

ACCESS MODIFIERS IN JAVA

Access modifiers are used to specify the accessibility or access levels of a type (class, interface) and its members (methods, variables and even constructors). There are three access modifiers and four access levels in Java. The three access modifiers are private, protected and public. Four access levels (from most restricted to least restricted) are private, default (no modifier), protected and public. If no access modifier is specified, it is called a default access level.

Access levels and their accessibility can be summarized as:

Private: Same class.

Default: Same class, Same package.

Protected: Same class, Same package, Subclasses.

Public: Same class, Same package, Subclasses, Everyone.

The top level classes (classes not within another class) have only public and default access; but for inner classes (classes within classes) have all four access levels.

Private

Private members are accessible only within the same class and also are not inherited.

Default

Default (no modifier) members can be accessed by members of the same class and members of any class in the same package.

Default members are inherited by another class only if both parent and child are in same package.

Protected

Protected members can be accessed by

- members of the same class
- members of any class in the same package (same as default)
- subclasses (any level of subclass hierarchy) in other packages (only through inheritance).

Protected members (static or instance) cannot be accessed from a non-subclass in another package.

Inherited protected members in the child class cannot be accessed using a parent reference variable (irrespective of the object it point to at runtime).

Static protected members can be accessed in subclasses through:

- object reference (Parent or Child) in subclasses
- class name

Public

Public members can be accessed from everywhere within your application either through inheritance or through object reference.

Note that the class or packages should also be accessible to access its members. You will not be able to access a public member from a default class from another package.

Source : <http://javajee.com/access-modifiers-in-java>