University of York

Department of Computer Science

SEPR - Assessment 2

Updated

Risk Assessment and Mitigation

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Risk Assessment and Mitigation

Categories

During the risk assessment, six categories of risks were identified: people, tools, organisational, technologies, requirements and estimation. They are defined as:

- People category contains risks related to the team members.
- Tools category contains risks related to the development tools.
- Organisational category contains risks about the management of the team.
- Technologies category contains risks related to hardware or software.
- Requirements category contains risks about managing requirements.
- Estimation category contains risks about the estimation of time and software characteristics.

Likelihood

The likelihood of the risks has three levels: low, moderate and high. They defined as:

- Low level risks are not likely to occur.
- Moderate level risks commonly occur.
- High level risks are likely to occur .

Severity and impact

The severity of the risks has three levels: low, moderate and high. They defined as:

- Low level risks could have no or minor effect on the project.
- Moderate level risks could have impact on the project, but treated carefully the team can mostly eliminate the effects on the project.
- High level risks could prevent finishing the project.

The impact is a more detailed description of the severity.

Mitigation

For each identified risk belongs a mitigation plan. In case one or more risks will occur the team will follow this plan to reduce the possible severity. Each of the mitigation plans were discussed by the group at meetings held early on in the project. These plans provide only a basic summary of the mitigation of these risks should they occur. Most likely the group will meet in a face-to-face meeting to discuss the finer details of each plan, and suggest minor changes to the mitigation plan in the context of the problem.

Owners

Throughout the course of the project, the various risks will be monitored by assigned owners. The owners are team members who have been assigned specific roles related to risks, in addition to the roles specified in the Team organisation section. The owners are:

- Team Leader: Monitors risks involving team cohesion and general workflow.
- Plan & Scheduling Manager: Monitors risks relating to the requirements, plan and scheduling.
- Tools & Software Manager: Monitors risks relating to the tools and development software being used for the project.
- Client Interface: Monitors risks relating to the requirements and those that involve the client.
- Resource Manager: Monitors risk relating to individual team members and/or the resources they are using.

Risk register

To list the risks we used a risk register. Each risk is numbered in XY format, where X is a letter and refers to the category and Y is a number and refers to an individual risk. This will help future referencing.

In the risk register likelihood and severity levels are colour coded (low -green, moderate - orange, high - red) for better visibility. Risks, in each category, are listed in descending order of severity firstly, secondly in descending order of likelihood. The severity and the likelihood were voted by the team if risks were low likelihood and low severity we eliminated them from the table.

Risk Monitoring

As the project develops and requirements evolve it is likely that the risk table will need to be updated. Changes to team organisation, project brief, requirements, and resources may create new risks which had not been concerns for previous assessments. As an example, the permanent loss of a team member, due to unforeseen circumstances, may fall under risk A4, however, the mitigation plan would not be sufficient or maintainable for the whole of the remaining assessment. Hence, an update to the table would be required. As a result, the team has discussed a suitable method for monitoring risks and updating the risk table. As mentioned previously, each risk will be assigned to an owner who is responsible for the managing of the risk. This also helps to reduce the possibility of risks not being mitigated appropriately as not one induvial of the team is responsible for overseeing all potential risks and managing them accordingly.

Every three weeks the team will attend a meeting where the risk assessment table is reviewed. It will also enable members to update on previous risks and suggest new risks which may have become relevant. Also, the team can deliberate over whether the impacts and mitigations of risks which have transpired were accurate and effective, and updates can be made accordingly. The risk register will be updated at each risk monitoring meeting. In cases where risks are no longer relevant, we will delete them from the risk register. If new risks are discovered, we will add them to the table along with a mitigation plan. The severity and likelihood of risks, including new and established risks, will be discussed at our risk monitoring meeting and updated if necessary.

This regular risk monitoring process should hopefully reduce the likelihood of risks being unnoticed and reduce the impact of unanticipated risks. This, in turn, will allow risks to be brought to our attention quicker and hence negative effects on progress can be addressed and lessened.

Category	ID	Risk	Likelihood	Severity	Impact	Mitigation	Owner
People	A1	Inability to work effectively as a team.	Moderate	High	Collaboration ceases and quality standards drop.	Efforts made to improve team bonding and adjustments to roles made.	Team Leader
	A2	One or more group member coding style is not readable.	High	Moderate	Collaboration becomes more difficult and can lead to confusion on tasks.	Documented code and well defined interfaces.	Resource Manager
	A3	Lack of enthusiasm in a group member.	High	Moderate	Increased workload for others which can lead to a lack of motivation.	Observation of, and communication with, underperforming members.	Team Leader
	A4	One or more group member gets ill unavailable close to deadline.	Moderate	Moderate	Workload of other members increases most likely leading to a drop in quality of deliverables or deliverables not being finished on time.	Ensure no one person is solely responsible for a work-package or task. Re-design of plan for current iteration (Sprint) to redistribute workloads.	Team Leader
	A5	Disagreement of execution.	Low	Moderate	Lead to a lack of direction with the task and created tensions within the group.	Having an expert on each work-package responsible for making executive decisions.	Team Leader
	A6	Developing the wrong software functions.	Low	Moderate	Missing needed functions as a result of developing incorrect functions.	Clear defined plan and well-defined specification. Efforts made to constantly check requirements.	Plan & Scheduling Manager
	A7	Lack of required skill in a group member.	Moderate	Low	Increases workloads of others and can be disengaging to struggling team member leading to decreased motivation.	Allocations of roles adjusted accordingly and an expert paired with member to improve skill set.	Resource Manager

Technologies	B1	Loss of files/code due to hardware failure.	Low	High	Progress stalled and time has to be reallocated to re-coding, reducing time to focus on other tasks. Quality will almost certainly drop.	Back up on GitHub repositories and other cloud services.	Tools & Software Manager
Tools	C1	Use of challenging or unsuitable game engine.	Moderate	High	Difficult for other team members to comprehend the game engine and application to other implementation.	Better research on game engine and understanding of requirements.	Tools & Software Manager
	C2	Use of unsuitable, non-integrable tools.	Low	Moderate	Will have to redesign our workflow and future plans.	Have a clear list of what tools are suitable and integrable.	Tools & Software Manager
	C3	Failure of version control software(Git).	Low	Moderate	Loss of code and documentation meaning. Time has to be spent re-producing deliverables.	Individual repositories, backups on different storage devices e.g. own laptops and google drive.	Tools & Software Manager
	C4	Licence for required development tools is not acquirable.	High	Low	Will not have access to the most suitable and the highest standard tools. Issues with copyright mean graphics and artistry will be difficult to acquire.	Utilise free tools familiar with students and available through the university. Utilize student discount on educational tools.	Resource Manager
Organisational	D1	Unclear schedule	High	Moderate	Time allocated for specific work-package unsuitable leading to rushed production and a drop in standards.	Constant re-evaluation of plan and improve understanding of future assessments to have better understanding of what is required.	Plan & Scheduling Manager
	D2	Unrealistic plan	Low	Moderate	Work will not be finished within the allocated time and the time of other tasks may be taken to compensate, most likely to leading to a drop in quality.	Ensure full understanding of what is required by updating requirements regularly. Make adjustments to plan as and when circumstances change.	Plan & Scheduling Manager

Requirements	E1	Requirements that have been missed/overlooked/forgotten.	Low	High	Product does not meet all of the clients requirements as they were not all accounted for.	Regularly updating requirements and multiple checks with client to make sure all the group has all the requirements.	Client Interface
	E2	Ambiguous requirements	High	Moderate	Time may be wasted developing something that doesn't meet the requirement it was aiming to meet.	Read assessment brief thoroughly, meet client frequently and discuss the requirement is greater detail.	Client Interface
	E3	Timeline may be affected by change in requirements	Moderate	Low	Less time for the new requirements, potentially uncompleted project by deadline.	Flexible schedule and attaining to agile method which incorporates changing requirements.	Plan & Scheduling Manager
	E4	Delay in getting response from client	Moderate	Low	Timeline affected because of the waiting.	Contacting client regularly until response is received to minimize waiting. Adjustments to plans should be made compensate for wait.	Client Interface
Estimation	F1	Underestimation of time needed to familiarise with development software.	Moderate	Moderate	Less time for development, potentially uncompleted project by deadline.	Allocating more of group members' time to familiarising with development software and updating plan/schedule so that project is completed.	Resource Manager