Things to know for next Monday:

1. C# anatomy: language, compiler, runtime, platform, general features, program structure
2. .NET building blocks: framework, standard core, project, assembly, solution, application, library
3. Infrastructure: CLI, CLR, CTS, BCL, VES, JIT compiler, CIL/MSIL
4. Managed/Unmanaged datatypes: value, reference access modifiers, extended modifiers, class, struct, interface, enum, property/field
5. Separations of concerns: KISS, DRY, comments
6. OOP principles: abstraction, polymorphism, encapsulation, inheritance
7. Advanced data types: upcasting, downcasting, implicit, explicit, boxing, is, ref, out, typeof collections, generics, array, list, set, dictionary, stack, queue
8. Serialization: XML, file I/O, JSON, regular expressions
9. Exception handling: try, catch, finally, throw
10. Testing: unit test, xUnit, arrange/act/assert, TDD
11. Debugging
12. Logging
13. SOLID principles
14. Delegates: action, func, lambda, LINQ, events
15. Task: async, await
16. Git: status, add, commit, push, pull, diff log, clone
17. Bash: ls, mkdir, cd

Git is a Version Control System (VCS) and a Source Control Management (SCM) tool. It is a distributed VCS that is a cloud network. With it being a distributed system it makes it a data backup on each local machine. Some other VCSs are SVN (subversion), hg (mercurial), TFS.

The working tree is the current state of files regardless of past files.

The staging area is a temporary place to prepare for a commit.

The local repository is the permanent record of the whole project.

The remote repository (github) is someone else’s and our record of history in commits.

Extended modifiers

|  |  |  |
| --- | --- | --- |
|  | Class | Member |
| Static | Y | Y |
| Virtual | N | Y |
| Override | N | Y |
| New | N | Y |
| Const | N | Y |
| Readonly | N | Y |
| Abstract | Y | Y |
| Sealed | Y | N |
| Partial | Y | N |

Static class- container for static members, cant be instantiated.

Static member- cant access non-static data

Virtual member- says that it can be overridden by a subclass

Override- is the partner to virtual. Means that it is overriding a parent method

New- work around for virtual and override

Const- cant have its value changed after initialization

Readonly- like const, but can be initialized in a constructer.

Abstract- only an abstract class can have abstract members and they push the constructing of methods off to a sub class.

Sealed- Can not have any classes inherit this class.

Partial- a partial class is defined in more than one file at a time.

Access mods are allowed on getters and setters individually.