# C# Chapter 1 Notes

1. What does CLR stand for? What is its primary role?

* Common Language Runtime. To locate, load, and manage .NET objects on your behalf. It also takes care of a number of low-level details such as memory management, application hosting, coordinating threads, and performing basic security checks.

1. What does CTS stand for and what does it describe?

* Common Type System. The CTS specification fully describes all possible data types and all programming constructs supported by the runtime, specifies how these entities can interact with each other, and details how they are represented in the .NET metadata format.

1. What does the CLS stand for?

* Common Language Specification

1. If I write code that is CLS compliant it will interoperate with code generated from any other .NET language, true or false?

* True

1. What do the base class libraries provide?

* They provide types to interact with the directory and file system on a given computer, communicate with relational databases, etc. They also define types that can be used to build any type of software application. (Among many other things they provide).

1. What is "managed" code?

* The C# language can only be used to build software that is hosted under the .NET runtime. “Managed code” is the term used to describe the code targeting the .NET runtime. Conversely, code that cannot be directly hosted by the .NET runtime is termed “unmanaged code.”

1. What is an "assembly"?

* The binary unit that contains the managed code.

1. What does the C# compiler output?

* A single-file \*.exe assembly that contains a manifest, CIL instructions, and metadata describing each aspect of the Calc and Program classes (or whatever was compiled).

1. What does the JIT compiler do?

* The entity that compiles CIL code into meaningful CPU instructions.

1. What uses the assembly's metadata?

* Numerous aspects of the .NET runtime environment, as well as by various development tools. It is also used by various object-browsing utilities, debugging tools, and the C# compiler itself.

1. What is the role of the manifest?

* The manifest documents all external assemblies required by the current assembly to function correctly.

1. Define the term "type". List the members of the type set.

* In .NET, type is a general term used to refer to a member from the set {class, interface, structure, enumeration, delegate}.

1. What are the intrinsic CTS data types?
2. What is a namespace?

* A grouping of semantically related types contained in an assembly or possibly spread across multiple related assemblies.

1. What keyword is used to reference namespaces?

* Using