Change Report

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Part A:

Introduction

After taking over Team 10's project, our team implemented a structured approach to planning, making, tracking, and reviewing changes to the original Assessment 1 deliverables by utilising different processes, tools and conventions. This ensured the updates aligned with the revised objectives for Assessment 2.

Firstly, the team conducted an initial analysis of the inherited deliverables, identifying any areas that required immediate extensions in response to the updated assessment 2 product brief. During this phase, we examined the Requirements Document, Risk Assessment and Mitigation Report, Method Selection and Planning Report, and Architecture Report for gaps or misalignments with the revised scope and used this to aid the creation of a plan for this process.

For documentation updates, we relied on Google Docs, which allowed for real-time collaboration and included the use of comment features to track suggestions and feedback. We prioritized clear communication within the team, allowing team members to stay informed of modifications made by others, reducing the risk of misunderstandings. We also collectively agreed that all additions made to the updated documents would be highlighted. The intention of this is to provide a clear visual representation of our contributions to each document, making them easy to distinguish from the original content.

We used continuous updates to the method selection and planning report, to set deadlines and allocate team members to specific tasks in the approach to updating each of the documents, based on their individual areas of expertise. This report was available to all team members throughout the duration of Assessment 2, so everyone could stay informed of the allocation of roles within the team. Communication was critical to this process; we engaged in discussions with members of Team 10 to clarify any questions regarding the original deliverables. This was essential in allowing us to gain a comprehensive understanding of their existing work, so we could update it effectively.

In order to extend team 10's implementation to meet the full product brief, we utilised Github as a tool to ensure modifications made to the code were traceable. Code comments clearly identify new or extended sections of code, and these are further identified within this report.

Part B:

Requirements:

The original Requirements deliverable inherited from team 10 was a comprehensive report of the Requirements for Assessment 1. This included a systematic account of both user and system requirements in a robust format as described in their introduction. However, as this report did not include any of the requirements necessary for Assessment 2, changes were necessary.

Introduction Changes

The introduction of the original report required minimal updates, as this section primarily described the document's formatting. As the format remained largely unchanged from the original, only a single sentence was added to clarify that any requirements modified or added for Assessment 2 would be highlighted in blue. This was done to ensure readers could easily understand the purpose of the highlighted sections.

Updated Requirements

We began the process of revising the requirements by analysing and comparing the product brief for Assessment 2 with the existing requirements we inherited from Assessment 1. We first highlighted areas of the brief that were not addressed and systematically mapping each requirement to the corresponding aspects of the brief. In addition to this we analysed the requirements we had identified from our initial client meeting that pertained to Assessment 2 to ensure we would meet our client's expectations and desires. After identifying what we needed for the product, we formalised these as user requirements, both updating existing requirements (i.e. *UR_LOCATIONS*) and extending the list to include any aspects that were not previously covered. This thorough approach ensured our requirements were complete and exhaustive.

To address the new requirements included for Assessment 2, we added to and updated the original Requirements. *UR_LOCATIONS* was updated to include the requirement for additional building types; and *UR_SATISFACTION, UR_WIN, UR_EVENTS, UR_LEADERBOARD* and *UR_ACHIEVEMENTS* were all updated to address the new requirements added for Assessment 2 identified from the product brief. With the addition of these, we also created the new functional requirements *FR_EVENT, FR_USERNAME, FR_DATABASE, FR_RESET, FR_SATISFACTION_VARIABLES* and *FR_CURRENCY* to describe more specifically how our product will deliver on these new user requirements, aiding in the future architecture and implementation processes. After a team discussion, *UR_CONTROLS* and *FR_CONTROLS_CUSTOM* were added to address the user's ability to customise their controls from the settings menu within the game. This decision was made to enhance user experience by providing flexibility and accessibility for players, ensuring that this functionality would help to accommodate individual user's preferences.

The original table was also identified to be missing explicit system requirements for placing and removing buildings, so this was added: UR_LOCATIONS_REMOVE. Both UR_LOCATIONS_MOVE and UR_LOCATIONS_REMOVE were also set to a priority of "shall" following the new product brief for assessment 2. Furthermore, the traceability of both of these user requirements to corresponding system requirements was unclear, so the team

agreed to include FR_LOCATIONS_MOVE and FR_LOCATIONS_REMOVE as a resolution to this issue.

We did not identify any new non-functional requirements for Assessment 2, as the qualities and constraints for the game remain the same as for Assessment 1.

Architecture:

The original Architecture deliverable from team 10 included all the necessary diagrams and justifications for their Assessment 1 game. However, for Assessment 2 significant changes to the architecture of the system were necessary as many new requirements had to be realised. This meant that we started Assessment 2 off with a refactor of existing code to facilitate easy addition of new functionalities.

UML Diagrams

All of the UML diagrams were constructed for the architecture of the Assessment 1 game, which was severely unequipped to handle the requirements for Assessment 2. Therefore, the class, component, state and sequence diagrams had to be modified to match the new structure of our game and the additional packages that we added. A significant difference within these additional packages was our large focus on managers to organise the functionality efficiently, which was appropriately justified within the Architecture document.

Method Selection And Planning:

The original Method Selection And Planning deliverable inherited from team 10 spoke about the methods that they used throughout Assessment 1. The methods they employed, although very similar, differed slightly to our methods and would not provide the structure necessary for Assessment 2. Additionally, the reflection section of the document is entirely subjective and would have to be tailored to our experience. Therefore, in order to account for the difference in methods between our teams we identified the need to update this document.

Software Engineering Methods

The methods employed by the other team and their reasoning were almost identical to the methods that we have chosen throughout the project. However, throughout our project PlantUML was a significant part of the planning process and was a vital tool for the organisation of our team. This was not something the previous team included in their Method Selection and Planning document, so a section discussing the fitness of PlantUML and alternatives was added to the document. Instead of using PlantUML the previous team used Google drive to house their project planning documents such as meeting minutes from sprints, which is not something that our team did, so this section was removed from the justifications for Google drive.

Organisation Approach

Our team had a similar approach to organisation throughout the project, however the previous team used a meeting diary to keep track of tasks and responsibilities. Our team instead relied on the weekly Gantt chart plans and two Kanban boards on Trello to keep

track of our ideas and duties. Additionally, we did not use “backups” for each role, we instead opted for leaders for subtasks and assigned multiple members to tasks.

Reflection

Our reflections were different to the previous teams as we had different strengths and weaknesses within our plans to the previous team. Additionally, the work we were doing within Assessment 2 varied from Assessment 1 meaning that a change to the reflection was necessary.

Risk Management:

The original risk management report considered the possible risks the team may have encountered throughout Assessment 1, categorised as Project Risks, Product Risks and People Risks. However, in order to account for the new risks associated with the handover of the project to a new team - we identified the need to update this document.

Introduction Changes

We initially used the introduction of this document as a tool to understand how the original risk table had been formatted. The previous team analysed risks by assessing their likelihood of each risk occurring and severity of their occurrence before and after carrying out the identified mitigation strategies. Our team preserved this structure, refining certain aspects where necessary to apply to Assessment 2.

Adjustments were made to the introduction to ensure clarity in the description of the formatting of the table. For example, we significantly extended the descriptions of the rankings for ‘Severity’ and ‘Likelihood’ and described the role of each column within the risk register - as this was not provided initially. As the original risk register did not use color coding, we decided not to apply it to our modifications either - the risk ratings combined both likelihood and severity into a single column, so color coding was not feasible.

One significant addition made to the introduction was an explanation of the use of highlighted text as a tool for tracking changes: Yellow indicating where text had been reworded for grammatical corrections to the original document, red indicating text to be removed, and green indicating any additional text. This explanation was necessary to ensure readers could easily understand the colour-coding system - eliminating any potential confusion over the meaning of each colour.

Updated Risks

The most significant change we made to the document was reallocating responsibility for handling and mitigating each risk to different members in our own team. The original document listed members of the previous team, so required names to be changed to allocate responsibility for managing the risks. This reallocation ensured alignment with the roles, strengths and areas of expertise of each individual within our group. This process was carried out as a team to ensure responsibility was fairly distributed across the group and all members were happy with accepting the responsibility for their newly assigned risks.

After further analysis of the risk table, we concluded that some of the risks in the original document were not applicable to our team. R2: “Secretary is unwell or does not show up.” was altered to “Team member in charge of planning is unable to attend a meeting.”. These changes were made to reflect how our team had appointed members to concrete tasks, based on the deliverables for the assessment, rather than giving out traditional titles with more abstract roles within the team (like “Project Manager” or “Secretary” as Team 10 had done). R1: “Game Logic Designer stops showing up/participating” was reworded to “Team member responsible for implementation is unable to attend a meeting.”, our team did not appoint a single Game Logic Designer; instead we assigned two of our members to collaborate on all aspects of the implementation, as this approach had proved successful during Assessment 1. Having two team members for this task also lowered the likelihood that both would be absent at once - acting as a preventative measure for the occurrence of this risk.

Another update made was to “R6: Losing locally stored project data”. The links to the project Repo and Website have been revised to reflect our own repository and website used for Assessment 2.

Additional mitigation strategies were also added to some risks to further reduce potential costs to project resources in the event these risks were to occur. R5: “Not fully meeting the product requirements in time.”, as well as scheduling regular meetings and aiming to be realistic about the project time frame, we also created weekly plans with internal deadlines as a further prevention strategy for the risk of running out of time - further reducing the likelihood of this risk occurring to “LOW”. R9: “Client unhappy with product direction.”, in addition to maintaining regular communication with the client, the team also regularly reviewed the project requirements to ensure they were aligned with our product’s development.

Some risks were identified to be incorrectly classified as project risks rather than product risks. Both R10: “Inconsistent naming of attributes and methods in source code” and R7: “Incorrect behaviour of the game at runtime” were identified to be incorrectly classified as project risks, so were updated to be product risks instead.

New Risks Identified

In addition to adapting existing risks, our team also extended the risk table to include new risks - related to inheriting the project and the extended requirements for Assessment 2.

R15: “Delays and errors arise after project handover due to unfamiliarity with tools or methods used by the initial team.” Assessment 1 offered each team a large amount of flexibility when choosing which tools to use for each component of the project, so R15 was implemented into the risk table to encompass the risks related to the use of these unfamiliar tools when inheriting the project. For example, the delays resulting from unaccounted for time spent learning any unfamiliar tools utilised within the previous team’s Assessment 1.To mitigate this risk, we ensured awareness of all unfamiliar tools the team had used, distributing these within the team so each member was not tasked with learning more than one of these.

R16: “Misunderstanding project components transferred from the previous team - such as code or documents.”. R16 covers the risks associated with inheriting components from a previous team and being unable to understand some included information. For instance, understanding the structure of an Assessment 1 deliverable is essential to extend it for Assessment 2. If a team member is unable to understand the initial structure of a deliverable, it may result in errors when they are tasked with extending it. Similarly, if the team encounters difficulty understanding sections of the inherited code, delays may arise when attempting to implement Assessment 2 requirements.

Team 10 Original Deliverables:

Requirements 1
Architecture 1
Method Selection and Planning 1
Risk Assessment and Mitigation 1
Found at [https://tameu.github.io/documentation.html]