

Practice of Programming using Java

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Nested Classes

A class can be defined inside another class

Enclosing class: outer class

```
class A {  
    class B { }  
}
```

class A is the enclosing class.

class B is the inner class.

Interactions between the 2 classes

Members of enclosing class can use the inner class.

Inner class is visible only from inside the enclosing class.

The inner class can see all the members of the outer class.

How do clients of outer class benefit?

They call member functions of the enclosing class.

These member functions may use the inner class.

An inner class's instance may be sent out for clients of outer class through polymorphism

```
Interface X { ... }
```

```
Class outer {
```

```
    Class Inner implements X { .. }
```

```
    Public X f( ) { return new Inner() }
```

```
}
```

Types of Inner Classes

Static inner class

- Static class, inside an outer class

Inner class

- Non static, inside an outer class

Local class

- Inside a member function

Anonymous class

- Has no name

- Is defined and instantiated immediately!

Class Object: For generic programs

Object clone()

Boolean equals (Object another)

Class getClass()

Void notify()

Void notifyAll()

Void wait() and other 2 wait () functions

getClass()