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Group Project Proposal

Our Group members will consist of Zach Williams, Robert Grady Williams, and Clay Shubert. Our primary motivation for this project was the use of graphics to display some form of game. We noticed that the Basys3 board has an onboard VGA connection, and we wanted to utilize this to create a fully functional version of an arcade infinite runner style game. Games that would fit this genre would include but are not limited to Flappy Bird, Jetpack Joyride, or Crossy Road. Our goal is to develop a physics based game that will be displayed through the VGA onto a VGA compatible monitor. This will be completed by creating a VGA module that will access the VGA ports and transfer the data to the monitor. Secondly, the physics for the player model and the obstacles will be constructed. Finally, we will have to account for a score system and “GAME OVER” screen. The Basys3 reference manual goes over the use of the VGA connector which will allow us to use up to 4096 different color combinations because of the 12 bit color pattern. Additionally, it goes over the timing diagrams allowing us to properly send a signal to the monitor with the appropriate timings. Through the information given within the reference manual we can understand the hardware behavior and write code that will reflect the behavior that we desire onto the monitor.