

ECEN 340 Project Definition

VICADO PONG
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Project Scope

We will create the game "Pong". It's a two player game where a ball is bounced back and forth between players using a line as a paddle and if the ball goes past the players paddle then the other player gets a point. This is important because it will teach us about serial communication and displays as well as new input types such as a keyboard. Some of the industry specifications that are applicable to this project are the VGA standard, finite state machine design, and user input and interaction.

Lessons to Learn

The team will need to learn more about the different input and output devices that will be used in this project. For example, the VGA port display and the keyboard input. We will also need to learn how to program the animation for the game and the movement of the different things to display.

Roles and Responsibilities

Role	Name	Responsibilities
Leader	Karl Richards	<ul style="list-style-type: none">• module-by-module design responsibilities• Input control
Not-leader	Brodrick Young	<ul style="list-style-type: none">• testing responsibility• VGA and display

Schedule

03/20/25 – Finish block diagram and project definition, module files creation.

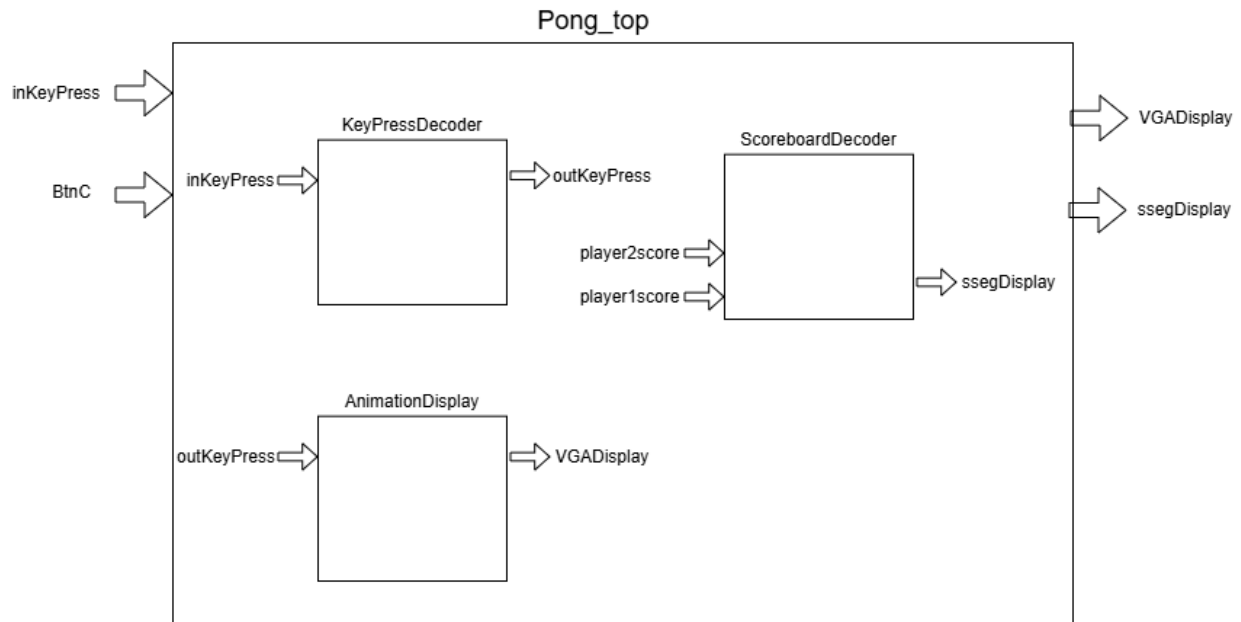
03/25/25 – Finish Key Press Decoder module, correctly getting inputs.

03/27/25 – Finish Scoreboard Decoder module, displaying the scores on the sseg display.

04/01/25 – Finish Animation Display module, showing the game on the monitor.

04/03/25 – Finishing touches, connect everything in the top module, test final implementation.

Hardware (FPGA-based) Block Diagram



Selection of Elements to Demonstrate in this Design

Note that the requirements state "at least 3 of the elements" as listed below. Talk with Brother Watson about other parts of the project that may not fit into these categories.

- ✓ Finite State Machine (at least 3 states)
- ✓ Keyboard or Mouse I/O
- ✓ 7-segment display
- ✓ VGA Port

Expectations of Testing the Design

7 segment scoreboard display: Tested with a testbench

Serial keyboard decoder: Tested with a testbench

Animation: Trial and error, see if it looks good