RESEARCH INTO THE SIMULATION OF SHOCK WAVES

Scheduling Disclaimer

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Introduction

This document will lay out process behind our initial scheduling plans as well as providing an explanation as to why these documents have not been included within this corpus.

Initial Process

During the first few weeks of the project, we had decided to build our own physics engine, in order to simulate shock waves. With this end goal in mind, we set out with writing a number of documents, including things such as the project's technical specifications as well as other general plans. Amongst these general plans were the predicted deliverable milestones as well as the estimated Gantt Chart.

This chart was broken up into a number of different sections based on the milestones previously decided upon and visualised the necessary order of development. The details for milestone 0 can be seen in figure 1, it displays what our objectives were and when we planned to meet these. We planned for this document to then be updated for milestone two, once we had reached the first milestone; our unfamiliarity with Unity meant that we were unsure which tasks would be required after the first milestone had been reached. However, as we progressed, the group realised that many of the tasks had unforeseen complications which resulted in subtasks taking substantially longer. These continued to occur extremely frequently during the initial milestone and, resultantly, the group decided that the building our own physics engine would be impossible to achieve within the set milestone.

Due to this, we changed the title and aims of our project to be achievable within the given timeframe; moving away from development and instead researching the practicality of our original simulation.

Milestone 0

Dates: Week 5 - Week 7 END

DEADLINE = Monday 31st

- Gantt Chart of Milestone 0
- Product Specification as table and proper document with reasoning and descriptions.
  - Document template
  - Proofread and redraft
- Refactored Class Diagram

DEADLINE = Monday 14th

- Testing document
  - Proofread and redraft
- Prototype engine of our own based on the unity engine layout
  - Documentation of progression of work
  - Unit Testing
  - Decision about if we use Unity Engine or our own
- Finish quality assurance document
  - Proofread and redraft
- Timesheets and Meeting Minutes
- Research/planning documentation(?)

Figure 1 - Milestone 0 Gantt Chart Plan.

Revised Process

In order to cope with this sudden, necessary process change, we decided to alter the way in which the group worked.

We split up into a front-end team and a back-end team to allow for a wider range of research to be carried out simultaneously. Each team would look into a few potential ways of improving the practicality of the system, before attempting to build it, these findings were then discussed throughout the week during quick catch ups with the whole group.

During weekly meetings, we brought together all of our research in order to decide which topics to research next, or what development should be done on the system.

The project became less focused on what the end product would be and became more focused on analysing the practically of the initially proposed system. At some points, for example, we researched into pre-rendering scenes - moving away from real-time calculations - in order to improve the accuracy and efficiency of the system.

Summary

As we chose to use this process, it meant that Gantt Charts were unable to be used as there was no possible way to predict the direction that the research would take us, or what further research would need to be done at each stage.

Furthermore, as we were no longer focusing on a single deliverable other aforementioned documents were not kept up to date as the project moved along. However, the original documents have been included within the corpus submission.