

Final Project  
CpSc 416/681: 2D Game Engine Construction  
Computer Science Department  
Clemson University  
**Putting it all together**  
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December 4, 2008

In order to receive credit for this milestone, your solution must be submitted, using the `handin` command, by Noon on Thursday, December 11th, 2008.

Most of you have put a lot of work into your game projects. You've given it a lot of thought and effort, and you have learned a lot about the language vehicle, C++, and game construction techniques. You have even built a web page to exhibit your game project to the world. This final project is an opportunity for you to (1) **Fix and extend your code**, and to (2) **Document** what you have done for your final project.

We will all meet at the time of the final and each team will present their final project. Part of your grade depends on how well you present your project to the class. I may invite some other knowledgeable gamers to help me evaluate your final game. You should be sure to point out the nice features of your game.

I would like to try to run all games from my laptop. This will demonstrate that your game runs on a computer other than yours and that, in the case that someone might download your game from my web page, that it will work for them. Also, the demos will run faster if we don't have to connect and disconnect everyone's laptop.

However, if you suspect that your game will only run on your laptop, you should bring your laptop to the final.

Submit your game the way you submitted milestone #6 and I will download them to my computer in time for the final exam.

The requirements for the final project are:

1. **Fix your code:**

- (a) Get rid of memory leaks; make a bold statement: "My code has no leaks".
- (b) Use the leak-free IOSingleton (on examples page).
- (c) Eliminate lines in your scrolling background.
- (d) Try using the version of IOSingleton that owns the screen.
- (e) Remove debug (print) statements from your code.
- (f) Thoroughly test your code and eliminate problems in your code, "It works except ...".

2. **Get your project to conform to previous specifications;** for example:

- (a) All movement of objects should be controlled by the game clock.
- (b) Incorporate music and sound.
- (c) etc.

3. **Add some new features and document them:**

- (a) Incorporate a particle system.
- (b) Add a new level.
- (c) Add a story line (see Abuse).
- (d) Add a help screen, or an options screen.
- (e) Add a "youtube-like" video to your web page.
- (f) Incorporate pause and unpause.
- (g) "All learning is self taught." Investigate the games on the SDL home page and try to incorporate a feature from a game (Alienblaster, Abe, et al.). Document it.

You must submit your final project using the handin command and you must include the images that you use, and the web page that you have constructed. Submit the final project as assignment #7.

**I will post all robust games on my webpage.**

The most important thing that you must do is to **Document** what you have done for your final project. If it's not documented, then you will not get credit for what you have done.

Here is the handin command:

```
handin.416.1 7 *
```