Full stack web development with ASP.NET Core

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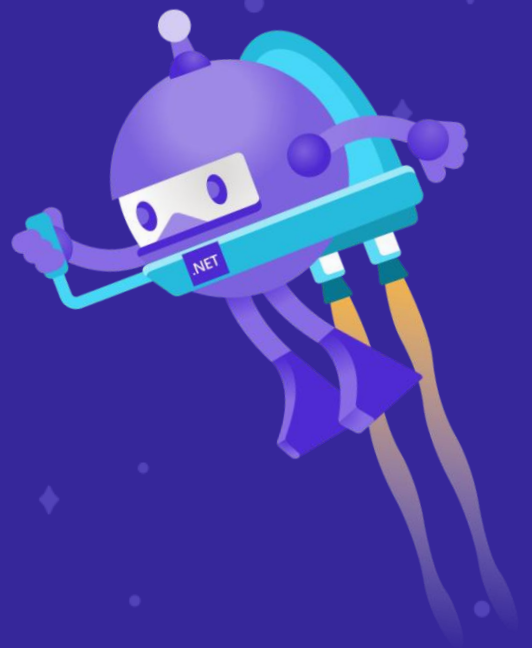
Lead Instructor



Installation

- Sql server
- Sql server management studio
- Git

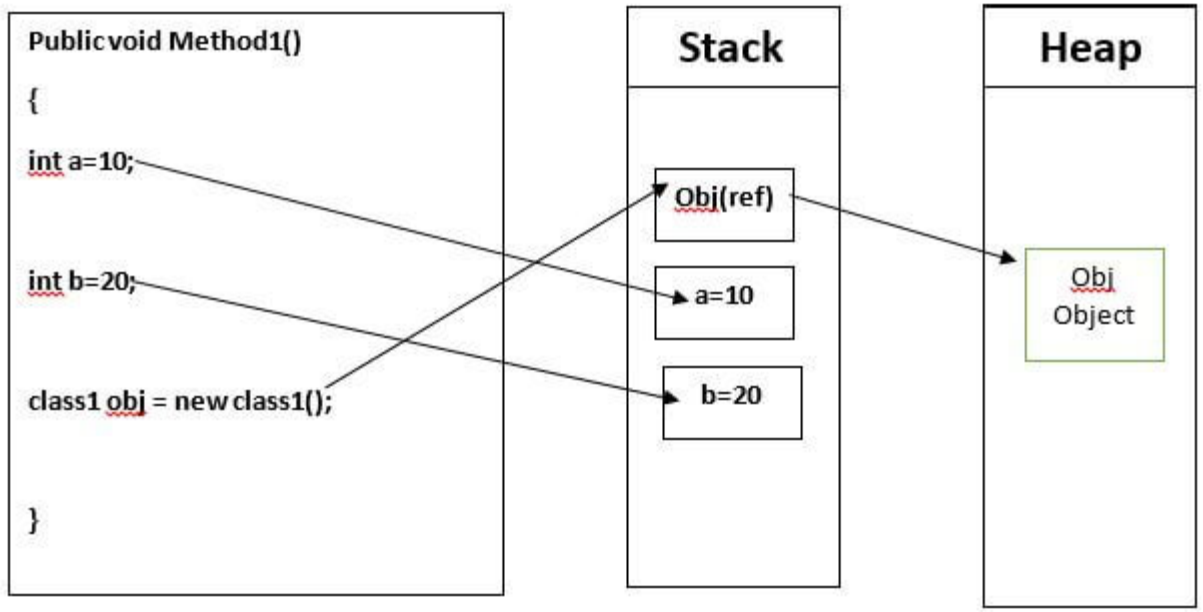
Topics

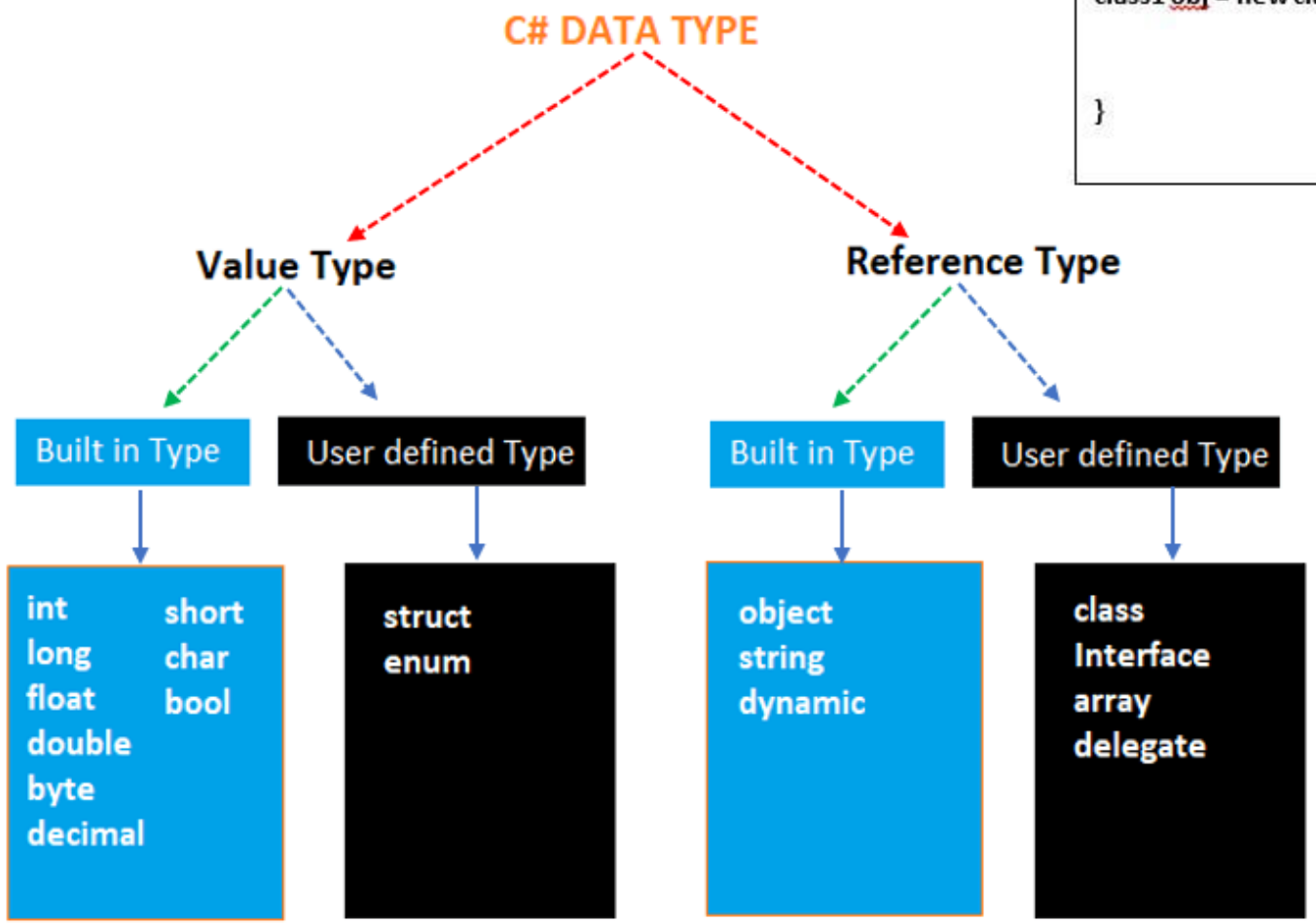
- Sql server vs sql server express
- IIS vs IIS Express
- EF connection string

- Server=localhost;Database=MyDatabase;User Id=myUsername;Password=myPassword;
- Server=localhost;Database=MyDatabase;Trusted_Connection=True;
- Server=sql.mycompany.com;Database=ProdDb;User Id=admin;Password=secret;Encrypt=True;TrustServerCertificate=True;
- Server=localhost\SQLEXPRESS;Database=MyDb;Trusted_Connection=True;

C# Feature Exlpore

- Value type vs Reference type
- Boxing/Unboxing





https://www.shekhali.com/

Common value types

1. **Integral Types:** (byte, sbyte, short, ushort, int, uint, long, ulong)
2. **Floating-Point Types:** (float, double)
3. **Decimal Type:** (decimal)
4. **Boolean Type :**(bool)
5. **Character Type:** (char)
6. **Enumerations:** (Enums)
7. **Structs:** are user-defined composite value types that can contain fields and methods. They are similar to classes but have value semantics and are typically used for small data structures.

Common Reference types

- class
- interface
- delegate
- record
- dynamic
- object
- string
- datetime

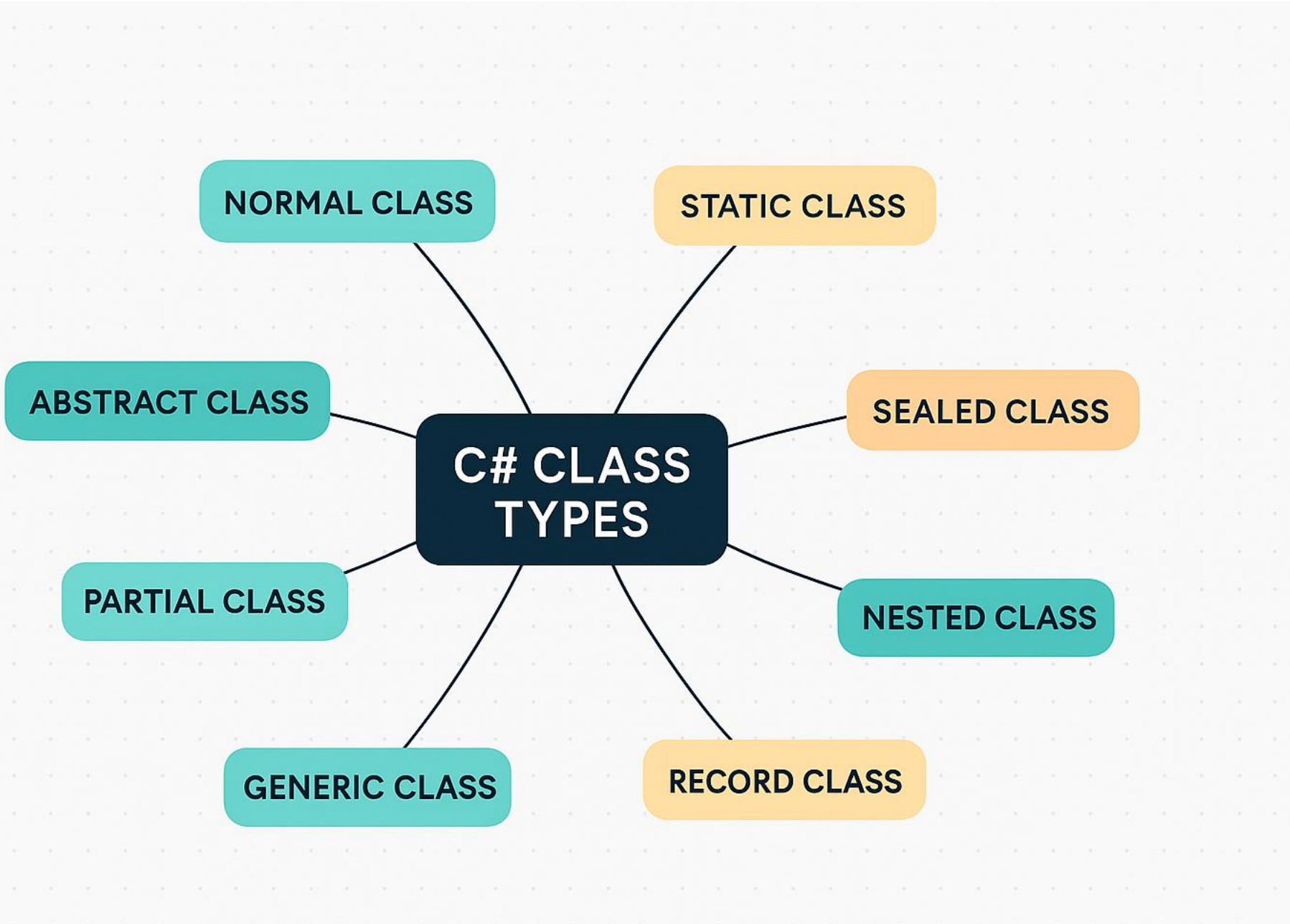
C# Access modifier

C# Access modifier

Access Modifier	Meaning	Where Accessible
public	No restriction	Anywhere
private	Only inside the same class	Same class only
protected	Inside the same class and derived classes	Same class + subclasses
internal	Within the same assembly/project	Any class in the same project
protected internal	Either derived classes **or** same assembly	Subclasses or same project
private protected	Derived classes **within the same assembly**	Subclasses in the same project only

C# Feature Exlpore

- Input/Output handling
- Statement/operators
- Sorting/Searching
- String operations
- Different types of Class


C# CLASS TYPES
NORMAL CLASS
STATIC CLASS
ABSTRACT CLASS
SEALED CLASS
PARTIAL CLASS
NESTED CLASS
GENERIC CLASS
RECORD CLASS

Type	Keyword / Feature	Key Rule	Where/Why to Use
Normal Class	class	Nothing special	For general-purpose objects (like models, services, etc.).
Static Class	static class	Only static members, no instances	Utility/helper classes (like MathHelper, StringUtils). Shared functionality without needing an object.
Abstract Class	abstract class	Cannot instantiate directly	Base class when you want **partial** implementation. Forces derived classes to **implement missing pieces**. Good for shared behaviors.
Sealed Class	sealed class	Cannot inherit	When you want to **prevent** others from extending your class for **security, stability, or design** reasons.
Partial Class	partial class	Defined across files	Large classes split into **multiple files** for better **organization** (common in auto-generated code, WinForms, or big models).
Record Class	record	Immutable, value-based equality	When you need **data-focused objects** (like DTOs, API models) that care about **values**, not references.
Generic Class	class<T>	Works with any type	Reusable logic for **multiple data types** (e.g., Collections, Services, Repositories).
Nested Class	class inside class	Inner class accessible via outer	Helper types that are **only meaningful** inside their parent class (like builder classes, or private internal helpers).

Thanks for joining!

References

1. https://medium.com/@dev.msalah/value-vs-reference-types-in-c-573e3cf6c5bf