Department of Computer Science, Clemson University
CpSc 416/616 – 2D Game Engine Construction
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Course Description

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The goal of the two-dimension Game Engine Construction course is to develop an operational understanding of the tools and techniques necessary to build a 2D game. The tools include an application programmers interface (API) for game development and the language that is most often used in game development: Simple Directmedia Layer (SDL), and C++. The techniques draw from subject areas such as object-oriented programming and software design, including design patterns; software engineering; 2D graphics including sprite construction; algorithms and efficiency; memory management; and artificial intelligence (AI). The language vehicle for this course is C++ and proficiency in object technology and the language vehicle for the course, C++, is the primary goal of CpSc 416/616.

The primary deliverable of this course is a 2D game written in C++ that demonstrates the exploitation of techniques developed during the course, including sprite animation, parallax scrolling, sound, AI, and the construction of a game shell to enable movement among different levels in the game. Pre-requisite requirements for the course include only good programming skills and an interest in game development. I will assume that you have no knowledge or understanding of the C++ language and that you have never used the game development tools and APIs that we use in this course.

Secondary deliverables include a web page, to describe development of your game, and screen and video captures of the game under development.