Access modifiers in Java

*<access modifier>* class Base

{

*<access modifier>* <member>

}

At the top level (outer class), there are two possible access modifiers:  
 **public** and *package-private* (default)

At the member level (members of the outer class, including any inner classes), there are four possible access modifiers:  
 **public, protected,** *package-private* (default), and **private**.

In Java, no explicit access modifier keyword (default) is also known as *package-private*.

Note that a **protected** member is not only visible in all subclasses, but also in all classes within the same package.

The tables below specify whether a type/member is visible or not, according to the location from which we wish to access it. An **X** signifies that the type/member is accessible.

Outer-level access modifiers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| access location  *<access modifier>* | **in the package** | | | **outside the package** | |
| in the class | in a subclass | in a non-subclass | in a subclass | in a non-subclass |
| (default) | X | X | X |  |  |
| **public** | X | X | X | X | X |

Member access modifiers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| access location  *<access modifier>* | **in the package** | | | **outside the package** | |
| in the class | in a subclass | in a non-subclass | in a subclass | in a non-subclass |
| **private** | X |  |  |  |  |
| (default) | X | X | X |  |  |
| **protected** | X | X | X | X |  |
| **public** | X | X | X | X | X |