University of Jeddah

College of Computer Science and Engineering

جامعة جدة
University of Jeddah

UJ PATHFINDER

empowering success

Software project management

Course Number CCSW-313

Section Y1

Group : 2

Dr. Wed Abozenada

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Introduction

UJ PathFinder is an application designed exclusively for the University of Jeddah community. This platform brings a revolutionary change to the academic journey by offering a centralized solution that benefits students, alumni, faculty, and companies alike. With UJ PathFinder, students can manage their profiles showing their experiences, access and request graduation documents, request recommendations and training letters, and connect with others. The application also serves as a bridge to job opportunities, allowing companies to view student profiles, engage in training programs, and explore potential employment options. By seamlessly integrating education and industry, UJ PathFinder empowers students and propels their career growth, providing them with a comprehensive tool to navigate their academic and professional paths more effectively.

UJ PathFinder also incorporates the feature of displaying the employment rate of University of Jeddah graduates, providing valuable insights into the success of alumni in securing job placements.

Additionally, companies are mandated to allocate a minimum of 2% of their total workforce for annual student training opportunities. This requirement ensures that both companies and students benefit from valuable internship experiences, fostering mutual growth and development within the UJ PathFinder platform.

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Phase 1

1. Business Case Analysis:

1. Introduction/Background

UJ PathFinder is an innovative application designed for the University of Jeddah community, aiming to enhance the academic and professional journey of students, alumni, faculty, and employers. The platform seeks to centralize services such as managing student profiles, facilitating access to graduation documents, enabling recommendation requests, and connecting students with job opportunities.

2. Business Objective

The primary objective of UJ PathFinder is to create an efficient and user-friendly platform that:

- Connects students with internship and job opportunities.
- Facilitates the academic recommendation process.
- Provides a means for tracking internship experiences and accessing employment statistics.
- Enhances communication among users, thereby improving networking and support.

3. Current Situation and Problem/Opportunity Statement

The University of Jeddah currently lacks a centralized platform to connect students, faculty, and employers, leading to significant challenges. Students struggle to obtain academic recommendations and find internship or job opportunities, while faculty face inefficient processes for managing recommendation requests.

This fragmentation results in limited visibility for students in the job market and makes it difficult for employers to identify qualified candidates.

UJ PathFinder presents an opportunity to address these issues by offering a comprehensive platform that streamlines profile management, recommendation requests, and job connections. By enhancing user experience and fostering stronger ties between students and potential employers, UJ PathFinder aims to improve employability and support the academic and professional growth of the university community.

4. Critical Assumptions and Constraints

Assumptions:

- **User Adoption:** Students will actively adopt UJ PathFinder to manage their academic and professional needs, utilizing its features to enhance their career prospects.
- **Employer Engagement:** Companies will participate by actively posting job and internship opportunities and facilitating student connections.
- **Institutional Support:** The University of Jeddah will support the integration of UJ PathFinder with existing systems and processes, ensuring seamless functionality.

Constraints:

- **Budget Limitations:** The development budget will require careful planning and resource allocation to meet project goals.
- **Project Timeline**: The project must be completed within six months, necessitating efficient project management and deadline adherence.
- **Change Resistance:** There may be resistance from faculty and staff who are accustomed to existing processes, highlighting the need for effective change management strategies to encourage the adoption of the new platform.

5. Analysis of Option and Recommendation

1. **Do Nothing:** Maintain the current system and processes.
2. **Outsource Development:** Hire an external vendor to develop the platform.
3. **In-House Development:** Utilize internal resources for development.

Recommendation: Option 3 is recommended as it leverages existing knowledge and resources, fostering collaboration within the university.

6. Preliminary Project Requirements

The main features of the UJ PathFinder platform include the following:

1. **Job and Internship Listings**: Users must be able to access a comprehensive database of job and internship opportunities. Listings should be searchable by various criteria such as job type, location, and field of study. Students should also be able to set up alerts for new opportunities that match their preferences.
2. **Profile Creation and Management**: Students and employers should have the ability to create and manage their profiles. Students can upload resumes, cover letters, and other relevant documents, while employers can provide information about their organizations and job openings.
3. **Academic Recommendation Requests**: The platform should facilitate the process for students to request academic recommendations from faculty. There should be templates and guidelines to help both students and faculty navigate this process efficiently.
4. **Networking Features**: An integrated networking tool that allows students to connect with alumni and industry professionals. This feature should include messaging capabilities, discussion forums, and event announcements to foster community engagement.
5. **User Feedback Mechanism**: A feature that allows users to provide feedback on job listings, academic recommendations, and platform usability. This feedback should be reviewed regularly to implement improvements and enhancements.
6. **Security Protocols**: Appropriate security measures must be in place to ensure that the platform is accessible only to registered users, with specific sections available to employers and faculty as needed.
7. **Mobile Responsiveness**: The platform must be fully functional on mobile devices to ensure accessibility for all users, allowing students and employers to engage with the site on the go.
8. **Additional Features Based on User Input:** The platform should be adaptable to include other features suggested by users that add value to the job placement and networking process.

7. Budget Estimate and Financial Analysis

A preliminary estimate of costs for the entire UJ PathFinder project is 310,000 SAR. This estimate includes the initial cost of 150,000 SAR in the first year, as well as annual maintenance costs of 40,000 SAR in the subsequent years. Additionally, a 15% risk factor has been applied to the overall budget, resulting in a total estimated cost of 310,000 SAR. The cost estimate is based on the project manager working about 20 hours per week for seven months, with other internal staff contributing a total of about 60 hours per week during the same period. The project manager will earn 50 SAR per hour, while the hourly rate for other project team members is 70 SAR, as some hours typically billed to clients will be allocated to this project.

Projected benefits are based on significant time savings for students and faculty, along with improved job placement rates. If each of the 1,000 students saves approximately 15 hours per year using the platform, this results in a total of 15,000 hours saved annually. At a conservative valuation of 10 SAR per hour, this translates to a projected benefit of 150,000 SAR per year. Additionally, if the platform leads to a 5% increase in job placements, this could generate an extra 100,000 SAR annually from increased enrollment and partnerships with local employers. Therefore, the total projected benefits amount to approximately 250,000 SAR per year.

Exhibit A summarizes the projected costs and benefits, providing details on the estimated net present value (NPV), return on investment (ROI), and the payback period for the project. The financial estimates are encouraging, The NPV is projected to be significantly positive, indicating a strong return on investment.

8. Schedule Estimate

The UJ PathFinder project is strategically planned for completion within a **six-month** timeframe, with built-in flexibility to accommodate any unforeseen challenges. Key milestones will facilitate progress monitoring and maintain transparent communication among stakeholders. The schedule considers the long-term viability of the system, assuming a useful life of at least **three years** to ensure sustainability and scalability.

Month 1: Requirements specification.

Months 2-3: Development of the platform.

Months 4-5: Validation and testing.

Month 6: Deployment and user training.

9. Potential Risks

The UJ PathFinder project carries several potential risks. The foremost risk is a lack of engagement and interest from students and faculty in utilizing the new platform. User adoption is critical for the system to function effectively and to achieve the anticipated benefits. Additionally, there are technical risks associated with selecting the appropriate technologies for system development, including challenges related to data security, user interface design, and integration with existing university systems. While the project will utilize proven technologies, unforeseen technical issues may still arise.

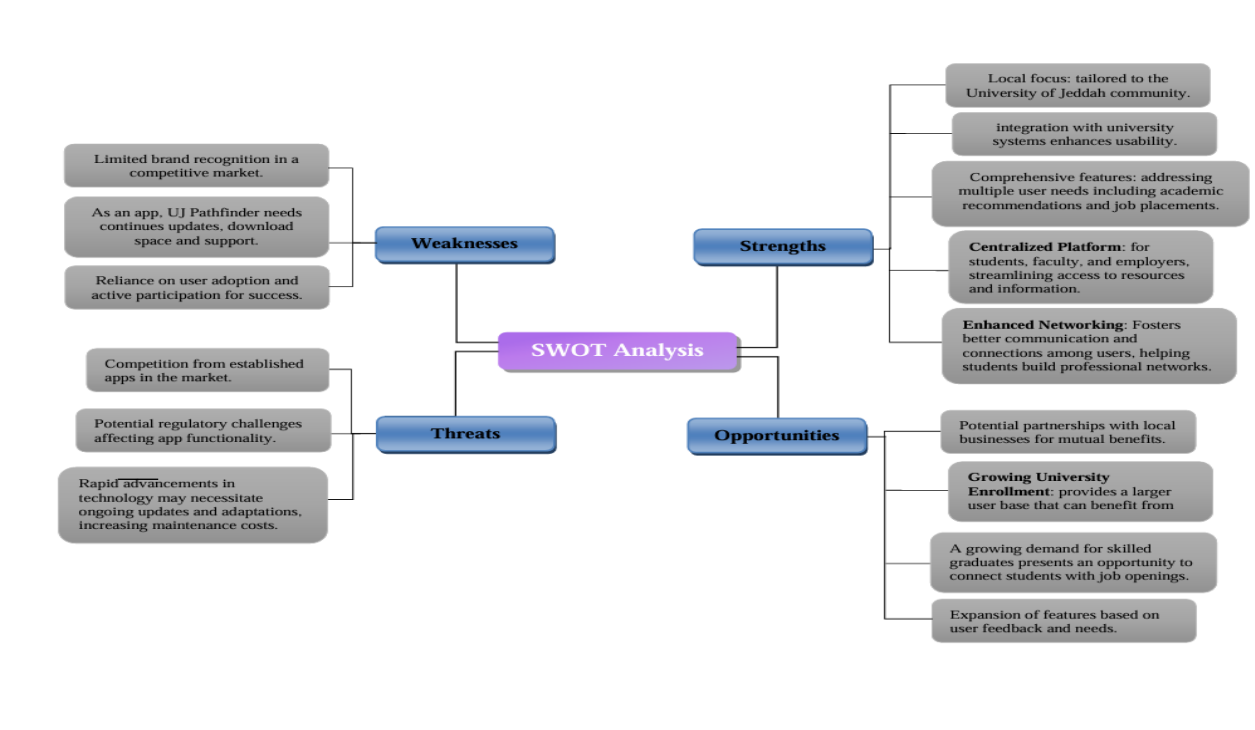
10.Exhibits

Exhibit A: Financial Analysis for UJ PathFinder Project

	A	B	C	D	E	F	G
1	**Financial Analysis for UjPathFinder**						
2							
3							
4	**Discount rate**	8.00%					
5							
6	Assume the project is completed in Year 0			Year			
7		0	1	2	3	Total	
8	Costs	150,000	40,000	40,000	40,000		
9	Discount factor	1.00	0.93	0.86	0.79		
10	**Discounted costs**	**150,000**	**37,200**	**34,400**	**31,600**	**253,200**	
11							
12	Benefits	0	250,000	250,000	250,000		
13	Discount factor	1.00	0.93	0.86	0.79		
14	**Discounted benefits**	**0**	**232,500**	**215,000**	**197,500**	**645,000**	
15							
16	Discounted benefits - costs	(150,000)	195,300	180,600	165,900	**391,800**	← **NPV**
17	Cumulative benefits - costs	(150,000)	45,300	225,900	391,800		
18							
19	**ROI** →	**155%**					
20			**Payback in Year 1**				
21	**Assumptions**						
22	Initial costs are incurred at the start (Year 0). Benefits accrue starting Year 1 after the system becomes operational. Constant benefits growth reflecting increased adoption and usage over time. Costs are limited to maintenance post-initial implementation. Discount rate reflects the expected return on investment, set at 8% based on economic conditions and project risk.						

	A	B	C	D	E	F	G
1	**Dis rate**	10%					
2							
3	**project1**	**year1**	**year2**	**year3**	**year4**	**Year5**	**total**
4	**Ben**	$0.00	$250,000.00	$250,000.00	$250,000.00	$250,000.00	$1,000,000.00
5	**cost**	$150,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$310,000.00
6	**cash flow**	-$150,000.00	$210,000.00	$210,000.00	$210,000.00	$210,000.00	$690,000.00
7	**npv**	**$468,792.49**					
8							

2. SWOT Analysis



3. Software Requirement Specification Document (SRS):

Introduction:

System Overview:

UJPathFinder is an innovative web-based application designed to enhance the academic and professional experiences of students and alumni at the University of Jeddah. The primary purpose of the system is to serve as a centralized platform that connects students, alumni, faculty, and potential employers. It facilitates the management of user profiles, the request and retrieval of academic documents, the solicitation of recommendations, and access to internship and job opportunities. By streamlining these processes, UJPathFinder aims to create a cohesive ecosystem that supports educational and career advancement for its users.

Operating Environment:

The UJPathFinder application will operate in a web-based environment, accessible on various devices, including desktop computers, laptops, tablets, and smartphones. The system will have the following specifications

Optimal Configuration:

- **Hardware:**
  - Processor: Dual-core 2.5 GHz or higher
  - RAM: 8 GB or more
  - Storage: Solid State Drive (SSD) with 256 GB or more

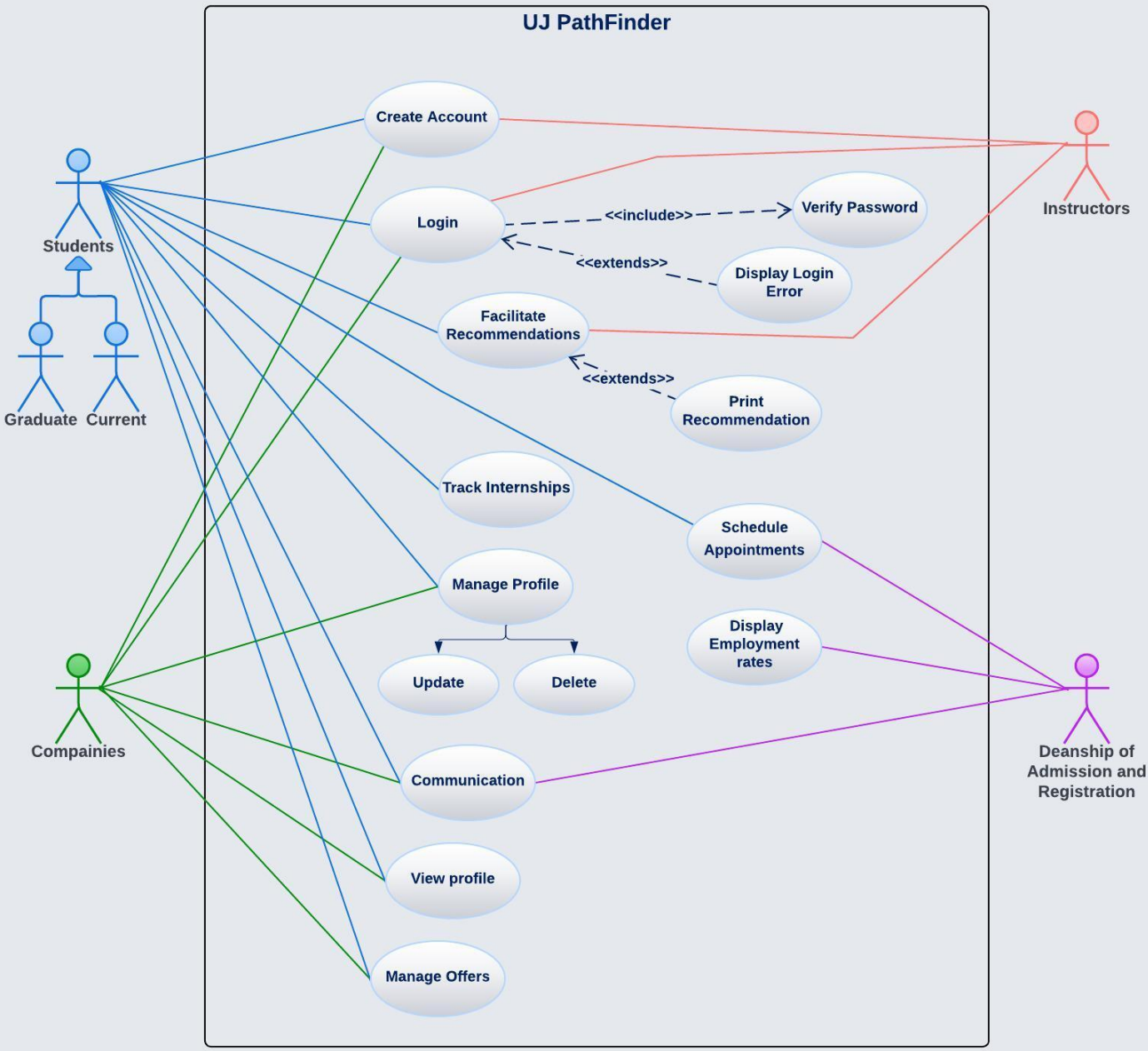
- **Software:**
  - Operating System: Windows 10 or later, macOS Mojave or later
  - Web Browser: Latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, or Safari
  - Internet Connection: High-speed broadband (minimum 10 Mbps)

Minimal Configuration:

- **Hardware:**
  - Processor: Single-core 1.5 GHz
  - RAM: 4 GB
  - Storage: Hard Disk Drive (HDD) with 128 GB

- **Software:**
  - Operating System: Windows 7 or later, macOS High Sierra or later
  - Web Browser: Latest versions of supported browsers
  - Internet Connection: Standard broadband (minimum 3 Mbps)

Conceptual Model:



Functional Requirements :

FR 1. User Registration and Authentication

- FR 1.1. User Registration
    - FR 1.1.1. User Registration Page
    - FR 1.1.2. Email Verification
- FR 1.2. User Authentication
    - FR 1.2.1. User Authentication
    - FR 1.2.2. Password Reset
        - FR 1.2.2.1. Reset Password via Email
    - FR 1.2.3. Password Reset Confirmation

FR 2. User Profile Management

- FR 2.1. Personal Information Management
    - FR 2.1.1. Profile Details Update
    - FR 2.1.2. Profile Details Delete

FR 3. Recommendation Management

- FR 3.1. Facilitate Recommendations
- FR 3.2. Print Recommendation

FR 4. Job and Internship Opportunities

- FR 4.1. Manage Offers
- FR 4.2. Track Internships

FR 5. Communication

- FR 5.1. View Profile
- FR 5.2. Communication with Companies
- FR 5.3. Messaging and Notifications

FR 6. Appointment Scheduling

- FR 6.1. Schedule Appointments
- FR 6.2. View Available Time Slots

FR 7. Data Display

- FR 7.1. Display Employment Rates
- FR 7.2. View Internship Tracking Data

Non-Functional Requirements (Quality Specification):

NFR 1. Accessibility Features

The application must include accessibility options for users with disabilities, ensuring compliance with relevant standards.

NFR 2. Development Requirements

NFR 2.1. Robust Security Measures

The system must implement strong security protocols to protect user data and ensure that personal information is accessible only to authorized users.

NFR 2.2. User-Friendly Interface

The platform must feature an intuitive and visually appealing interface that enhances user experience.

NFR 2.3. Testing Strategy

A comprehensive testing strategy must be implemented, including unit, integration, system, and user acceptance testing.

NFR 3. Performance Requirements

NFR 3.1. Concurrent Users

The system must support at least 500 concurrent users without performance degradation.

NFR 3.2. Response Time

The system shall respond to user requests within 2 seconds for 95% of interactions.

NFR 4. Foreseeable Non-Functional Changes

NFR 4.1. Scalability

The system may need to scale to support increased user loads as the university expands its offerings.

NFR 4.2. Technology Updates

Future updates may require integration with new technologies, such as cloud services.

NFR 4.3. User Needs Evolution

User needs may evolve, necessitating enhancements in user experience and accessibility features.

Use Case Description:

UC1: Create account

Scope: UJ PathFinder Users

Level: The system enables the users to create an account.

Primary Actor: Student, Companies, Instructors.

Preconditions :

- The user must not have an existing account with the same username or email.
- Provided username and email must be valid and unique.
- The password must meet security requirements (e.g., minimum length, special characters).

Stakeholders and Interests:

- Students, Companies, Instructors, and the deanship.

Scenario of UC1:

- The user downloads the application.
- The user creates accounts in the system.

UC2: Schedule Appointments

Scope: Student, Deanship, and the system.

Level: The students make an appointment with the deanship

Primary Actor: Students

Preconditions:

The student must have a valid account in the system.

The Deanship must have available time slots for appointments.

Stakeholders and Interests:

- Students and the deanship

Scenario of UC2:

- The system displays the available time slots for appointments.
- The student selects a preferred time slot.
- If the time slot is available, the system confirms the appointment and sends a confirmation to the student.
- The system notifies the Deanship about the scheduled appointment.

UC3: Facilitate Recommendations

Scope: Students, Instructors, and the system.

Level: facilitate recommendations operation.

Primary Actor: students, Instructors.

Precondition:

- After login, the student Should have a valid academic connection or affiliation with the instructors to access the recommendation section.

Stakeholders and Interests:

- Students, and instructors.

Scenario of UC3 :

- The user downloads the application.
- The user creates accounts in the system.
- The user accesses the recommendation section to request a recommendation letter from instructors or view their recommendations.

UC4: Track Internships

Scope: Students and the system**.**

Level: The system allows students to track and manage their internship experiences.

Primary Actor: Students

Precondition:

- The student and the company must have a valid account in the system.
- The student must have an active internship with a company.

Stakeholders and Interests:

- Students, Companies, and the deanship.

Scenario of UC4:

- The system provides a feature for tracking internships.
- The system displays the student's active internships.
- The system provides information about the internship, such as start date, end date, tasks, and mentor details.
- The system allows the student to update the progress of their internship, such as completed tasks or milestones.

UC5: Communication

Scope: students, companies, the deanship.

Level: allows students to communicate with companies, the deanship, or other students.

Primary Actor: students.

Precondition:

- The student and company must have a valid account in the system.

Stakeholders and Interests:

- Students (current and graduates), companies, and the deanship.

Scenario of UC5 :

- The system provides a communication interface.
- Students can initiate communication with other students, companies, or the deanship by selecting the desired recipient.
- Students are interested in communicating with graduate students for academic guidance and mentorship. They are also interested in communicating with companies for internships, job opportunities, or networking purposes.
- The system facilitates communication by providing messaging or chat functionality.
- The system notifies the sender of any new messages or responses.
- The communication continues until both parties conclude the conversation.

UC6: Manage Offers

Scope: Students, Companies, and the system.

Level: allows students to receive offers from companies.

Primary Actor: students, companies.

Precondition:

- The student and company must have a valid account in the system.

Stakeholders and Interests:

- Students, and Companies.

Scenario of UC6 :

- Students and companies log in to their accounts.
- Companies see a profile they like so they send job/training offers.
- Students receive the company's offer in the offers section and choose to accept or decline.

4. Stakeholder Register for UJ PathFinder:

Name	Position	Internal/External	Project Role	Contact Information
Dr. Wed Abozenada	Main Potential Investor	Internal	Provide specialized services	Waz@uj.edu.sa
University of Jeddah	Potential Investor	Internal	Provide funding, guidance, and support	info@uj.edu.sa
Deema Alshehri	Software Developer	Internal	Developer	DeemaAlshehri@UJPathFinder.edu.sa
Maryam Alotaibi	Subcontractor	External	Provide specialized services	MaryamAlotaibi@hotmail.com
Market & Content Team	Marketing and Content Team	Internal	Create content and execute marketing strategies	Marketing@vitafit.com
Technical Team	Technical Team	Internal	Create content and execute marketing strategies.	Support@vitafit.com
Develop & Test team	Development and Testing team	Internal	Develop app. Bugs testing.	Developers@vitafit.com
Layan Kandil	Project Lead	Internal	Provide strategic decision-making	layanKandil@UJPathFinder.edu.sa
Mashaer Aldeghalbi	User Experience Designer	Internal	UX Designer	maldeghalbi@UJPathFinder.edu.sa
Yara Alamri	Business Analyst	Internal	Analyst	YaraAlamri@UJPathFinder.edu.sa
Deanship of Admissions and Registration	University Department	Internal	Operational Support	admissions@uj.edu.sa
Ministry of Education	Government Agency	External	Regulatory Oversight	info@moe.gov.sa

5. Stakeholder Management Strategy for UJ PathFinder:

Prepared by: Group 2 **Date: 06/11/2024**

Name	Level of Interest	Level of Influence	Potential Management Strategies
Dr. Wed Abu Zanadah	High	High	Regular updates, progress reports, financial summaries
University of Jeddah	High	High	Regular updates, progress reports, strategic meetings
Deema Alshehri	High	Medium	Involvement in the development process, regular feedback sessions
Maryam Alotaibi	Medium	Medium	Clear contracts, regular performance reviews, communication
Market & Content Team	High	High	Collaborative planning sessions, regular updates on marketing
Layan Kandil	High	High	Strategic decision-making sessions, regular progress updates
Mashaer Aldeghalbi	Medium	Medium	Design reviews, regular feedback sessions, involvement in testing
Technical Team	High	High	Frequent meetings, training sessions, collaborative problem-solving
Develop & Test Team	High	High	Agile methodology, regular sprints, and reviews
Yara Alamri	High	Medium	Regular performance evaluations, data analysis input
Deanship of Admissions	Medium	Medium	Operational support meetings, regular updates on admissions
Ministry of Education	Medium	High	Compliance updates, regular communication regarding regulations

6. Project Management Charter:

Project Title: UJ Pathfinder **Project Start Date:** 6/11/2024 **Projected Finish Date:** 27/7/2025

Budget Information: The project budget is set at 150,000 SAR primarily allocated for software development, marketing, and promotional activities.

Project Manager: Layan Kandil ,0557859333, layanKandil@UjPathFinder.edu.sa

Project Objectives:

Develop and launch the UJ PathFinder application, enabling students at the University of Jeddah to manage their profiles, request academic recommendations, access training opportunities, and connect with potential employers. The app aims to enhance communication within the University of Jeddah community and facilitate the transition from academic to professional life.

Main Project Success Criteria: The project should achieve a user adoption rate of at least 70% among target users within three months post-launch and generate measurable engagement metrics, such as the number of recommendations processed, and job placements facilitated.

Approach:

- Conduct comprehensive market research to assess the needs and preferences of students and employers.
- Develop prototypes and perform user testing to refine features based on feedback.
- Collaborate with university faculty, career services, and industry partners to ensure the app meets educational and professional standards.
- Implement strong security protocols to protect user data and privacy.

Roles and Responsibilities:

Role	Name	Organization/ Position	Contact Information
Project Manager	Layan Kandil	UJ PathFinder, Project Manager	layanKandil@UJPathFinder.edu.sa
Sponsor	Dr. Wed Abu-zanadah	UJ PathFinder, Investor	Waz@UJPathFinder.edu.sa
Team Member	Deema	UJPathFinder, Senior Developer	Deema@UJPathFinder.com
Advisor	Dr. Omniya Wajeeh	UJ PathFinder, University Faculty, Client representative	omniyawajeeh@UJPathfinder.edu.sa
Advisor	Aryam Alotaibi	UJ PathFinder, Graduated Student , Client representative	Aryam@UJPathFinder.com

Sign-off:

Comments: "Please note that the scope excludes any modifications to existing backend systems. Any changes to backend functionality will require separate approval and budget allocation."

7. Kick-off Meeting:

Date: 6 November

Project Name: UJPathFinder

Meeting Objective: Get the project off to a great start by introducing key stakeholders, reviewing project goals, and discussing future plans.

Agenda:

- Welcome and Introduction
- Review of the project background
- Discussion of the project idea
- Identify stakeholders
- Review of Project Goals
- Discussion of project organizational structure
- Discussion of project scope, time, and cost goals
- Discuss the required features in UjPathFinder application design.
- List of action items from the meeting.

Action Item	Assigned To	Due Date
Communicate with stakeholders	Mashaer Aldeghelbi	21 January
Financial analysis	Layan Kandil	22 January
Initial design of the interface	Deema Alshehri	20 December

Date and time of next meeting:

Saturday 1 February 2025

11:00 am-1:00 pm

Phase 2

8. Scope Statement:

Project Title: UJ PathFinder **Date: 07/11/2024** **Prepared by: Group2**

Project Justification:

The UJ PathFinder project addresses a critical issue within the Jeddah University community: the absence of a centralized platform that effectively connects students, alumni, faculty, and companies. This gap creates inefficiencies and hampers access to essential resources and opportunities. The UJ PathFinder program seeks to resolve practical challenges such as the cumbersome process of obtaining academic recommendations, difficulties in connecting students with job prospects, delays in receiving graduation documents, challenges in locating cooperative training opportunities, and inadequate integration between education and industry. By enhancing communication, streamlining operations, and facilitating valuable career opportunities for students and alumni, UJ PathFinder aims to deliver an effective solution. The project budget is set at **310,000 SAR**, including a risk factor of 15% with an expected annual maintenance cost of **40,000 SAR** after completion. The anticipated benefits are projected at **250,000 SAR** annually, underscoring the system's potential to pay for itself within the first year of implementation.

Product Characteristics and Requirements:

1. **Centralized Platform**: The UJ PathFinder will serve as a unified platform that connects students, alumni, faculty, and companies, facilitating seamless communication and collaboration.
2. **User-Friendly Interface**: The application must feature an intuitive and accessible interface that allows users to navigate easily and access the resources they need without technical difficulties.
3. **Academic Recommendations**: The platform will provide a streamlined process for students to request and obtain academic recommendations from faculty members, ensuring timely support for job applications and further studies.
4. **Job Matching**: A job matching feature will connect students with relevant job opportunities based on their skills, interests, and career goals, including internships and co-op placements.
5. **Graduation Document Management**: The system will automate the processing and distribution of graduation documents, reducing delays and ensuring students receive their documents promptly.

6. **Cooperative Training Opportunities**: The platform will include a database of cooperative training opportunities, making it easier for students to find hands-on experience in their field of study.
7. **Integration with Industry**: UJ PathFinder will foster partnerships with local companies and organizations, ensuring that the platform aligns educational outcomes with industry needs.
8. **Feedback Mechanism**: A built-in feedback mechanism will allow users to provide input on the platform's functionality and content, enabling continuous improvement based on user needs.
9. **Mobile Accessibility**: The platform must be optimized for mobile devices, ensuring users can access resources and opportunities on the go.
10. **Data Security and Privacy**: Robust security measures will be implemented to protect user data and ensure privacy, complying with relevant regulations and best practices.
11. **Analytics and Reporting**: The system will include analytics capabilities to track user engagement and measure the effectiveness of the platform in connecting students and alumni with career opportunities.
12. **24/7 Availability**: UJ PathFinder will be accessible 24 hours a day, 7 days a week, with scheduled maintenance windows communicated in advance to users.
13. **Technical Support**: Reliable technical support will be available to assist users with any issues they encounter while using the platform.

Summary of Project Deliverables

Project management-related deliverables: business case, charter, team contract, scope statement, WBS, schedule, cost baseline, status reports, final project presentation, final project report, lessons learned report, and any other documents required to manage the project.

Product-related deliverables:

1. **User Research Report**: Identify needs and preferences of users for platform features.
2. **Design Documents**: Create wireframes and specifications for the platform.
3. **Software Development**: Build the UJ PathFinder application and integrate required features.
4. **UX Prototypes**: Develop interactive prototypes for user feedback.

5. **UI Design**: Finalize visual design elements for a user-friendly experience.
6. **Testing Plan**: Outline testing strategies, including unit and user acceptance tests.
7. **Maintenance Documentation**: Provide guides for ongoing support and troubleshooting.
8. **Job Matching Feature**: Implement a system to connect students with relevant job opportunities.
9. **Opportunity Database**: Create a database of job listings and internships.
10. **Feedback System**: Enable users to submit feedback for continuous improvement.
11. **Analytics Dashboard**: Track user engagement and key performance indicators.
12. **Training Materials**: Develop tutorials and guides for effective platform use.
13. **Marketing Strategy**: Plan promotional activities to increase user adoption.

Project Success Criteria:

The UJ PathFinder project aims to be completed within a timeline of Seven months, adhering to a budget not exceeding 310,000 SAR. It is crucial that the project generates sufficient benefits to cover its costs within the first year of operation. To achieve this, the platform must effectively support user engagement and meet the needs of both students and faculty. Additionally, a robust framework for measuring benefits must be established during the development phase and continue through testing and post-launch. While timely completion and adherence to budget are essential, the project will also be deemed successful if it contributes positively to the university's reputation and enhances job placement rates, even if minor delays or budget overruns occur.

9. Work Breakdown Structure (WBS):

Project Name: UJ PathFinder **Prepared by:** Group2 **Date:** 07/11/2024

1. Planning

1.1.Budget Planning

- 1.1.1. Estimate Costs of app development
- 1.1.2. Develop Cost Baseline

1.2. Risk Management Planning

- 1.2.1. Identify Risks
- 1.2.2. Develop Risk Mitigation Strategies

1.3. Develop Testing Plan

2. Design and Development

2.1. Conduct User Research

- 2.1.1. Surveys and Interviews
- 2.1.2. Data Analysis

2.2.Platform Design

- 2.2.1. Create Wireframes5
- 2.2.2. Develop UI/UX Prototypes

2.3.Prototypes Creation

- 2.3.1. Develop Front-end Prototype
- 2.3.2. Develop Back-end Prototype
- 2.3.3. Prototypes Creation complete

2.4. Software Development

- 2.4.1. Implement Front-end Functionality
- 2.4.2. Implement Back-end Functionality
- 2.4.3. Integrate Front-end and Back-end
- 2.4.4. Develop Using Node.js
- 2.4.5. Implement Core Application Features
- 2.4.6. Optimize and Integrate Database

2.5. Testing and Quality Assurance

- 2.5.1. Conduct User Acceptance Testing
- 2.5.2. Conduct Unit Testing
- 2.5.3. Perform Integration Testing

3. Operational Management and Maintenance

3.1.Set up Customer Support for App Users

3.2. Plan for Regular App Updates

4. Implementation

4.1. Deploy Platform

4.2. Conduct Training Sessions

4.3. Launch Marketing Campaign

5. Monitoring and Control

5.1.Track Project Progress

5.1.1. Update Status Reports

5.1.2. Hold Regular Team Meetings

5.2.Manage Risks

5.2.1. Monitor Risk Mitigation

5.3.Gather User Feedback

5.3.1. Analyze Feedback for Improvements

5.4. Manage Change Requests

6. Closure

6.1. Finalize Deliverables

6.2. Conduct Final Project Review

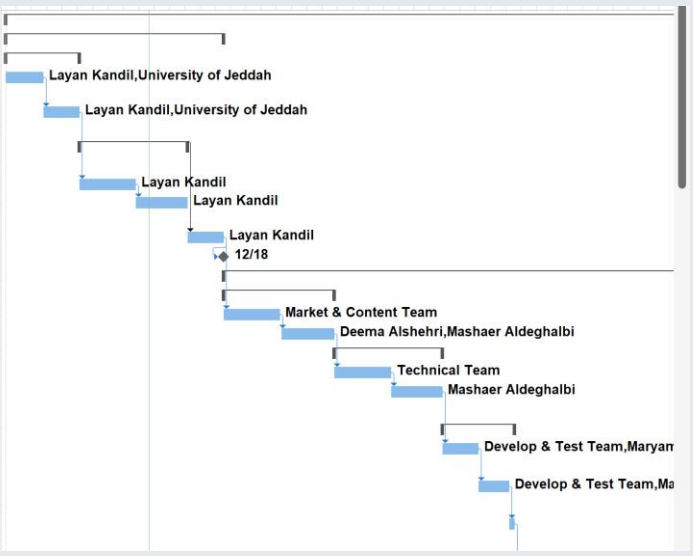
6.3. Document Lessons Learned

6.4.Release Project Resources

10. Gantt Chart (Scope Management)

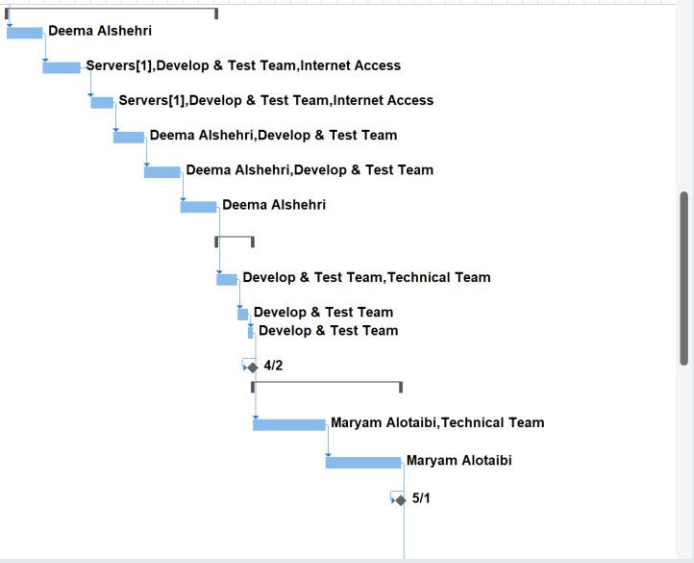
GANTT CHART

		Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**UJPathFinder Development**	**183 days**	**Wed 11/6/24**	**Sun 7/27/25**		
2		**Planning**	**30 days**	**Wed 11/6/24**	**Wed 12/18/24**		**Layan Kandil,University of**
3		**Budget Planning**	**10 days**	**Wed 11/6/24**	**Wed 11/20/24**		**Layan Kandil,University of**
4		Estimate Costs of app development	5 days	Wed 11/6/24	Wed 11/13/24		Layan Kandil, University of Jeddah
5		Develop Cost Baseline	5 days	Wed 11/13/24	Wed 11/20/24	4	Layan Kandil, University of Jeddah
6		**Risk Management Planning**	**15 days**	**Wed 11/20/24**	**Wed 12/11/24**		**Layan Kandil**
7		Identify Risks	7 days	Wed 11/20/24	Sun 12/1/24	5	Layan Kandil
8		Develop Risk Mitigation Strategies	8 days	Sun 12/1/24	Wed 12/11/24	7	Layan Kandil
9		**Develop Testing Plan**	5 days	Wed 12/11/24	Wed 12/18/24	6	Layan Kandil
10		Planning complete	0 days	Wed 12/18/24	Wed 12/18/24	9	
11		**Design and Development**	**73 days**	**Wed 12/18/24**	**Wed 4/2/25**		**Deema Alshehri,Mashaer A**
12		**Conduct User Research**	**15 days**	**Wed 12/18/24**	**Thu 1/9/25**		**Market & Content Team**
13		Surveys and Interviews	7 days	Wed 12/18/24	Sun 12/29/24	9	Market & Content Team
14		Data Analysis	8 days	Mon 12/30/24	Thu 1/9/25	13	Deema Alshehri,Mashaer Al
15		**Platform Design**	**15 days**	**Thu 1/9/25**	**Thu 1/30/25**		**Mashaer Aldeghalbi**
16		Create Wireframes	7 days	Thu 1/9/25	Mon 1/20/25	14	Technical Team
17		Develop UI/UX Prototypes	8 days	Mon 1/20/25	Thu 1/30/25	16	Mashaer Aldeghalbi
18		**Prototypes Creation**	**10 days**	**Thu 1/30/25**	**Thu 2/13/25**		**Maryam Alotaibi**
19		Develop Front-end Prototype	5 days	Thu 1/30/25	Thu 2/6/25	17	Develop & Test Team, Maryam Alotaibi
20		Develop Back-end Prototype	4 days	Thu 2/6/25	Wed 2/12/25	19	Develop & Test Team, Maryam Alotaibi
21		Prototypes Creation complete	1 day	Wed 2/12/25	Thu 2/13/25	20	



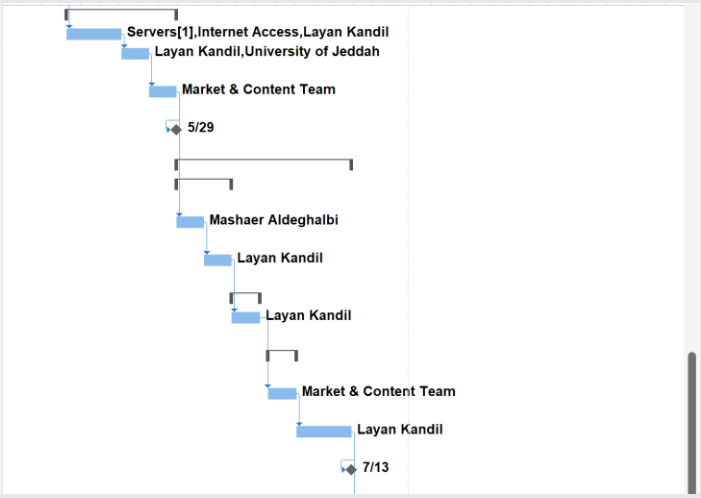
GANTT CHART

		Task Name	Duration	Start	Finish	Predecessors	Resource Names
22		**Software Development**	**28 days**	**Thu 2/13/25**	**Wed 3/26/25**		**Deema Alshehri,Develop &**
23		Implement Front-end Functionality	5 days	Thu 2/13/25	Thu 2/20/25	21	Deema Alshehri
24		Implement Back-end Functionality	5 days	Thu 2/20/25	Thu 2/27/25	23	Servers[1], Develop & Test Team,Int
25		Integrate Front-end and Back-end	4 days	Sun 3/2/25	Thu 3/6/25	24	Servers[1], Develop & Test Team,Int
26		Develop Using Node.js	4 days	Thu 3/6/25	Wed 3/12/25	25	Deema Alshehri, Develop & Test Team
27		Implement Core Application Features	5 days	Wed 3/12/25	Wed 3/19/25	26	Deema Alshehri, Develop & Test Team
28		Optimize and Integrate Database	5 days	Wed 3/19/25	Wed 3/26/25	27	Deema Alshehri
29		**Testing and Quality Assurance**	**5 days**	**Wed 3/26/25**	**Wed 4/2/25**		**Develop & Test Team**
30		Conduct User Acceptance Testing	2 days	Wed 3/26/25	Sun 3/30/25	28	Develop & Test Team, Technical Team
31		Conduct Unit Testing	2 days	Sun 3/30/25	Tue 4/1/25	30	Develop & Test Team
32		Perform Integration Testing	1 day	Tue 4/1/25	Wed 4/2/25	31	Develop & Test Team
33		Design complete	0 days	Wed 4/2/25	Wed 4/2/25	32	
34		**Operational Management and Maintenance**	**20 days**	Wed 4/2/25	**Thu 5/1/25**		**Technical Team, Maryam Alotaibi**
35		Set up Customer Support for App Users	10 days	Wed 4/2/25	Wed 4/16/25	32	Maryam Alotaibi, Technical Team
36		Plan for Regular App Updates	10 days	Wed 4/16/25	Thu 5/1/25	35	Maryam Alotaibi
37		Operational Management and Maintenance completed	0 days	Thu 5/1/25	Thu 5/1/25	36	



GANTT CHART

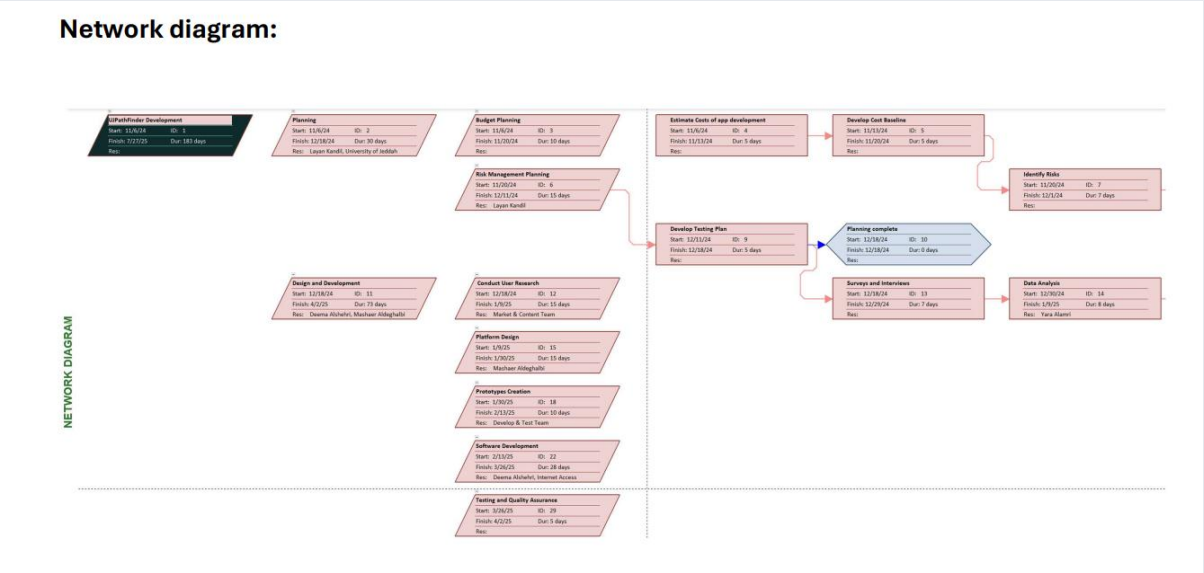
38	**Implementation**	**20 days**	Thu 5/1/25	**Thu 5/29/25**		**Layan Kandil**
39	Deploy Platform	10 days	Thu 5/1/25	Thu 5/15/25	36	Servers[1],Internet Acces
40	Conduct Training Sessions	5 days	Thu 5/15/25	Thu 5/22/25	39	Layan Kandil, University of Jeddah
41	Launch Marketing Campaign	5 days	Thu 5/22/25	Thu 5/29/25	40	Market & Content Team
42	implementation completed	0 days	Thu 5/29/25	Thu 5/29/25	41	
43	**Monitoring and Control**	**30 days**	Thu 5/29/25	**Sun 7/13/25**		**Layan Kandil,Mashaer Alde**
44	**Track Project Progress**	**10 days**	Thu 5/29/25	**Thu 6/12/25**		**Layan Kandil**
45	Update Status Reports	5 days	Thu 5/29/25	Thu 6/5/25	41	Mashaer Aldeghalbi
46	Hold Regular Team Meetings	5 days	Thu 6/5/25	Thu 6/12/25	45	Layan Kandil
47	**Manage Risks**	**5 days**	Thu 6/12/25	**Thu 6/19/25**		**Layan Kandil**
48	Monitor Risk Mitigation	5 days	Thu 6/12/25	Thu 6/19/25	46	Layan Kandil
49	**Gather User Feedback**	**5 days**	Sun 6/22/25	**Sun 6/29/25**		**Market & Content Team**
50	Analyze Feedback for Improvements	5 days	Sun 6/22/25	Sun 6/29/25	48	Market & Content Team
51	**Manage Change Requests**	10 days	Sun 6/29/25	Sun 7/13/25	50	Layan Kandil
52	Monitoring and control completed	0 days	Sun 7/13/25	Sun 7/13/25	51	

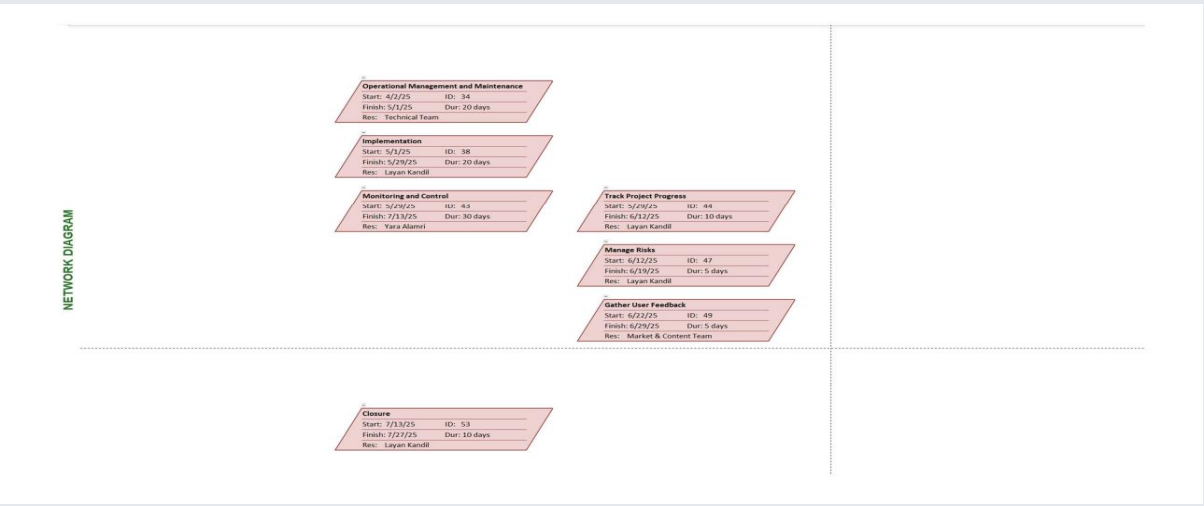


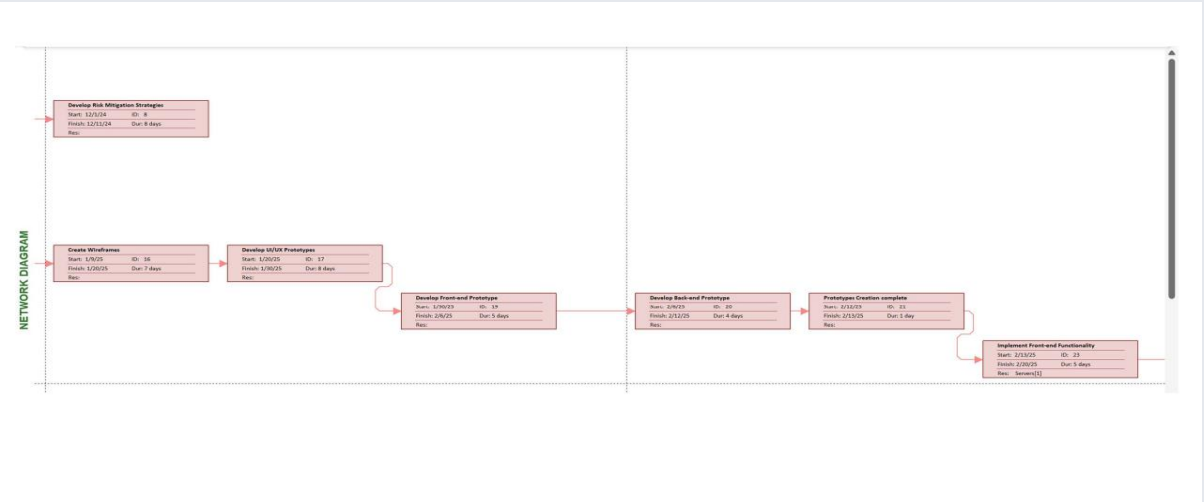
53	**Closure**	**10 days**	Sun 7/13/25	**Sun 7/27/25**		**Layan Kandil,Deema Alshe**
54	Finalize Deliverables	3 days	Sun 7/13/25	Wed 7/16/25	51	Deema Alshehri,Layan K
55	Conduct Final Project Review	3 days	Wed 7/16/25	Mon 7/21/25	54	Layan Kandil
56	Document Lessons Learned	2 days	Mon 7/21/25	Wed 7/23/25	55	Deema Alshehri
57	Release Project Resources	2 days	Wed 7/23/25	Sun 7/27/25	56	Layan Kandil
58	Closure complete	0 days	Sun 7/27/25	Sun 7/27/25	57	
59	UJPathFinder Development completed	0 days	Sun 7/27/25	Sun 7/27/25	58	

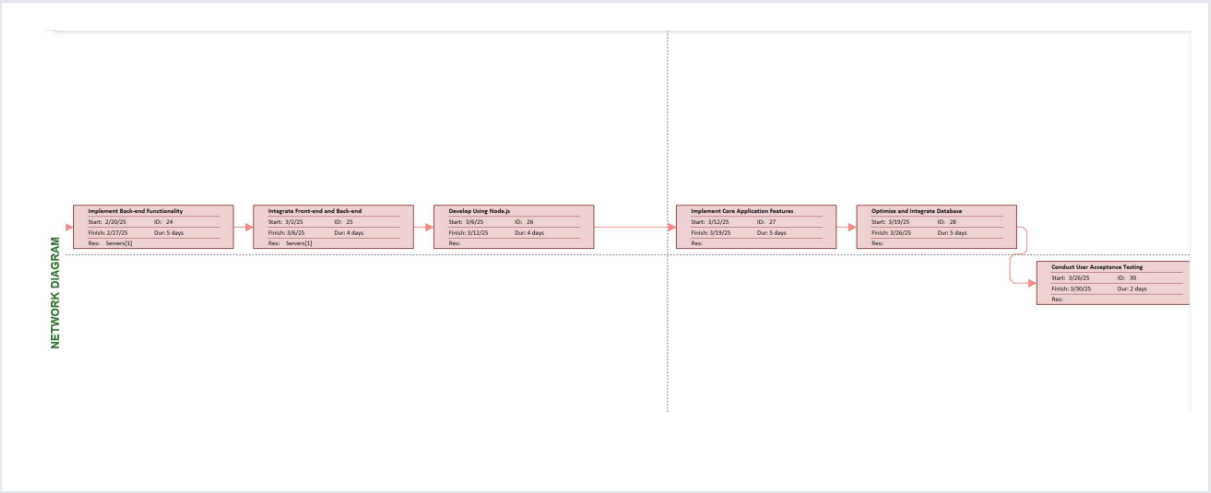
11. Activities Network Diagram (Schedule Management)

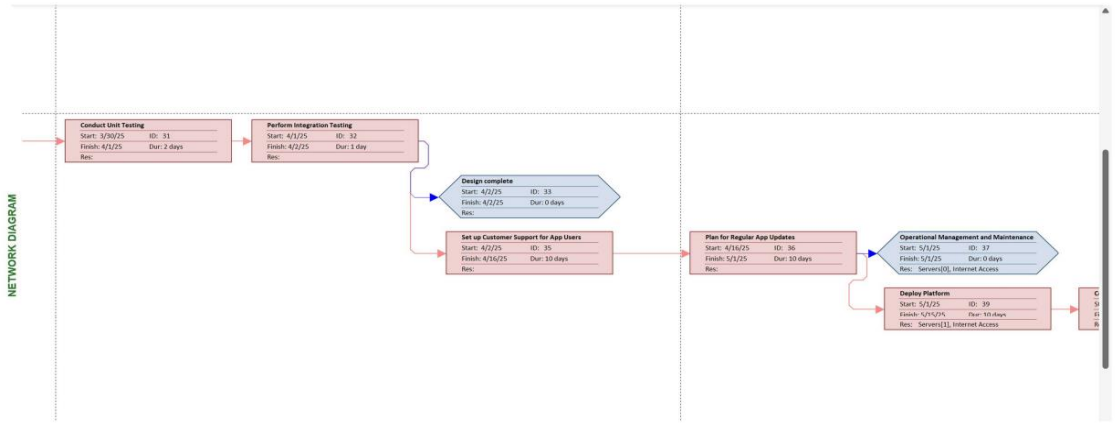
Network diagram:

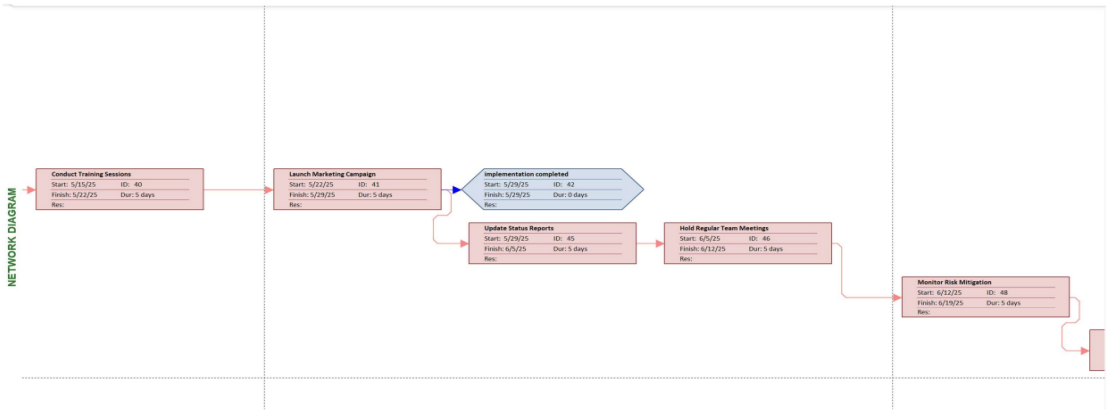


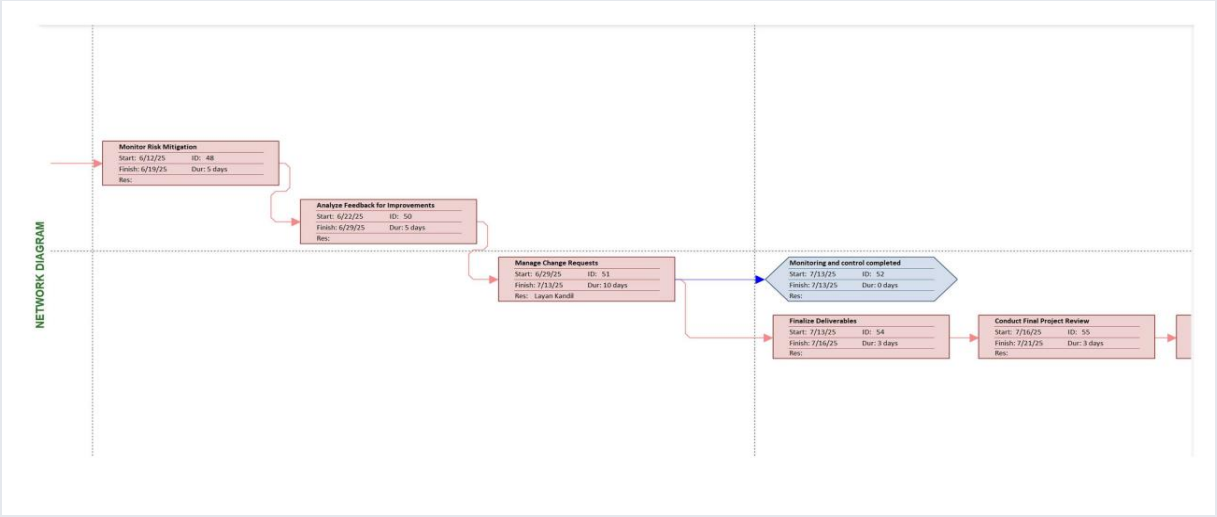


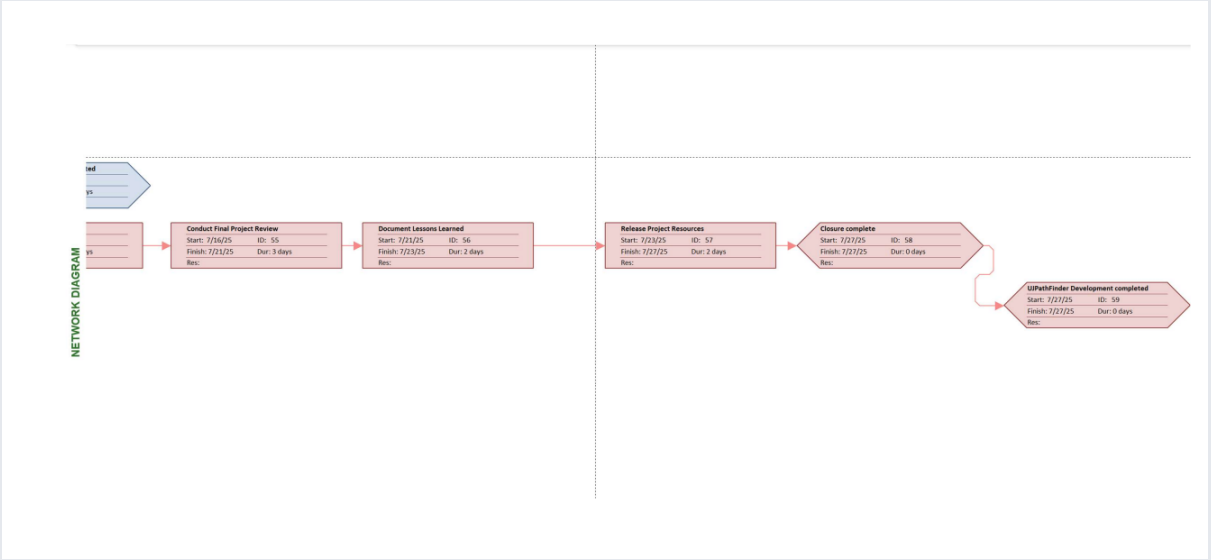



NETWORK DIAGRAM
Implement Back-end Functionality
Start: 2/20/25 ID: 24
Finish: 2/27/25 Dur: 5 days
Res: Servers[1]
Integrate Front-end and Back-end
Start: 3/2/25 ID: 25
Finish: 3/6/25 Dur: 4 days
Res: Servers[1]
Develop Using Node.js
Start: 3/6/25 ID: 26
Finish: 3/12/25 Dur: 4 days
Res:
Implement Core Application Features
Start: 3/12/25 ID: 27
Finish: 3/19/25 Dur: 5 days
Res:
Optimize and Integrate Database
Start: 3/19/25 ID: 28
Finish: 3/26/25 Dur: 5 days
Res:
Conduct User Acceptance Testing
Start: 3/26/25 ID: 30
Finish: 3/30/25 Dur: 2 days
Res:


NETWORK DIAGRAM
Conduct Unit Testing
Start: 3/30/25 ID: 31
Finish: 4/1/25 Dur: 2 days
Res:
Perform Integration Testing
Start: 4/1/25 ID: 32
Finish: 4/2/25 Dur: 1 day
Res:
Design complete
Start: 4/2/25 ID: 33
Finish: 4/2/25 Dur: 0 days
Res:
Set up Customer Support for App Users
Start: 4/2/25 ID: 35
Finish: 4/16/25 Dur: 10 days
Res:
Plan for Regular App Updates
Start: 4/16/25 ID: 36
Finish: 5/1/25 Dur: 10 days
Res:
Operational Management and Maintenance
Start: 5/1/25 ID: 37
Finish: 5/1/25 Dur: 0 days
Res: Servers[0], Internet Access
Deploy Platform
Start: 5/1/25 ID: 39
Res: Servers[1], Internet Access


NETWORK DIAGRAM
Conduct Training Sessions
Start: 5/15/25 ID: 40
Finish: 5/22/25 Dur: 5 days
Res:
Launch Marketing Campaign
Start: 5/22/25 ID: 41
Finish: 5/29/25 Dur: 5 days
Res:
implementation completed
Start: 5/29/25 ID: 42
Finish: 5/29/25 Dur: 0 days
Res:
Update Status Reports
Start: 5/29/25 ID: 45
Finish: 6/5/25 Dur: 5 days
Res:
Hold Regular Team Meetings
Start: 6/5/25 ID: 46
Finish: 6/12/25 Dur: 5 days
Res:
Monitor Risk Mitigation
Start: 6/12/25 ID: 48
Finish: 6/19/25 Dur: 5 days
Res:


NETWORK DIAGRAM
Monitor Risk Mitigation
Start: 6/12/25 ID: 48
Finish: 6/19/25 Dur: 5 days
Res:
Analyze Feedback for Improvements
Start: 6/22/25 ID: 50
Finish: 6/29/25 Dur: 5 days
Res:
Manage Change Requests
Start: 6/29/25 ID: 51
Finish: 7/13/25 Dur: 10 days
Res: Layan Kandil
Monitoring and control completed
Start: 7/13/25 ID: 52
Finish: 7/13/25 Dur: 0 days
Res:
Finalize Deliverables
Start: 7/13/25 ID: 54
Finish: 7/16/25 Dur: 3 days
Res:
Conduct Final Project Review
Start: 7/16/25 ID: 55
Finish: 7/21/25 Dur: 3 days
Res:


NETWORK DIAGRAM
Conduct Final Project Review
Start: 7/16/25 ID: 55
Finish: 7/21/25 Dur: 3 days
Res:
Document Lessons Learned
Start: 7/21/25 ID: 56
Finish: 7/23/25 Dur: 2 days
Res:
Release Project Resources
Start: 7/23/25 ID: 57
Finish: 7/27/25 Dur: 2 days
Res:
Closure complete
Start: 7/27/25 ID: 58
Finish: 7/27/25 Dur: 0 days
Res:
UIPathFinder Development completed
Start: 7/27/25 ID: 59
Finish: 7/27/25 Dur: 0 days
Res:

12. Activity Cost Estimation (Cost Management):

WBS Items	# Units/Hrs	Cost/Unit/Hr (SAR)	Subtotals (SAR)	WBS Level 1 Totals (SAR)	% of Total
1. Project Planning and Preparation				12500	
Budget Planning	50	56	2800		0.90
Estimate Costs of App Develop	60	70	4200		1.35
Develop Cost Baseline	50	60	3000		0.97
Risk Management Planning	50	50	2500		0.81
2. Design and Development				166120	
Conduct User Research	120	65	7800		2.52
Surveys and Interviews	80	69	5520		1.78
Data Analysis	100	65	6500		2.10
Platform Design	100	55	5500		1.77
Create Wireframes	80	75	6000		1.94
Develop UI/UX Prototypes	120	60	7200		2.32
Prototypes Creation	120	55	6600		2.13
Develop Front-end Prototype	80	70	5600		1.81
Develop Back-end Prototype	80	55	4400		1.42
Prototypes Creation Complete	60	65	3900		1.26
Software Development	400	100	40000		12.90
Implement Front-end Function	200	50	10000		3.23
Implement Back-end Functiona	220	50	11000		3.55
Integrate Front-end and Back-e	210	55	11550		3.73
Develop Using Node.js	230	60	13800		4.45
Implement Core Application Fe	215	50	10750		3.47
Optimize and Integrate Databa	200	50	10000		3.23
3. Testing and Quality Assurance				32280	
Conduct User Acceptance Testi	50	70	3500		1.13
Conduct Unit Testing	60	75	4500		1.45
Perform Integration Testing	50	70	3500		1.13
Debugging and Fixes	120	90	10800		3.48
Security and Compliance Testir	72	90	6480		2.09
Post-Deployment Testing	50	70	3500		1.13
4. Implementation Phase				20400	
Deploy Platform	120	90	10800		3.48
Conduct Training Sessions	60	70	4200		1.35
Launch Marketing Campaign	60	90	5400		1.74
5. Maintenance and Support				32200	
Ongoing App Updates	120	120	14400		4.65
User Feedback Management	80	70	5600		1.81
Technical Support	100	80	8000		2.58
Bug Fixes and Security Patches	60	70	4200		1.35
6. Reserves (Risk Factor)			46500	46500	15.00
Total Project Cost Estimate				310,000.00	100.00%

Conclusion

In conclusion, UJ PathFinder is a transformative project that aims to enhance the University of Jeddah experience by connecting students with companies, streamlining academic recommendations, and providing guidance for graduates. Through its centralized system, UJ PathFinder simplifies academic and professional processes, allowing students to efficiently manage profiles, access essential documents, schedule appointments, and build valuable connections. The project has received positive feedback, highlighting its potential to streamline the process of finding training opportunities, foster student-company collaborations, and address the challenges faced in obtaining academic recommendations and the desire for guidance from graduates. By integrating education and industry, UJ PathFinder empowers students, facilitates job opportunities, and provides valuable insights into alumni success through employment rates. UJ PathFinder is poised to revolutionize the academic journey and create a more seamless and beneficial experience for students, alumni, instructors, the deanship, and companies alike.