

## **Greg Luthman and Akash Shah**

### **6.111 Final Project Abstract**

The purpose of this project will be to implement an interactive side-scrolling adventure game on the FPGA. The player will stand in front of a “green-screen” type background and this image will be captured by a video camera that is hooked up to the labkit. Meanwhile, the player will also see an image of the “game world” on an output screen. Within this game world image, the player will see the image of themselves overlaid onto the game world.

The player will interact with the adventure game by making exaggerated movements (i.e. jumping, ducking, etc.) in front of the camera. This will allow their character within the game world to avoid obstacles, kill enemies, and interact in various ways with elements of the game world. The system will also detect a limited number of actions that the player can make in order to affect the game world. Additionally, using the same framework, we would like to explore the possibility of converting this into a two-player cooperative game.

One person will largely be in charge of development of the game itself while one person will largely handle video processing and detection of the player image.