C#

Advanced Topics…..everything introductory is same as Java

Visual Studio – C# .net programming

- 1000 jobs on Stack Overflow
- 4th in popular frameworks/tools
- MSU students can get free access to VS

C#

- Visual Studio
- Unity 3D
- Developed in 2000 @ Microsoft
- The language is intended to be a simple, modern, general-purpose, object-oriented programming language.
- The language, and implementations thereof, should provide support for software engineering principles such as strong type checking, array bounds checking, detection of attempts to use uninitialized variables, and automatic garbage collection. Software robustness, durability, and programmer productivity are important.

C# Criticism

- James Gosling, who created the Java programming language in 1994, and Bill Joy, a co-founder of Sun Microsystems, the originator of Java, called C# an "imitation" of Java; Gosling further said that "[C# is] sort of Java with reliability, productivity and security deleted.

Unity 3D – Game Engine

- Unity 3D lets you create applications, with physics, GUI, HCI, and many more features and output your app to 25+ platforms.

- Demo………setting up platforms

- Most Unity applications are done in C#, but Javascript and Boo are also options
  - Boo uses Duck Typing…….never heard of this before, but I'll explain in class.

- Huge Asset Store where you can build 3D art and sell it, or buy it if you're a programmer.
  - Also lots of scripts in the store where you can buy and sell scripts.
  - Demo……..

C# - What we'll cover today

- I'm going to cover the topics in Intermediate Gameplay Scripting because that is where most of the advanced C# information is such as:
  - Ternary operators (since we covered that in chapter 7)
  - Static variables (because CS students always seem to be a little vague on this)
  - Overloading
  - Generics
  - Inheritance
  - Polymorphism
  - Member Hiding

More C# Topics

- Coroutines
  - Yield and give other things time to work.
- Getter and setter methods (unique way in C#)
  - Property Target that encapsulates the target property
  - No need for update to call, it automatically gets called and makes it much more efficient.
- Events
- Delegate
  - (delegate template)
  - (dynamically call which methods we want to call)
  - (you can stack functionality)