**.NET Using C#**

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* When creating a project in VS, you are creating a solution
* Project directory inside solution directory
* .snl file: when clicked will open all products in that solution
* Solution holds projects
* One class in the project has a main class, project runs as a whole
* For submission, submit whole solution
* C# Intro
  + Internal modifier: Only specific for this project. This class is only available inside the project it’s in
  + Static allows for a method to be called without instantiating the class
  + Const keyword: used to create a constant variable (final in Java) Value cannot be changed after assignment
  + Input: Parse
* .NET Framework
  + Original software developed by Microsoft. Designed to build and run Windows apps
  + Last major version is 4.8.1
  + The major problem for .NET was that it only worked with Windows
* .NET Core
  + Cross-platform, open-source version of .NET Framework
  + Now, after 2020, its just called .NET
* .NET
  + A modular and cross-platform framework
  + Platform for writing software
  + Not a programming language, rather an umbrella
  + Components
    - ASP.NET Core
      * Web development
    - .NET MAUI
    - WPF
    - WinForms
    - Common Language Runtime (CLR)
      * An interpreter for C#, F#, and Visual Basic. Compiles code into Intermediate Language
    - Base class library
      * Collection of reusable, object-oriented class libraries, also called the Assemblies
      * It is just like the header files in C/C++ and packages in Java
      * Provides functionality like: File I/O, Network Access, Collections,
    - Common Intermediate Language
      * When a .NET program is compiled using .Net compliany languages, the source code gets converted to intermediate code
      * Process assembly (.exe) or library assembly
      * The JIT compiler then converts the CIL into achine code
    - Framework Class Library (FCL)
  + Types of Applications
    - Common Type System (CTS)
      * Describes a set of types (data types) that can be used in different .NET technologies
      * CTS ensures that objects written in different .NET languages can interact with each other. An int should be the same in C#, VB and all other .NET languages
    - Garbage Collection
      * Runs in a low-priority thread and checks for un-referenced, dynamically allocated memory space
  + .NET MAUI
    - Modern, cross-platform framework for building native apps on Windows, Android, iOS, and macOS
  + LINQ
    - Query language to query data sources
  + Entity Framework
    - Open source Object Relational Mapping
    - Manages relationship of objects