Design and Implementation of an Interactive Simulation Using the JAVA Language Through Object Oriented Programming and Software Engineering Techniques

Dan Stalcup

TJHSS Computer Systems Lab 2005-2006

Abstract

As logarithms and set-ups for interactive simulations (games) become more and more complex, the method in which such projects are approached, designed, and implemented requires careful analysis. Others have studied theories of object orientation, and have hypothesized on the ways to optimize the development of complex computer programs. This study encompasses the engineering and construction of a complex interactive simulation called “Project Dart Hounder” with an object oriented approach, analysis of the process, and results.

Upon analysis of the effectiveness and complexity of the resulting product, mixed conclusions were reached. While breaking down problems into objects often simplifies the solution, it occasionally makes it more complex. Careful judgement is required, and very thorough planning and design is even more essential: without effective planning and design, object-oriented programming loses a majority of its value. But when used carefully and smartly, object-oriented programming is a highly effective method of problem solving and software development, especially when working with large groups of people.