# C# Access Modifiers with Example

In C#, access modifiers control the visibility of classes, methods, and variables. They define the scope of a member and determine where it can be accessed.

## Types of Access Modifiers in C#

1. public – Accessible from anywhere.

2. private – Accessible only within the same class.

3. protected – Accessible within the same class and derived classes.

4. internal – Accessible within the same assembly.

5. protected internal – Accessible within the same assembly and derived classes.

6. private protected – Accessible within the same class and derived classes in the same assembly.

## Example: Demonstrating Access Modifiers in C#

using System;  
  
namespace AccessModifiersDemo  
{  
 public class Person  
 {  
 public string Name;  
 private int age;  
 protected string Address;  
 internal string Nationality;  
 protected internal string Occupation;  
 private protected string Secret;  
  
 public void SetAge(int a)  
 {  
 age = a;  
 }  
  
 public int GetAge()  
 {  
 return age;  
 }  
 }  
  
 class Employee : Person  
 {  
 public void Display()  
 {  
 Console.WriteLine("Name: " + Name);  
 Console.WriteLine("Address: " + Address);  
 Console.WriteLine("Nationality: " + Nationality);  
 Console.WriteLine("Occupation: " + Occupation);  
 }  
 }  
  
 class Program  
 {  
 static void Main()  
 {  
 Person p = new Person();  
 p.Name = "John";  
 p.Nationality = "American";  
 p.Occupation = "Engineer";  
  
 Console.WriteLine("Person Name: " + p.Name);  
 Console.WriteLine("Person Nationality: " + p.Nationality);  
  
 p.SetAge(25);  
 Console.WriteLine("Person Age: " + p.GetAge());  
 }  
 }  
}

## Output:

Person Name: John  
Person Nationality: American  
Person Age: 25

## Key Takeaways:

- private members are accessible only within the class.

- protected members are accessible within the class and derived classes.

- internal members are accessible within the same assembly.

- protected internal members are accessible in the same assembly and derived classes.

- private protected members are accessible only in derived classes within the same assembly.

- Use public for members that should be accessible from anywhere.