GIT PAGES, TIME MANAGEMENT, COMMUNICATION AND TEAM WORK

Week three was brute in focusing only on presentation skills, teamwork and communication, each and every one of the interns were to perform a presentation in front of all the other interns, in order for them to get a better grasp on the skills, and to shape up their confidence as well.

during this week, in addition to the presentations, we were still doing some design touches to our portfolios and personal projects.

I was fortunate to have participated in the presentation of the following topics:

- PRESENTATION ON GIT, GITHUB, GIT PAGES
- PRESENTATION ON HOW TO PRESENT
- PRESENTATION ON TEAMWORK
- PRESENTATION ON COMMUNICATION
- PRESENTATION ON TIME MANAGEMENT

(UPLOADED TO GITHUB)

I was also assigned intern of the week for this week.

2.4 WEEK FOUR: PHP FRAMEWORK “LARAVEL” INTRODUCTION

The first day into week two, we were introduced to LARAVEL, Laravel is a cross-platform PHP framework for building web applications but with less code that basically replaces multiple lines of php. this effectively makes our code look cleaner. With this intro into Laravel, we were given the objective to learn the language on our own, by means of research, study, and repetitive practice within this week.

The first target was to learn how to properly setup a Laravel project.

SETTING UP FOR LARAVEL PROJECT

- Download Composer
- Install Git
- Go to the directory in which you would like to store your project
- Right click and select "Gitbash Here"
- Type this into the terminal "Composer create-project --prefer-dist laravel/laravel Projname"
- Projname stands for the projects name
- Type "cd/Projname" into the terminal
- Type "php artisan Serve" into the terminal to launch the project you just created

Figure 2.4: Basic Project Setup Instructions for Laravel Project

After that, I opened up the project on Visual studio code to set up some parameters. Firstly, I corrected the database name and made sure it directed to an existing database created on my Xampp server, this is done in the env file.

In case there is no env file, do the following:

Copy .env.example .env

php artisan key: gen

The other objectives of this week were Models and Controllers.

MODEL: this is a class representation of a table in our database, by which we can create, delete, collect or manipulate a row in our database.

CONTROLLERS: It holds the logic and controls of functionality in our Laravel project, it accepts HTTPS requests from the user interface, collects data from the database using the models, can be used to handle authentication and input validation, and is usually responsible for sending feedback to the user.

“php artisan make: controller UserController “

we also received some insight on the Laravel tool called “**artisan**” which i have displayed above multiple times, that it can be used to run migrations, Create controllers, models and other Laravel files automatically with simple codes.

2.5 WEEK FIVE: GETTING FAMILIAR WITH LARAVEL

This week was filled with serious studies on the different parts of Laravel, for example: Views, Routing, Seeders and Migrations.

VIEWS: A view holds our HTML used to present the user interface to the user. Go to the views folder and create a new file “file.blade.php”. blade is not a part of the MVC, but rather it’s a template engine provided by Laravel.

In order to open this view file, you can use direct routing or you call it using the controllers

ROUTING: All Laravel files are defined in a route file, which are located in the route’s directory. These files are automatically loaded by your web app. The main route files are in Web.php route file

SEEDERS: this is a simple Laravel method of inputting test data into your database

MIGRATIONS: migrations allow for you to manipulate the database schema rather than manually adding any additional table after transfer to another user. it provides support for creating and manipulating tables in the database

C.R.U.D: This refers to the four basic functions of persistent storage: Create, Read, Update and Delete. they’re operations operated on the database that have been simplified for even a beginner to execute.

Laravel 9 CRUD (Create, Read, Update and Delete)

Actions						
#	Name	Address	Mobile	role	Verified	
1	Mbiybee Prince Charles	kkk	+237680012854	1	2022-11-10 12:50:36	View Edit Delete MAKE ADMIN Verify Unverify
2	selina velor	kumba	567898765432	1	2022-11-10 12:50:53	View Edit Delete MAKE ADMIN Verify Unverify
3	Anna Thelma	bamenda	2877289982	2	2022-11-10 12:51:17	View Edit Delete MAKE ADMIN Verify Unverify

Figure 2.5: Laravel C.R.U.D

In addition to this concept, we did repetitive exercises on routing views and controllers, and learning how to pass variables from the controller and the route.

2.6 WEEK SIX: INTERNSHIP PROJECT EXPLANATION AND WORK DISTRIBUTION

CREATE A LOGIN AND REGISTRATION PAGE THAT CONTAINS VALIDATION AND AUTHENTICATION FUNCTIONALITIES AND STORES DATA IN A DATABASE (UPLOADED TO GITHUB)

LOGIN Email <input type="text" value="admin@gmail.com"/> Password <input type="password" value="....."/> Login	REGISTRATION Full Name <input type="text" value="Enter Full Name"/> Email <input type="text" value="Enter Email"/> Password <input type="password" value="Enter Password"/> Register
---	---

New User !! [Register Here](#)

Already Registered? [Log in Here](#)

Figure 2.6: Laravel Login and Registration Form

Getting towards the end of this week, Mr Justus Penn, Mr Samuel Gharla and Mr Momen Vigal Presented the internship project to us interns. Our project was to work on an E-learning platform which independent teachers can sign up to teach on, and students sign up to learn courses.

The purpose of this was to test what we managed to learn so far, and in addition make us more familiar with Laravel by using the practice and fail method, so that it would be easier to learn from our mistakes when we find the solutions ourselves.

We were then divided into 3 different groups, one responsible for front end development and was led by Mr Justus Penn, the other was for merging the front end and back end, their team was led by Mr Samuel Gharla and finally, my team was to focus strictly on the back-end functionalities, we were led by Mr Momen Vigal.

2.7 WEEK SEVEN: INTERNSHIP PROJECT DEVELOPMENT

This week started with Mr Vigal calling us into his office in order to discuss the back-end requirements for the project. We were analysing the various functionalities that the project was required to execute, and in turn create Files for those requirements (Controllers, Models, Migrations, Routes and Seeders).

After determining the required files to be created, I was assigned to supervise the rest of the interns on my team, and we split the work among ourselves to cover more ground.

Meanwhile, during this operation, we lacked a user interface to use for testing our work, as thus we were required to learn how to use POSTMAN to receive our JSON outputs from the back-end to ensure that our code works.

Getting towards the end of this week, I was tasked with working on the form validation and Multi-role Authentication on Laravel 9.

The form validation was auto implemented by the Laravel code.

I used 3 roles; student, teacher and admin, they were administered on registration, and on login, they were directed to a different dashboard depending on the roles they had. this particular feature took me over 4 days to provide a bug-free working code to execute the authentication.

2.8 WEEK EIGHT: INTERNSHIP PROJECT FINALISATION AND CONCLUSION OF INTERNSHIP

In summary, I had 3 tasks for my final week at Nexinch, the first was route all the dashboards we collected from the front-end team in accordance to my role-based authentication code. I created special routes for these redirections.

My second task was to implement the email verification functionality. i created a specific controller for this function, and I tested it using a mail catcher called **Mail hog**. as a beginner in Laravel, this tasks account for the whole weeks work, as we were testing, debugging and implementing one functionality at a time, while simultaneously making sure it does not affect the other functionalities already implemented.

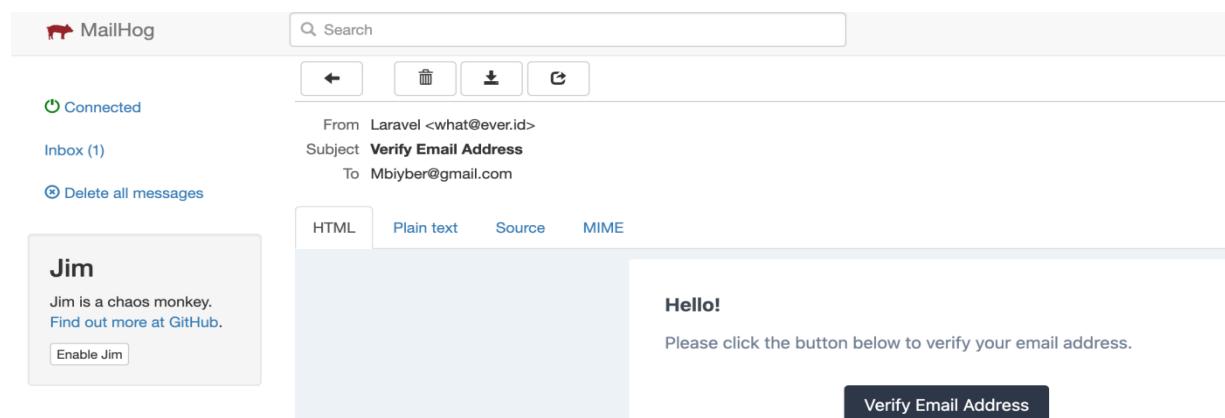


Figure 2.7 : Mail hog Email Catcher for Email Verification Testing

The dashboard has a sidebar with 'DASHBOARD', 'My Dashboard' (selected), 'My Courses', 'Quiz', 'ACCOUNT SETTINGS', 'Edit Profile', and 'Sign Out'. The main area shows a table of course submissions and three course cards below it.

NAME	DATE OF SUBMISSION
Gatsby Tutorial - Fast Website...	December 20,2022
Gatsby Tutorial - Fast Website...	December 20,2022
Gatsby Tutorial - Fast Website...	December 20,2022

Courses:

- Create a Website with WordPress (1h 30m)
- Create a Website with WordPress (1h 30m)
- Create a Website with WordPress (1h 30m)

Figure 2.8: Platform Teachers Dashboard

Design For Web

Natalie Storn, Physics Department

A video player interface showing a dark video frame. Below it, the course title 'Design For Web' by 'Natalie Storn' is displayed, along with a progress bar at 0:00.

ALL

RESOURCE

QUIZ

Lorem, ipsum dolor sit amet consectetur adipisicing elit. Perferendis, ipsa eligendi. Culpa hic, inventore quibusdam est error accusamus blanditiis sed sit repudiandae expedita rem ullam, vitae obcaecati,

Instructor

Natalie Storm

2/5 COMPLETED

1 Introduction to design ✓

2 Motion in UI ✓

3 Design For Web

4 Improving visual skills 🔒

5 Finding inspiration 🔒

Discussion

Jason Statham

Lorem, ipsum dolor sit amet consectetur adipisicing elit. Perferendis, ipsa eligendi.

Reply · view 8 replies

Discussion

Robin Sharbasky

Figure 2.9: Students Courses and Quiz Area

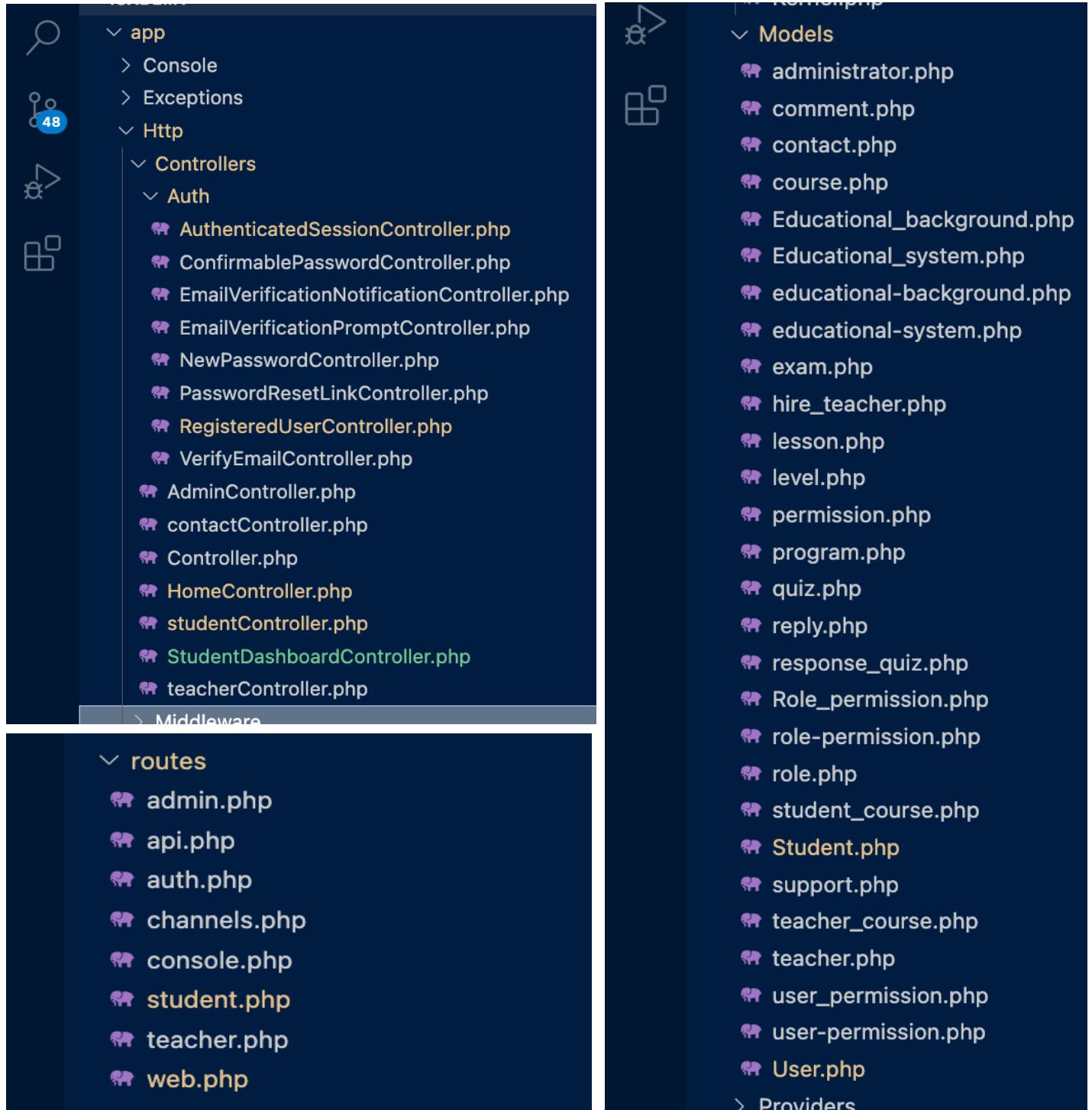


Figure 2.10: My Projects Controllers, Routes and Models

GITHUB LINK: [Github.com/sancomics](https://github.com/sancomics)

PORTFOLIO: Sancomics.github.io/scratch1

CHALLENGES AND CONCLUSION

CHALLENGES:

My greatest challenge I faced, was the problem of poor connection due to the MTN internet service provider. since my project required me to carry out a lot of research online.

As well as the fact that we occasionally had blackouts which hindered progress in the project during that period of time.

CONCLUSION:

I am so grateful to the staff of Nexinch for treating us as developers and not just interns who are fed every little detail. they taught us the value of research, presentation, team work, leadership and consistency

The academic internship is an essential step in training of junior and senior developers because it is in the future that we discover the reality of the professional environment. The end of studies at NEXINCH has given me much benefits in almost all areas (both practical and relation aspects). In review this internship has been an excellent and rewarding experience. Since, I have been able to meet and network with so many people that I am sure will be able to help me with opportunities in the future.

Furthermore, one main thing that I have learned through this internship is time management skills as well as self-motivation and as well Teamwork and team management. This internship allowed me to acquire more knowledge

I am going to continue to working on the Internship project in order to perfect it and to hone my skills as well.