



UNIVERSITY OF LEEDS

**ELEC5620M
Mini Project**

DE1-SoC Pong

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May 2019

Submitted in accordance with the requirements for the degree of
Master of Science in Embedded Systems Engineering

The University of Leeds
School of Electronic and Electrical Engineering

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1 Introduction

This report will discuss the group project for the Embedded Microprocessor System Design module. The groups member's were Alexander Bolton, Sam Wilcock, and John Jakobsen. The projects aim was to create a game of Pong on the DE1-SoC's microprocessor unit (MPU) which utilised the LT24 LCD Screen, a VGA screen, PS2 keyboard controls, button controls, and have audio output.

This report will be broken down into sections with section 1 being the introduction. Section 2 will discuss the display and graphics side of the project including the VGA driver which controls the monitor, the display driver which controls both LCD and VGA screens with a frame buffer, sprites and text which will go into depth of how the sprites are created, finally game engine graphics which will go into how the game engine uses the sprites including destroying, creating, and moving the sprites.

Section 3 will discuss...

Section 4 will discuss...

Section 5 will be the conclusion which will summarise the report and discuss if we have met the aims of the project. It will discuss what could be improved upon and changed. All code will be placed in the end of the report in the appendices.

2 Display and Graphics

2.1 VGA Driver

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2.2 Display Driver

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2.3 Sprites and Text

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2.4 Game Engine Graphics

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3 Controls and Menus

4 Game Physics

5 Conclusion

6 Appendix

References