

Visual Studio and .NET Framework

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Administration



- Course website is up
 - Slides of Lecture 1 have been posted
- CMS is up
 - But you probably can't see the course yet...
- First assignment will be posted by Friday
 - Optional: propose your own C# project

Review



- C# example programs
- Quiz on OO programming
 - Great resources for view at
<http://www.cs.cornell.edu/courses/cs211/2007sp/>

Roadmap for Today's Lecture



- Visual C# 2008 Express walkthrough
- .NET framework, CLR, CTS, CLS

Visual C# 2008 Express Walkthrough



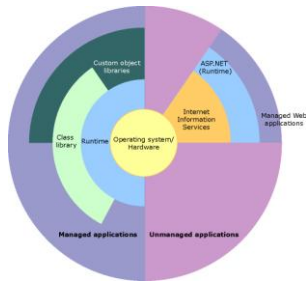
- Use wizard to create a C# program
- Build and run
- Intellisense feature
- MSDN lookup
- IDE debugger

What is .NET?



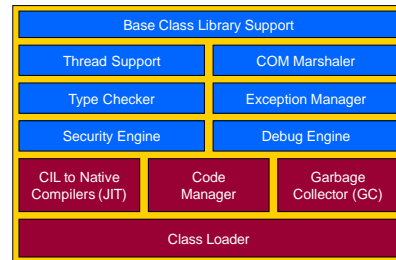
- A Common Language Runtime (CLR)
 - Virtual Machine like Java
 - C# compiles to Common Intermediate Language
 - code written in many languages compiles to CIL
 - E.g. C#, C++, J#, Visual Basic, IronPython
 - CIL runs on CLR
- A Common Type System (CTS)
- A Common Language Specification (CLS)
- Base Class Library (BCL)

.NET Framework in Context



From MSDN

What is the CLR?



From MSDN

What is the CTS?

- A set of common types
 - any language that runs in CLR should implement
 - no syntax specified
 - Languages often define aliases
- For example
 - CTS defines System.Int32 – 4 byte integer
 - C# defines int as an alias of System.Int32
 - string -> System.String
 - object -> System.Object

What is the CLS?

- A specification of language features
 - how methods may be called
 - when constructors are called
 - subset of the types in CTS are allowed
 - E.g. UInt32 is in CTS, but not in CLS
- Non-CLS-compliant example
 - Code that takes UInt32 in a public method
- Can mark classes as CLS-compliant
 - not marked is assumed to mean not compliant