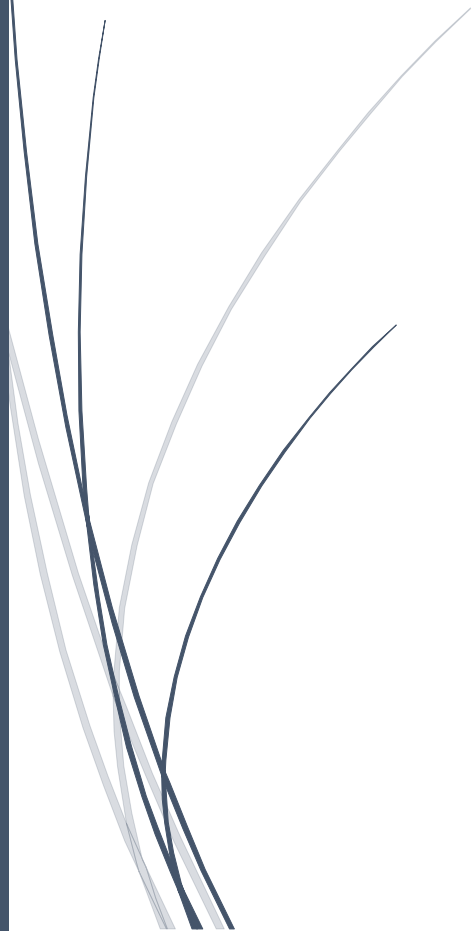
11/9/2021

Software Engineering

Virtual Market Application

Project Plan - Report



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Introduction

Description of the Project (VMA)

We are asked to develop an Online Virtual Market Application (VMA) that lets users shop for required products and have these products delivered to their addresses. Some of the capabilities of this application are expected but not limited to:

VMA offers various product categories such as “Fruits & Vegetables”, “Dairy Products”, “Cleaning Products”, “Electronics” and so on.

Some of the tasks that Customers can do are given below:

- Search and filter products
- Add desired products into their shopping cart
- Benefit from coupons and discounts
- Specify some of the products as their favorites,
- Set and update their personal information such as address details and payment information
- Place their order, etc.

Some of the tasks that Market/Store Managers can do are given below:

- Set/update a physical store location
- Define/update new products
- Keep track of the stock
- Define/update coupons and discounts
- Fulfill orders
- Get statistics & reports about orders

The developed VMA will be accessible from different platforms such as web browsers, smartphones/tablets etc. (It’s responsive)

The use case to be implemented is placing an order by the customer, it is assumed that the use cases that the store manager must perform before this use case are already completed.

Example: products are already defined

Gantt Chart of the Project Plan

We have used Project Professional 2019 to create a detailed project plan, which contains all the required features.

When the project plan completed, the Gantt Chart of the Project Plan had been created automatically within the application we were working on. A part of the Gantt Chart is shown in **Figure 1**. You can find a more detailed view of Gantt Chart in the VMA_Group22.mpp file.

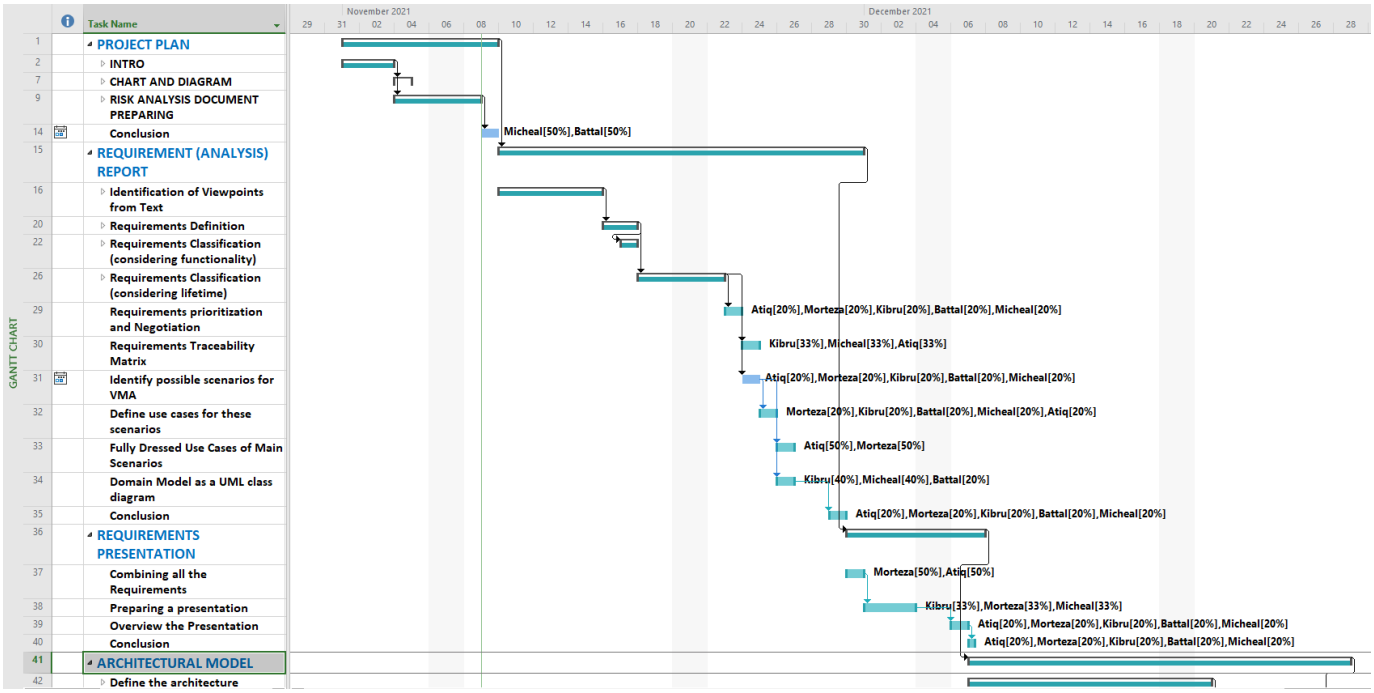

Figure 1.

Note: You can find the entire Project Plan in the VMA_Group22.mpp file fully detailed.

Network Diagram of the Project Plan

We have used Project Professional 2019 again to create a detailed project plan, which contains all the required features.

When the project plan completed, the Network Diagram of the Project Plan had been created automatically within the application. A part of the Network Diagram is shown in **Figure 2**. You can find a more detailed view of Network Diagram in the VMA_Group22.mpp file.

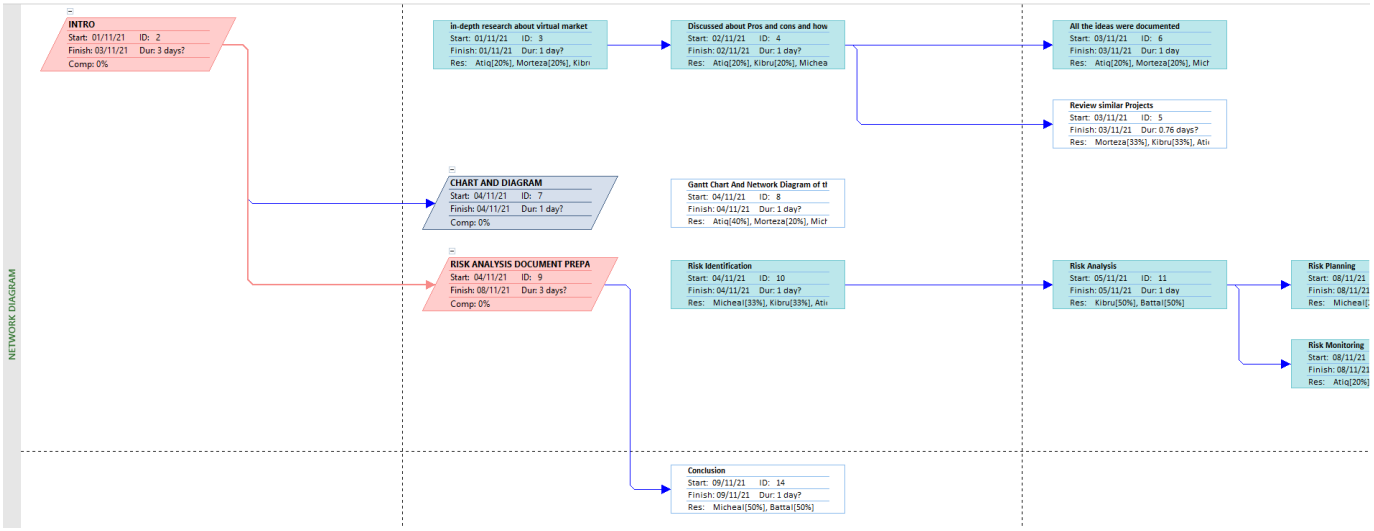

Figure 2.

Division of Labor

Resource Usage

Our Gantt Chart and Network Diagram are capable of showing division of labor, you can find more detail in this part in VMA_Group22.mpp file.

	Resource Name	Work
1	Atiq	87.87 hrs
2	Morteza	88.45 hrs
3	Kibru	88.26 hrs
4	Micheal	86.63 hrs
5	Battal	84.28 hrs

Risk Analysis Document

Risk identification is done throughout the project life cycle, with special emphasis during the project planning phase.

There are four main risk categories: technical, external, organizational and project management related.

Below we have created a table showing probable risks and their effects. The table is neither exhaustive nor static (because risk identification occurs throughout the project life cycle) but it is enough for the planning phase.

Risk	Risk Description	Risk Category	Mainly Affects
Lack of familiarity with development tools such as IDEs, programming languages, frameworks, etc chosen/required for the project	Developers may not have enough technical know-how to bring the project to fruition.	Technical	Product
Inability to solve novel challenges which are inherent to the project	Every project brings with it, novel problems that developers might struggle to deal with.	Technical	Project and Product
Final program may not work on customer system because of differences in the development and user system environment	The program's dependencies can become a source of great frustration as a program that works on development system environment may not work on customer system environment.	Technical	Product
Communication problems with the customer	Failure of customer to articulate software requirements, availability of customer for further interviews, failure of developer to procure detailed software requirements from customer, etc…	External	Project and Product
Development tools becoming unavailable	If support for chosen development tools	External	Project and Business

	such as IDEs, compilers, cloud development kit and so on runs into a problem the project and the entire business will be affected.		
Disruption of the Internet and communication platforms	Government may block a particular site needed for development or team communication.	External	Business and Project
Unexpected employee departure	Experienced/critical members of the team may leave the group	Organizational	Project and Product
Lack of decisive leadership	The group may become disjointed and unable to work cohesively because of a lack of a strong leader.	Organizational	
Missing deadline for product delivery	Since the project adheres to the waterfall development model	Project Management related	Business
Project goes over budget	The waterfall method's rigid development process has little space for changing software requirements. If the customer demands a change in the software requirement the development has to start again from the beginning, which would incur extra costs.	Project Management related	Business

Risk analysis involves examining how project outcomes and objectives may change due to the impact of the risk event.

Risk	Probability of Risk Occurrence	Risk Impact
Lack of familiarity with development tools such as IDEs, programming languages, frameworks, etc chosen/required for the project	Low	Critical
Inability to solve novel challenges which are inherent to the project	Medium	Catastrophic
Final program may not work on customer system because of differences in the development and user system environment	High	Catastrophic
Communication problems with the customer	Medium	Critical
Development tools becoming unavailable	Low	Marginal
Disruption of the Internet and communication platforms	Low	Critical
Unexpected employee departure	Low	Critical
Lack of decisive leadership	Low	Critical
Missing deadline for product delivery	Low	Marginal
Project goes over budget	Low	Marginal

Conclusion

VMA is a broad project encompassing web and mobile app. As we are working in a team, we have distributed the tasks to save time and deliver the project on time as per the project plan.

After reviewing the project, we deem it is necessary to use waterfall model. Nonetheless, since we are in the introduction part of the project, it is possible the project might see some change; we will try to stick to the plan as much as we can. In the risk analysis table, we have tabulated risks we may encounter with; this helps us to act timely.

Our goal is to deploy a satisfactory application and get good feedback from our end users. If our customers are not happy with the delivered project, however, we are always open to constructive critiques to improve the project's efficiency.

For the project plan, we have prepared Ghant chart, Network Diagram, and Risk analysis.