Introduction to C#

Mingsheng Hong
CS 215, Spring 2008

Goals of the course

- Introduce C# language
  - originally developed by MSR
  - ECMA standard
  - not just a syntactic variant of Java or C++
- Introduce .NET framework
  - "write once, run everywhere"
  - future of Windows (?)
  - base of Microsoft's C# implementation

Non-goals

- Teach you to program
  - we will not cover much if any basic programming
- Introduce object oriented languages
  - you should be very comfortable writing OO code
    - prerequisites: CS 211/212
    - really: experience in OO coding/concepts
- Describe every detail of C# language and its library
  - consult MSDN or search engine

Reference materials

- No required textbook
- Recommended resources
  - MSDN
  - search engine
  - books
    - Programming Microsoft Visual C# 2005
    - The C# Programming Language (2nd edition)
    - Inside C# (2nd edition)

Course overview

- 1-credit, 4-week
- To pass, you should
  - understand the concepts, and can write C# code
- Requirements for the course
  - come to lecture, and learn proactively
  - finish three assignments
- Assignments are S/U
  - we will not be giving a detailed grade
  - Academic Integrity
    - Do not submit work that is not your own

Quiz

- During some lectures quizzes are given
  - not for credit but for knowledge
- Today's quiz will be on OO programming
  - talk to me after if you have trouble

Class time and office hours

- class time MWF 12:20-1:10
- office hours: Monday after class or by appointment
  - mshong@cs.cornell.edu (4104 Upson)

Websites

- Course webpage:
  http://www.cs.cornell.edu/courses/cs215
  - will post lectures online
  - as well as other relevant information
    - e.g. possible errata for the homework
- CMS: http://cms.csuglab.cornell.edu
  - we will use this for homework
  - turn on your email notifications!

Hardware/software setup

- Machines
  - CSUGLab
    - Visual C# 2008 Express and Visual Studio .NET 2005 should be installed there
  - your own computer
- Visual C# IDE
  - find "Visual C# Express" in a search engine
  - or, Visual Studio: MSDNAA
  - Version 2008 recommended, 2005 is mostly OK

Syllabus

- C# constructs
  - Types, Delegates, Generics, Reflection, Iterators
- .NET Memory Management
- Advanced topics
  - C# 3.0, Threading, MSIL…

C# syntax through examples

- Program 1: hello world
  - using
  - namespace
  - class
  - (static) member method
  - main function
  - Console.Writeline
    - similar to printf (C), cout (C++), system.out (Java)
  - string data type
    - typical primitive data types?

C# syntax through examples

- Program 2: stack
  - accessibility
    - public, protected, private…
  - member field
  - exception
  - inner class
  - object creation