Evan Richter

Maj Ross

CompSci 359

PEX2 Prelim Paragraphs

“Sam the Square”

My program will be a game set in a 2-D physics based world. I will use the package **pyBox2D** to help me implement the physics required such as collision detection and gravity. Rolling right or left, or jumping, the main character (a box) will battle enemies and overcome environmental obstacles. Enemies will be either smart or dumb, following and attacking the main character, or moving in a predetermined path. Another enemy will be a boss, only generated in a specific stage layout (read below). The boss will be defeated based on the character’s actions in the environment (not simply jumping on his head, or shooting him).

The environment will be generated randomly from a set of preconfigured stages. For example, if I have made stages A-F, the player might play one game F->D->A->C, then die; then play again and go through stages A->C->B->D->F->E->E->C, then die. The player will earn points as she progresses further through the stages and the high score will be stored.

To make gameplay more varied, the player can collect power-ups placed in the environment. Power-ups will include:

* Faster movement
* Increased vertical jump
* Bullets
* Grenades

The user will interact with the program’s main menu to begin the game, view the help, view the high scores, enter initials upon winning a high score, exit the game, or select difficulty:

* Newbie: no bosses, no smart enemies, all power-ups available
* Easy: no bosses, all power-ups available
* Medium: all power-ups available
* Hard: some power-ups available

During gameplay, the user will direct the main character to move left or right, jump, or shoot if available. A pause key will pause the game, giving the option to continue or exit to main menu.