6.111 Final Project Abstract: Motion Capturing System for Game Control

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For our project, we plan to build a motion capture system that allows the player to control a stick figure character on a VGA monitor (inspired by NBA 2k18). In our system, we will capture the player's' body (or hand) movement with markers placed on them. The character should be able to jump over obstacles, walk, run, and collect coins. Each of these actions have a corresponding body (or hand) movements associated with them. For the specific implementation, we will integrate FPGA, digital camera, VGA type monitor, and LED markers. We will use digital camera to capture and extract the positions of LED markers, and import it into FPGA. On FPGA, we will create ZBT memory for captured data and animation, use an FSM to create the appropriate graphics display that is dependent on the information that is captured from the camera, and display the animation on monitor.