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Abstract (*What will the project achieve, how so, and why.)* not included in wordcount

Keywords - not included in wordcount

1 Introduction (~400 words)  
*This is a brief literature review. Using a number of key sources, map out the professional context for your project.*

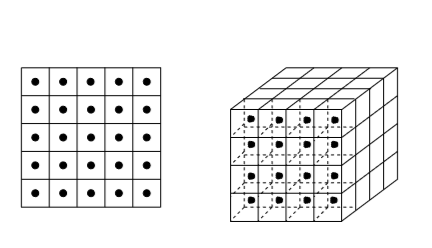
Graphics are ever evolving and have come a long way since they were first developed in the 1940’s. Due to the modern demand for graphics in films and games to look as realistic as possible. Certain techniques have had to have been developed to keep up with the demand. These techniques include fluid dynamics as one way of modelling liquids and gases through a scene. The fluid dynamics need to be produced in real time so that it can react to the objects placed within the scene. A lot of work into fluid dynamics has been done by Stam (1999) who created a semi-lagrangian method to produce a grid (figure 1) , that holds data in the center of each segment.

Figure 1- Grid with center point that holds the data

which allows the fluid to flow by checking the blocks around, however the system was produced on the central processing unit (CPU), which limited the extent of the project. Further work has then been done by (Liu et al, 2004) who produced the system on the GPU, allowing it to be calculated quicker.

2 Research methods ~200 words  
***List (!)*** *your key research questions and the research methods you use(d) to answer them*

3 Research findings ~800 words  
*discuss what exactly you have discovered. Insert tables, images and short snippets of code if necessary.*

To create a simple but effective fluid dynamics system, as used by Stam (1999) a grid will need to be created, first a 2D grid which can then later be converted into a 3D grid. Each of the grid sections will hold centralised data which Stam(1999) and Stam(..) favors as the method used to create the dynamic flow by controlling all the different variables within the grid individually. This allows the flow through each section of grid to be controlled. This also allows extra variables to be added into the sections of the grid. The placement of objects into the scene can be shown and allow the flow to adjust in accordance e.g. a block placed in the section of the grid will mark it as containing an object and wouldn’t allow any flow into the section. The sections around would then adjust to deal with the extra flow through their blocks.

Calculations around how the flow will move is solved using a diffusion solver. There are two different types; linear and non-linear.

4 Conclusion and Recommendations (Planned research implementation) ~100 words  
***One paragraph only*** *that tells us how your project will develop from here, based on your research.*

References - not included in wordcount

Author, A. (2009) *A Book About Student Projects*. Location Publisher.

Author, B (2008) ‘Journal Article’, *Digital Media Journal*, Vol 1/13, pp 13-23

University of the West of England (2009) *UWE Library Services:Study skills - The Harvard System* [Online] Available from <http://www.uwe.ac.uk/library/resources/general/iskillzone/referencing/harvardreferencing/> [18 September 2009]

Bibliography - not included in wordcount

Appendixes: - not included in wordcount

A Log sheets (mandatory)  
covering your research and development phase (September to December)

B Further documentation (optional)  
If applicable, insert further evidence of research completed, such as interview questions, competitor research, longer code sections or other relevant materials in here. This appendix does not come under the wordcount. Nevertheless only insert useful materials here, please don’t add bulk.