5.5 Access Protection

The three access specifiers, **private**, **public**, and **protected**, provide a variety of ways to produce the many levels of access required by these categories.

While Java's access control mechanism may seem complicated, we can simplify it asfollows.

Anything declared **public** can be accessed from anywhere. Anything declared **private** cannot be seen outside of its class.

When a member does not have an explicit accessspecification, it is visible to subclasses as well as to other classes in the same package.

This is the default access.

If you want to allow an element to be seen outside your current package, but only to classes that subclass your class directly, then declare that element **protected**.

Access modifier ⇨ Access location ⇩	Private	No Modifier	Protected	Public
Same class	Yes	Yes	Yes	Yes
Same package subclass	No	Yes	Yes	Yes
Same package non subclass	No	Yes	Yes	Yes

Different package subclass	No	No	Yes	Yes
Different package non-subclass	No	No	No	Yes

Table 5.5.1 Access Protection table

A non-nested class has only two possible access levels: default and public.

When a class is declared as **public**, it is accessible by any other code.

If a class has default access, then it can only be accessed by other code within its same package.

When a class is public, it must be the only public class declared in the file, and the file must have the same name as the class.