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6.111 Final Project - Abstract
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Virtual Pitch and Catch

For our final project, we will build a virtual pitch and catch game on the FPGA. The end result will be two simulated hands on the screen tossing a ball between each other, making sounds when catching and throwing the ball. We plan on implementing this system by creating two gloves with flex sensors. We will have two cameras – one tracking each glove so that the players can stand far apart. The flex sensors that will be fitted to the gloves will allow us to tell if the glove is open or closed, so that we know if the ball has been caught, thrown, or missed. By setting up the cameras a fixed distance apart, we will be able to plot the two players on the screen and draw a virtual ball between them that will obey basic Newtonian physics. We'll then wire up speakers and play sound effects for catching and throwing a ball. If we finish the major parts of our project early, we will also try to implement a blue screen such that we could show the actual players on the screen and put a background image up behind them. If we also finish that with time remaining, we'll work on implementing virtual basketball by creating a hoop and a scoring method.