- ***Common Type System*** ***Value Type Vs Reference Type***

Feature	Value Type	Reference Type
Storage	• Stack	• Heap but (Reference in Stack),must Use 'new Key Word'
Deletion	• When the variable is deleted	• When the reference variable is deleted
Copy	• A copy of the value is made	• Only the reference is copied
Equality	• Two value types are equal if they have the same value	• Two reference types are equal if they point to the same object
Passing to Methods	• The value is passed by value	• The reference is passed by reference
Boxing	• Not required	• Required when a value type is used in a context that requires a reference type
Unboxing	• Not required	• Required when a reference type is used in a context that requires a value type
Example	Integer, Float, Boolean, Char	• Object, Array, class, String.

Note:

-> reference Data Type is Complex Data Type

```
class student
 {
    public int Id;
    public string Name;
 }
```

Note: *Address Vs Reference*

-> Address: *The address refers to the specific memory location where the data is stored.*

-> References: *in C# simply store memory addresses, and they are not involved in encryption directly.*

- ***Control Statement(Done)***
- ***Conditional Statement***
- *If*
- *If else*
- *If ,else if , else*
- *Switch*
- ***Looping Statement***
- *Loop.*
- *While.*
- *Do While.*
- *Foreach.*
- ***Array***
- ***Declaration and Initialization Arrays***
- ***DataType + [] + Arr_Name = new + DataType[Size];***
- *int[] Arr1 = new int[5];*
- *int[] Arr2 = new int[] { 1, 2, 3, 4, 5 };*
- *int[] Arr3 = { 1, 2, 3, 4, 5 };*
- *Can Use Same Structure Of Declaration and Initialization*
- *int[,] Arr2D = new int[3, 4] { { 1, 2, 3, 4 }, { 1, 2, 3, 4 }, { 1, 2, 3, 4 } };*
- ***Notes:***
- ***Fixed Size.***
- ***Same DataType.***
- ***Array Zero-based Indexing.***
- ***Directly Access By Index "Arr[0]".***
- ***Array class in the System namespace provides a number of methods for working with arrays. These methods include methods for creating, initializing, accessing, sorting, and searching arrays.***