600.112: Introduction to Programming for Scientists and Engineers

Assignment 10: Hacking a Game

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Due Date: 2014/12/05 before 10:00 pm!

Introduction

The tenth and final assignment for 600.112: Introduction to Programming for Scientists and Engineers is very different from all the previous assignments. We’re not doing anything very scientific or very engineered at all. Instead we’ll end the semester with something a bit more relaxed: you’ll hack a video game. The handout itself is also not going to be very informative, I am really only putting one together to be consistent with the previous assignments.

The one thing that is still very serious is this: You can lose points if you create more work than necessary for the graders by not following the instructions.

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1 The Game Project (100%)

The most important thing for you to do is to read all the (current and future) posts regarding this assignment on Piazza!

There are several posts covering the team aspect of the assignment. Please make sure that you register the team of people you work with; yes, you have to register even if you work by yourself. Remember that all members of a team will submit one solution together and that all members of a team will receive the same score for the assignment.

You will need to pick a game to hack, and there is a Piazza post that goes into more detail about the choices you have: BREAKOUT, MISSILE COMMAND, and ASTEROIDS. These are given in roughly order of difficulty, although each has its own particular challenges as well.1

Finally there’s a Piazza post that links to example code for the PyGAME library: A three-dimensional star field, a simple example for drawing sprites and playing sounds, and a “complete” game in which you have to dodge Mom’s flower pots as Stewie Griffin. You should read those examples and learn from them but you should not copy/paste them without understanding; there will be a question or three on PyGAME on the final exam, and if you don’t understand what you did for this assignment, you won’t be able to answer those questions very well.

1. For those of you who really want a challenge, there’s also the option of doing the game LODE RUNNER. But that is a lot harder than the other three, so please think very very carefully before picking that game. You have been warned...