.NET Framework and IDE Walkthrough

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Administration

• Course website is up
  • Work in progress
  • Keep checking for updates
• Office hour suggestion sheet
  • Mark the day/time slot(s) that you prefer
Administration

- First assignment will be posted Friday
  - Due next Friday
- 3 assignments total
  - Assigned on Friday, due next Friday
Question From Last Lecture

• Can argument to the Main(..) function be of a type other than a string array?
  – Apparently not! Shell sends parameters to application as a string
  – But you can parse the string input to another type
Today's Agenda

• A short walkthrough of a C# IDE
  • I will use Monodevelop
  • Microsoft Visual C# 2008 Express is much better!
  • For our purposes they are similar
    - Still .. I would recommend Visual C# Express
• .NET framework, CLR, CTS, CLS
IDE Walkthrough

• Using a wizard to create a C# program
• Build & run
• Intellisense feature
• Debugging
Parts of .NET

- A Common Language Runtime (CLR)
  - Virtual Machine like Java
  - C# compiles into Common Intermediate Language
    - All .NET languages compile into CIL
    - e.g. C#, F#, VB.net, IronPython ..etc
  - CIL runs on CLR
- A Common Type System (CTS)
What is the CLR?

- Base Class Library Support
- Thread Support
- COM Marshaler
- Type Checker
- Exception Manager
- Security Engine
- Debug Engine
- CIL to Native Compilers (JIT)
- Code Manager
- Garbage Collector (GC)
- Class Loader
What is the CTS?

• A set of common types
  – Any language that runs in the CLR should implement
  – No syntax specified
  – Languages often define type aliases

• Examples:
  – CTS defines System.Int32 – 4 byte integer
  – C# defines int as an alias of System.Int32
    • string → System.String
    • object → System.Object