CS530 - Assignment 3

Job System

In this assignment the goal is to create a multithreaded job system. This system will manage a set of tasks and run them on multiple hardware threads.

To show a basic feature you must have a small working code example that demonstrates the feature. For the ui based features a simple mouse based ui is sufficient.

The Grade for this assignment is a simple point system. You start with a base grade and implement features to get a higher grade. The idea is to select the features that are valuable first and be selective of the advanced features you would like to include. There are also issues that can subtract points. When you turn in your assignment, have a text file starting with a basic readme and a list enumerates each feature you completed, its point worth, where it is located in your code and any other comments. Zip this file with a folder labeled source that has your source code and a visual studio project/solution that will compile your project (expect me to be using a standard school computer). Total your grade at the end. Additional features not listed can be added, just ask the instructor for their point value.

Example:

Name: Chris Peters

Bind Basic Functions: Binding.hpp(100-200)/.cpp(120-140) +4%

Etc.

Expected Grade 85%

* Base Grade %50
* Basic Job System %20
  + Basic Demo of Threaded / Not Threaded %10
  + Stress test with no failures %10
* Bad Threading
  + Deadlocks -%5
  + Sleeping for no reason -%5
  + Spinlocks -%5
  + Bad shutdown -%5
* Job System Features %20
  + Generate Job from function +2%
  + Generate job from meta +2%
  + Priority +%4
  + Cancelation +%4
  + Utilization Detection +%4
  + Continuations / Job Finalizer (final part of job on main thread) +%4
* Job Dependencies %16
  + Descendant /Child Jobs +%4
  + Job Groups +%4%
  + Wait for all Descendants +%4
* Deductions
  + Does not compile in VS2010 -20%
  + Does not run on school computer -20%
  + Crashes constantly -20%
  + Crashes frequently -10%
  + Ui is unusable -10%
  + Code is very confusing -5%
  + Features listed that are not complete -5% EACH