**Lab Assignment:** 2

**Title:** VGA Display, Image Rotation and Interpolation

**Group members:**

Max Hensler, and Zachary Wells

**Objective:**

Implement the hardware necessary to send images over VGA, rotate the image while interpolating necessary pixels to make the image look complete, and calculate the framerate of the image and print it to the UART console. Additionally, the rotation of the image had to rotate in increments of 30 degs, in both directions, and the direction of rotation had to be printed to the screen.

**Describe the functionalities achieved:**

Briefly describe the functionalities you are able to achieve with your embedded system.

**Describe the hardware components:**

What are the hardware components of the embedded system? Briefly describe.

**Describe the software components:**

What are the software components of the embedded system? Briefly describe.

**Major challenges:**

Briefly describe the major challenges you faced during the software-hardware co-design. This could include, for example, major bugs during the system design, challenges in interfacing hardware components with your system, and challenges with integrating software APIs for the hardware components.

**Solutions to the major challenges:**

How did you overcome the major challenges? This could include your approach to debugging, for example, a step-by-step debugging of a major bug in your system.

**Potential approaches to improve the software-hardware co-design:**

Describe any potential approach to improve your software-hardware design in the future.

**Questions and Answers:**

Answer all the questions from the lab assignment instruction file.