A TECHNICAL REPORT ON STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME(SIWES)

UNDERTAKEN AT

ipNX

4, BALARABE MUSA CRESCENT, VICTORIA ISLAND, LAGOS, NIGERIA.

BY

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Abstract

This paper reports a six-month Internship with the Research and System Architecture department at ipNX Nigeria Limited, Victoria Island, Lagos.

My tasks were to engineer, develop and deploy customer-centric software products while employing modern Software development paradigms and practices. Some projects require data visualization in which communication between Front-end and Back-end asynchronously JSON over XMLHttpRequest (XHR) using Asynchronous JavaScript and XMLHttpRequest (Ajax) while others involve implementing complex algorithms such as the Materialized Path Algorithm to provide some required complex features as contained in the Software Requirement Specification document. Such implemented complex features include but not limited to a Threaded Commenting System, Full-text search system using PostgreSQL's full-text search engine, a live chat system and other basic Create, Retrieve, Update and Delete (CRUD) processes using Flask and Django frameworks as well as PostgreSQL and SQLite databases. Most of the software projects were wholly written in Python, an interpreted, high-level, general-purpose programming language created by Guido van Rossum and first released in 1991 that lets one work quickly and integrate systems more effectively. Few other projects such as a Web crawler and Recommender system were implemented in Julia, a new programming language offering a unique combination of performance and productivity that promises to change scientific computing, and programming in general. Julia picks the best parts of existing programming languages, providing out-of-the-box features such as a powerful Read-Execute-Print Loop (REPL), an expressive syntax, Lisp-style metaprogramming capabilities, powerful numeric and scientific programming libraries, a built-in package manager, efficient Unicode support, and easily called C and Python functions.

System/Linux Administration works were also embarked upon ranging from deploying already developed applications to a Linux server using Apache2 and nginx to complying with versioning and back-end compatibility of resources. In cooperation with a notable senior staff in the department of Business Intelligence and Data Analytics (BIDA), I designed and developed from scratch a complex blogging web application primarily to bring together tech enthusiasts. Syntax highlighting was implemented using Primejs and Django-ckeditor was used as "What You See Is What You Get(WYSIWYG)" rich texts or documents editor.

Acknowledgements

I owe a huge debt of gratitude to God Almighty for His unconditional and resilient love cum compassion towards me. He is deeply appreciated for the intellectual acumen He amply bestowed on me before, during and after this industrial training.

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I would like to thank my industry-based supervisor, Oluboyo Charles Oluwaseun, for his encouragement, supports in all aspects, and timely help. I am favoured to have been under your tutelage. Special thanks are extended to Frances Nnamadim, a Business Analyst and UI/UX designer, who never seemed to be tired of imparting knowledge and writing comments as well as remarks, for discussions, feedback, ideas, and for help on the various projects done. I would also like to thank Amuche Benson-Onyeibor, who extended her generosity and was kind enough to offer comments and suggestions in the course of implementing some projects. My grateful thanks go to all the people at ipNX Nigeria Limited for the pleasant co-operation and hospitality they offered during my stay, particularly Shade Efiong-Bassey, the Human Resources Managers, and Administrators.

Finally, I want to thank Dr. (Mrs) Folasade Mojisola Dahunsi, Ag. Head Of Computer Engineering Department, Federal University of Technology, Akure, especially for help on getting Internship placement and superb cum expressive motherlike love.

Publication List

[Optional] The main contributions of this research are either published or accepted or in preparation in journals and conferences as mentioned in the following list:

Journal Articles

1.

Conference Papers

1.

Additional Publications

Following is the list of relevant publications published in the course of the research that is not included in the thesis:

1.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

[Must be present in FYDP-1 Report and also in Final Report]

Every chapter should start with 1-2 sentences on the outline of the chapter.

1.1 Project Overview

1.2 Motivation

1.3 Objectives

1.4 Methodology

1.5 Project Outcome

1.6 Organization of the Report

Chapter 2

Background

[Must be present in FYDP-1 Report and also in Final Report]

Every chapter should start with 1-2 sentences on the outline of the chapter.

2.1 Preliminaries

2.2 Literature Review

2.3 Summary

Chapter 3

Project Design

[Must be present in FYDP-1 Report and also in Final Report]

Every chapter should start with 1-2 sentences on the outline of the chapter.

3.1 Requirement Analysis

3.2 Methodology and Design

You have to mention alternate solutions that you have considered. Why you have selected the specific solution, etc.

3.3 Summary

Chapter 4

Implementation and Results

[Must be present in Final Report. Incomplete version might be included in FYDP-1 Report, however it is optional.]

Every chapter should start with 1-2 sentences on the outline of the chapter.

4.1 Environment Setup

4.2 Evaluation

4.3 Results and Discussion

4.4 Summary

Chapter 5

Standards and Design Constraints

[Must be present in FYDP-1 Report and also in Final Report]

Every chapter should start with 1-2 sentences on the outline of the chapter.

5.1 Compliance with the Standards

Only mention the standards that are related to your project. This list is not complete.

5.1.1 Software Standard

5.1.2 Hardware Standard

5.1.3 Communication Standard

5.2 Design Constraints

Only mention the design constraints that are related to your project. This list is not complete.

5.2.1 Economic Constraint

5.2.2 Environmental Constraint

5.2.3 Ethical Constraint

5.2.4 Health and Safety Constraint

5.2.5 Social Constraint

5.2.6 Political Constraint

5.2.7 Manufacturability and Cost Analysis

5.2.8 Sustainability

5.3 Summary

Chapter 6

Conclusion

[Must be present in FYDP-1 Report and also in Final Report. Might be incomplete in FYDP-1 Report.]

Every chapter should start with 1-2 sentences on the outline of the chapter.

6.1 Summary

6.2 Limitation

6.3 Future Work

References