Risks and Lessons Learned Submission

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Part 1: Identifying Risks (Need 20-25)

1. Competing firm receives a project- Our proposal isn't accepted and another firm gets the bid for the project.
2. Client servers- the client servers are unable to host or properly run the new website we provide.
3. Software incompatibility- Some of the client's current software systems are incompatible with our solution.
4. Resistance to change- The client provides resistance to some of our proposed design changes due to an organizational resistance to change.
5. Lack of developers- Not enough developers are assigned to the project, jeopardizing the timeline.
6. Team conflict- Conflict between different parts of the development team which leads to delays.
7. Bad cost estimates- Inaccurately estimating the cost of the project.
8. Bad time estimates- Inaccurately estimating the timeline needed for the project.
9. Scope creep- Having the scope of our project increase as the project progresses, which jeopardizes both the timeline and budget.
10. Not meeting stakeholder expectations- Stakeholders being unhappy with the final project due to a variety of reasons.
11. Missing project deadlines and milestones- Failure by the development team to meet the timeframe laid out in the project schedule.
12. Bad risk management- Not properly planning for and addressing the risks in our project.
13. Failure to get end user engagement- Not interacting with the end users of the product to receive their feedback and input.
14. Failure to comply with development style- Failure of development teams to adopt Agile style of development in the project.
15. Unrealistic client expectations- The client's expectations are too large for their budget and timeline.
16. Legal risks- The legal requirements surrounding the scope of our project change, jeopardizing our previous development work.
17. Cybersecurity risks- A cybersecurity event causes delays in the development of the project.
18. Lack of communication- Not enough confusion between teams and stakeholders leads to confusion and a lack of clarity.
19. Website becomes obsolete- External business factors on Best Community Service cause the website we are designing to become obsolete or unneeded.
20. Lack of customer approval- Customer delays in approval to milestones or conceptual design/prototype lead to delays.
21. Improper integration- Failure to properly integrate modules leads to massive project delays.

Part 2: Risks Register

Risk number: 3
Name: Software Incompatibility
Probability: 60%
Impact: In a worst-case situation, we would have created the entire product, and afterwards, we find out that their HR or their calendars will not sync and we might have to redo a significant portion of the product. Otherwise, it will just be a tedious task to then find a way to make the old software the client has been using to match the current product.
Category and subcategory: Technical and Software
Description: Some of the client's current software systems are incompatible with our solution. This means if they have been using a specific entry point address to a server or if they have been using a certain calendar input, maybe those access points are not reachable by our product and we would have to figure out how to make an entry point.
Trigger(s): What can trigger this would include backing up the product with the past data the pre existing company has. Also, if we were trying to get it running on the business devices, it would not render or function properly. These situations would trigger a situation where we have to deal with the incompatibility.

Risk number: 5
Name: Lack of Developers
Probability: 30%
Impact: In the worst case scenario, we would plan out the entire process of developing the project and tell the clients a set date of when the project will be finished, then during development some important developers leave the project to pursue other endeavors. This will jeopardize the efficiency and time of meeting the project deadline. Not only that but if the developers that leave are experts in the tasks that they were working on then that will delay the project even more. This could cause large delays in delivering the project on time.
Category and subcategory: Project Management and Communication
Description: When working on large software projects, they are planned out to meet a specific deadline. The deadlines in planning are there to help clients and the project management team make time estimates of when certain tasks will be completed and create a budget for the team but those deadlines may be modified often due to unforeseen circumstances such as not being able to hire enough developers to deliver the project or during the development phase of the project, some developers may leave for other opportunities. This causes a lack of developers which can jeopardize the timeline of the project.
Trigger(s): There are several triggers that could cause an insufficient number of developers. One of them being having a poor company culture. No one enjoys working in a toxic environment and developers need support and collaboration in order to deliver exceptional work to the project. Another trigger is not enough work flexibility or compensation. Having poor compensation could scare away developers from even applying to work for the company and if

workers are already working on a project but have no room to grow, this could cause developers to leave halfway through the project. Having poor work flexibility is one of the most valued qualities of working on a project and is one of the biggest deal breakers for leaving or even being interested in working for a company. Developers need work flexibility in order to stay with a company and we have just seen a huge example recently with COVID-19. Many developers now are able to work from home or even hybrid. Examples like this are what produces interest for the developers to stay and produce quality work.

Risk number: 6
Name: Team Conflict
Probability: 40%
Impact: In a worst-case situation, we would have many conflicts with teams maybe not on the same page or not being able to function together. In each of these instances, it would elongate our process in order to finish the project. This is not good because it can ruin the relationship between us and the customer, also we will not meet deadlines.
Category and subcategory: Project Management and Communication
Description: Conflict between different parts of the development team which leads to delays. This can be internally within one team, or maybe one team is depending on another team to get work done, so now there is a delay caused by an individual team. Professor has talked about the importance of communication amongst team members and teams, so this means that the communication is poor and there is not a growth in the performance as well.
Trigger(s): What can trigger this would include poor onboarding processes for new hires where they are not well equipped to be doing the task or are still trying to learn on the spot, which can delay the process. Also, if a team member leaves, there can be a situation where more work has to be done by fewer people. Lastly, if the communication between team members is poor, then it can be hard to make progress.

Risk number: 8
Name: Bad time estimates
Probability: 40%
Impact: In the worst case scenario, we may plan out the entire project and tell the client when specific features will be implemented or even when the full project will be finished when, in reality, it will in fact take far longer. This can set unreasonable expectations from the clients side and cause undue stress on us, the developers, and we may be forced to work crunch time in order to attempt to meet deadlines as a result. The culmination of this risk can result in a decrease in funding from the client as deadlines are missed and the possibility of losing the project as a whole.
Category and subcategory: Project Management and Estimates
Description: When planning a project, unforeseen circumstances that may cause delays are not accounted for by the project management team, such as developers leaving the project, unexpected complexity in the design, scope adjustments, or funding issues. In such cases, the

management team may believe that the client's demands are fully understood and that the development team can quickly solve any bugs encountered during development. The management team can also make the blunder of not taking into consideration requirements changes, which can lead to redesigns of entire sections of software during the development process. This can all cause previously good time estimates to turn bad as soon as one deadline is missed, leading to a very unhappy customer.
Trigger(s): Triggers for this risk can include experts leaving the project for any number of reasons, the design being far more complex than originally envisioned, the project scope expanding past what was originally planned for, excessive technical challenges appearing such as bug identification and correction, and requirement changes. Any of the above can cause a deadline to be missed, which can further setback other time estimates for other parts of the project, creating a cascading effect.

Risk number: 7
Name: Bad cost estimates
Probability: 60%
Impact: In the worst case scenario, we might estimate that a project will cost X amount of dollars and woefully underestimate the true cost of the project which could be many times the original estimate. This can end up hurting our companies reputation with stockholders, deteriorate the companies relationship with the client, force layoffs to offset the companies losses on the over budget project, and potentially bankrupt a company if the project is simply too expensive to finish.
Category and subcategory: Project Management and Estimates
Description: When estimating the cost of a project, overly optimistic cost estimates are given due either to incompetence or misjudgement. This is generally caused by the management staff underestimating the complexity of the project at different stages, resulting in cost projections that don't accurately reflect all the factors that may increase project spending. Bad cost estimates can cost a company far more than they initially anticipated investing in a project, creating a situation where the project may no longer accurately reflect the original value the company saw in undertaking the endeavor.
Trigger(s): Triggers of bad cost estimates are initially created by an overly optimistic management team, a poor management team, or an inexperienced management team trying to estimate the cost of a new endeavor. Then, these bad cost estimates are later exposed by features taking a longer time to complete than initially anticipated, bugs delaying the development of further interactions of the project, the loss of valuable staff, and/or requirements/scope changes, all of which increase the project cost.

Risk number: 10
Name: Not meeting stakeholder expectations
Probability: 10%

Impact: In the worst case scenario, the client would come to a company and would like a product to be made with certain requirements to meet. Then the team goes and plans out the project and starts developing, later finishing the project and delivering it to the customer. Then the customer is dissatisfied with the final product because during planning the team assured the client that certain requirements on the product will be met but when the final product was delivered, they were not fulfilled. Causing the client to write a bad review about a company thus lowering the company's reputation and profits.
Category and subcategory: Project Management and Planning
Description: During the beginning stages of starting a project, a plan is created to meet client expectations with the client being very vocal about the end result that they want. After planning the team develops and delivers the project to the client but the client can be dissatisfied with the final product due to a variety of factors such as quality issues, poor budget, or failure to meet expectations/requirements. So now there is an unhappy customer which can lead to a poor reputation for the company and cause lower sales and profits. The professor has talked about how poor planning can lead to a bad product, so this means that if planning was done correctly and the client was satisfied with the product in the beginning it can reduce this risk.
Trigger(s): There are several factors that can trigger this with the main one being poor planning. During the planning process, the client should be very vocal and detailed about what exactly they want for a product. Also during this phase the management team should be very attentive and ask lots of questions because the client may be thinking of what they want but now know how to describe it in words. If for example the client wants the home page of an application to look very appealing to adults and the management team that is there talking with the client doesn't ask questions about what exactly will make it appeal to adults then this can cause some confusion about what requirements actually need to be met. Another trigger could be poor budgeting. This trigger could collapse the whole project. When it comes to stakeholders, they expect the project to be delivered with a specific amount of money. If the business uses all of the money and isn't able to deliver on all of the promises it made then this can cause an unhappy customer.

Risk number: 11
Name: Missing project deadlines and milestones- Failure by the development team to meet the timeframe laid out in the project schedule
Probability: 40%
Impact: In the worst-case scenario, missing project deadlines and milestones can make your entire software project fall behind schedule. This is not a good situation to be in, as you are going to be working with a client on trying to meet their product needs. If you are not meeting the needs of the client for any appropriate reason, it can cause conflicts between the team and client.
Category and subcategory: Project Management and Communication
Description: In the software industry, when you work with teams it is super important to create deadlines of development work needing to be done. It allows the client, and team members to develop cost, and time estimates that are relevant to let us know when the given work will be

completed. By missing project deadlines, and milestones it causes risk to finish the overall project by a given deadline which is something the professor advocated with high importance.
Trigger(s):In the software industry missing deadlines in development is super common. What can trigger this is by doing development work that you are not familiar with. For example, let's say that you are utilizing technologies you are not familiar with. This will allow the team member to actually research and understand the technology taking as a result more time. Thus there is a high chance that you can miss deadlines, unless the work given is super standard. Also if a team member puts off work due to the very last minute, it can make the work needed to be completed by a given deadline not finished. This would be a primary fault of the team member's work ethic as they had all conditions under their control.

Risk number: 15
Name: Unrealistic client expectations- The client's expectations are too large for their budget and timeline
Probability: 60%
Impact: In the worst-case scenario, not meeting the client's expectations can hurt your reputation not only with the client, but also potentially with other future clients or stakeholders. This could lead to you losing your job or your company losing future income and projects, or your team members being reassigned.
Category and subcategory: Project Management and Communication
Description: Managing client expectations throughout the lifecycle of a project is one of the most important aspects of project management. Ensuring that you fulfill the guarantees made in the project charter and scope statement is a crucial factor in ensuring that you make your client happy and satisfied.
Trigger(s): There are plenty of things that can trigger you not being able to meet your client expectations. The major one is a lack of communication between you and your client throughout the project and not including them in any planning discussions and getting their sign off for milestones, changes to the scope, or project goals.

Risk number: 17
Name: Cybersecurity risks
Probability: 40%
Impact: In the worst case scenario, a cyber incident would affect either our timelines or the development that we already had completed. If we were hit with a ransomware attack, all of our work may be unrecoverable, which could lead to massive delays in the timeline of the project along with a large increase in the cost of the project. Other attacks could down some of our servers/other services and also increase the cost and timeline of the project.
Category and subcategory: Technical and network
Description: Cyber attacks and threats are continuing to grow and affect more and more companies and projects. A failure to address these threats could be the difference between project success and failure. Having a strong security policy will help to ensure that this doesn't occur.

Triggers: Cyber attacks can be triggered by any number of things. For instance having workers that are uneducated about what to look for to avoid a cyber attack could leave them more susceptible to falling for a phishing attack. Additionally, poor security policy in your company networks could leave you open to any number of attacks such as denial of service attacks which could take weeks to recover from.

Risk number: 18
Name: Lack of communication- Not enough confusion between teams and stakeholders leads to confusion and a lack of clarity
Probability: 30%
Impact: When there is not proper communication between the development teams and stakeholders that leads to a lack of communication. The impact of this would be negative. This would elongate the overall project time, as when the teams are delivering results during the given milestones, and deadlines there could be a high chance that the results are not what stakeholders expected.
Category and subcategory: Project Management and Communication
Description: In the software industry, communication is super important. It is not just vital within the team to have good communication but also with your client and stakeholders.With poor communication between the teams, and stakeholders it can lead members not knowing their roles in the project, the expectations of parts of the project, or even lead to the wrong flow of information. This can lead to significant delays, and re-work which will cost more time, and money. If you are running a business, and you have poor communication with your client, there is a high chance of loss of business.
Trigger(s): A trigger for this could be not having regular stakeholder meetings. In the software industry client/stakeholder meetings are of the utmost importance, and should be conducted in a weekly manner. Not having regular stakeholder meetings with the team can lead to the information and expectations of the team to diminish. This ultimately leads to confusion, and lack of clarity within the team, and the stakeholder also.

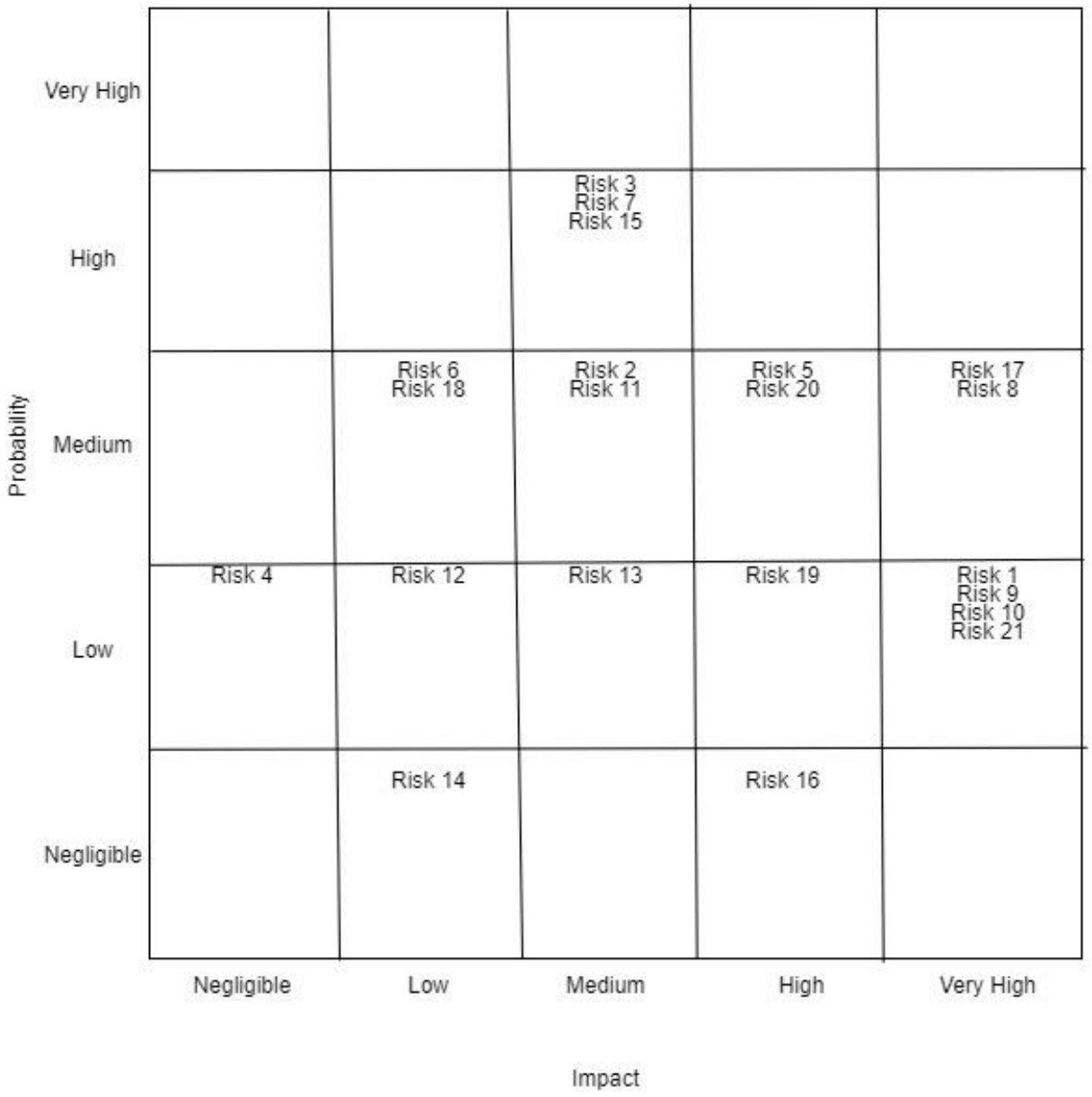
Part 3: Quantifying Risks

1. Competing firm receives project- Our proposal isn't accepted and another firm gets the bid for the project
   Probability: Low
   Impact: Very High
2. Client servers- the client servers are unable to host or properly run the new website we provide
   Probability: Medium
   Impact: Medium
3. Software incompatibility- Some of the client's current software systems are incompatible with our solution
   Probability: High
   Impact: Medium
4. Resistance to change- The client provides resistance to some of our proposed design changes due to an organizational resistance to change.
   Probability: Low
   Impact: Negligible
5. Lack of developers- Not enough developers are assigned to the project, jeopardizing the timeline
   Probability: Medium
   Impact: High
6. Team conflict- Conflict between different parts of the development team which leads to delays
   Probability: Medium
   Impact: Low
7. Bad cost estimates- Inaccurately estimating the cost of the project
   Probability: High
   Impact: Medium
8. Bad time estimates- Inaccurately estimating the timeline needed for the project
   Probability: Medium
   Impact: Very high
9. Scope creep- Having the scope of our project increase as the project progresses, which jeopardizes both the timeline and budget
   Probability: Low
   Impact: Very high
10. Not meeting stakeholder expectations- Stakeholders being unhappy with the final project due to a variety of reasons
    Probability: Low
    Impact: Very high
11. Missing project deadlines and milestones- Failure by the development team to meet the timeframe laid out in the project schedule

Probability: Medium
Impact: Medium

12. Bad risk management- Not properly planning for and addressing the risks in our project
    Probability: Low
    Impact: Low
13. Failure to get end user engagement- Not interacting with the end users of the product to receive their feedback and input
    Probability: Low
    Impact: Medium
14. Failure to comply to development style- Failure of development teams to adopt Agile style of development in the project
    Probability: Negligible
    Impact: Low
15. Unrealistic client expectations- The client's expectations are too large for their budget and timeline
    Probability: High
    Impact: Medium
16. Legal risks- The legal requirements surrounding the scope of our project change, jeopardizing our previous development work
    Probability: Negligible
    Impact: High
17. Cybersecurity risks- A cybersecurity event causes delays in the development of the project.
    Probability: Medium
    Impact: Very high
18. Lack of communication- Not enough confusion between teams and stakeholders leads to confusion and a lack of clarity
    Probability: Medium
    Impact: Low
19. Website becomes obsolete- External business factors on Best Community Service cause the website we are designing to become obsolete or unneeded
    Probability: Low
    Impact: High
20. Lack of customer approval- Customer delays in approval to milestones or conceptual design/prototype lead to delays
    Probability: Medium
    Impact: High
21. Improper integration- Failure to properly integrate modules leads to massive project delays
    Probability: Low
    Impact: Very high

Part II:


Very High
High
Medium
Low
Negligible
Probability
Risk 3
Risk 7
Risk 15
Risk 6
Risk 18
Risk 2
Risk 11
Risk 5
Risk 20
Risk 17
Risk 8
Risk 4
Risk 12
Risk 13
Risk 19
Risk 1
Risk 9
Risk 10
Risk 21
Risk 14
Risk 16
Negligible
Low
Medium
High
Very High
Impact

Part 4: Lessons Learned

Provide a narrative description of 10-12 issues or problems your team faced during your work on the project and explain how your resolved that issue and your recommendation on how to avoid it (if possible) in the future.

Lesson 1:

Problem: Software Supportability for Project Schedule Creation

Description of Problem: Our team wanted to create a Gantt chart to create a project schedule mapping the overall time it would take to create the Best Community Service website. In order to do this we used a software suggested by our client called click up which can display tasks needed to be completed by teams in an organized manner by showing clear deadlines. When working on the project schedule on ClickUp we used up the free trial offered. We were unable to use this software anymore as there was a paywall in place, and our client was unable to meet the financial needs to support the ClickUp App.

Solution: We consulted with our client, and explained this problem. We derived alternative solutions to create the Gantt Chart and decided on using Excel as it has a built in Gantt chart creator. ClickUp has an export feature which allows us to convert data we entered on this app to Excel, so it made the transition of keeping all deadlines and milestones in track. Once we wrote all the data needed for the project schedule on Excel, we were able to deliver the Gantt chart.

Recommendation: Our recommendation for future teams is that they do a lot more verification on any information we receive from the client. This way we can be sure that any tools that they want us to use will work for the desired purpose and won't leave us scrambling to finish deliverables at the last second.

Lesson 2:

Problem: Adhering to Client's Expectations

Description of Problem: Initially when starting the project management class, and learning ways to build a project, our team had little knowledge on the importance of client meetings. When we started the Best Community Service project, and started filling the SRS, and WBS sections of the project planning - our team was missing crucial information needed to make this project complete. We weren't meeting client expectations on what is required with the Best Community Service project.

Solution: As we knew that a successful project requires good project planning skills, we made sure to ask our client Ashraf Gaffar questions about project topics that were a little foggy to us. This allowed us to gather important information that helped us during the entire project planning process. It made us more confident as a team when delivering project deliverables throughout the rest of the semester.

Recommendation: Make sure you ask plenty of questions to the client in all phases of the project. This will remove any delays in meeting project deadlines. Additionally, asking questions makes the job of the project team much easier to carry out and reduces costs and time, which increases the likelihood of project success.

Lesson 3:

Problem: Failing to Comply to Agile Software Development Process

Description: One of the important standards of an Agile run project is the collaboration between team members to develop solutions to problems raised during the project work time frame. To have great collaboration ideas must be shared between team members, work has to be deviated to team members, and team members should be able to adapt to any issue that arises within the project. Initially, though, with our group there was a lack of communication. Many people would lack the understanding of what work needed to be completed, and that led to us failing to follow simple agile standards

Solution: We had to figure out a way to build an engaging, collaborative work atmosphere for our team. Thus. We created a Discord so all group members are connected 24/7. Also we meet together once a week to discuss project requirements so all of us are caught up to date, and know what is expected of us.

Recommendation: Make sure that you are adhering to a strict Agile process. There are plenty of free tools online to help facilitate an agile environment. It has been empirically proven that Agile processes increase the likelihood of project success, so adhering to these guidelines is absolutely crucial.

Lesson 4:

Problem: Lack of Communication

Description: Our team had poor communication with each other and the client. The main source of communication between our team was discord. This is where we would assign tasks for each member to do but sometimes, team members did not check the team chat often so it led to other team members having to pick up the slack of the ones that didn’t do their share of the work.

When it came to understanding what the client's expectations were on the product. Some team members were not informed on what exactly needed to be done in order to finish certain tasks because they did not check the team chat in discord. Team members were also expected to meet once a week but many of the team members didn't inform the team of when they were going to be gone so when it came to actually meeting, some members were just missing. For these reasons it caused confusion and poor quality work being delivered. It also created a disconnect between the team members and thus losing a sense of purpose when it came to working together.

Solution: In order to fix this, the team has agreed to check the discord chat everytime there is a new message and stay true to the deadlines that are assigned for all work needed to be done. All team members will be staying informed on client expectations so that no one is misinformed about certain requirements needed to be met. Lastly when it comes to team meetings, we will send a summary of the meeting information gathered during the meeting.

Recommendation: We recommend establishing a baseline communication method being discord with clear implications on when team members need to check the team chat. This needs to stay consistent throughout the entirety of the project to ensure quality communication. Also accountability will be taken by individuals who are not doing their due diligence of communicating with other team members about what they are doing or need help with, and if needed the team will meet with the individual to talk about what is expected of them.

Lesson 5:

Problem: Availability of Team Members

Description: Being available is one of the biggest driving factors in a project's success. Our team had an issue with many team members voluntarily being unavailable whether it be not showing up to the weekly scheduled meetings or not checking the discord chat to stay informed on what tasks to do. In order to have great collaboration between the team, the team needs to be consistently available in order to execute the tasks that need to be done. When team members are not available this delays the work a lot, as team members provide lots of productivity, and when the work is delayed then it will make it much harder for the team to meet the deadline. This is because other team members may have to pick up the slack to hit the deadlines or it may cause rushed work by the unavailable team members which results in low quality production.

Solution: The team has agreed that when it comes to being informed, weekly meetings, and being available for other team members, everyone needs to be present. No team member is allowed to voluntarily be unavailable as it affects the team negatively. If a something does cause being absent then the individual needs to inform the team through the discord chat

Recommendation: Instead of team members just voluntarily skipping meetings or not checking the discord chat, we recommend the team to always check the discord when a new message is sent and to always meet weekly unless something changes. This will help every individual stay consistent and if someone is absent, then the team will be informed about it beforehand.

Lesson 6:

Problem: Maintaining Quality of Project Planning

Description: While we started this project with lots of energy and wanted to have high quality, effective, meetings, as the semester progressed, you could tell we were losing steam. While the initial project planning meetings and the plans created from those meetings were very high quality, less thought and effort was being put into them as we moved forward. This became a problem as we continued to divy up work because previously there were clear objectives for each part of the project and for each team member, but those objectives became less and less clear as time went on.

Solution: In order to figure out how to reinvigorate our meetings and produce quality plans, we decided that instead of one person typing up their objectives during the meeting, we would each work on a shared document with all of the goals in one place. By doing this, each member would catch mistakes or raise points about the objectives being discussed that other team members may not have caught. As a result, we saw a dramatic improvement in the quality of our project planning as everyone was engaged in every step of the process.

Recommendation: We would recommend starting a project with a shared planning document in the future instead of allowing team members to have their own, private notes. While private notes may work initially, as a project progresses and complexity increases, it can become harder to identify clear goals. Having a shared document will help maintain the quality of project planning as all team members will have input into the objectives of other team members (which will avoid overlapping goals).

Lesson 7:

Problem: Adhering to the Project Scope when planning the project

Description: As software engineers, it is easy for us to get sidetracked while developing a component of an application and quickly get off scope. This is because we are naturally creative

types, and while working on a problem, our brains are thinking of ways that we could improve what we are working on through additions or adjustments. However, this is a trait that we must reign in on clearly defined group projects so that we meet the clients specifications, not our own conceptions of what makes a good project. This was a problem we encountered a few times throughout the project as we developed different parts of the web application.

Solution: In order to curb this creative tendency to go off scope, we created clearly outlined plans of what was to be included in each specific part of the website. Then, if someone was considering adding a feature that wasn't listed, they were obligated to ask the team if that feature was in our project's scope before going ahead and implementing it. This way, time wasting would be limited and a team member would be more certain of their addition if a group consensus could be reached.

Recommendation: We would recommend creating clearly defined plans for features, as we did, to avoid this issue in the future. This is because this was a very effective way to outline requirements that we all agreed were within our project's scope, which avoided confusion and wasted time on features that were not within our scope.

Lesson 8:

Problem: Setting clear goals and objectives as a team for the project

Description: As students, we are currently in the process of learning the logistics of project management, and learning how to adapt to the aspects and the process of project management. Due to this reason, it can sometimes be difficult to set clear goals and objectives for a specific project as a team, as everyone may have different views as to what the goals and objectives should be for the project. However, this is something that is very important for a team to adhere to, as without setting clear goals and objectives for a project, it would be extremely difficult to complete the project accurately. This issue could disrupt the smooth running of all the required objectives, which is why it is extremely important for team members to come to a conclusion to set clear goals and objectives for the project. This was a problem we encountered a couple of times during the initial stages of the project, as not everyone was able to be on the same page to set clear goals and objectives.

Solution: In order to be able to set clear goals and objectives for the project, we created a clear outline of all the objectives that we selected as a team, by listing out all the requirements for the final project. If a team member feels that there needs to be an additional objective later on during the project, all the team members will have the opportunity to decide its feasibility depending on their explanation. We also maintained thorough documentation and communication amongst ourselves, to ensure that all the team members were on the same page as far as the objectives were concerned, and to maintain the progress of all the work being done. A similar practice was

followed to set clear goals for the project, which allowed us to not waste any time, and allowed us to follow a steady progress.

Recommendation: We would recommend creating clear objectives and goals at the very beginning, during the project planning step, which would allow the team members to know what they need to work on in order to achieve those goals. This is because this was an extremely useful tool for our team, as everyone was well aware of all the objectives they needed to work on for the project, which would help us to complete the project successfully. This would also avoid any future chaos during the implementation of the objectives.

Lesson 9:

Problem: Poor risk management

Description: Application of effective measures for auditing project performance is the key to any project's success. Initially, our team wasn't able to audit processes that would have allowed us to evaluate any concerns, problems, and challenges that may surface during the course of our project. At first, we were not able to pin-point what could possibly go wrong with our project planning, and hence we faced challenges while working on the project schedule, which caused unforeseen risks affecting the project's timeline, as it took us time to understand, analyze and respond to the challenges. This is a problem because poor management has the potential to severely impact a project's success, and being students, we could not afford that mistake.

Solution: After a thorough analysis and a discussion amongst ourselves, we figured out that in order to improve our risk management, we need to know four objectives, that is, what can possibly go wrong, the reason behind that problem, what would be its impact, and finally, how we could solve the problem. This is something that we have been practicing throughout our project management, which has allowed us to overcome any hurdles in the way that could have potentially failed our project's progress. Following this early identification of any potential risks, it allows us to minimize delays to the project schedule.

Recommendation: Successful risk management strategies can help team members to minimize any delays to the project schedule. Practicing early identification of risks, such as conducting risk assessments throughout the timeline of the project of every objective the team is working on can avoid poor risk management strategies. When any inefficiencies are identified, root cause analysis can be performed, and corrective recommendations can be made, to ensure similar mistakes are avoided in the future.

Lesson 10:

Problem: Lack of accountability

Description: For our team, this issue is something that was linked to setting clear goals and objectives for our team. Initially, during the early stages of project management, the responsibilities of each team member was unclear, which caused lack of accountability. Since the expectations and prompt feedback was lacking initially, it caused other issues such as decreased productivity and extended delays in the timeline of the project. This was a huge problem for our team, as we had an underlying issue, such as unclear roles and responsibilities, a poor strategy, caused multiple unwanted delays in our project schedule, which could have affected our project progress drastically.

Solution: In order to make sure that we avoid any circumstances of lack of accountability, we clearly communicated with our team members, discussing any underlying issues that may cause any delays in the schedule. Instead of pushing around people to get the work done, team members took the approach to tackle any issues with a leadership mindset, which helped everyone to stay on track, and adhere to the schedule as planned. We also maintained track of progress for every individual and every task, in order to ensure everything was completed before time. This avoided any unwanted chaos, loss of time, and loss of communication, as everyone was able to take accountability for their actions, and was able to complete the objectives of the project as discussed.

Recommendation: In order to avoid such an issue, it is important to discuss the roles and responsibilities of each individual, prior to creating the objectives of a project. It is also important to know the goals and objectives of each individual in the group, which will further allow everyone to take a better approach in understanding any underlying issues that may arise during the course of the project. It is also important to keep a track of the progress being made by each individual, which allows everyone to know what is going on with the project.