

Final Project Abstract: William Huffman and Aakanksha Sarda

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Note: This is one of two abstracts that we are submitting. We are currently waiting on approval from Professor Hom before choosing a final project from among these two proposals.

Abstract

This project aims to create a visual representation of an analog volt meter, which will respond to a voltage measurement by swinging a virtual dial onscreen, as well as displaying a digital representation of the voltage measured. The project is subdivided into three main parts. The first part involves reading voltage measurements into the FPGA using a voltage probe, and parsing that input for use in the remainder of the project. The second part involves displaying a representation of an analog volt meter onscreen. The third part involves calculating the appropriate position for the digital needle to inhabit, representing the needle on the screen, and displaying a digital version of the measurement on the screen. This results in a highly-parallelizable project which explores implementing graphics from hardware, reading and sanitizing input from a measurement device, and finally quickly and efficiently doing trigonometric calculations (in order to render the needle correctly).