**Enum Data Type**

**Definition:**  
An enum (short for enumeration) is a user-defined type that consists of a set of named constants.

**Use Case:**  
Use enums when a variable can only take one out of a small set of predefined values, like days of the week or states in a process.

**Common Built-in Enums:**

* DayOfWeek
* ConsoleColor
* DialogResult

**String vs. StringBuilder**

**String:**  
Immutable. Every change creates a new object in memory. Use it for light or infrequent modifications.

**StringBuilder:**  
Mutable. Efficient for heavy or repeated text changes (e.g., loops or concatenation inside large documents).

**User-defined Constructor**

**Definition:**  
A constructor written by the programmer to initialize object properties when the object is created.

**Role:**  
Sets default or specific values. Controls how objects are built, especially when overloading is needed.

**Array vs. Linked List**

| **Feature** | **Array** | **Linked List** |
| --- | --- | --- |
| Memory | Fixed size, continuous block | Dynamic size, scattered nodes |
| Access Speed | Fast (O(1) random access) | Slow (O(n) traversal) |
| Insert/Delete | Slow (need shifting) | Fast (just re-link nodes) |
| Memory Usage | Compact | Extra space for pointers |