

**Imam Mohammad ibn Saud Islamic University**

**College of Computer and Information Sciences**

**Information Systems Department**

**AOUN**

**By:**

Saleh Jamal Almutairi, 442015756, 076, Group 06

Yazeed Ayman Kordi, 442020048, 076, Group 06

**Supervised by:**

Prof. Abdul Kader Jilani Saudagar

Project Submitted in Fulfillment for the IS495 Course requirements

Semester-Year



**Imam Mohammad ibn Saud Islamic University**

**College of Computer and Information Sciences**

**Information Systems Department**

**AOUN**

**By:**

Saleh Jamal Almutairi, 442015756, 076, Group 06

Yazeed Ayman Kordi, 442020048, 076, Group 06

|  |  |
| --- | --- |
| **Supervisor Name** | Prof. Abdul Kader Jilani Saudagar |
| **Date** | **564** |
| **Signature** |  |

# Declaration

We Saleh Jamal Almutairi / 442015756, and Yazeed Ayman Kordi / 442020048 being members of final year project group number 06, declare that this report contains only work completed by members of our group except for information obtained in a legitimate way from literature, company or university sources. All information from these other sources has been duly referenced and acknowledged in accordance with the University Policy on Plagiarism.

Furthermore, we declare that in completing the project, the individual group members had the following responsibilities and contributed in the following proportions to the final outcomes of the project:

|  |  |  |  |
| --- | --- | --- | --- |
| **Student ID** | **Responsibilities[[1]](#footnote-1)** | **Contribution[[2]](#footnote-2) %** | **Signature** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Abstract

[Give a complete but concise description of your work. It is a brief overview of your motivation, statement of purpose, general methodological approach, major results, discussion and conclusion.

Must not exceed one page and not less than 150 words. ]

# Abstract (in Arabic)

# 

أكتب مستخلص المشروع الخاص بك باللغة العربية بحيث لا يقل عن 150 كلمه

# Keywords

[List the main keywords in your project if there are any]

Sample:

Web Application, Management System, Ontology, Data Mining, Cloud Computing, Sound Recognizer Application.

# List of Abbreviations

[List the abbreviations you have used in your project if there are any and what are they stands for]

Sample:

SDLC: Software Development Life Cycle.

JSP: Java Server Pages.

ERD: Entity Relationship Diagram.

DFD: Data Flow Diagram

CSS: Cascading Style Sheets

GUI: Graphical User Interface

HTML: HyperText Markup Language

# Table of Contents

[you must have all the chapters and sections given here]

[Declaration iii](#_Toc68786593)

[Abstract iv](#_Toc68786594)

[Abstract (in Arabic) v](#_Toc68786595)

[Keywords vi](#_Toc68786596)

[List of Abbreviations vii](#_Toc68786597)

[Table of Contents viii](#_Toc68786598)

[List of Figures x](#_Toc68786599)

[List of Tables xi](#_Toc68786600)

[Chapter 1: Planning 1](#_Toc68786601)

[1.1 Project Overview 2](#_Toc68786602)

[1.2 Problem Statement 2](#_Toc68786603)

[1.3 Project Impact 2](#_Toc68786604)

[1.4 Project Stakeholders 2](#_Toc68786605)

[1.5 Objectives 2](#_Toc68786606)

[1.6 Approach 2](#_Toc68786607)

[1.7 Project Scope 2](#_Toc68786608)

[1.8 Work Breakdown Structure 2](#_Toc68786609)

[1.9 Gantt Chart (Time Frame) 3](#_Toc68786610)

[1.10 Team Member's Responsibilities 3](#_Toc68786611)

[Chapter 2: Background Analysis 4](#_Toc68786612)

[2.1 Possible Solutions 5](#_Toc68786613)

[2.2 Overview of Existing systems 5](#_Toc68786614)

[2.3 Existing Business Processes 5](#_Toc68786615)

[2.4 Literature review [if applicable] 5](#_Toc68786616)

[Chapter 3: Requirements Analysis 6](#_Toc68786617)

[3.1 Requirement Gathering Summary Results 7](#_Toc68786618)

[3.2 Stakeholder Requirements 7](#_Toc68786619)

[3.3 Proposed Business Process 7](#_Toc68786620)

[3.4 Functional Requirements 7](#_Toc68786621)

[3.5 Non-functional Requirements 7](#_Toc68786622)

[Chapter 4: System Design 8](#_Toc68786623)

[4.1 System Modelling 9](#_Toc68786624)

[4.1.1 Activity diagrams 9](#_Toc68786625)

[4.1.2 Class Diagram 9](#_Toc68786626)

[4.1.3 Sequence Diagrams 9](#_Toc68786627)

[4.2 Data Modelling 9](#_Toc68786628)

[4.2.1 ER Diagram 9](#_Toc68786629)

[4.2.2 Data Dictionary 9](#_Toc68786630)

[4.3 Detailed Interface Design 9](#_Toc68786631)

[4.4 Component Diagram [optional] 9](#_Toc68786632)

[Chapter 5: System Implementation 10](#_Toc68786633)

[5.1 System Specification 11](#_Toc68786634)

[5.1.1 Hardware Specifications 11](#_Toc68786635)

[5.1.2 Software Specifications 11](#_Toc68786636)

[5.2 System Testing 11](#_Toc68786637)

[5.2.1 Features to be tested 11](#_Toc68786638)

[5.2.2 Test Cases 11](#_Toc68786639)

[5.3 System Deployment 11](#_Toc68786640)

[5.3.1 Deployment Diagram 11](#_Toc68786641)

[5.3.2 Expected Users/Load 11](#_Toc68786642)

[5.3.3 Installation Process 11](#_Toc68786643)

[Chapter 6: Conclusion and Future Work 12](#_Toc68786644)

[6.1 Conclusion 13](#_Toc68786645)

[6.2 Future Work 13](#_Toc68786646)

[References 14](#_Toc68786647)

[Appendix 16](#_Toc68786648)

[A. Code Snippets 17](#_Toc68786649)

[B. Presentation Slides 18](#_Toc68786650)

[C. Miscellaneous 19](#_Toc68786651)

# List of Figures

Figure 1...................................................................................................................................

# List of Tables

Table 1 ……………………… ..............................................................................................

# Chapter 1: Planning

## 

## 1.1 Project Overview

[Give a comprehensive overview of your graduation project. Start with your motivation to do the project and the purpose of the project. Then provide a summary of project approaches to complete the project. Conclude the overview with the major results you have achieved]

## 1.2 Problem Statement

The core issue driving the development of the Aoun Project is the significant gap in the accessibility and management of cooperative training opportunities for students nearing graduation. This gap manifests in two primary challenges: first, the lack of a centralized platform where students can discover organizations offering co-op positions relevant to their field of study; and second, the inconventient process of submitting and managing weekly reports for both students and supervisors.

The consequences of not addressing this problem are multifaceted and far-reaching. For students, this gap represents a missed opportunity in gaining vital hands-on experience, enhancing their employability, and bridging the theory-practice divide that is crucial for their transition into the workforce. For educational institutions and employers, the inefficiency and lack of coordination can result in a talent mismatch, underutilization of eager and capable students, and ultimately, a slower pace in addressing the skills gap in various industries.

The need for a solution like the Aoun Project is underscored by evidence from academic studies and labor market analyses that highlight the growing importance of cooperative education. For instance, research indicates that students who participate in co-op programs are more likely to secure employment upon graduation, often with higher starting salaries (National Association of Colleges and Employers, 2020). Additionally, organizations that provide cooperative training opportunities report higher retention rates among employees who participated in these programs as students, underscoring the mutual benefits of such initiatives (Journal of Vocational Education & Training, 2019).

By facilitating easier access to cooperative training opportunities and streamlining the reporting and management process, the Aoun Project aims not only to enhance the educational outcomes for students but also to contribute to a more skilled and ready-to-work graduate pool. This, in turn, supports the broader goal of strengthening the link between academia and industry, thereby fostering a more dynamic and responsive workforce.

## 1.3 Project Impact

[Address the intended impact you wish your system after implementation and operation will have on society and environment (in local and global context).]

Upon implementation, our platform is positioned to majorly impact the Information Systems (IS) department. By providing a comprehensive framework to enhance Co-op programs, we aim to curate a more professional and skilled workforce, better equipped to meet the needs of modern companies. This initiative not only strengthens individual students' skills but also contributes to the overall advancement of the IS field.

On a global scale, our ambition is to establish our platform as the standard across all universities worldwide. The broad implementation will revolutionize recruitment practices globally, ensuring a more effective and efficient matching of talent with opportunities. By bridging the gap between academia and industry, our platform will play a integral role in shaping the future workforce, making it more agile, and ready for the challenges of the future.

## 1.4 Project Stakeholders

### 1.4.1 Students

The **Aoun** platform is primarily intended to benefit students, with a focus on student-centered design. For students, the platform creates new opportunities by streamlining the Co-op training program application process. It successfully resolves the issues with the present application system, such as the inability to find opportunities, guaranteeing that students may efficiently and easily apply for training programs.

### 1.4.2 Faculty

Faculty members with the correct tools to systematically supervise and review students, promoting a structured approach that fosters a conducive environment for continuous student improvement. This systematic approach not only enhances the quality of supervision but also creates opportunities for faculty to provide targeted feedback and support, leading to a more enriching training experience for students. By facilitating a better environment for constant evaluation, the platform plays a pivotal role in the holistic development of students, ensuring they are well-prepared for their future endeavors.

### 1.4.3 Companies

**AOUN** optimizes the registration of co-op programs for companies, simplifying the process of discovering suitable student candidates, sanctioning efficient acceptance or rejection workflows. It enables easy scheduling and conduction of follow-up interviews, all while significantly reducing the reliance on hard copies and signatures for weekly or monthly reviews. This solution is designed to enhance the professionalism and success of co-op program management.

## 1.5 Objectives

**AOUN** goal is to help students find cooperative training easily, as well as help companies find students for training, and this is done by achieving the following objectives:

* Increase the availability of co-op training opportunities for students.
* Decrease the duration it takes for students to find co-op training opportunities.
* Facilitate companies in identifying suitable trainees.
* Enhancement of managing co-op positions for companies.
* Greater three-way communication between organisations, faculty, and students.
* Easy tracking of students’ applications status.
* Enable faculty members to review co-op evaluations efficiently.
* The process of evaluating trainees will be streamlined.
* Enhancement of students’ effectiveness in acquiring practical skills and industry knowledge.
* User friendly UI for navigation and task completion.

## 1.6 Approach

[Explain project approach that will be used for different project aspects.]

In our project, we adopted the waterfall approach, which is a traditional methodology and methodology within the software development life cycle (SDLC). The waterfall model is known for its linear and sequential progression, which ensures that all phases are completed before the next one starts, thus creating a clear structure for our project execution. This method has been proven to be effective in various software engineering and product development projects, making it an ideal choice for achieving our goals.

The reasons why we chose the waterfall approach is that the requirements are clear and well-known, and the solution to our problem is straightforward.



Figure 1.1 Waterfall approach

Planning Phase**:** This stage involves thorough discussions to define our project idea and the problem we aim to solve. We evaluate the system's benefits, drawbacks, and expected performance, aiming to align our goals with user needs and expectations.

Analysis Phase: We then collect system requirements through stakeholder interactions, employing brainstorming, interviews, and questionnaires. Our objective is to create a complete list of requirements, guaranteeing that the final product meets all user necessities.

Design Phase**:** Next, we analyze the requirements to understand them deeply, translating this information into a structured model for guiding subsequent design and development.

Development Phase**:** With a clear understanding of requirements, our development phase involves coding and building the project components as per specifications, focusing on collaboration, problem-solving, and iteration.

Deployment Phase**:** The project is launched in the deployment phase, transitioning it to a real-world setting and marking the start of its operational life. This phase is crucial for delivering our solution.

Our goal throughout the Waterfall model is to maintain high quality and efficiency standards, while delivering a product that exceeds user expectations and effectively solves the identified problem.

## 1.7 Project Scope

[Describe what work is in scope for the graduation project, and specifically what work is out of scope. Boundaries, limitations, assumptions, and/or constraints of the graduation project studies, requirement gathering and the final produced system. Conclude this section with a list of all deliverables to supervisor.]

The project focuses on the development of a comprehensive platform tailored to facilitate the application process for students seeking co-op training programs. This platform will also serve as a registration portal for companies looking to offer co-op opportunities, all under the compass of the IS department. Notably, the platform does not extend to providing graduates with GDP or other similar services.

Communication channels will be established to facilitate three-way interactions between students, companies, and faculty members exclusively. This approach’s goal is to create a focused and efficient system for the management of co-op positions.

To ensure a fair and structured process, students will be required to apply for co-op positions and await acceptance based on their resumes, the platform will not grant students co-op opportunities freely.

A few presumptions have been made when procuring the process of developing the platform, such as the requirement to improve cybersecurity and application development skills to guarantee data security. It is also understood that the platform can have bugs and run into operational issues, demanding ongoing maintenance and development.

Moreover, the platform will be optimized for the use on web browsers, Especially Chrome OS, with the primary language being English. These constraints and specifications are crucial for ensuring the platform's functionality and accessibility to its intended users.

The deliverable will be a fully functioning and comprehensive system designed to manage all aspects of co-op training programs, including student applications, company registrations, and faculty oversight.

## 1.8 Work Breakdown Structure

A screenshot of a chat

Description automatically generated[Based on project approach and scope, break down the work that needs to be done to an appropriated level]

Figure 2 WBS

## 1.9 Gantt Chart (Time Frame)

[Based on the WBS, provide the time needed to complete each activity. You need to submit GP1 final deliverables for evaluation and verification by week 12 of the GP1 course and GP2 final deliverables for evaluation and verification by week 12 of the GP2 course. Weeks 13 and 14 are for closing the project i.e. performing the presentation and submitting the final deliverables after modifications needed after presentation and evaluation.]

## 1.10 Team Member's Responsibilities

[Based on the WBS, assign each team member's responsibilities. One responsible member per task. Other members can be involved, consultant, participated in doing the task if not responsible to do the task.]

# 

# Chapter 2: Background Analysis

## 

## 2.1 Possible Solutions

[Evaluation of at least two **possible solutions** for **your proposed solution** to the general problem initially described in 1.2 by conducting a Cost-benefit Analysis of each solution.]

## 2.2 Overview of Existing systems

[Overview of existing systems that includes their advantages, and disadvantages. This helps clarify the problem and helps in proposing a solution. Demonstrate what your solution needs to take into account (advantage from other existing systems) and what your solution needs to improve/solve (the disadvantages of existing systems).]

## 2.3 Existing Business Processes

[Detailed explanation of the existing business processes followed by your current customer using existing system preferably in BPMN using one chosen reviewed existing system you wish to use as a baseline for your proposed solution or to understand Current Business Process (As-Is)]

## 2.4 Literature review [if applicable]

Summarize and review the publications in journals, conferences, etc. related to your project.

## 

# Chapter 3: Requirements Analysis

## 3.1 Requirement Gathering Summary Results

[For each requirement gathering technique used provide technique structure and summary results of the requirements gathered. Actual tools used and detailed results should be **in the appendix**]

## 3.2 Stakeholder Requirements

[Provide in this section with final stakeholder requirements gathered from all techniques your proposed system needs to satisfy. Stakeholders should be listed and their stakeholder requirements should be clarified in this section. It summarizes each stakeholder needs and expectations of the final system. More details for system and user requirements can be provided **in the Appendix**]

## 3.3 Proposed Business Process

[Detailed explanation of the proposed business processes preferably in BPMN that will be followed by using your proposed system. Proposed Business Process (To-Be)]

## 3.4 Functional Requirements

[Use-case diagram for major functionalities of the system and Use-case descriptions for each use-case. Number of use-case: should be about 5 – 9 use-cases for major functionalities of the system only]

## 3.5 Non-functional Requirements

[Discuss the non-technical issues (such as – response time, compatibility, green-IT, sustainability etc.) of your project]

# 

# References

[A list of references should include all the documents that you refer to or quote from in your own writing. Follow the IEEE citation style. For information on IEEE style visit <https://www.ieee.org/documents/ieeecitationref.pdf> ]

**Examples:**

**Book**

[1] C. Brusaw, C. Aired, and W. Oliu, *Handbook of Technical Writing*, 3rd ed. New

York: St. Martin’s Press, 1987.

**Journal Article**

[2] S.K. Kenue and J.F. Greenleaf, “Limited angle multi-frequency deification tomography,” *IEEE Trans. Sonics Ultrason*., vol. SU-29, no. 6, pp. 213-2 17, July 1982.

**Dissertation or thesis**

[3] B. Tsikos, “Electricity Load Forecasting” Ph.D. dissertation, Univ. of Pennsylvania, BCE Dept., Philadelphia, 1987.

**Proceedings paper**

[4] R. Finkel, R. Taylor, R. Bolles, R. Paul, and J. Feldman, “An overview of programming system for automation,” in the Proc. of the Fourth International Joint Conference in Artificial Intelligence, pp. 758-765, Sept. 3-7, 1975.

**URLs (when author and title is given)**

[5] Fuminao Okumura and Hajime Takagi, “Maglev Guideway On the Yamanashi Test Line,” http://www.rtri.or.jp/rd/maglev2/okumura.html, October 24, 1998.

**URLs (when author and title is not given)**

[6] <http://www.rtri.or.jp/rd/maglev2/okumura.html>[Last accessed October 24, 1998].

# 

# Appendix

[All appendix items shown here must be included]

# A. Miscellaneous

[Includes any further data (for example: interview form, questionnaire form, Interview answers, questionnaire responses, mock interface, remaining figures of data analysis …etc.)]

# B. Presentation Slides

[4 slides per page]

1. Write down your responsibilities in the project [↑](#footnote-ref-1)
2. Must add to 100% [↑](#footnote-ref-2)