Computer Games Development

SRS and Project Report

Year IV

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Page BreakAcknowledgements

No one who has helped me, has finished yet.

**Project Abstract**

The problem is creating an algorithm for multiple cars to get to their own destination without getting in each other's way. It is up to the player to make other routes to have smoother traffic and the car AI needs to know a longer route will be quicker with less traffic. I’ve chosen A\* search algorithm to find the ideal paths for each car because it is a very effective algorithm when calculating for a single path and its method of using estimates works very well with moving agents on a path that may currently be blocked or may block another's path.

**Project Introduction**

I chose this topic because of my interest of seeing AIs react to one another while still trying to achieve its own specific goal. The algorithm could be used to simulate traffic where every driver has a goal and doesn’t just drive endlessly. With more work it could even be used for a fully automated driving environment, where every car knows each other's routes and can plan accordingly.

**Background**

The game “Cities: Skylines” is a city building game where you must build the houses, shops and roads to connect everything together. Part of the game is to build the road network so not only can you get from any building to any other, but also to avoid causing bottle necks which lead traffic jams. The idea of an A.I. car having to take the highway because too many A.I. cars were clogging up the city let to idea of an A.I. algorithm to control multiple agents.

**Project Description**

Replace this text with an appropriate Project Description.

Describe your game (including screen-shots, where appropriate).

Description of Learning – two types: “technical” and “personal”. What are your technical achievements – what did you learn? What are your personal achievements?

Page BreakOverview

***Philosophy***

Philosophical point #1

This game is trying to do this and that.  Fundamentally I am trying to achieve something that has never been achieved before.  Or.  This game will not try and change the world.  We are ripping off the competition so exactly that I can’t believe it.  The world will be shocked at how we are using an existing engine with new art.

Philosophical point #2

Our game only runs on Compaq computers.  The reason for this is such and such.  We believe the world is coming to **an** end anyhow so what difference does it make?

Philosophical point #3

When you create some of these overarching philosophical points about your design, say whatever you want.  Also, feel free to change it to “My game design goals” or whatever you like to call it.

Common Questions

What is the game?

Describe the game is a paragraph.  This is the answer to the most common question that you will be asked.  What are you working on?

Why create this game?

Why are you creating this game?  Do you love 3D shooters?  Do you think there is a hole in the market for Jell-O tossing midgets?

Where does the game take place?

Describe the world that your game takes place in.  Simple as that.  Help frame it in the reader’s mind by spending a few sentences on it here.  You can go into lengthy detail later in a section solely dedicated to describing the world.  Remember that we want to keep this part of the design light and readable.

What do I control?

Describe what the player will control.  You will be in charge of a band of rabid mutant fiddle players.  If you want you can switch on the AI and turn it into a fish bowl simulation.

Page BreakHow many characters do I control?

If this applies talk a little more about the control choices.  Remember to add answers to questions that you think the reader will ask.  This is totally dependent on your design.

What is the main focus?

Now that we know where the game takes place and what the player controls.  What are they supposed to achieve in this world?  Angry fiddle players take over the U.N. building.  Be careful not to add a bunch of salesmanship here.  Your design wants to stay light and informative.

What’s different?

Tell them what is different from the games that are attempting this in the market right now.  This question comes up a lot.

Page BreakDefine the Application

What is the application supposed to be?

What the product is.

**What is the application supposed to do**

Usually a small number of core pieces of functionality and a larger number of less important functions

List all functionality- re arrange with most important first.

**Who is going to be using this application**

Identify the user group(s).

**Context Diagram and Use Cases**

**Metrics**

How will you (and we) gauge if your project is successful.

**Is there a precedent for this application? (Your inspiration):**

Is it similar to something already in existence?

How does it differ?

Page BreakDesign Manual

Model the Application.

Design and describe how the application will be used: e.g. Navigation sequence in Web based project.

This may necessitate some high level design in order to convey how the application may be used to access its functionality.

User interfaces should be specified loosely here (possibly screen shots of prototype user interfaces - you will not be held to using these UIs they are just to assist in explanation of your project functionality).

Major architectural components and their relationship to each other should also be diagrammatically (with brief explanation paragraphs) presented here e.g Database backend, web server front end with ODBC connecting them etc.

Include any element that you would feel conveys how you perceive your project will function.

Page BreakProject Milestones

Replace this text with Project Milestones.

Key project milestone dates and measurement on schedule, was project schedule adhered to, effectively planned for delivery on-time or ahead of schedule if appropriate.

**Project Review and Conclusions**

Replace this text with Project Review.

Critical analysis and conclusions written to a highly professional standard including conclusions regarding;

What went right? What went wrong? What (if anything) is still outstanding/missing (i.e., still left to do)?  If starting again, how would you approach this project differently? What advice would you have for someone attempting a similar project in the future? Were your technology choices the right or wrong ones? If you chose the wrong technology, provide justifications for why you think this. What were the implications of your technology choices?

**References**

**Book**

Author(s) - family name, initials. (Year). *Title of book.* Edition. Place of publication: Publisher.

[1] Doe, B. (2013). *C++ for Game Developers.* Indianapolis: John Wiley & Sons.

**Report**

Author(s) - family name, initials. (Year). *Title of report.* Edition. Place of publication: Publisher. (Series and vol./no.).

[2] Burrows, D., *et al.* (2012). *Global Trends: Alternative Worlds.*Washington: National Intelligence. (Office of the Director of National Intelligence).

**Web-site**

Author(s) - family name, initials. (Year, month day). *Title of document.* [Online]. (URL). Place of publication: Publisher. (Date accessed).

[4] de Valk, J. (2014, May 12). AI for Games. [Online]. (URL <https://www.somesite.com/articles/1234/>). (Accessed 12 February 2014).