



University of Jeddah

College of Computer Science and Engineering

Department of Computer Science and Artificial Intelligence

Software Project Management| CCSW-313

# ghost kitchen

Prepared for: Course project for Software project Management - CCSW 313

Prepared by:

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## **STAGE ONE**

### **Business Case for Ghost Kitchen**

Prepared by: Raneem Mohammed, Lama Alghamdi, Mariyyah Samarin

Date: 1/4/2023

#### **1. Introduction/ Background**

Ghost Kitchen is a food delivery app that specializes in delivering orders exclusively from ghost/cloud kitchen restaurants. Ghost kitchens are delivery-only restaurants that operate out of commercial kitchen spaces and do not have a physical storefront. As the popularity of ghost kitchens continues to grow, Ghost Kitchen aims to become the go-to app for customers looking to order from these unique dining establishments. By partnering with the most popular ghost kitchens in each market it operates in, Ghost Kitchen aims to provide customers with a wide range of food options at competitive prices. The company's objective is to provide a superior user experience that makes it easy for customers to browse menus, place orders, and track their deliveries in real-time. By achieving these business objectives, Ghost Kitchen can establish itself as a leader in the ghost kitchen delivery space and capture a significant portion of the food delivery market.

#### **2. Business Objective**

One of our objectives is to Expand market share, Ghost Kitchen wants to take a sizable chunk of the meal delivery business by working only with restaurants affiliated with their brand. The startup hopes to establish itself as the go-to app for clients wishing to place an order from a ghost kitchen. We would also want to Expand restaurant partner network Ghost Kitchen wants to broaden its network of restaurant partners to provide consumers more dining alternatives. The company's goal is to collaborate with the most well-liked ghost kitchens in each of the markets it serves. In addition to that we aim to Deliver a great user experience, Ghost Kitchen strives to offer users a smooth and simple interface. Customers should find it simple to explore menus, place orders, and follow the progress of their delivery, according to the firm. Also Maintain competitive pricing, Ghost Kitchen hopes to provide consumers with more cheap costs than typical restaurants by collaborating with ghost kitchens. The firm wants to keep its prices low while yet providing a high-quality product. Finally Increasing income and cutting expenses in order to optimize profitability is the main goal of Ghost

Kitchen by achieving these business objectives, Ghost Kitchen can establish itself as a leader in the ghost kitchen delivery space and capture a significant portion of the food delivery market.

### 3. Current Situation and Problem/Opportunity Statement

**Current Situation:** Ghost Kitchen is a food delivery app that specializes in delivering orders exclusively from ghost/cloud kitchen restaurants. As the popularity of ghost kitchens continues to grow, there is an opportunity for Ghost Kitchen to establish itself as a leader in the ghost kitchen delivery space.

**Problem/Opportunity Statement:** While the demand for food delivery services is growing, traditional restaurants are facing increased competition from ghost kitchens that operate out of commercial kitchen spaces and offer more affordable prices. Ghost Kitchen has the opportunity to capture a significant portion of the food delivery market by partnering with the most popular ghost kitchens in each market it operates in and providing a superior user experience that makes it easy for customers to browse menus, place orders, and track their deliveries in real-time. However, in order to achieve its business objectives, Ghost Kitchen must maintain competitive pricing while still offering a high-quality product and maximize profitability by controlling costs and increasing revenue.

### 4. Critical Assumption and Constraints

The application must contain an interface that shows a list of several ghost kitchens, provides customers with the ability to place orders, track their delivery status, and provide feedback on their experience. Current customers must actively support the application. The application must pay for itself within one year by increasing various ghost kitchens and reducing internal operating costs. The new system should not rely on any specific hardware interfaces and must run on existing hardware and software. It must be compatible with the operating systems and devices used by both users and delivery partners, requiring minimal technical assistance. Additionally, it must be reliable, efficient, cost-effective, and secure from unauthorized users.

## 5. Analysis of Option and Recommendation

There are two options for addressing this opportunity:

1. Third-party delivery apps: These apps like Hunger Station, ToYou, and Jahez have a vast customer base and can help ghost kitchens reach more customers. However, they charge high commission fees that can eat into profits.
2. Hire our own drivers or use a third-party logistics provider to handle deliveries and implement an application that offer features like order tracking, management, and customer support.

After careful consideration of these options, we have decided that the second option is the best choice for us. It gives us more control over the delivery process and allows for better customer service. Additionally, it will reduce fees and increase profits.

## 6. Preliminary Project Requirements

**App Development:** The development of a user-friendly and efficient mobile application that allows customers to browse and order from a variety of ghost/cloud kitchens.

**Ghost Kitchen Partnerships:** Establish partnerships with a variety of ghost/cloud kitchens to offer a diverse range of cuisine options to customers.

**Delivery Logistics:** Develop a delivery logistics system that ensures timely and efficient delivery of orders to customers.

**Payment Processing:** Implement a secure and reliable payment processing system that allows customers to pay for their orders through the app.

**Marketing and Promotion:** Develop a marketing and promotion strategy to increase brand awareness and attract new customers to the app.

**Customer Service:** Establish a customer service team to handle inquiries, complaints, and feedback from customers.

**Data Analytics:** Implement a data analytics system to track customer behavior and preferences, as well as monitor the performance of ghost/cloud kitchens on the app.

**Legal Compliance:** Ensure compliance with all relevant laws and regulations related to food delivery and online transactions.

**Scalability:** Develop a scalable business model that can accommodate growth and expansion into new markets.

**Cost Management:** Develop a cost management strategy to ensure profitability while maintaining competitive pricing for customers.

## 7. Budget Estimate and Financial Analysis

\$200,000 is the estimated renovation cost for Ghost Kitchen Application. This includes \$30,000 for services from suppliers and infrastructure to store and manage data, server costs, and network costs, and \$40,000 for rent and Utilities. Company employees work for 30 hours per week which cost \$80,000, each employee will earn about 30\$ to 45\$ per hour. However, \$10,000 are allocated for marketing and advertising, and legal fees and taxes will approximately cost \$25,000. Furthermore, after the app is released, we need regular maintenance to keep up the quality of our service and to add features according to users' feedback. This expense is about \$20,000 monthly. Finally, the budget estimate and financial analysis was done based on assumptions.

## 8. Schedule Estimate

According to the stakeholders, the project should be completed within 8 months. We will publish a trial version as we develop the application so we can enhance the user experience and deliver the application at the desired date. However, the schedule estimation is only intended as a starting point, it is crucial to review and update the schedule frequently throughout the project.

## 9. Potential Risks

**Competition:** The market for food delivery apps is highly competitive, with established players like Hungersation, and Jahez already dominating the market. It may be difficult to gain market share and establish a loyal customer base.

**Dependence on Partnerships:** The success of the business is heavily dependent on partnerships with ghost/cloud kitchens. If these partnerships fall through or if the quality of food and service provided by these kitchens is not up to standard, it could negatively impact the reputation of the app.

**Delivery Logistics:** The delivery logistics system is critical to the success of the business. If there are issues with delivery times, order accuracy, or customer service, it could lead to negative reviews and a loss of customers.

**Cybersecurity:** The app will be handling sensitive customer information, including payment details and personal information. If the app is hacked or if there are data breaches, it could lead to a loss of customer trust and legal repercussions.

**Legal Compliance:** The food delivery industry is heavily regulated, and there are many laws and regulations that must be followed. Failure to comply with these regulations could result in fines, legal action, and damage to the reputation of the app.

**Financial Risk:** The business model may require significant upfront investment in app development, marketing, and partnerships. If the app fails to generate enough revenue to cover these costs, it could lead to financial losses and potentially bankruptcy.

**Reputation Risk:** Negative reviews, poor customer service, or food quality issues could damage the reputation of the app and lead to a loss of customers. It may be difficult to recover from a damaged reputation in the highly competitive food delivery market.

## 10. Exhibits

	A	B	C	D	E	F	G	H
1	Financial Analysis for Ghost Kitchens							
2	Created by: Mariyyah Samarin			Date:1/4/2023				
3	Discount rate	10.00%						
4	Year	0	1	2	3	4	5	Total
5	Costs	\$ 200,000.00	\$ 90,000.00	\$ 100,000.00	\$ 90,000.00	\$ 90,000.00	\$ 100,000.00	
6	Discount factor	1.00	0.91	0.83	0.75	0.68	0.62	
7	Discounted costs	\$ 200,000.00	\$ 81,900.00	\$ 83,000.00	\$ 67,500.00	\$ 61,200.00	\$ 62,000.00	555,600.00
8								
9	Benefits	1.00	\$ 380,000.00	\$ 203,000.00	\$ 380,000.00	\$ 100,000.00	\$ 100,000.00	
10	Discount factor	1.00	0.91	0.83	0.75	0.68	0.62	
11	Discounted benefits	\$ 1.00	\$ 345,800.00	\$ 168,490.00	\$ 285,000.00	\$ 68,000.00	\$ 62,000.00	929,291.00
12								
13	Discounted benefits - costs	(199,999)	263,900	85,490	217,500	6,800	-	
14	Cumulative benefits - costs	(199,999)	63,901	149,391	366,891	373,691	373,691	
15			Payback in Year 1					
16		ROI: 67%						
17		NPV: 373,691						
18								
19	Project1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
20	Ben	\$ -	\$ 380,000.00	\$ 203,000.00	\$ 380,000.00	\$ 100,000.00	\$ 100,000.00	\$ 1,163,000.00
21	cost	\$ 200,000.00	\$ 90,000.00	\$ 10,000.00	\$ 50,000.00	\$ 80,000.00	\$ 10,000.00	\$ 440,000.00
22	cash flow	\$ (200,000.00)	\$ 290,000.00	\$ 193,000.00	\$ 330,000.00	\$ 20,000.00	\$ 90,000.00	\$ 723,000.00
23		NPV: \$491,470.52						
24								
25	Assumptions : The value of NPV = 373,691 and because it is positive, it is a worthwhile investment And the ROI ratio is high,							
26	which indicates that there is a good investment return							
27								

## Stakeholder Register for Project Name

Prepared by: Maryam aldahri

Date: April 7, 2023

Name	Position	Internal/ External	Project Role	Contact Information
Raneem Aljehani	CEO	Internal	Approve Decision, Sponsor	Raneem@gmail.com
Layan Alsaud	Project Manager	Internal	Project Planning, Progress Monitoring	LayanAli@gmail.com
Mariyyah Samarin	Finance Director	Internal	Approve Funds	Mariyyah@gmail.com
Lama Alghamdi	Developer	Internal	Managing Software Program	Lama@gmail.com
Maryam Aldahri	Interface Developer	Internal	UI Developer	Maryam@gmail.com
Rola Aloafi	Business Analyst	External	Advisor	Rola_@gmail.com
Rasha Alomari	Consultant	External	Advisor, Sponsor	Rasha@gmail.com



## Stakeholder Management Strategy for Project Name

Prepared by: Maryam aldahri

Date: April 7, 2023

Name	Level of Interest	Level of Influence	Potential Management Strategies
Raneem Aljehani	high	high	Raneem favors staying on top and observing the project and managing the overall operations and adding to it, concentrating on achieving the goals of the project. So consult and engage her regularly.
Layan Alsaud	high	high	Layan makes sure to delegate tasks to project team members, supervise those employees, ensure the project is completed on time, and appoint meetings throughout the project. Involve her in decision-making.
Mariyyah Samarin	high	high	Mariyyah oversees the financial aspects of the project and assesses financial performance as well as the possible risks and investments that make the most profitable decisions. So consult regularly and keep her satisfied.
Lama Alghamdi	high	high	Lama is responsible for developing, coding, installing, maintaining, testing, and evaluating the project software program. So consult her regularly.

Maryam Aldahri	high	Low	Maryam designs and creates a software interface by prioritizing users and project requirements and ensuring that the software is presented attractively. Make use of her interest through involvement.
Rola Aloafi	Low	high	Rola assists in determining the project needs and improving the systems by analysis to come up with solutions to business problems. Does not seem excited about this project so meet her needs and show her how this project will help her.
Rasha Alomari	high	Low	Rasha offers advice and expertise to the project to help improve it and detect issues and investigate ways to solve them but has a lot of things on her plate. So consult her on the areas of interest

## Project Charter

Prepared by: Layan Alsaud

Date: 6/4/2023.

Project Title: Ghost Kitchen

Project Start Date: 4/4/2023

Projected Finish Date: 4/12/2023

**Budget Information:** The project has a budget of \$200,000. Most of the budget will be on the implementation and testing process, and the primary estimation will be 30 hours per week.

**Project Manager:** Layan Al-Saud , (+966)501488282 , LayanAli@gmail.com

**Project Objectives:** Simplifying delivery for ghost kitchens to meet customers' needs by creating an application that customers can view ghost kitchens with a few taps on their screens, providing faster and safer delivery to the customers, easy to order anytime and anywhere, providing real-time updates on order status and estimation delivery time. Ghost Kitchens Delivery will be understandable, useable, and compatible with other applications that customers use as well as customers, and ghost kitchens' data will be secure.

**Main Project Success Criteria:** The application ends on time. It is reliable and safe for users. Customer overview is positive within 4-5 rating.

### Approach:

- Gather and analyze information about target customers to know what they really need.
- Gather and analyze information about application requirements, and survey similar delivery applications.
- Generate a questionnaire containing a simple introduction about Ghost Kitchens Delivery and the most important features that it provides to know advisor opinion.
- Looking for suitable software to garnet data security for customers and ghost kitchen providers.
- Modify the software to be more convenient, suitable, and simple to use.

### Roles and Responsibilities

Role	Name	Organization/ Position	Contact Information
Managing Software Program	Lama Alghamdi	Developer	Lama@gmail.com
Project Planning, Progress Monitoring	Layan Alsaud	Project Manager	LayanAli@gmail.com
Approve Funds	Mariyyah Samarin	Finance Director	Mariyyah@gmail.com
UI Developer	Maryam Aldahri	Interface Developer	Maryam@gmail.com
Approve Decision, Sponsor	Raneem Aljehani	CEO	Raneem@gmail.com
Advisor, Sponsor	Rasha Alomari	Business Analyst	Rasha@gmail.com
Advisor	Rola Aloafi	Consultant	Rola_@gmail.com

### Sign-off:

Lama Alghamdi, Raneem Aljehani, Layan Alsaud, Maryam Aldahri , Mariyyah Samarin, Rasha Alomari, Rola Aloafi.

### Comments:

“The application should apply in a way that changes are easy to implement. Also, it should maximize the use of resources as well as responsiveness. “ - Lama Alghamdi

## Kick-off Meeting

Prepared by: Layan Alsaud

Date: 6/4/2023

**Meeting Date** 4/4/2023

**Project Name:** Ghost Kitchen

**Meeting Objective:** clarifying the project objectives and goals, building a relationship between team members, determining responsibilities for team members, and planning to the next step.

### Agenda:

- Introductions about project for team members.
- Project background overview.
- Establish project purpose.
- Determine main services that project provide and constraints.
- Define main required functions and suitable technology to use for project.
- Discussion of project cost, schedule estimation and budget.
- Discussion of project plans and potential changes.
- List of action items from meeting.

Action Item	Assigned To	Due Date
Stakeholders register and strategy	Maryam Aldahri	7/4/2023
Project charter	Layan Alsaud	7/4/2023
Analyze project resources and requirement	Raneem Aljehani	9/4/2023
Analyze project cost and potential risks	Mariyyah Samarin	10/4/2023
Search and analyze for similar project	Lama Alghamdi	6/4/2023

**Date and time of next meeting:** 11/4/2023, at 9:00 am.

## **STAGE TWO**

### **SCOPE STATEMENT**

**Project Title: Ghost kitchen**

**Date: 4 May**

**Prepared by: Rannem Mohammed, Mariyyah Essam**

**Project Justification:**

Ghost Kitchen is a specialized delivery application that serves cloud kitchens. The main reason to focus on cloud or ghost kitchens is the lack of cloud kitchen logistic services in Saudi Arabia so, our app will increase the profit of cloud kitchens through high-speed delivery and advertisements via the app. On the side, the Ghost Kitchen app will reserve all customer rights. However, \$200,000 is the estimated renovation cost for Ghost Kitchen Application. Furthermore, after the app is released, we need regular maintenance to keep up the quality of our service this expense about \$20,000 monthly.

**Product Characteristics:**

-App Features:

- A user-friendly interface that enables customers to easily browse menus, place orders, and track deliveries in real-time
- A search function that enables customers to find the ghost kitchen restaurants that offer the food they want
- A rating system that enables customers to rate their experience with the ghost kitchen restaurants
- A notification system that enables customers to receive updates on their orders

-Partner Features:

- A dashboard that enables ghost kitchen restaurant partners to manage their menus, orders, and deliveries
- A reporting system that enables ghost kitchen restaurant partners to track their sales and performance

**Requirements:**

-Technical Requirements:

- A mobile app for both iOS and Android platforms
- A web application for restaurant partners
- A cloud-based database for storing menus, orders, and customer data
- Integration with third-party logistics providers for order delivery

**-Business Requirements:**

- Partnerships with the most popular ghost kitchen restaurants in each market
- Competitive pricing that offers customers more affordable prices than traditional restaurants
- A financial model that balances the costs of operating a delivery app with the revenue generated from commissions and fees
- A marketing strategy that promotes the app to potential customers and ghost kitchen restaurant partners

**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**

research reports, design documents, software code, hardware, etc.

- 1) User surveys : enhance useability of app by using the survey to understand user needs, results to guide product decisions.
- 2) User Interface Design: An intuitive and visually attractive user interface that makes it simple for users to utilize the app, explore menus, place orders, monitor delivery, and submit payments.
- 3) Database design: This comprises the design of the database that will keep all of the app's data. The database design needs to be effective and scalable so that the app can support a big volume of customers and orders.
- 4) Delivery Tracking System: A system that keeps users updated on the estimated time of arrival (ETA) and allows them to track their orders in real-time.
- 5) Payment Gateway Integration: Secure payment gateway integration that accepts a variety of payment methods, including credit/debit cards, net banking, e-wallets, etc.
- 6) Order Management System: Restaurants can efficiently receive and manage orders with the help of an order management system. Features like order confirmation, order tracking, and shipping status updates ought to be included.
- 7) Analytics and reporting: enable the app to monitor user activity, such as past orders, preferences, and feedback. The analytics and reporting system ought to offer perceptions into user activity and ought to aid the app's continual development.
- 8) Performance testing : The performance of the app can be optimized using the findings of the performance testing to make sure it can support a big number of users.

- 9) Bug tracking: The goal of bug tracking is to ensure that the app is as bug-free as possible and that any issues are immediately fixed. It involves identifying and tracking any bugs or issues that occur within the app.

**Project Success Criteria:**

The success of the Ghost Kitchen project will be measured by the following criteria:

1. Market share: Increase Ghost Kitchen's market share in the food delivery industry by 10% within the first year of operation.
2. Partner network: Expand Ghost Kitchen's restaurant partner network to include at least 50 ghost kitchens in each market it operates in within the first year of operation.
3. User engagement: Achieve a user engagement rate of 50% within the first six months of operation, as measured by the percentage of users who place at least one order per month.
4. Customer satisfaction: Maintain a customer satisfaction rating of at least 4.5 out of 5 stars, as determined by user ratings and reviews.
5. Revenue generation: Generate at least \$10 million in revenue within the first year of operation, with a profit margin of at least 10%.

By achieving these success criteria, Ghost Kitchen can establish itself as a leader in the ghost kitchen delivery space and capture a significant portion of the food delivery market.



# Work Breakdown Structure Template for Ghost Kitchen

Prepared by: Maryam aldahri

Date: 4/20/2023

## 1.0 Initiating

### 1.1 Project definition

- 1.1.1 Scope and goal setting
- 1.1.2 Preliminary project requirements
- 1.1.3 Budget estimate
- 1.1.4 Schedule estimate
- 1.1.5 Potential risks estimate

### 1.2 Identify stakeholders and their requirements

### 1.3 Develop project charter

### 1.4 Hold a project kick-off meeting

## 2.0 Planning

### 2.1 Team Meeting

### 2.2 Develop project management plan

### 2.3 Develop communication plan

### 2.4 Develop scope statement

### 2.5 Create WBS

### 2.6 Develop project schedule

### 2.7 Develop resources plan

### 2.8 Develop quality control plan

### 2.9 Identify project risk

### 2.10 Develop risk management plan

### 2.11 Gain approval for project plan

## 3.0 Executing

### 3.1 Team Meeting

### 3.2 Conduct user survey

### 3.3 Conduct requirements gathering

### 3.4 Develop software design

### 3.5 Develop software functionality and features

### 3.6 Testing phase

#### 3.6.1 Software testing

#### 3.6.2 UAT testing

### 3.7 Conduct new solution

### 3.8 Improve performance

### 3.9 Update the project plan

### 3.10 Launch software

#### 4.0 Monitoring and Controlling

4.1 Provide ongoing maintenance

4.2 Monitor project

4.2.1 Progress report

4.2.2 Progress performance

4.2.3 User feedback

4.3 Risk management

4.4 Change requests

4.5 Conduct status meetings for stakeholders

#### 5.0 Closing

5.1 Project evaluation

5.2 Prepare project final report and presentation

5.3 Gain formal acceptance from stakeholders

5.4 Prepare Lessons Learned file

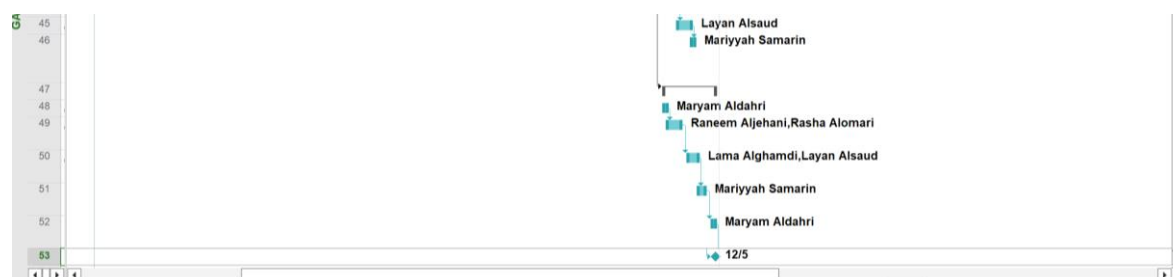
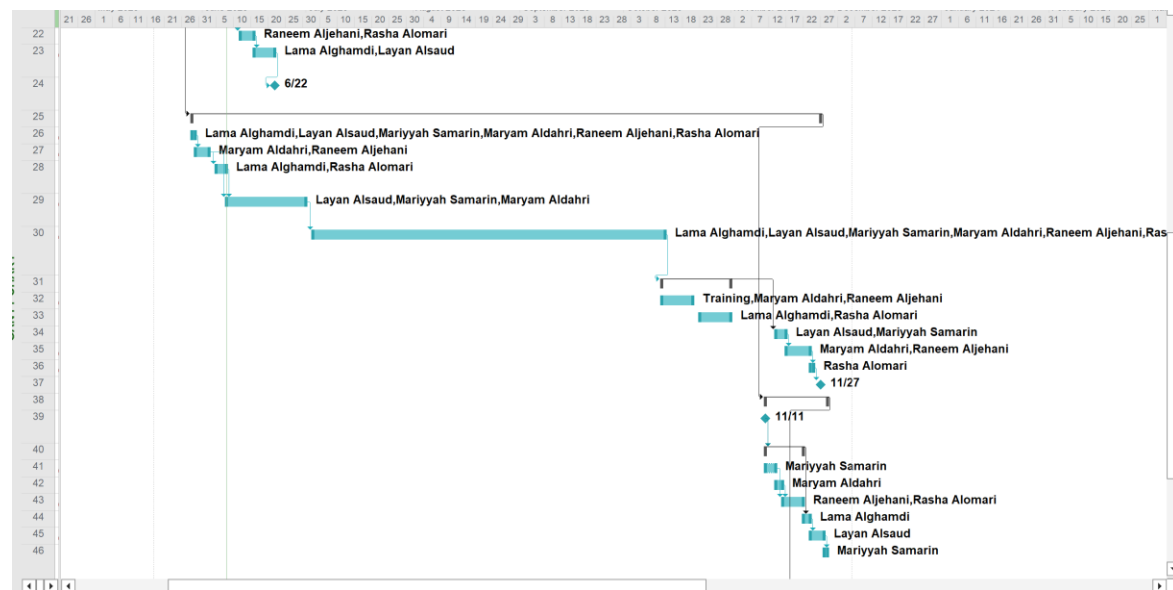
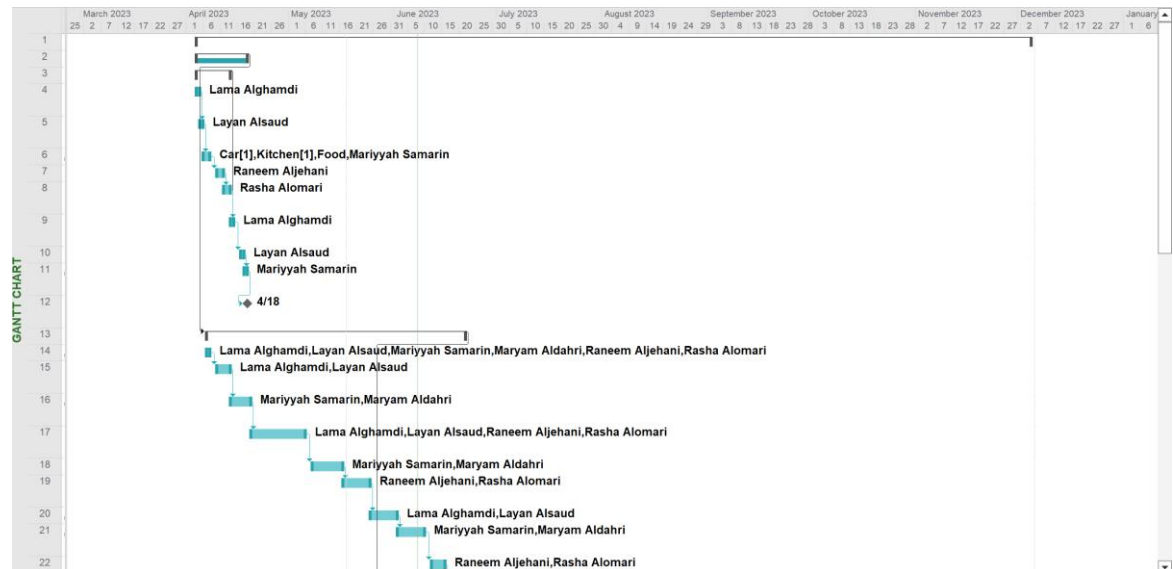
5.5 Archive project documentation

5.6 Close Project

## Gantt Chart

Prepared by: Layan Alsaud – Lama Alghamdi

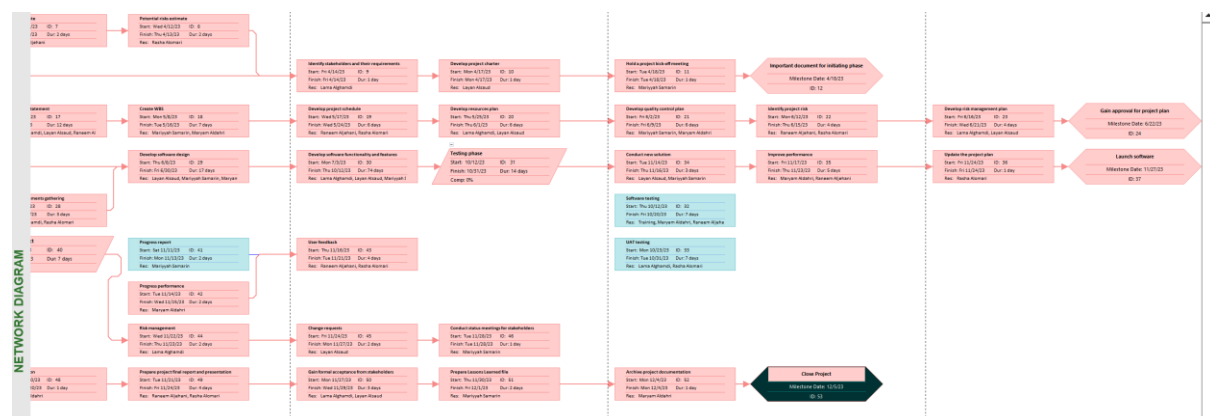
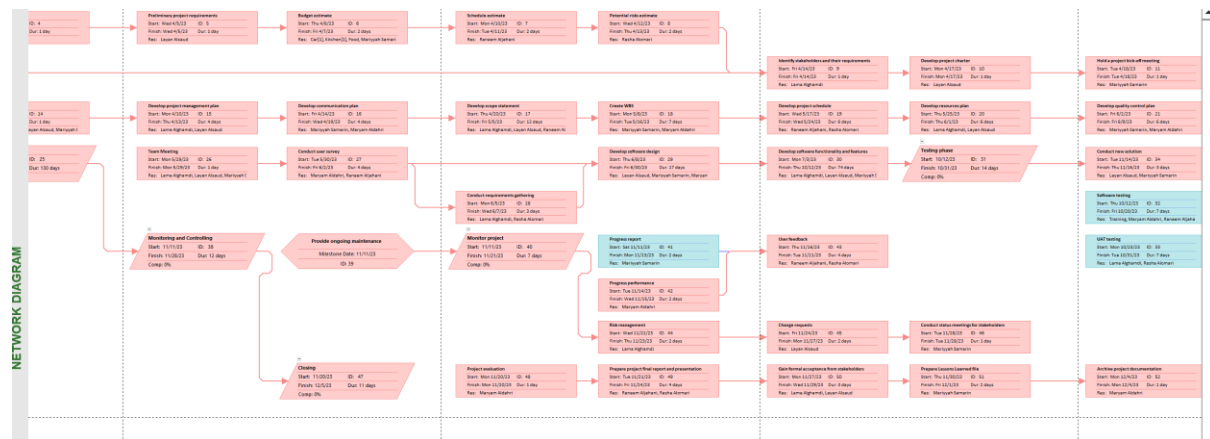
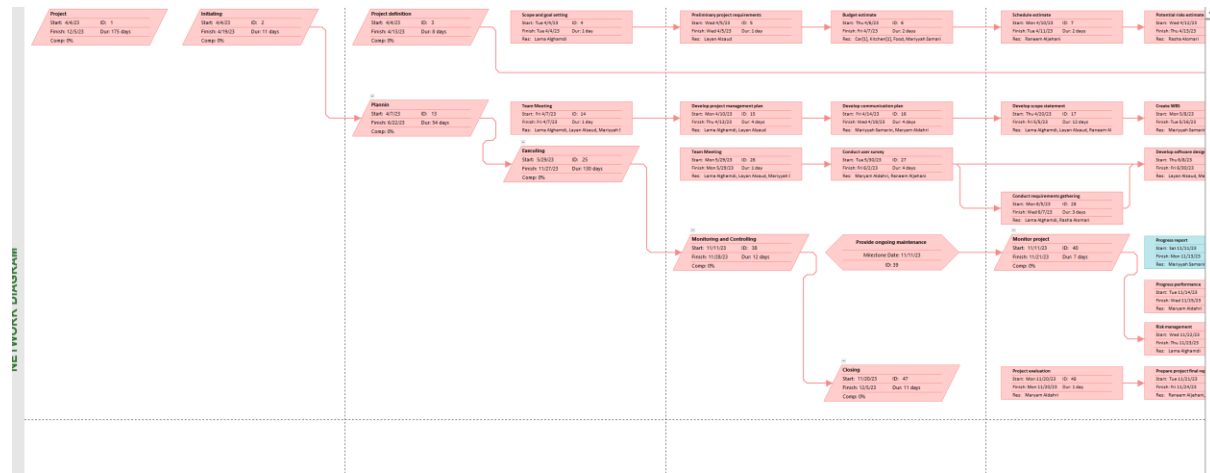
Date: 5/22/2023



## Network diagram

**Prepared by:** Layan Alsaud – Lama Alghamdi

**Date: 5/22/2023**



## Reference

- Work Breakdown Structure Template. (n.d.). ProjectManager.  
<https://www.projectmanager.com/templates/work-breakdown-structure-template>
- Pavlou, C. (2017, August 31). UI/UX Designer job description. Recruiting Resources: How to Recruit and Hire Better. <https://resources.workable.com/ui-ux-designer-job-description>
- Bika, N. (2015, December 11). CEO job description. Recruiting Resources: How to Recruit and Hire Better. <https://resources.workable.com/ceo-job-description>
- The benefits of a food delivery app. (2022, -12-15T10:38:11+00:00). Retrieved from <https://www.peasy.es/the-benefits-of-a-food-delivery-app/>
- Müller, R., & Turner, J. R. (2019). The impact of project cost management on project performance. Project Management Journal, 50(4), 363-375.  
<https://doi.org/10.1177/8756972819845262>