Team 4 - “Pirate Hygiene”

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Section 2 – Change Report

2.A)

When approaching change management team members would discuss any changes we wanted to make while developing the game. Before making these changes the team evaluated how that change would affect the whole system. This meant that we could predict and prevent any bugs from being created by adding new features or updating old ones. We would then decide if this change was necessary by looking at the requirements and what problems the change may cause. If approved the change would begin to be implemented. During implementation, team members would document changes by providing a description detailing the exact changes that have been made for each commit to the repository.

We also used GitHub actions to automatically produce a release including the latest changes each time a new addition is pushed to the main branch of the project. This ensured that the team always had access to an up-to-date version of the game allowing for the impact of each change to be evaluated post-implementation. This is a form of system prototyping and allowed the team to make certain that no new additions had affected any previously implemented requirements as well as making it easier for the team to check for any errors that could break the game.

When making changes to documentation we would check through the current documents and assess what needed to be added or amended to match the new deliverables and changes to the product for assessment 2 as well as any missed or poorly implemented deliverables from assessment 1. We would then list the changes we made within the change report discussing why we made the decision to change this part of the documentation. Changing aspects of the documentation allowed for the team to evaluate various changes that needed to be made to the product such as the new requirements and any new risks associated with them.

2.B)

I. Requirements

- changes made to user requirements:
    - Updated the priorities of UR_SHIP_COMBAT, UR_OBSTACLE_ENCOUNTER, UR_WEATHER_ENCOUNTER, UR_SPEND_MONEY from ‘Assessment 2’ to ‘Shall’.
        - This is due to these requirements becoming necessary for assessment 2.
    - Fixed spelling errors.
        - Makes the documentation more professional.
- Changes made to functional requirements:
    - Updated the risks for FR_POWERUPS, FR_DIFFICULTY, FR_SAVE_STATE, FR_RESTORE_STATE to include new risks added to the risk register.
        - This was necessary due to the new requirements creating new risks which needed to be documented.
    - Fixed spelling errors.
        - Makes the documentation more professional.
- Changes made to non-functional requirements:
    - Updated the risks for NFR_SAVEFILE_AVAILABILITY to fit with the new risks added to the risk register.
        - This was necessary due to the new requirements creating new risks which needed to be documented.

Not many changes were needed for the requirements documentation as assessment 2’s brief did not change the requirements it just added new ones. This meant that most of the requirements already outlined in assessment 1 were still necessary for assessment 2 so did not need to be changed.

II. Architecture

The abstract and concrete architecture of the software did not undergo major changes when compared to Assessment 1. There were no changes in the abstract architecture as it was suitable for Assessment 2 and therefore followed. There are a few changes/additions in the concrete architecture such as:

- KillDuckQuest that inherits from Quest class. This is added due to a wanted feature in the game, being able to fight and defeat a sea monster for Assessment 2
- EnemyState that inherits from State class for combat features between ships(player fighting enemies and allies fighting enemies) that is also required for Assessment 2
- Chest, DuckMonster, Powerup classes that inherit from the Entity class. The Chest entity is created in order to collect plunder for quests or during combat which was not implemented in Assessment 1. DuckMonster entity is created for the sea monster feature required for Assessment 2. Powerups are created for the combat feature and shop feature for Assessment 2.
- DataCollege, DataShip, and DataQuest all 3 are new classes used for creating objects and maintaining their data, SaveData is created for the feature of being able to save the game for Assessment 2.

The reason for having minor changes and additions to the architecture from Assessment 1 is that the architecture provided is a well-defined base(as mentioned in Assessment 1 the structure of concrete architecture is informed by that of a game engine) for Assessment 2 where specific classes and subclasses that are provided make it easy to continue building and developing the game further without any need for major changes(e.g having entities, components, screens, quests, managers) and only a few extensions were added to existing classes mainly for completing the product and feature requirements of Assessment 2.

III. Methods and plans

Part A

- Addition of other alternative communication software's to use throughout the project.
    - There were provided alternatives that were not selected among Website, Architecture, and Implementation, however there wasn't any alternatives considered for the Communication section hence Slack was added to it.
- Change of methodology for Assessment 2 compared to Assessment 1.
    - As it was stated that the plan-based methodology was used due to the lack in changes in requirements once Assessment 2 began and there were new requirements it gave the opportunity when taking over this project to change the methodology to a more suitable one for us as that what we used in our Assessment 1 and found it effective when implementing as it allowed for a more customer interaction-based product.

Part B

- Assignment of new team roles post project takeover
    - Having people dedicated for a role will allow for meeting to run more efficiently hence when taking over we have re-assigned the roles to people who would be able to suit that role needs from the four available ones.
- Separated Librarian and Report Editor roles into two separate roles
    - As there were more than enough team members present in our meetings, we were able to separate that singular role into two separate ones having the workload during meetings distributed more evenly.

Part C

- Deletion of Estimated Time (weeks) in the Plan table
    - The information was redundant as it didn't contribute to any valuable information when assessing the plan table as the Gantt chart as well as the start and end dates within the plan providing the expected duration for those sections of the project.
- Addition of the Priorities column within the Plan table
    - Including priorities in the plan allows for a more focused distribution of work allowing for the sections with higher priority to have a larger amount of attention and possibly number of members working on it compared to ones with a lower priority.
- Addition to the progress indicator missing in the Gantt chart for submission section for the peer assessment

- As due to that the Gantt chart wasn’t fully complete the addition of that single element completed it allowing for the Assessment 2 section to be implemented into the next part of the Gantt chart.

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IV. Risk assessment and mitigation

- The column heading categories have been expanded in the initial part of the risk assessment & mitigation document stating different classifications as well as their definitions and their possible impacts on the project e.g Category types for risks, Likelihood and Severity.
    - The expansion of the risk register categories occurred to provide a more thorough documentation for that section of the risk assessment. This expansion adds extra details on what area of the project the category effects as well as its subsidiary classifications and how within the register they're presented.
- Exempting the "Monitoring" column from being included in the risk register
    - This decision was based on the information that was provided within the original document. Although the concept of the monitoring section is a great idea to track if any of the listed risks have occurred it could be done more efficiently through a third-party software or in our case communication in Discord.
- Addition of the "New Owner" section and column in both the classification section and risk register respectively and having more than one owner for the risk register.
    - To allow for a smooth takeover. The new owner section allows to select new individuals that were familiar with the areas of risk before the takeover of the other groups project allowing for a more even distribution of work in the case
- Separating the risk register into "Assessment 1" & "Assessment 2" subsections.
    - As the requirements change for the second part of the assessment it was decided to separate the risk register into two sections to present a clearer and easier to navigate table when identifying risks and assessing their mitigation methods in case they occur.
- The Risk IDs have been rearranged
    - In the original the Risk IDs weren't in an ascending order occasionally missing some Risk IDs. The reason for the rearrangement is that when separating the table into sections there was a hole in the register as there was an Assessment 2 risk identified in the Assessment 1 release of the Risk assessment & mitigation.
- Some of the types within the risks register has been edited the following edited are:
    - Following a group discussion, we decided to re-assess the risk types listed in the risk register as we didn't believe that all the risks displayed could've been under the "Technology" classification. Upon re-assessing them we used newly established categories at the top of the document for the risk types to re-evaluate which category is most suitable for them.
- Combining the previous version R1, R3 & R12 into a single risk.
    - Those three risks where all revolving around the quality and implementation of the "AI" within code stating differently worded consequences and using the same method of mitigation said risks. For the likelihood & severity it was decided to go with the highest level of both as it's more reasonable to use the worst-case scenario when identifying risks.
- Change to the current R5

- The mitigation method given was inefficient hence it was decided to substitute it to a more feasible method.