

Proposal Presentation “PING PONG RETRO”

EDA 385 - Design of Embedded Systems

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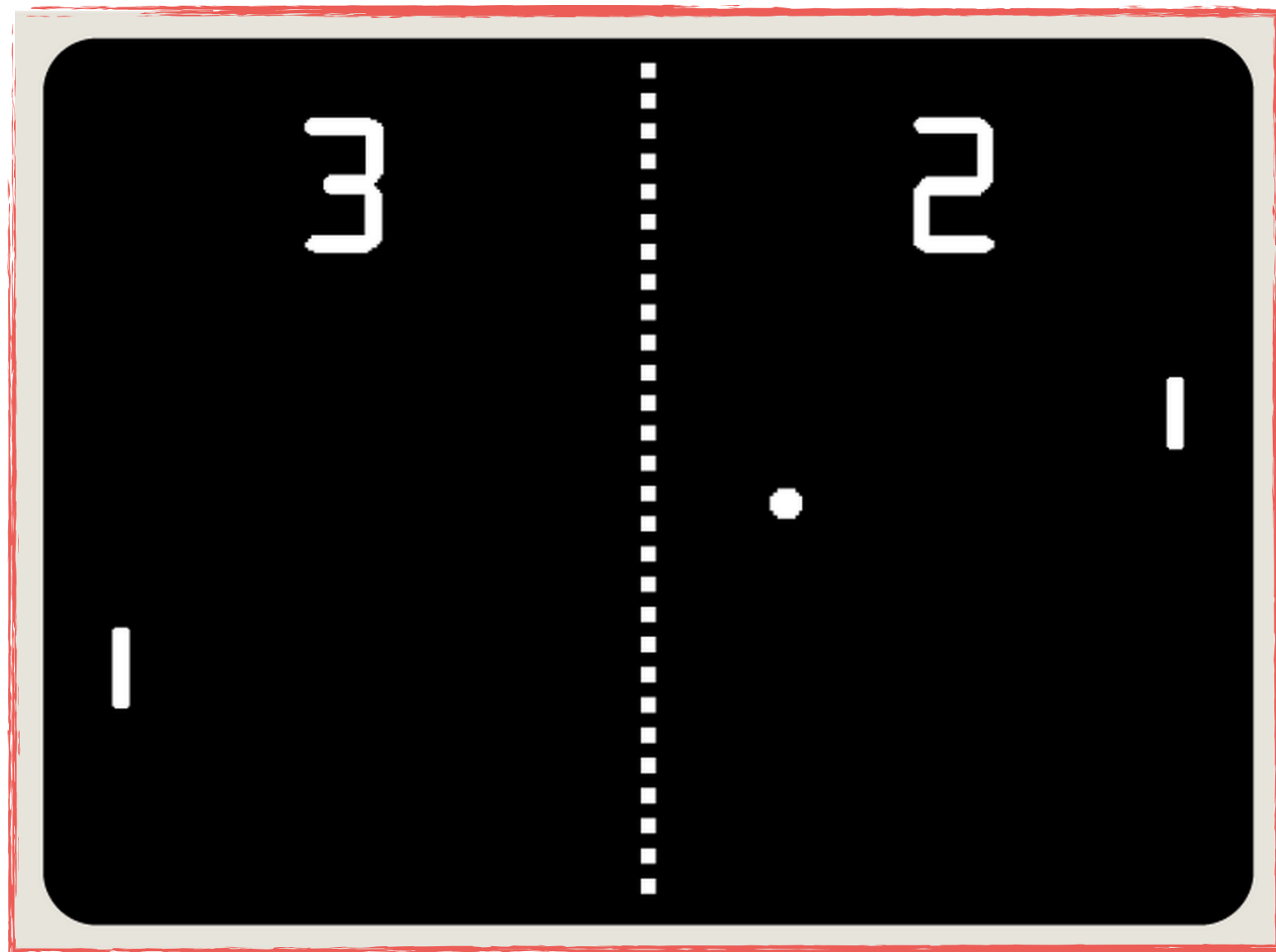
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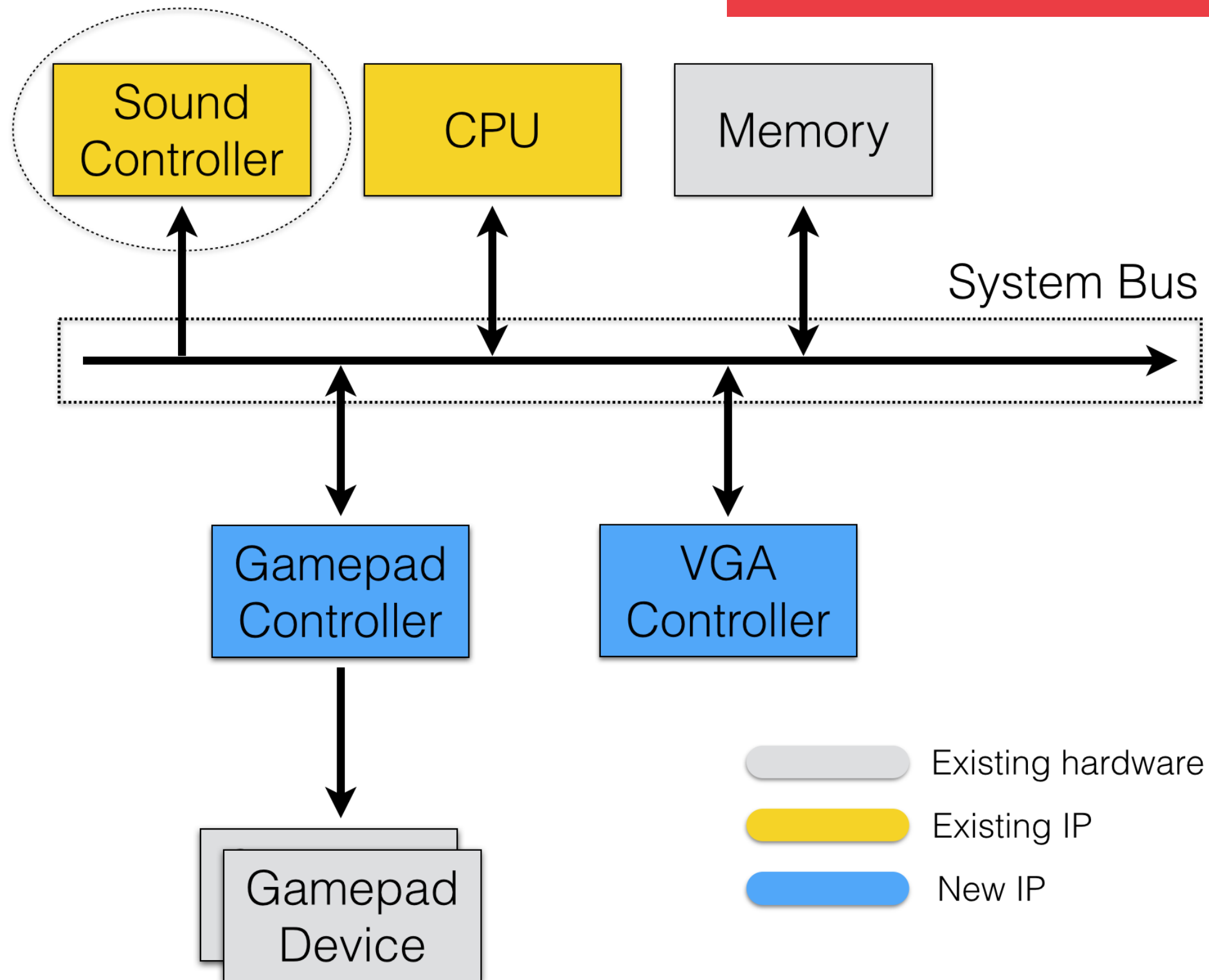
2014 - 09 - 09

A 3D rendering of a lightbulb lying on its side. The bulb is white with a black base. The glass part of the bulb is covered in various financial and investment terms in a bold, sans-serif font. The word 'IDEA' is prominently displayed in red at the top. Other words include 'INVESTOR', 'BALANCE', 'GAIN', 'UPWARD', 'FINANCIAL', 'INTEREST', 'RATES', 'PERCENTAGE', 'FOREIGN', 'EXPERTISE', 'TENDENCY', 'INVESTMENT', 'BRIGHT', 'CORE', 'BUYERS', 'TRADING', 'FUTURES', 'INDEX', 'RATIOS', 'SYSTEM', and 'INVESTING'. The background is a solid red rectangle on the left and white on the right.

The goal of this project is to implement the 80's classic video game Pong on a FPGA using a VGA monitor as a display.



Block Diagram



CPU is a MicroBlaze soft-core / Memory and sound are available on the board.

System Overview

CPU

The CPU will run the Pong-program as well as communication with the controllers to read user input, display game on the monitor and optionally output sound.

VGA controller

This controller is responsible for updating the connected monitor.

Gamepad controller

Reads input from the two gamepads and writes it to the bus upon request.

Sound (Optional)

Play sound when the ball bounces and the game is lost via a speaker.

Graphics

On the monitor the current score, player position and ball position will be displayed. It will look approximately like the picture in the introduction.

Project Schedule

	Week 36	Week 37	Week 38	Week 39	Week 40	Week 41	Week 42	Week 43
Planning	■	■						
Hardware design		■	■	■	■		■	
Software design				■	■	■		
Final implementations						■	■	
Report & Presentation							■	■
Testing			■	■	■	■	■	

“PING PONG RETRO”