

School of Computing, Electronics and Mathematics

PRCO304

Final Stage Computing Project

2015/2016

BSc (Hons) Computing & Games Development

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<*Your Registration Number*>

<*Your* *Project Title*>

Supervisor: <your supervisor’s name>

Second marker: <your second marker’s name>

Abstract –

Save for the end of the report. It covers the report as a whole so impossible to write before the report is complete.

Introduction –

With the forever growing popularity of computer based games, it is becoming essential to create unique, engaging and powerful artificial intelligence (AI) systems.

The aim of this project was to create a turn based strategy game that can be played against the computer in the form of AI.

This report presents the research, design and production of the turn based strategy game, with a high focus on the artificial intelligence, the main aim being a smart AI system that’s able to assess and formulate a response to a range of different situations.

Main Body –

Background and objectives

The initial plan for this project was a multiplayer real time strategy game, where two players would compete against one another. The players carefully select from a set of predefined characters, position them in any strategical arrangement, then taking turns to move the chosen characters around a fixed map or environment to out manoeuvre their opposition, with an end goal of defeating the opposition in tactical combat.

This initial project idea was carefully broken down into more detail in the form of a project initiation document (PID). After further discussions with my supervisor it soon became clear that this was a suitable project to undergo, however it lacked slightly in terms of a challenge. This level of challenge was expressed to give the project something more exciting than the initial plan and would be a welcome adjustment to the proposed project.

PID – “3. Project objectives, 4. Scope out development miles stones, what is going to be key to make a minimal viable product, increase the focus on areas that are going to be most important”

After further discussion with my supervisor it was suggested that instead of making a game that focused on a player vs player environment that it shifted towards some form of artificial intelligence (AI). Creating a game that was playable verse the computer would require more complex coding methods and research into a number of different approaches to solve this new problem. Using AI in the project would introduce a new area of development to me as I had not programmed any form of AI in the past.

As this was the only additional suggestion made towards the proposed project as well as the PID being approved it in original state. I was confident that it would be suitable project to undergo.

After assessing the project objectives within the PID and comparing them to the Specific, Measurable, Achievable, Relevant, Time-bound (SMART) principle I could see some room for improvement. Although the vast majority of the objectives were specific, giving clear and precise goals and outcomes, I believe that some of them (Objective 4, 5) could have been broken down further to give a greater understanding of the original objectives.

In terms of being measurable all bar the last objective have been formulated to give a clear indication of being completed or not. As for the last object (6. To further enhance my programming and game development skills with a fully functional game) it is more of a personal objective. Although the objective clearly states that it will be measured by the outcome of a fully functional game. The completion of said game could be very basic and not have challenged my programming ability, because of this I feel that it could be rephrased to make it more applicable, emphasizing the need to create a fully functional game that introduces new and challenging elements.

Creating achievable objectives was very important as it would give me a sense of accomplishment throughout the research and development of the project. The moral boost that comes with completing a task is very important in my development process. This is why I have broken down the entire project into incremental steps (available Trello link). Each one of the objectives has resources available to show that they were indeed achievable.

Relevance is an area in which I think I could have improved or altered the objectives. Although the objectives are relevant in terms of the entire research and development process I should have been more specific when writing objectives (5 + 6). I have clearly scoped out appropriate objectives for the research part of the project, however point 3 isn’t as focused as it should be. This point targets the environment I chose to use when developing the project opposed to focusing on the project itself.

Time-bound is an interesting element to consider as the overall project was broken down into project plan which specifies the goals and time frames in which I had hoped to complete each task. Although the project plan doesn’t cover all of the objectives it does break it down into more reasonable tasks to be achieved throughout the research and development stages. Each one of the objectives has been accounted for within the plan and progress was documented through weekly highlight reports. These reports were a healthy reminder of the initial project plan and how each weeks work had fit in with the corresponding time frame.