Access Modifiers in Java

Access modifiers in Java are keywords that define the accessibility or visibility of classes, methods, variables, and constructors within a program. They control how these elements can be accessed and utilized by other parts of the program, such as other classes, methods, or packages.

Java provides four types of access modifiers:

1. **public:** The public access modifier allows unrestricted access to the class, method, variable, or constructor from any other part of the program. It has the widest scope of accessibility.
2. **private:** The private access modifier restricts access to the class, method, variable, or constructor only within the same class. It provides the narrowest scope of accessibility, as it cannot be accessed from outside the class or even from subclasses.
3. **protected:** The protected access modifier allows access to the class, method, or variable within the same package and subclasses residing in any package. It provides wider accessibility than private but more restricted than public.
4. **default (package-private):** If no access modifier is specified, it is considered the default access modifier. It allows access to the class, method, or variable within the same package but not from outside the package. It provides more accessibility than private but less than protected or public.

The choice of access modifier depends on the desired level of encapsulation and visibility required for the elements in your program. It is an important aspect of designing well-structured and maintainable code.

All member of JAVA can be assigned with the acess modifire

Member Type	Default Access Modifier	Public Access Modifier	Private Access Modifier	Protected Access Modifier
Variables	Yes	Yes	Yes	Yes
Methods	Yes	Yes	Yes	Yes
Constructors	No	Yes	Yes	No
Nested Classes	No	Yes	Yes	Yes
Interfaces	No	Yes	No	No

Scope of the acess modifire

	Accessibility	Private	Default	Protected	Public
Same Package	Same Class	YES	YES	YES	YES
Same Package	Without Inheritance	NO	YES	YES	YES
Same Package	With Inheritance	NO	YES	YES	YES
Different Package	Without Inheritance	NO	NO	NO	YES
Different Package	With Inheritance	NO	NO	YES	YES