



Faculty of Computer Science and Information Technology

e-Internship for FCSIT, UNIMAS

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ABSTRACT

The third-year students of Faculty of Computer Science and Information Technology were having problems applying for industrial training at the companies. It is due to the fact that they are not given the application materials as early as possible. They had to apply for the materials manually by emailing the senior assistant registrar personally. Therefore, in this paper, a website called e-Internship was proposed to solve the issues faced by the students. There are three websites that are chosen for the purpose of benchmarking with the proposed website which are “Sistem Pengurusan Latihan Industri (UTHM)”, “Industrial Training System (Universiti Sains Islam Malaysia)”, and “Penyeliaan Pelajar (UNIMAS)”. Based on the findings, all the websites have their own strengths and weaknesses. The proposed website focuses on the important features which includes search for company, download materials needed for internship, and student evaluation which the supervisors do. Some of the features implemented are based on the findings from the three websites. The Waterfall Model is implemented in the development of the proposed website as it is ideal for small projects, and it reduces the number of issues faced.

ABSTRAK

Pelajar tahun tiga Fakulti Sains Komputer dan Teknologi Maklumat menghadapi kesukaran untuk memohon latihan industri di mana-mana syarikat. Ini disebabkan oleh kerana mereka tidak diberikan bahan-bahan yang diperlukan untuk permohonan latihan industri seawal mungkin. Mereka terpaksa memohon bahan-bahan tersebut secara manual dengan menghantar e-mel kepada penolong pendaftar kanan secara peribadi. Oleh itu, dalam kertas kerja ini, satu laman web yang dinamakan e-Internship telah dicadangkan khas untuk menyelesaikan masalah yang dihadapi oleh pelajar. Terdapat tiga laman web yang dipilih untuk tujuan penandaarasan dengan laman web yang dicadangkan iaitu “Sistem Pengurusan Latihan Industri (UTHM)”, “Sistem Latihan Industri (Universiti Sains Islam Malaysia)”, dan “Penyeliaan Pelajar (UNIMAS)”. Berdasarkan penemuan, semua laman web mempunyai kekuatan dan kelemahan masing-masing. Laman web yang dicadangkan memfokuskan kepada ciri-ciri penting yang merangkumi carian syarikat, muat turun bahan yang diperlukan untuk latihan industri, dan penilaian pelajar yang dilakukan oleh penyelia. Beberapa ciri yang dilaksanakan adalah berdasarkan penemuan daripada ketiga-tiga laman web tersebut. *Waterfall Model* telah dilaksanakan dalam pembangunan web yang dicadangkan kerana ia sesuai untuk projek kecil, dan ia mengurangkan isu yang dihadapi.

CHAPTER 1: OVERVIEW/INTRODUCTION

1.0 Project Title

e-Internship for FCSIT, UNIMAS

1.2 Background

These days, most people are very familiar with the term "website", but some may not fully grasp the real meaning of it, especially the one that is not from a computer science background. According to GeeksforGeeks (n.d.), a website is a collection of numerous web pages that are written using HyperText Markup Language). Lots of websites serve different uses depending on the targeted audience (What Is the Purpose of a Website?, n.d.). For example, informative websites are used to convey information, meanwhile, E-Commerce websites are for selling products to users.

A website called e-Internship was developed for the Final Year Project (FYP) that serves the purposes of anything related to industrial training. The website will be used to store industrial training data for further use, and it can be a reference to the industrial training coordinators and students. Besides, the placement supervisor and visiting/monitoring lecturer are able to evaluate the industrial training students through the website. Moreover, the students can upload their offer letter from the company placement into the website after they have finalised their selection. This is to inform the industrial training coordinator of their choice of selection regarding their company placement. The students can also create their resume by using the proposed website by filling in all the required details such as education background, personal details and so forth.

1.3 Problem Statement

The third-year students from the Faculty of Computer Science and Information Technology (FCSIT) of Universiti Malaysia Sarawak (UNIMAS) undergo industrial training in their second semester. The current third-year students, session 2023/2024, were provided with a website that is used for their industrial training purposes. However, some of them faced issues when using the website. For instance, a number of students mentioned that the website is quite confusing to use, which means it should be more user-friendly. Besides, some of the students stated that they are unable to edit the submitted placement letter on the website before being approved by the industrial training coordinator. They prefer to be able to edit it before the letter being approved to save time. Therefore, I would like to develop a website that serves as a solution for the issues faced by the students.

1.4 Scope

This project focuses on the development of a website for the industrial training management process. It helps ease the work of the industrial training coordinator, and UNIMAS management (admin), and visiting/monitoring lecturer manages all the third-year students of FCSIT that undergoes industrial training. Therefore, the functions that are available in the e-Internship are stated below:

i) **Sign up**

Every user needs to register first before using the website. However, only students are able to register by themselves at the register page. The other user will be registered by the administrator.

ii) Insert, update, and save new data

This function is applicable to admin, industrial training coordinators, placement supervisors, visiting/monitoring lecturers, and students. They can insert, update, and save new data on the website for future reference.

iii) Authentication for security purposes

When users want to log into the website, they need to fill in their email and password.

iv) Approval of application

The industrial training coordinator has the authority to approve the application of a “placement letter” after they view and validate the details of the students.

v) Download placement letter

After getting the approval of the “placement letter” from the industrial training coordinator, the students can download it from the website. Then, they can use it as one of the materials needed to apply for internship placement.

vi) Create resume

The students can create their resume by filling in all their details on the website. With this feature, it helps them to save their time and effort to create their own resume.

vii) View data

All users have this functionality, but different levels of users can view different data.

viii) Delete unnecessary data

This function is only applicable to the admin. The admin is able to delete the data of the assigned placement supervisors, visiting/monitoring lecturers, and industrial training coordinators if they are no longer valid for the website.

ix) Evaluate student's performance

Placement supervisors and visiting/monitoring lecturer able to evaluate the student's internship performance by using the website.

1.5 Aims and Objectives

Based on the problem statement stated, these are the objectives that need to be achieved in this project:

1. To analyse the existing system of industrial training management for FCSIT.
2. To develop an industrial training website based on the design of the proposed website.
3. To evaluate the functionality and usability of proposed website.

1.6 Brief Methodology

The methodology that will be implemented in this project is waterfall methodology and the illustration of the model is shown in *Figure 1.1*. According to Martin (2022), Waterfall Model is a sequential model that separates software development into subphases, and each phase need to be completed before the next phase can begin with no overlap happening between the phases. The Waterfall Model is implemented in the development of the proposed website as it is ideal for small projects, and it reduces the number of issues faced. There are seven phases of Waterfall methodology as mentioned below:

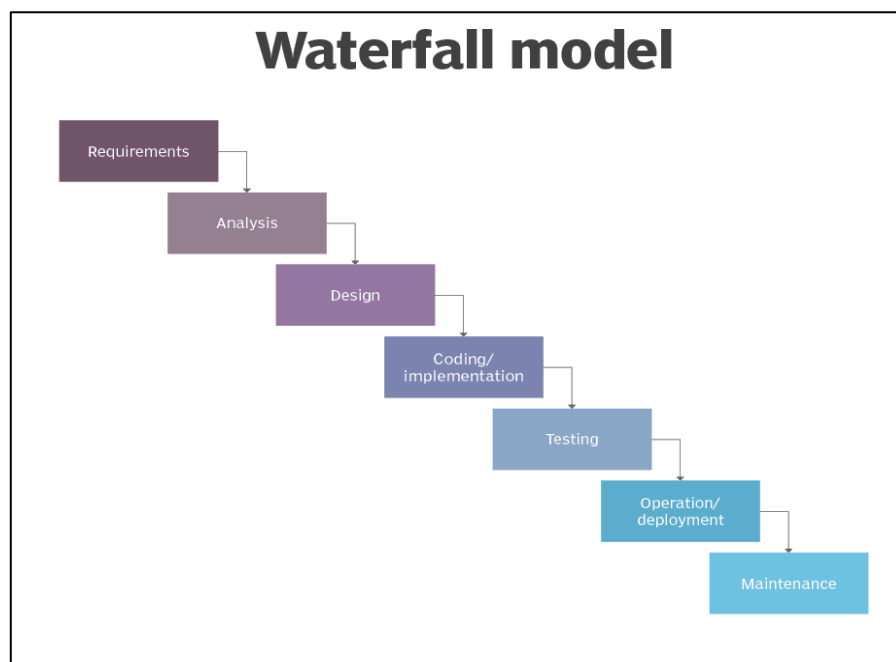


Figure 1. 1 Waterfall Model (Lutkevich, n.d.)

1. Phase 1: Requirement

In this stage, it is required to gather information by doing some findings on websites that have the similar purpose with the proposed website, e-Internship. By doing so, it enables the developer to grasp some important features that should be implemented in the proposed website.

2. Phase 2: Analysis

The analysis phase is where the developer reviews and analyse all the gathered specifications or requirements. This means that all the data from the findings are used to analyse and hence providing solutions for the given specifications.

3. Phase 3: Design

Usually, in the design phase, the solutions are made for the project's requirements. First thing first, use case diagram, activity diagram, and sequence diagram will be created to show the process of the website and show its uses. After that, Entity Relationship Diagram (ERD) is developed to know the number of tables and attributes needed as well as the relationship of the tables for the database of e-Internship. Then, the creation of the mock-up happens. A software called "Balsamiq" will be used to create the mock-up of the e-Internship.

4. Phase 4: Implementation

The implementation phase is where the website development happens. The programmer writes the source code which satisfies all the requirements stated in the previous phases. Laravel framework will be used for the development of e-Internship. Moreover, a database of e-internship will be created in this stage, along with lots of tables by using MySQL.

5. Phase 5: Testing

After the code is written, the relevant testers, like the end-user explore the website to discover any issues within it that need to be resolved. During this phase, the programmer will perform debugging in a repeating manner. The functionality

and features of the e-Internship are tested, and it should be working well. Then, it continues to the next phase.

6. Phase 6: Deployment

This stage involves deploying the website into a live environment or also known as a customer environment to evaluate its performance. The website is made available to end users once it has been deployed. The website, e-Internship will use “hostinger” as a web hosting online service to publish it online.

7. Phase 7: Maintenance

The maintenance stage involves patching and upgrading systems, testing for errors, fixing bugs if any occurred, as well as providing support and maintenance to make sure it runs smoothly. However, this phase is not utilised in this project.

1.7 Significance of project

The main purpose of e-Internship is to enable the industrial training coordinators, and UNIMAS management (admin) to manage the students that undergo industrial training in an easy manner. Besides, this website will help ease the students in terms of finding the companies to undergo their industrial training. The students and industrial training coordinators can also add new company details to add into the list of companies provided on the website. For example, if a student adds a new company, they need to wait for the approval from industrial training coordinators. Once it has been approved, the newly added company will be permanently displayed on the list of companies' page. This helps to increase the amount of list companies shown on the website for the students to refer to.

Furthermore, the students able to create their resume by using the proposed website. They need to fill in details such as personal details, education background, and much more. After they have fill in all the required details, the website generates the resume, and the students can download it instantly.

Moreover, the placement supervisor and visiting/monitoring lecturer can easily evaluate the performance of the students in e-Internship as they are required to fill in the evaluation form that is provided on the website.

In conclusion, this website will help to reduce the time constraint and steps needed to manage the industrial training management process.

1.8 Project Schedule

Refer to Appendix A.

1.9 Expected Outcome

The expected outcome for this website is able to store information on students, internship placements, and student's evaluation results for future reference, increase the efficiency of industrial training management for FCSIT and increase the motivation of students to apply for their industrial training placement.

1.10 Project Outline

Chapter 1, which is the introduction, explains the overall idea and overview of the proposed project. This chapter has nine chapters, excluding the project outline such as project title, background, problem statement, objectives, scope, methodology, the significance of the project, project schedule, and expected outcomes. The project title is the name of the proposed project. Meanwhile, the background elaborates the main ideas of the project. For problem statement, it explains the issues faced by users which is the motivation of this project. The objectives section states the proposed project's aims, and it must be related to computer science. For scope, it explains the requirements of the project. Next, the methodology describes the method used in the proposed project which in this case, the Waterfall Methodology. It briefly explains each phase of the methodology. Then, the significance of the project section elaborates the importance and benefits of the proposed website to the target user. The project schedule shows the Gantt Chart of the project, which is created using the Microsoft Project software. Last but not least, the expected outcome mentions the end result or what the proposed project will achieve.

For chapter 2, it explains the comparison of three existing websites with the proposed website. The three existing websites are "TMF39412 Industrial Training Website (UNIMAS)", "Industrial Training System (Universiti Sains Islam Malaysia)", and "Penyelidikan Pelajar

(UNIMAS)”. Each website has its features, strengths, and weaknesses, which makes it a great help as a reference to the proposed website. Then, the tools and technologies used are also explained in this chapter. There are two tools utilised which are Laravel and XAMPP. Lastly, there is a brief explanation of the proposed website on its functionality and its unique features.

Chapter 3 contains introduction, user requirement specification, system requirement specification, software requirement specification, hardware requirement specification, system design, and user interface design. The introduction section briefly explains the methodology used in the proposed website. The user requirement specification describes the summary of findings gathered from the previous chapter. Besides, the system requirement specification clarifies the functional requirement and non-functional requirement of the proposed website. Furthermore, there are software requirement stated in another section followed by hardware requirement specification. Next, the system design section has use case diagram, activity diagram, sequence diagram, Entity Relationship Diagrams (ERD), and a data dictionary. Then, the last chapter is about user interface design. It is a mock-up design of the proposed website. It explains the user interface from all the user’s perspectives, including the students, admins, industrial training coordinators, placement supervisors, and visiting/monitoring supervisors.