

Structs

What is Struct?

- Structs share most of the same syntax as classes
- More limited than classes
- Fields cannot be initialized
- Cannot declare a default constructor
- Structs are value types and classes are reference types.
- Can be instantiated without using a new operator

Definition and usage

```
1 namespace test
2 {
3     2 references
4     struct Bar
5     {
6         int a;
7         1 reference
8         public int A { get => a; set => a = value; }
9     }
10    0 references
11    class Program
12    {
13        0 references
14        static void Main(string[] args)
15        {
16            Bar myBar = new Bar();
17            myBar.A = 123;
18        }
19    }
```

instantiated without using a new operator

```
struct Bar
{
    1 reference
    public void Hello()
    {
        Console.WriteLine("Hello");
    }
}
0 references
class Program
{
    0 references
    static void Main(string[] args)
    {
        Bar myBar;
        myBar.Hello();
    }
}
```

Struct copy

```
struct Bar
{
    int a;
    4 references
    public int A { get => a; set => a = value; }
}
0 references
class Program
{
    0 references
    static void Main(string[] args)
    {
        Bar myBar = new Bar();
        myBar.A = 123;
        Bar myCopy = myBar;
        myCopy.A = 456;
        Console.WriteLine(myBar.A); // 123
        Console.WriteLine(myCopy.A); // 456
    }
}
```