



Codigo Fuente

javac

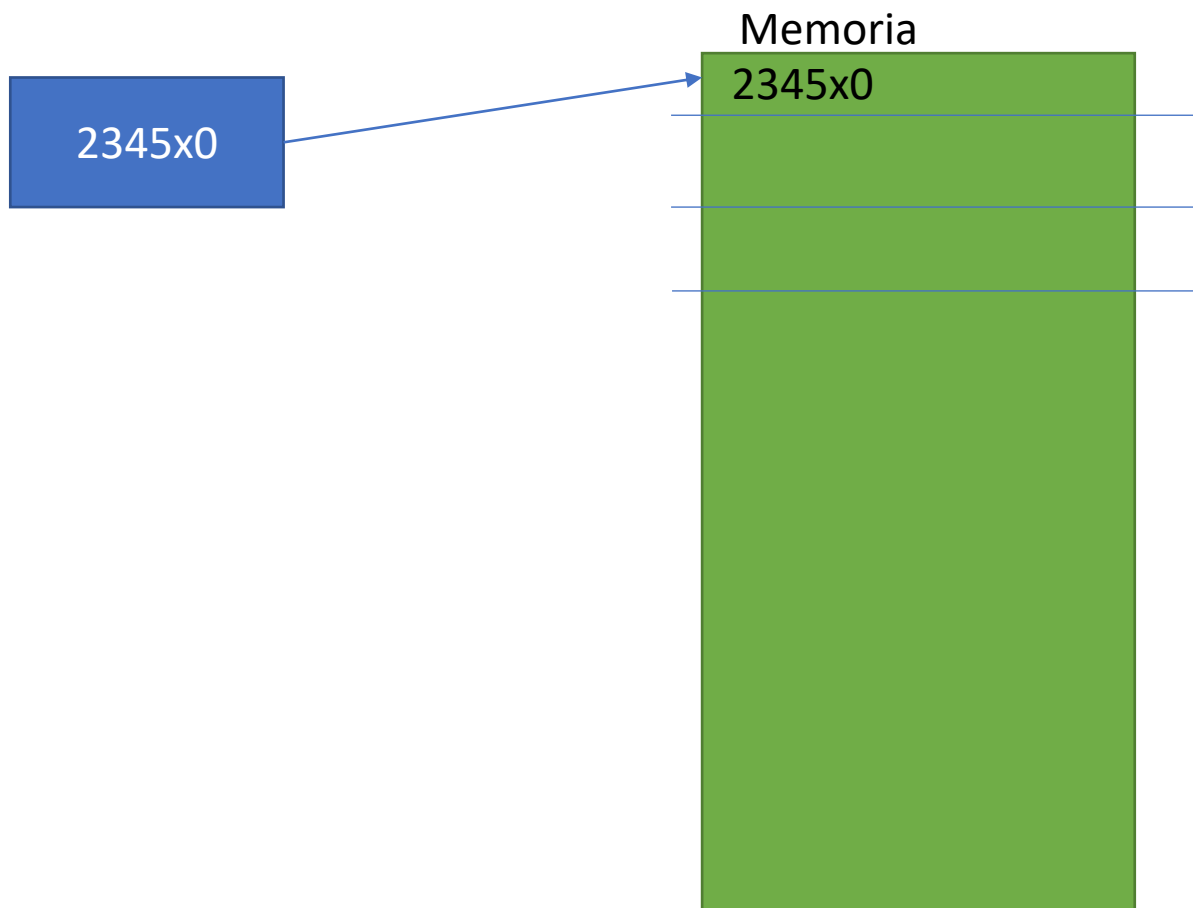
bytecode  
.class

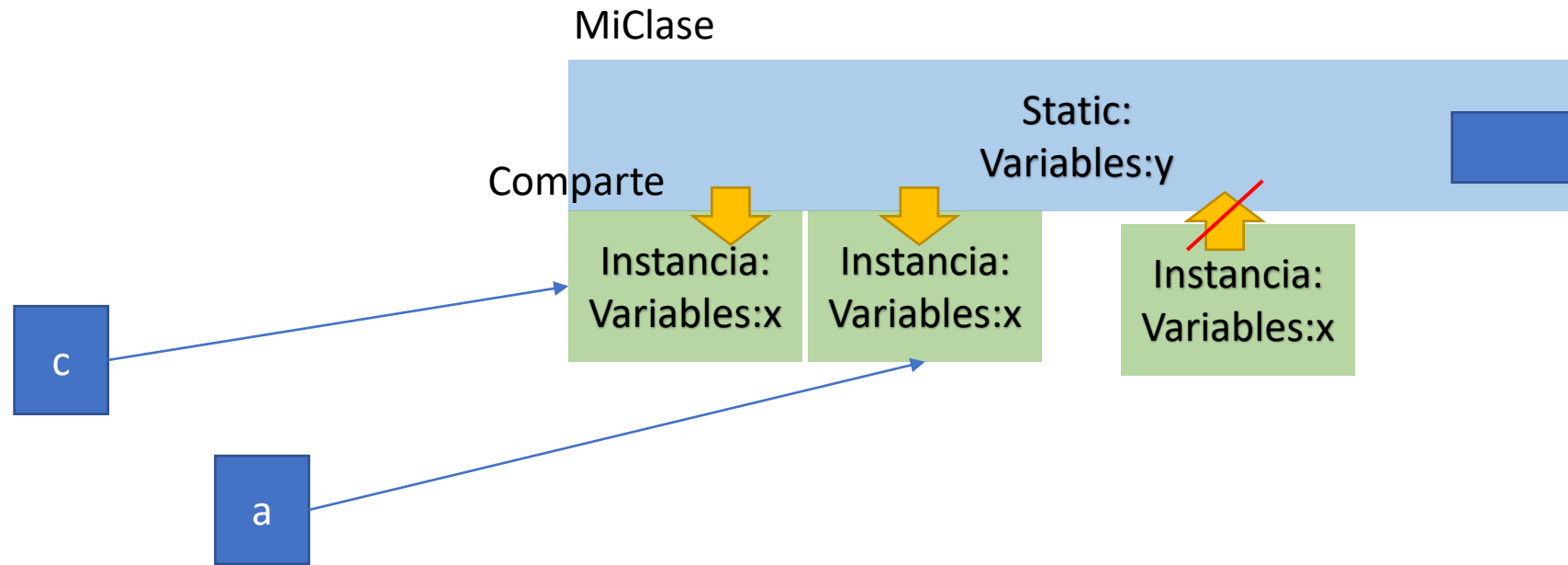
Vendor:  
Oracle: JVM hotspot  
IBM: J9  
AWS: cordela  
BLUE

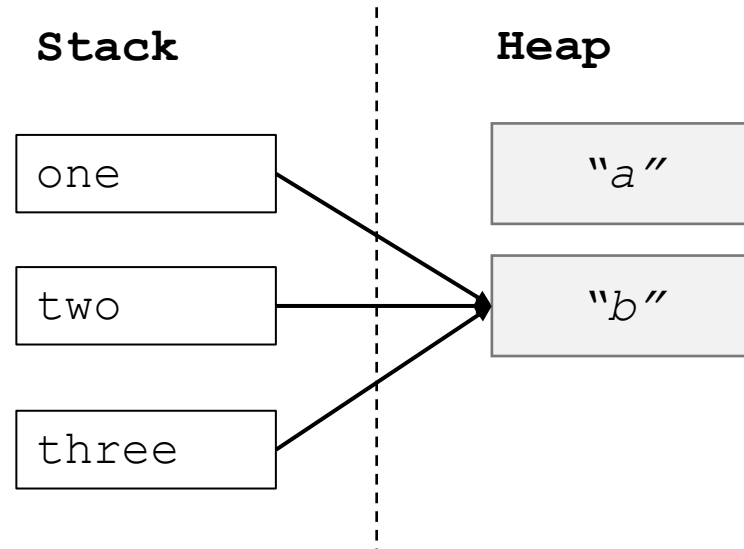
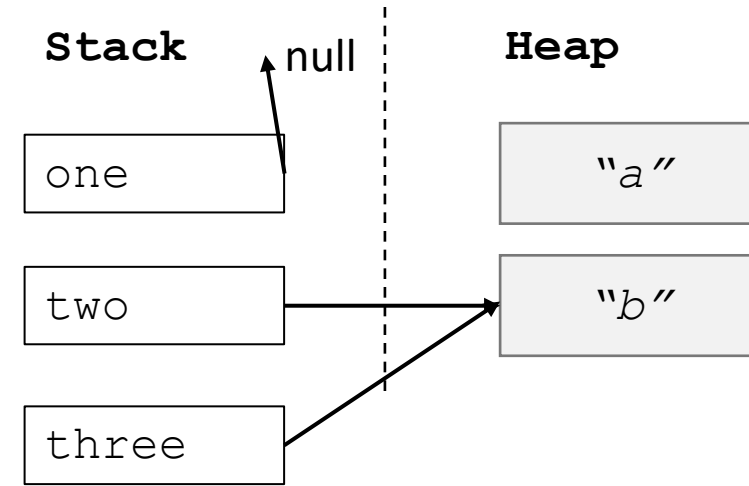
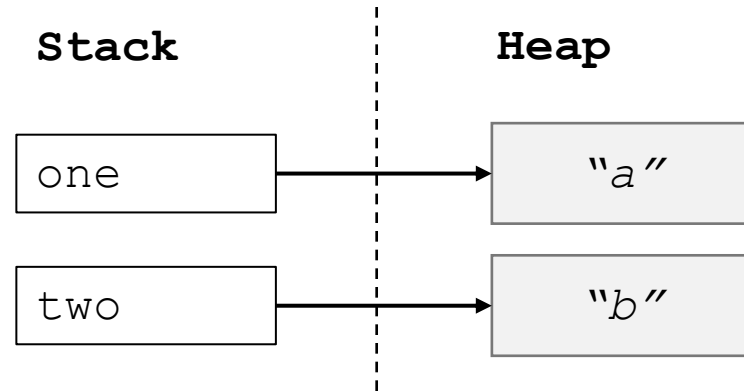
JVM

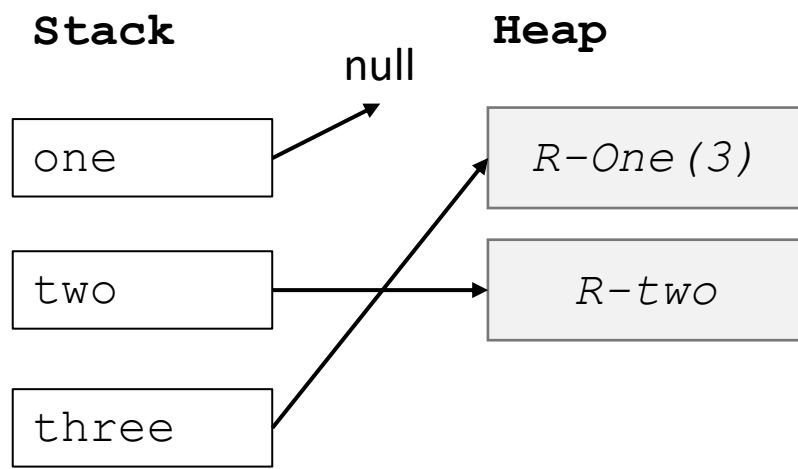
S.O

HW -> instrucciones

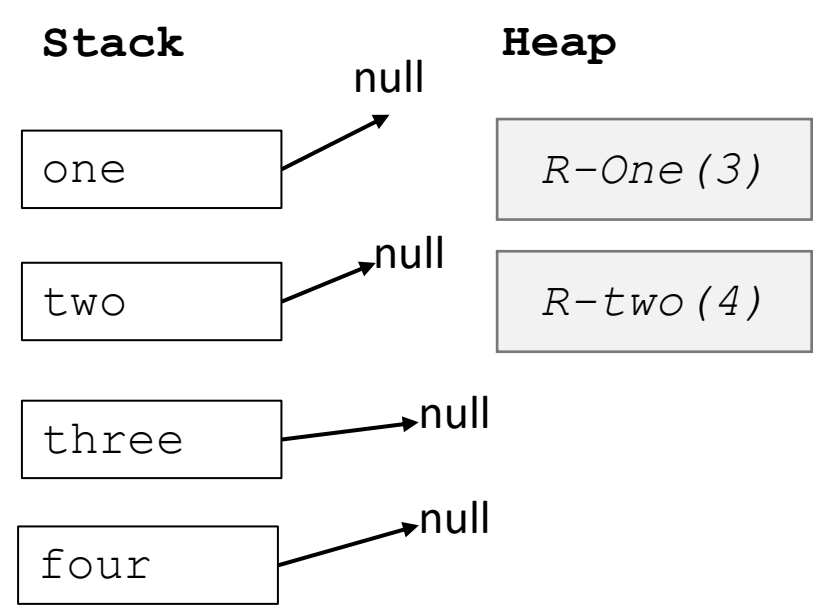




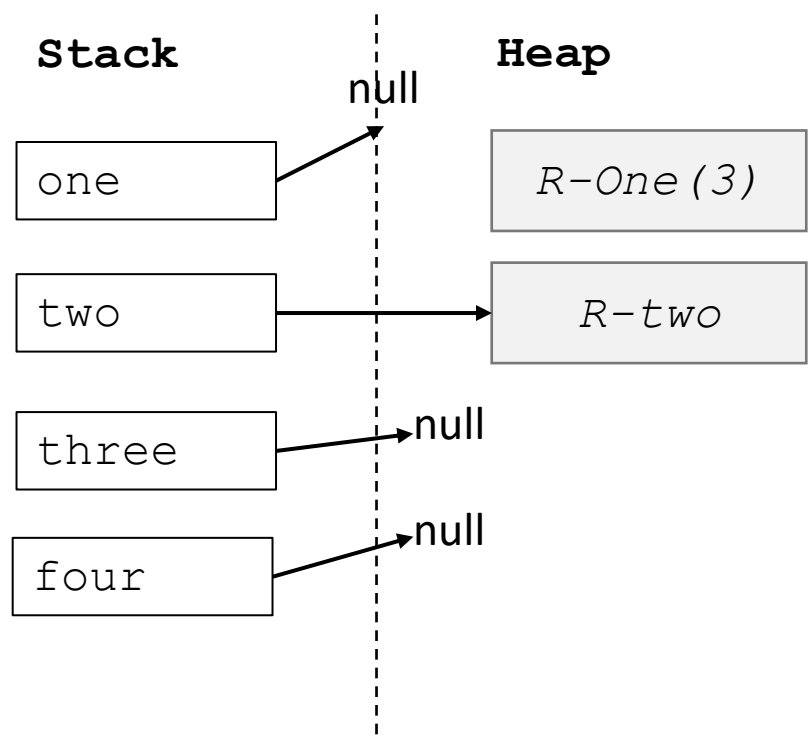




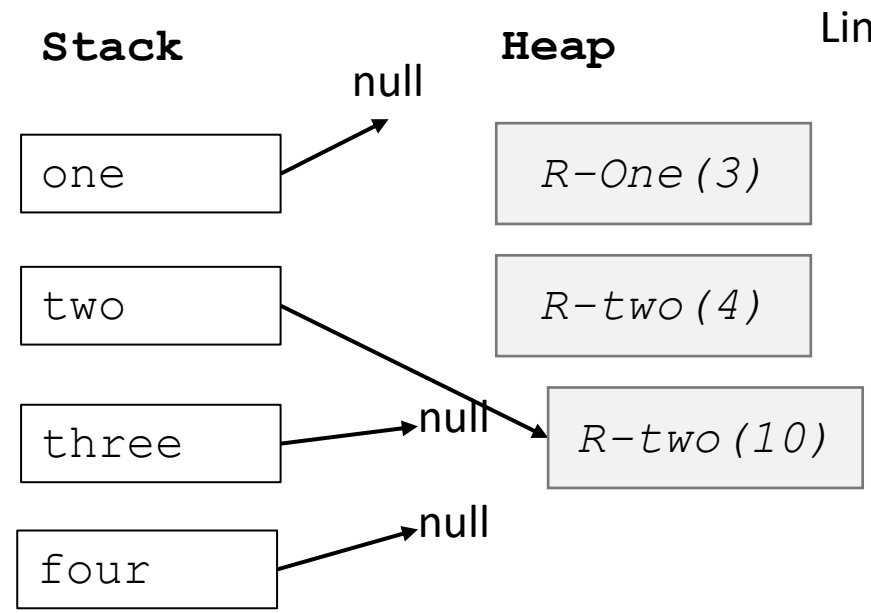
Linea 6



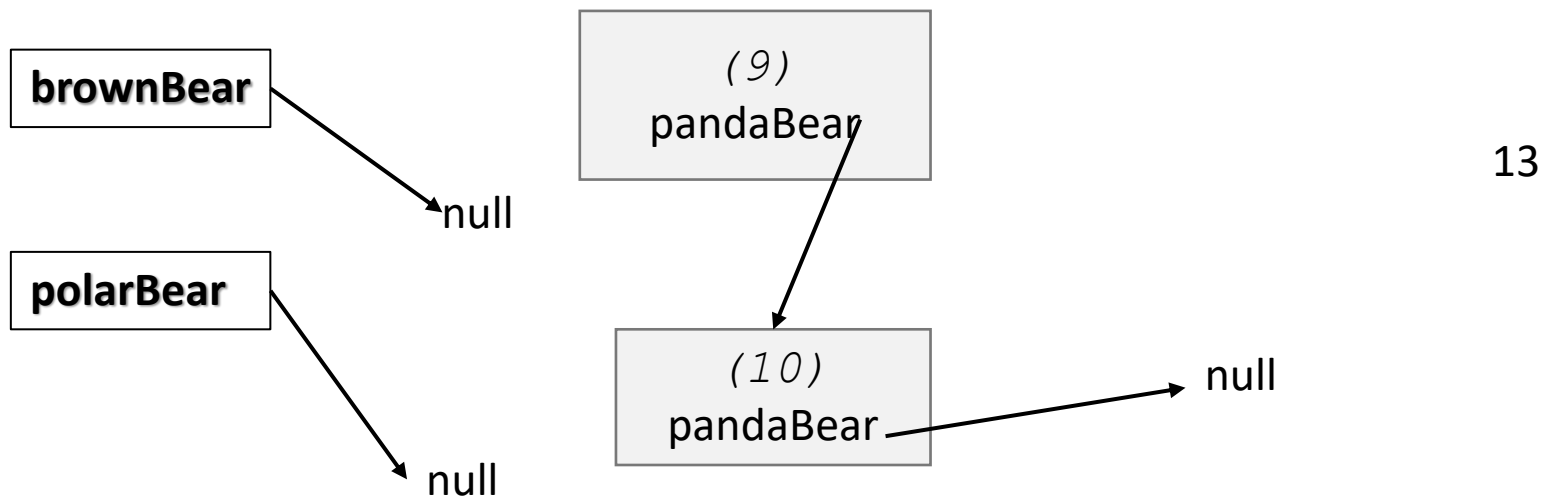
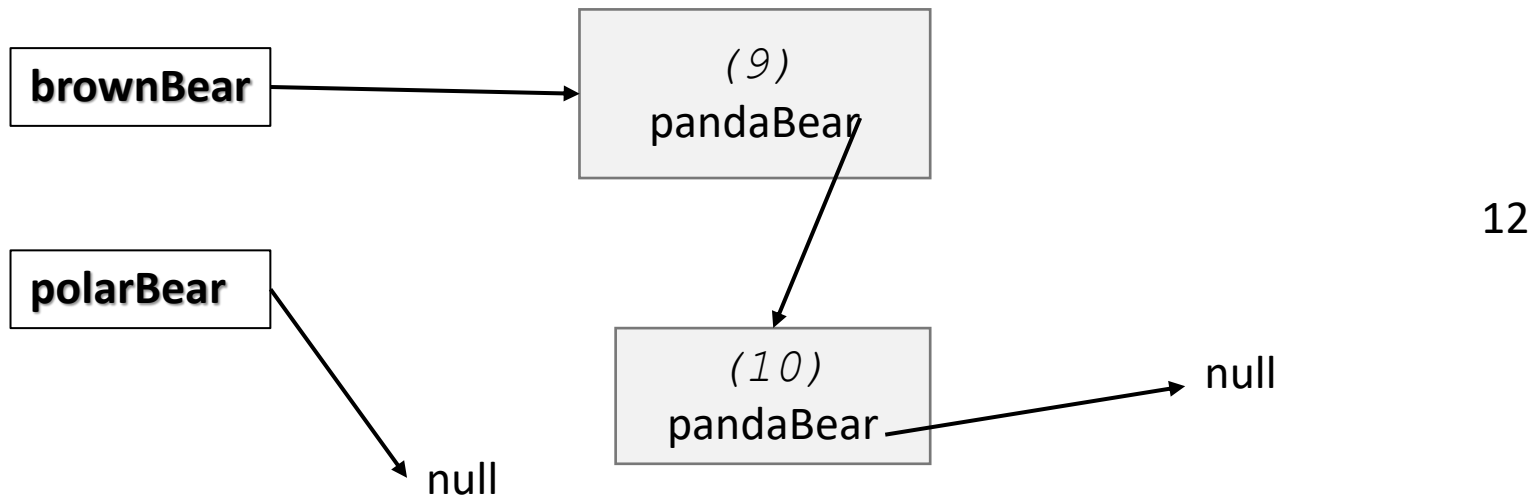
Linea 9

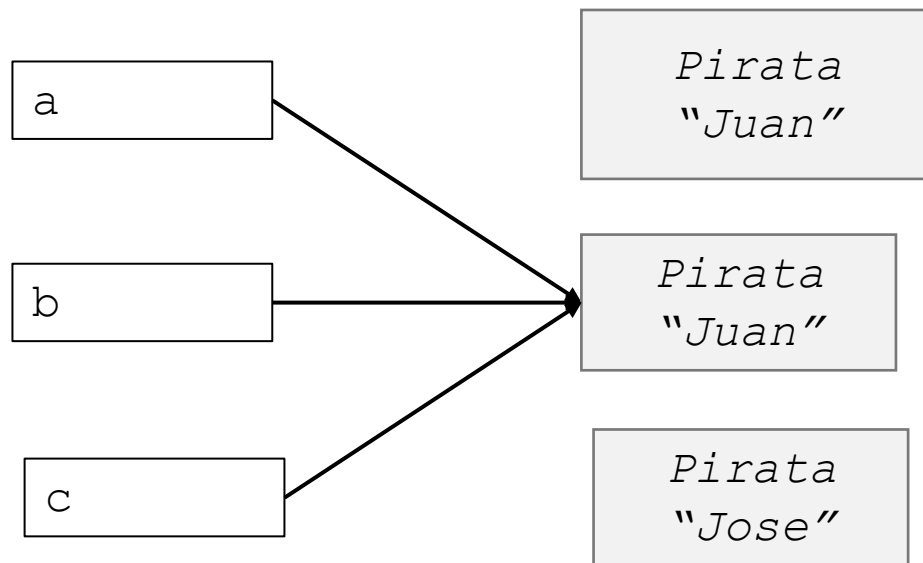
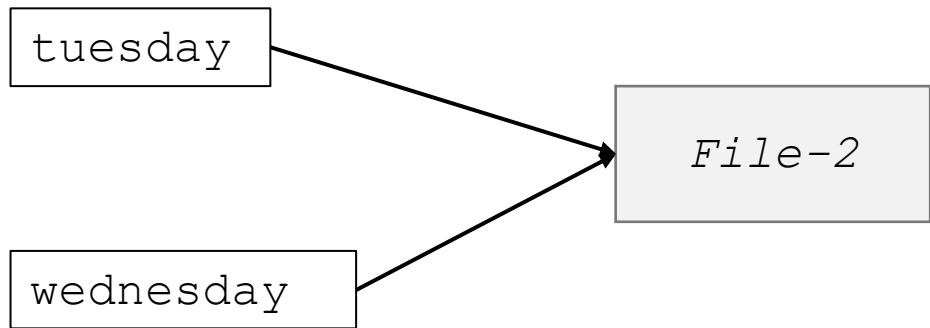
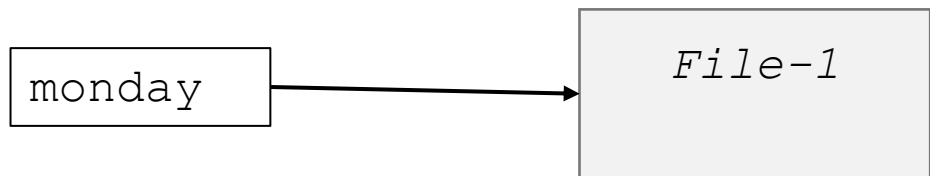


Linea 8

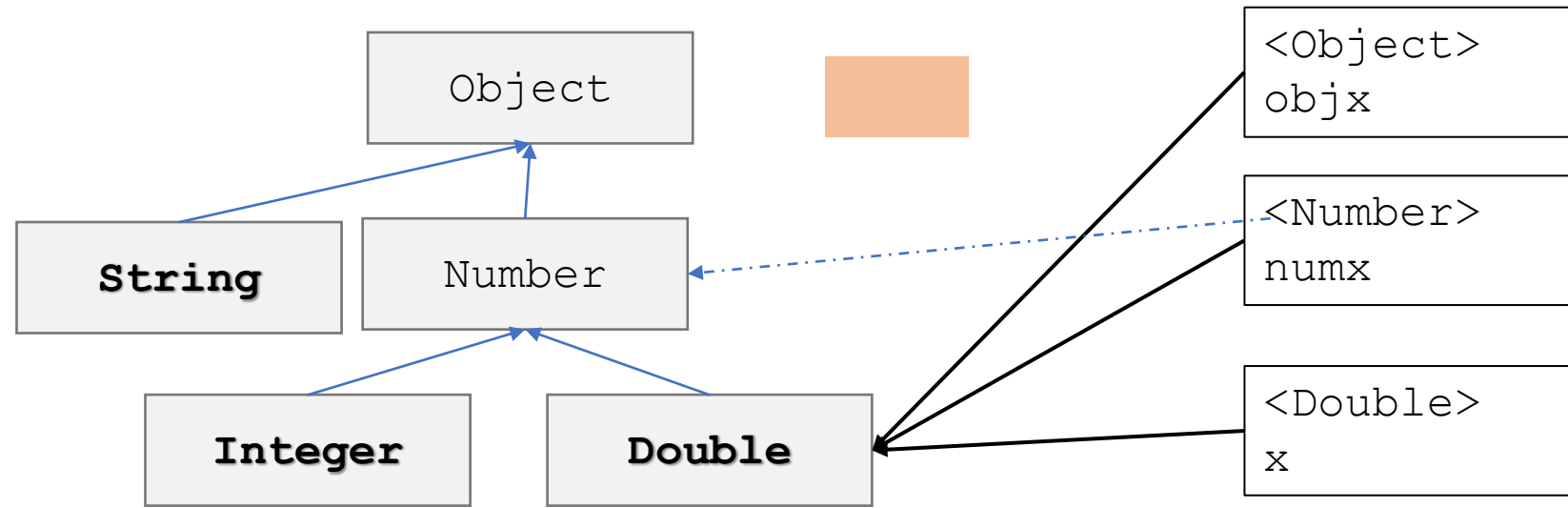
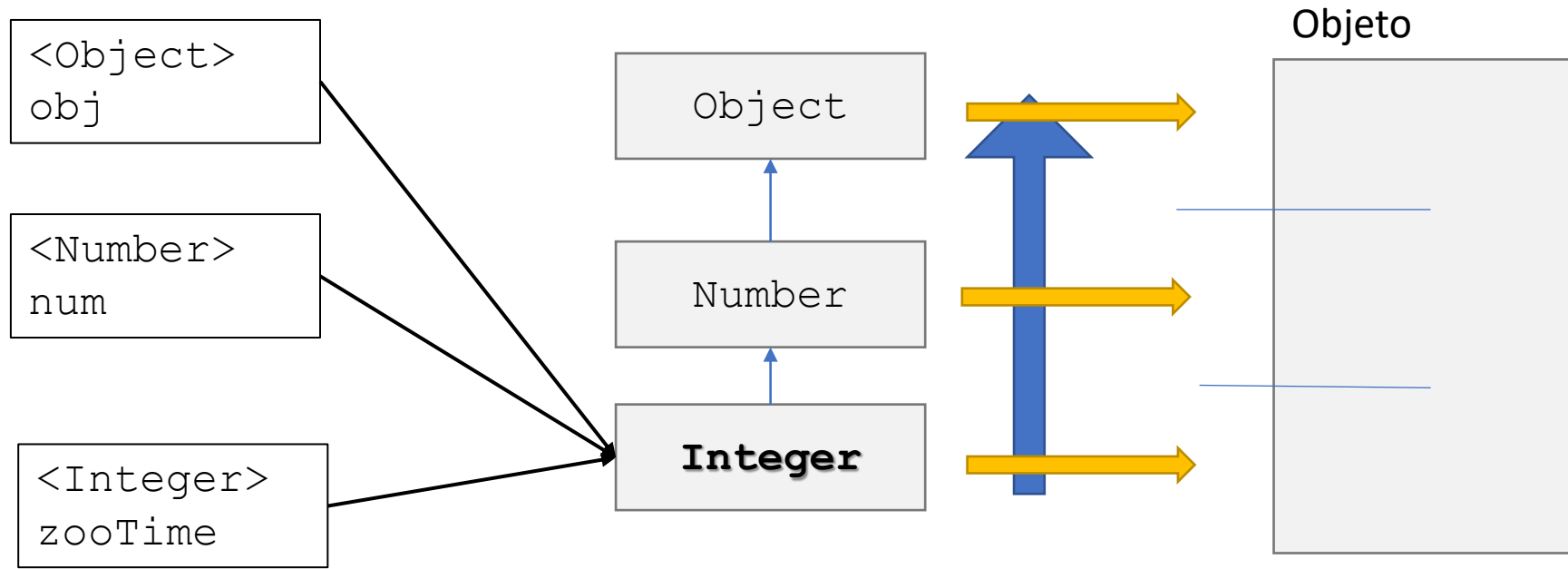


Linea 11

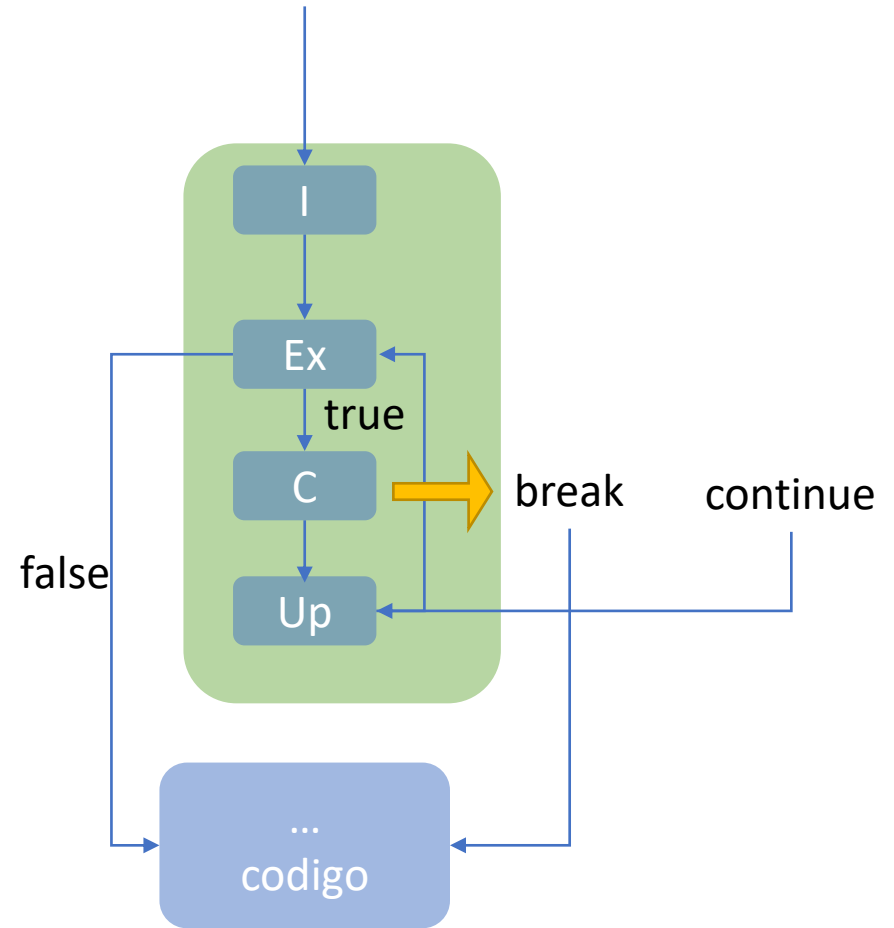


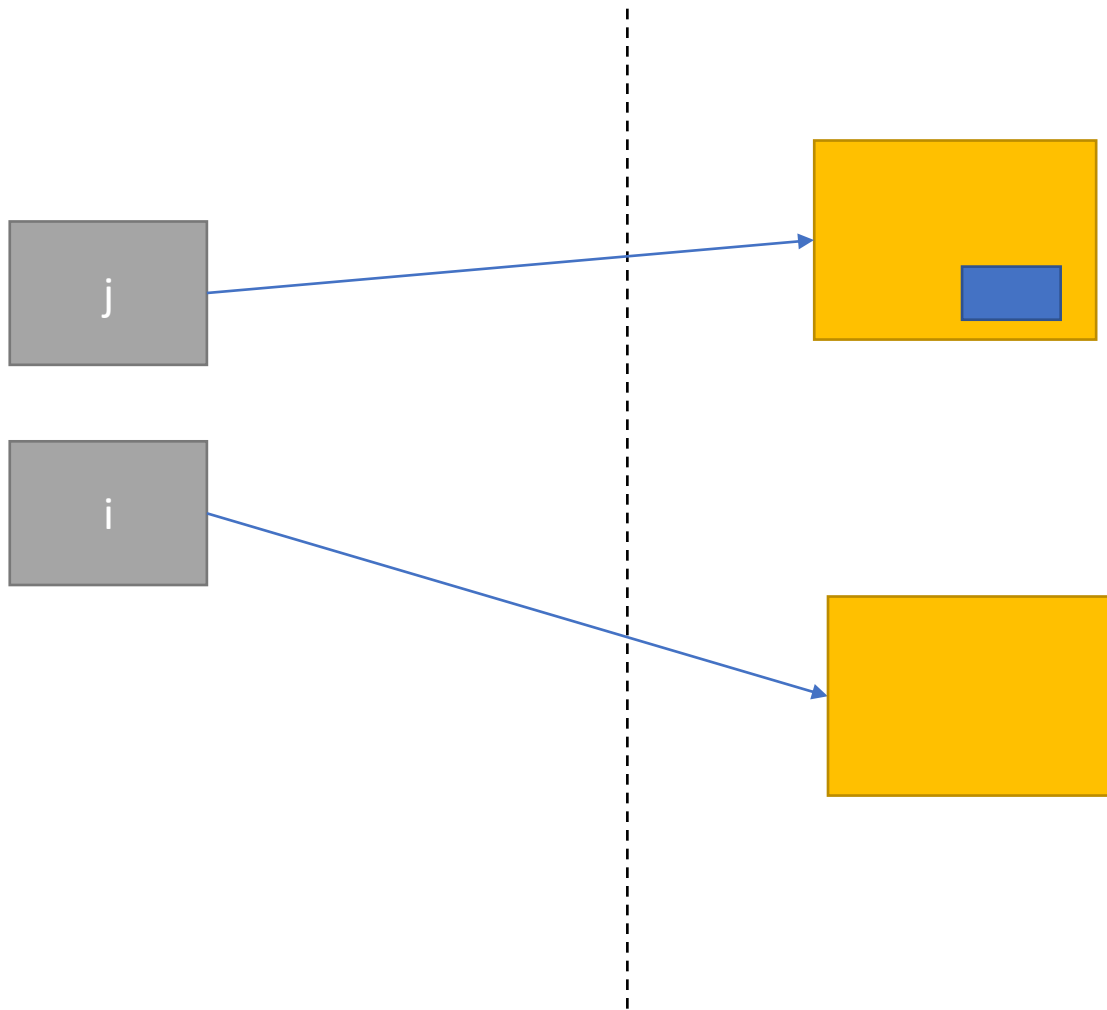


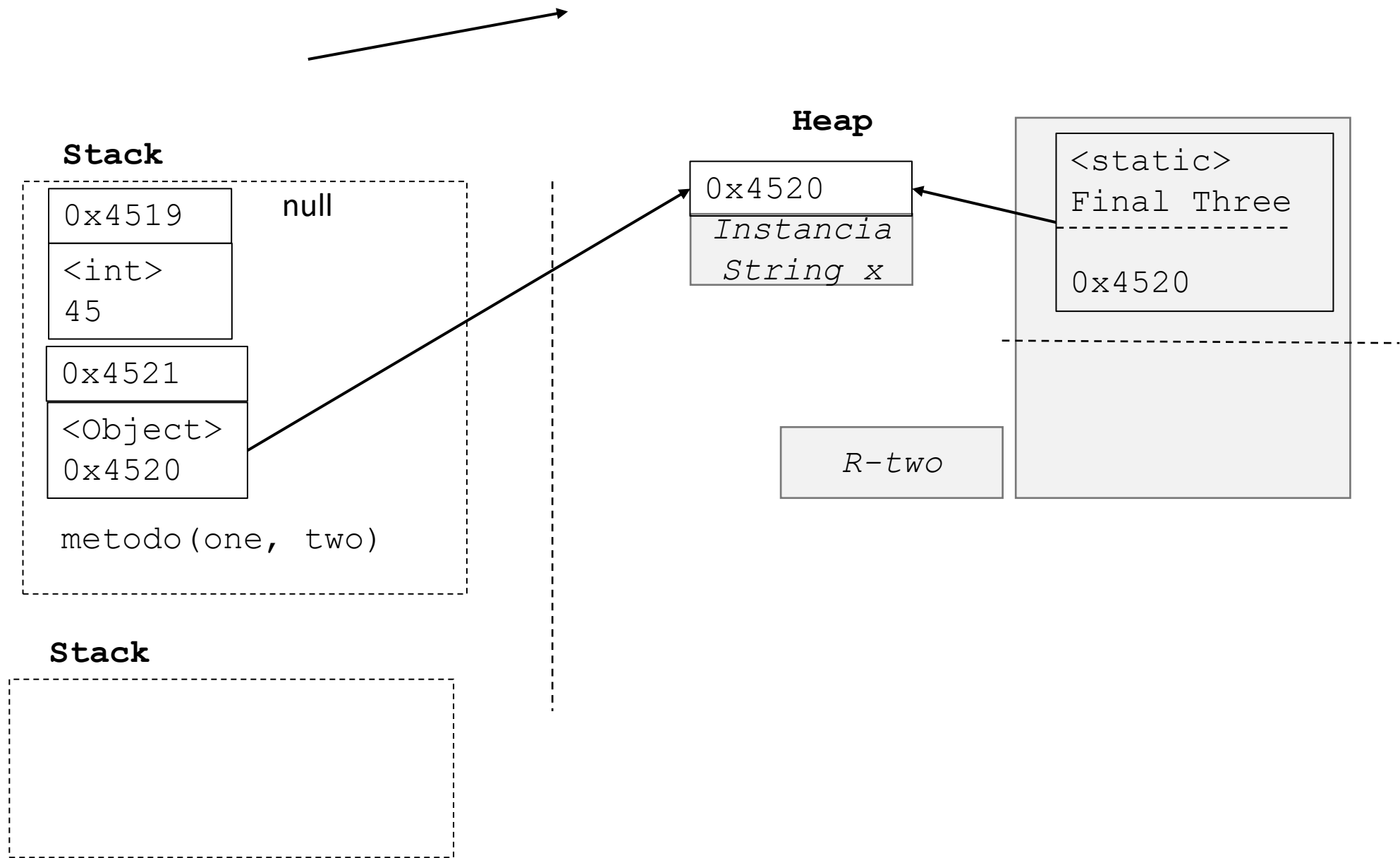


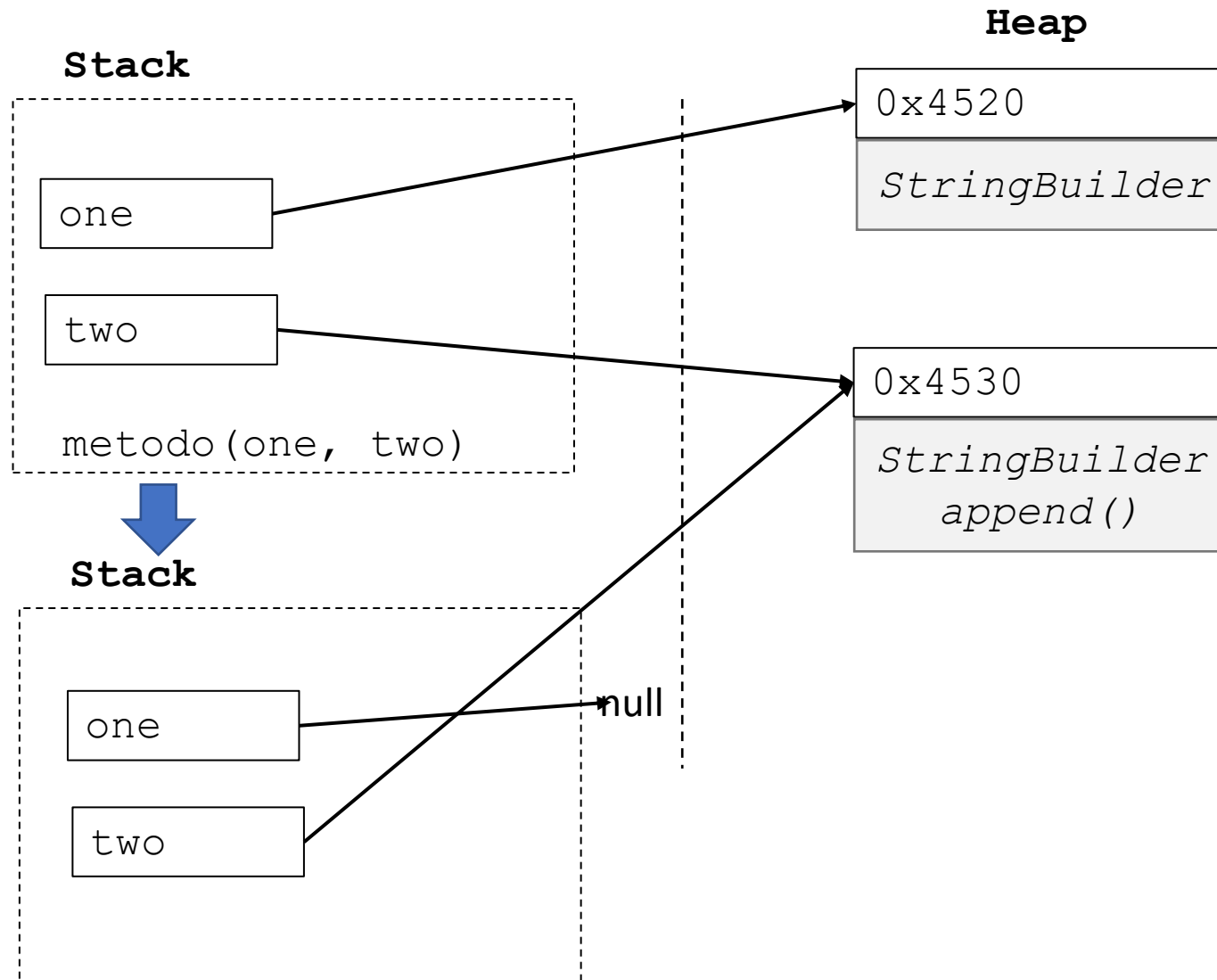


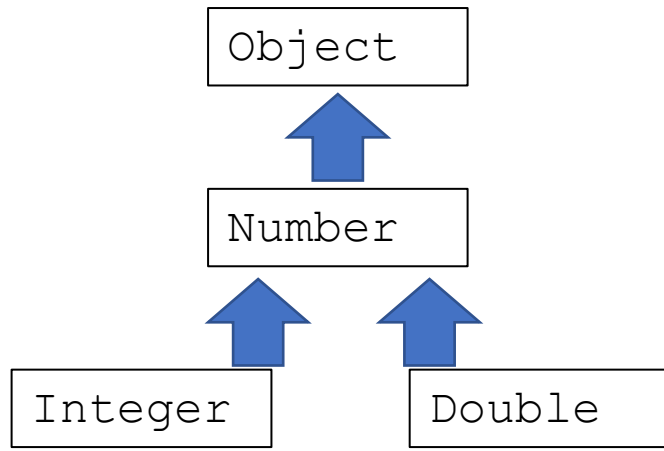
```
For(I; Ex; Up){  
    C;  
    ....;  
}
```



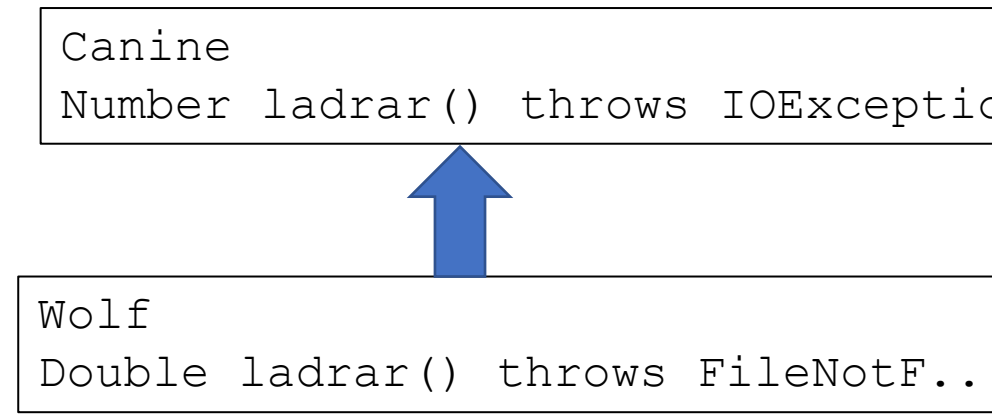
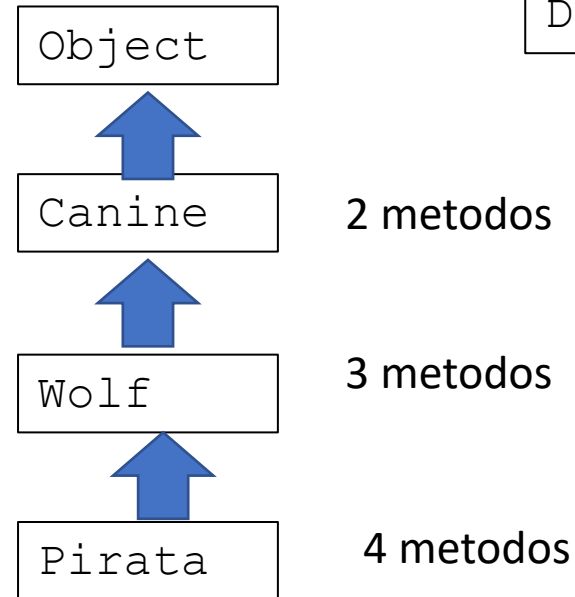


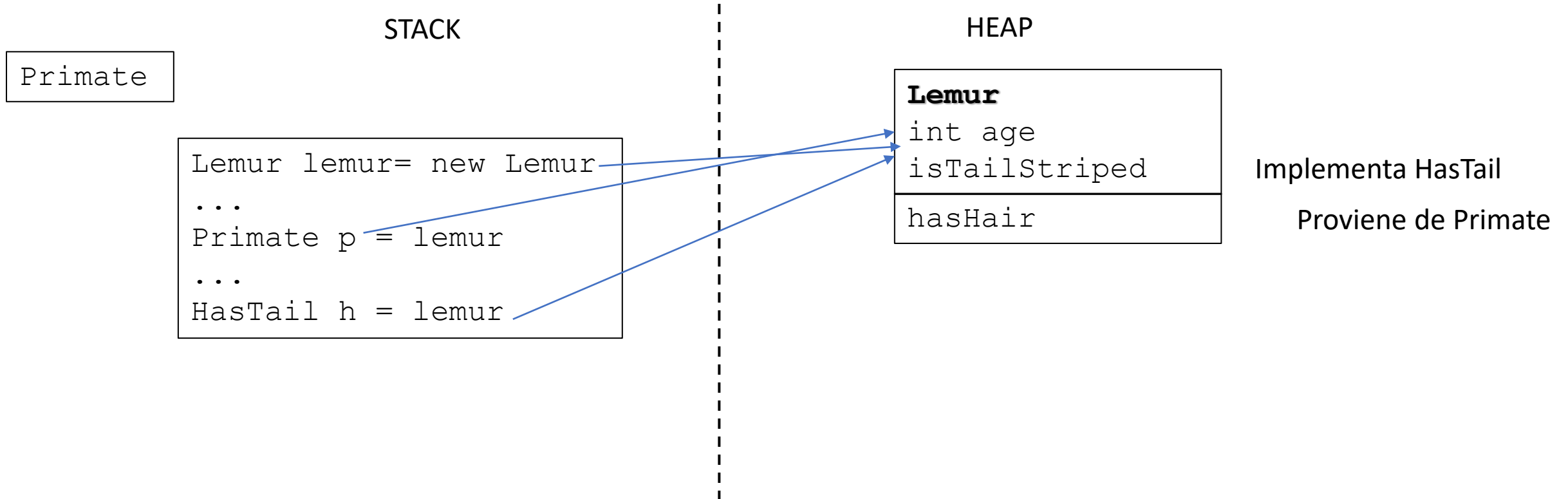
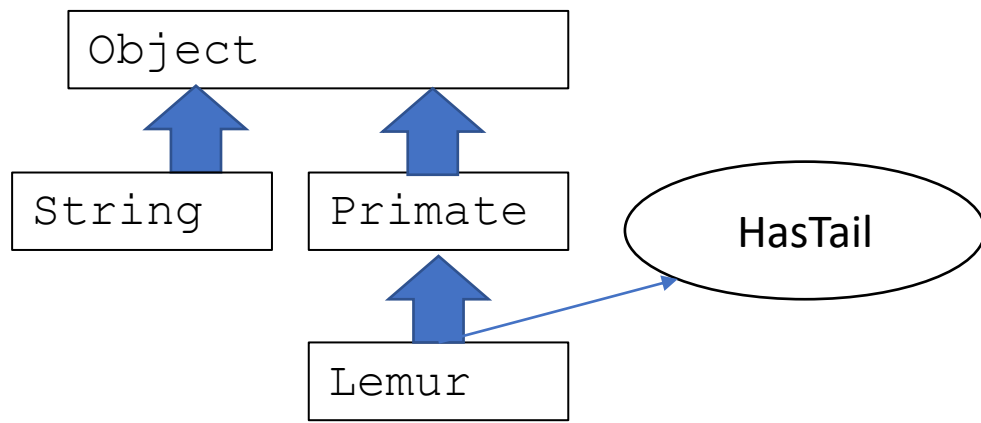


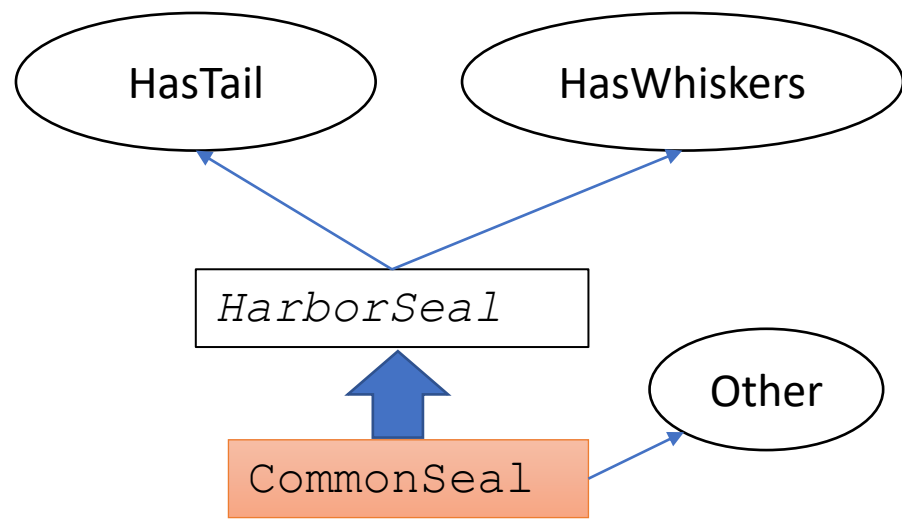




Canine c = [redacted]  
Number n = c.ladrar();







*String*

**Stack**

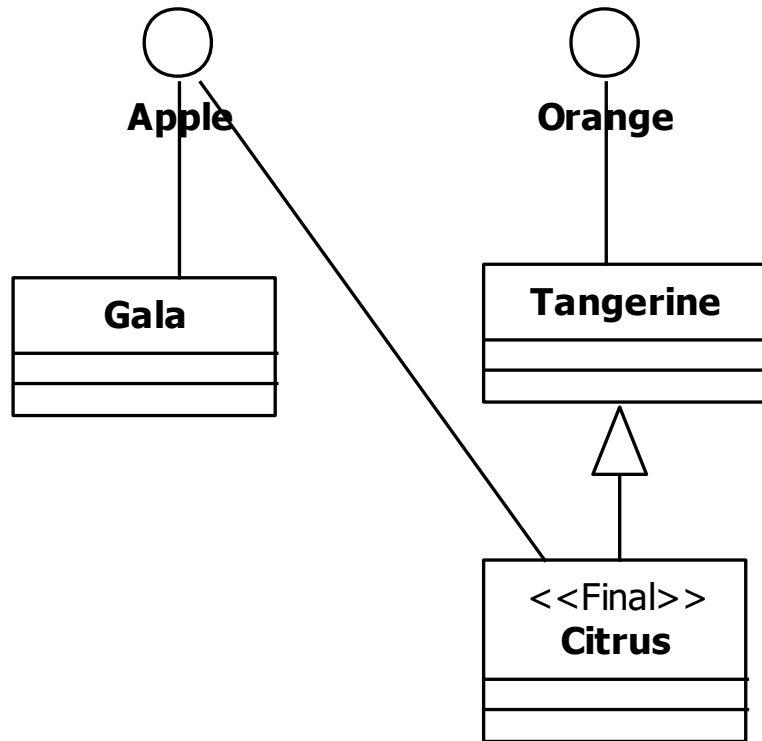
`HasTail h = ...`

**Heap**

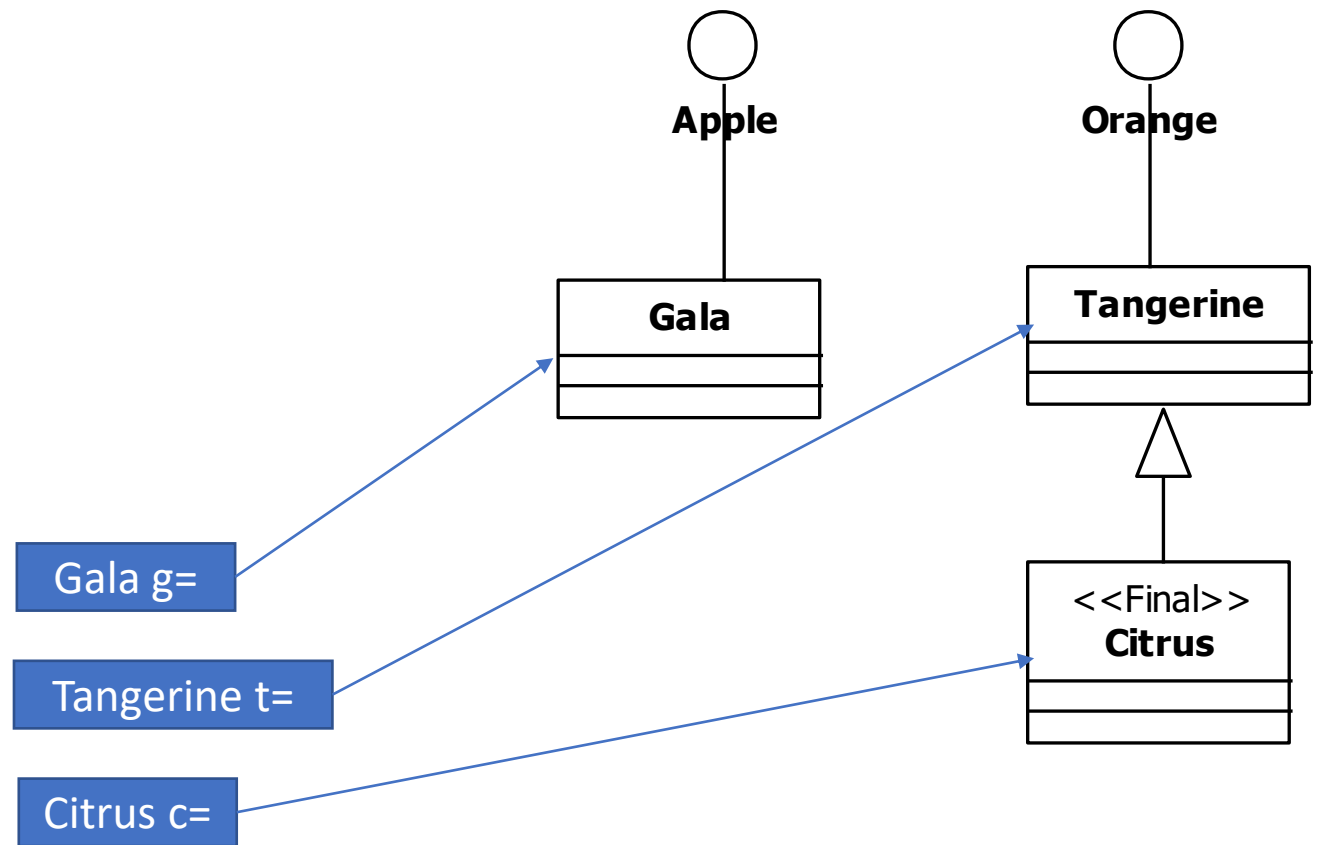
`CommonSeal`

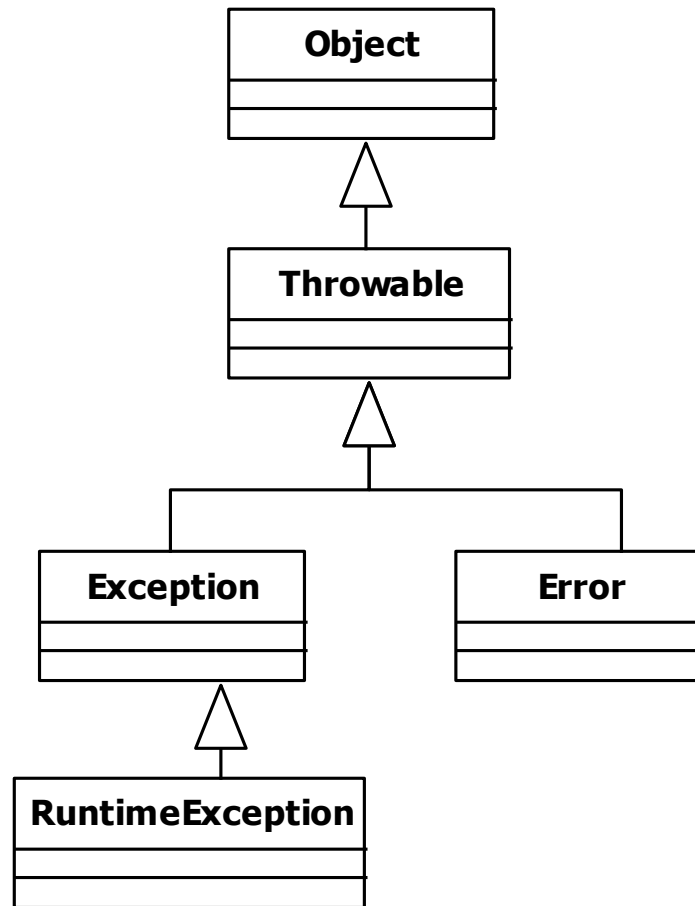






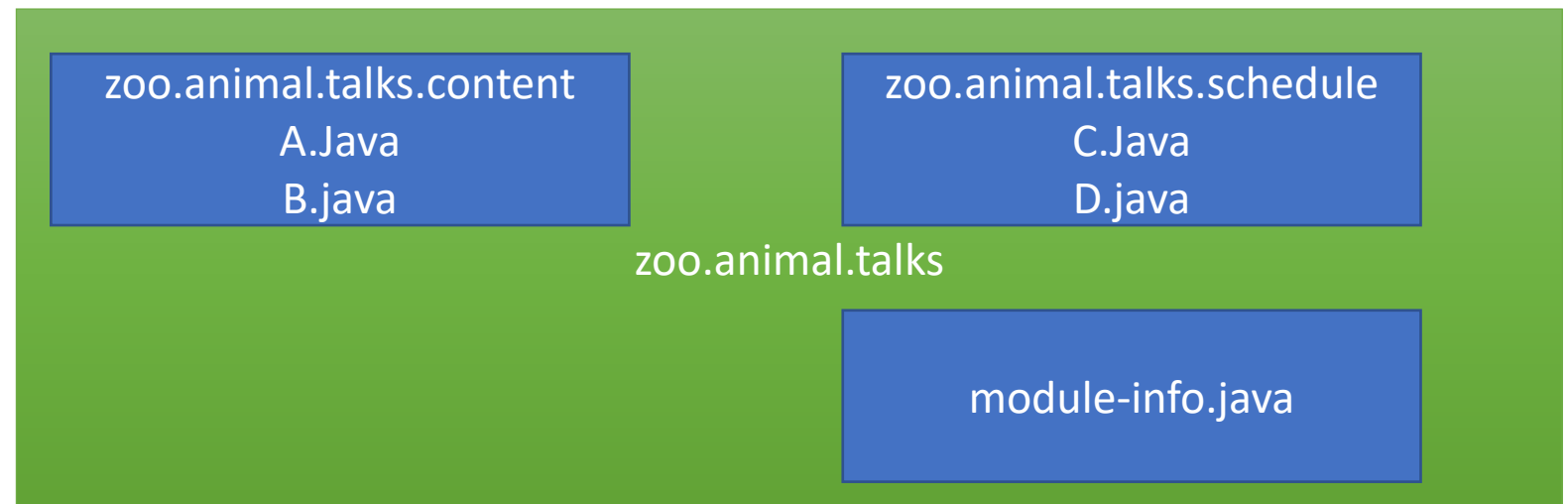
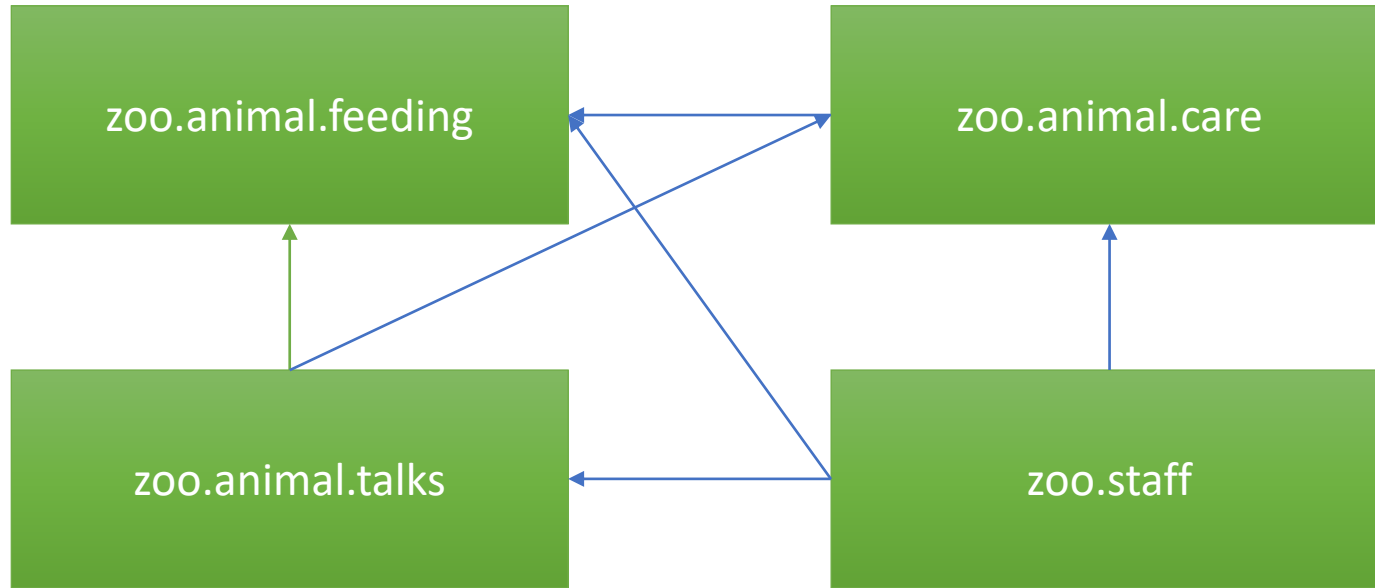
```
Tangerine t=new Citrus()
```





Checked : Exception y las que extiendan de esta  
(sin pasar RuntimeException)

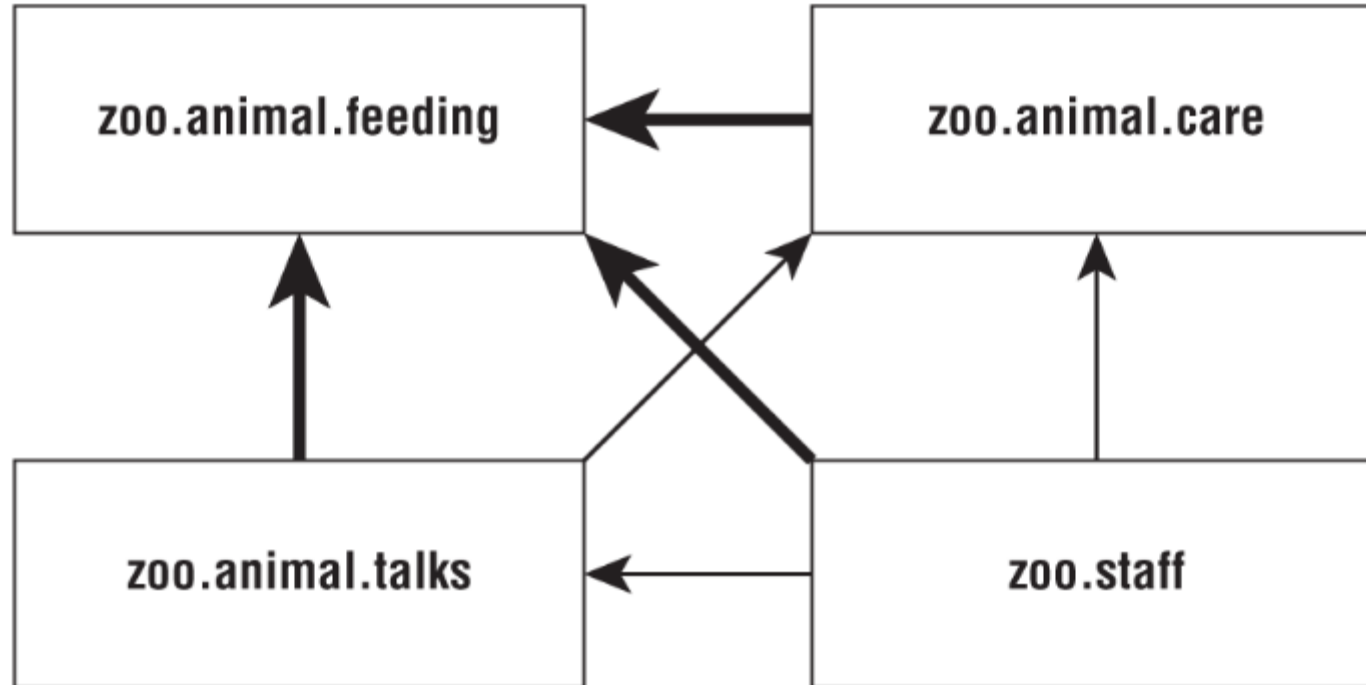
Unchecked: RuntimeException y las que extiendan de estas



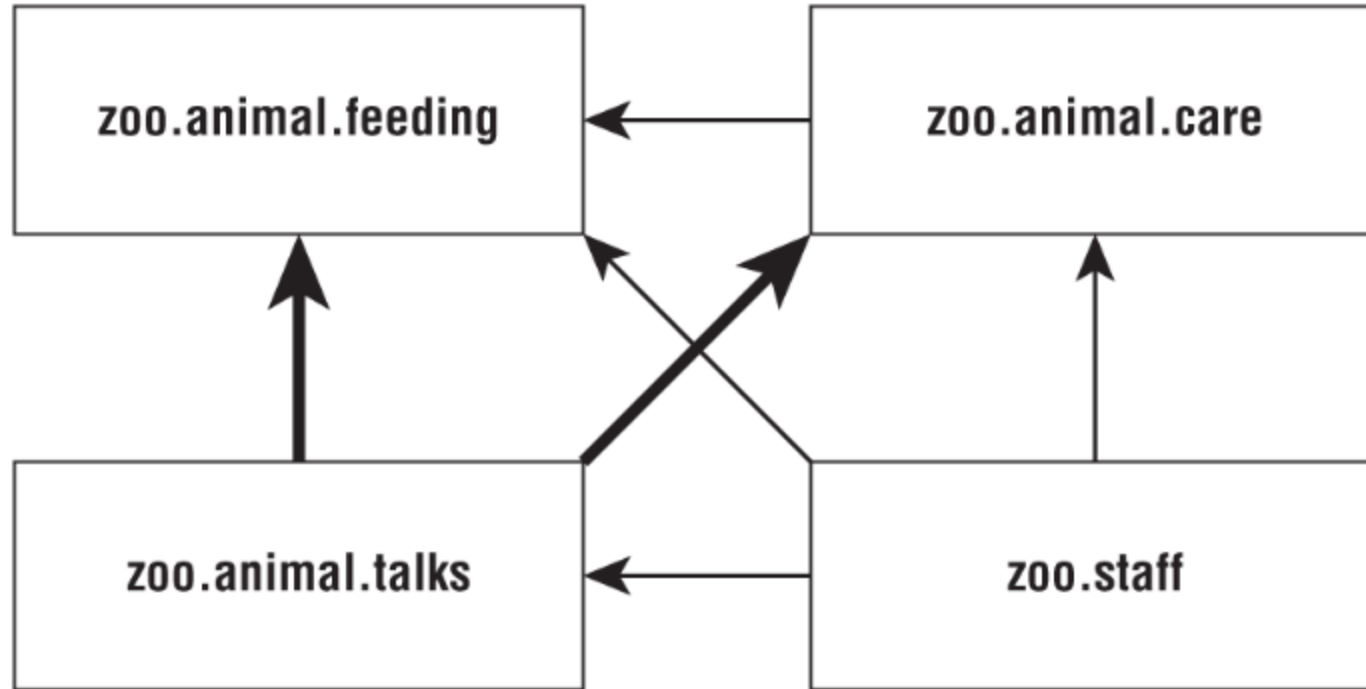
## Beneficios:

1. Mejor control de Accesos
2. Clara gestión de dependencia
3. Builds Personalizados
4. Mejora Performance
5. Package Unificado

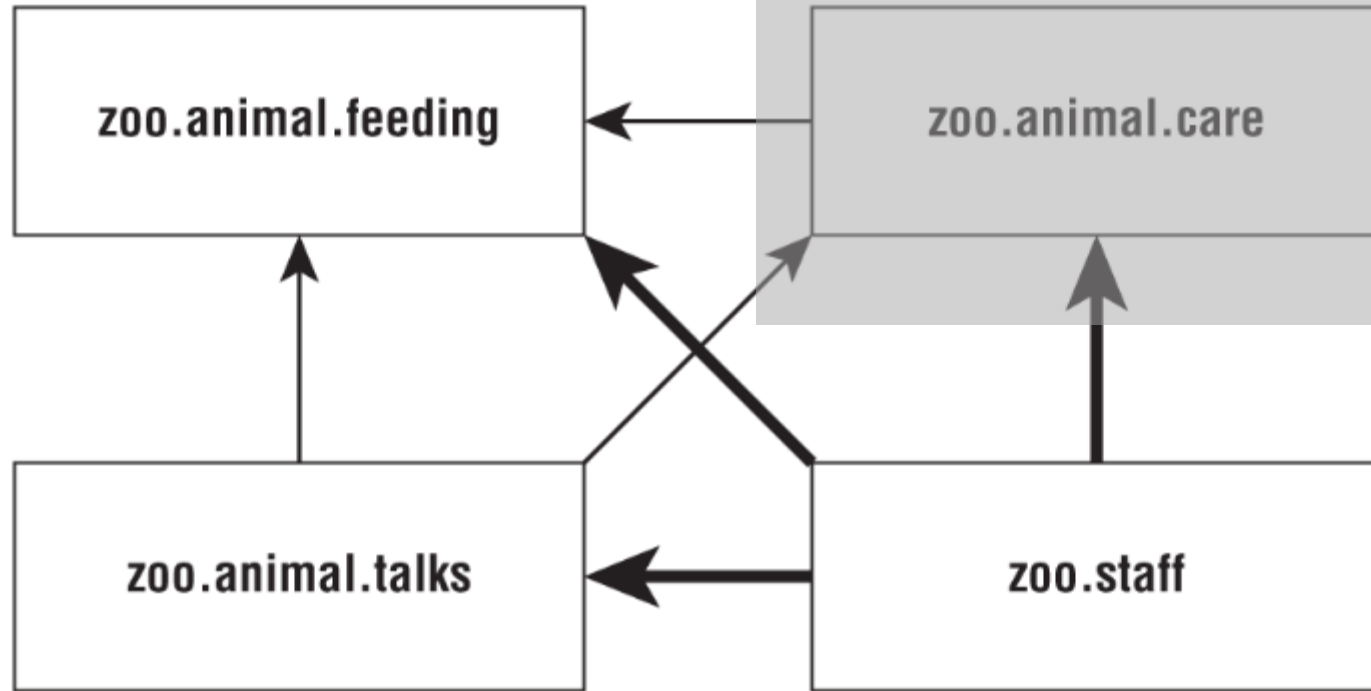
## Zoo

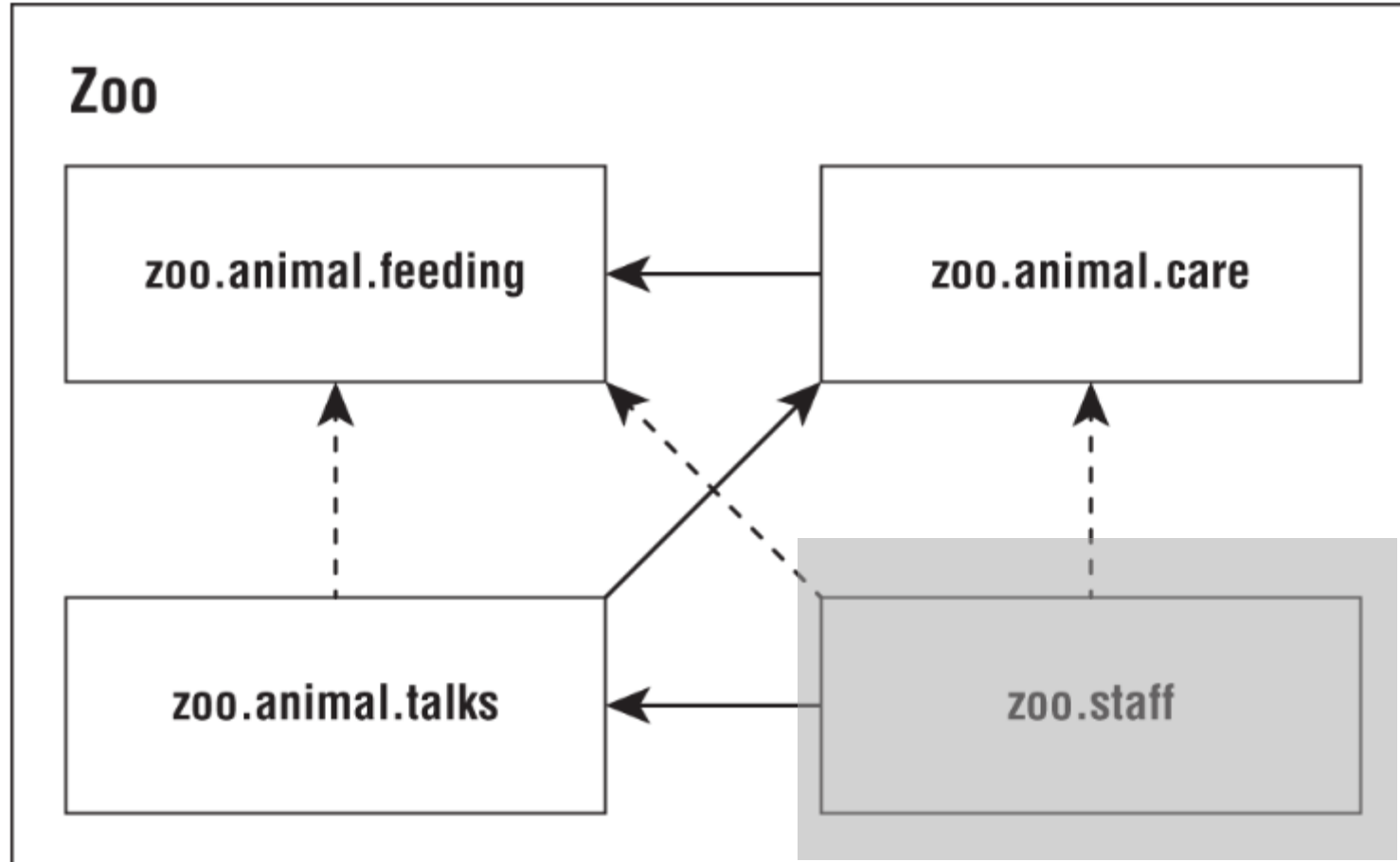


## Zoo

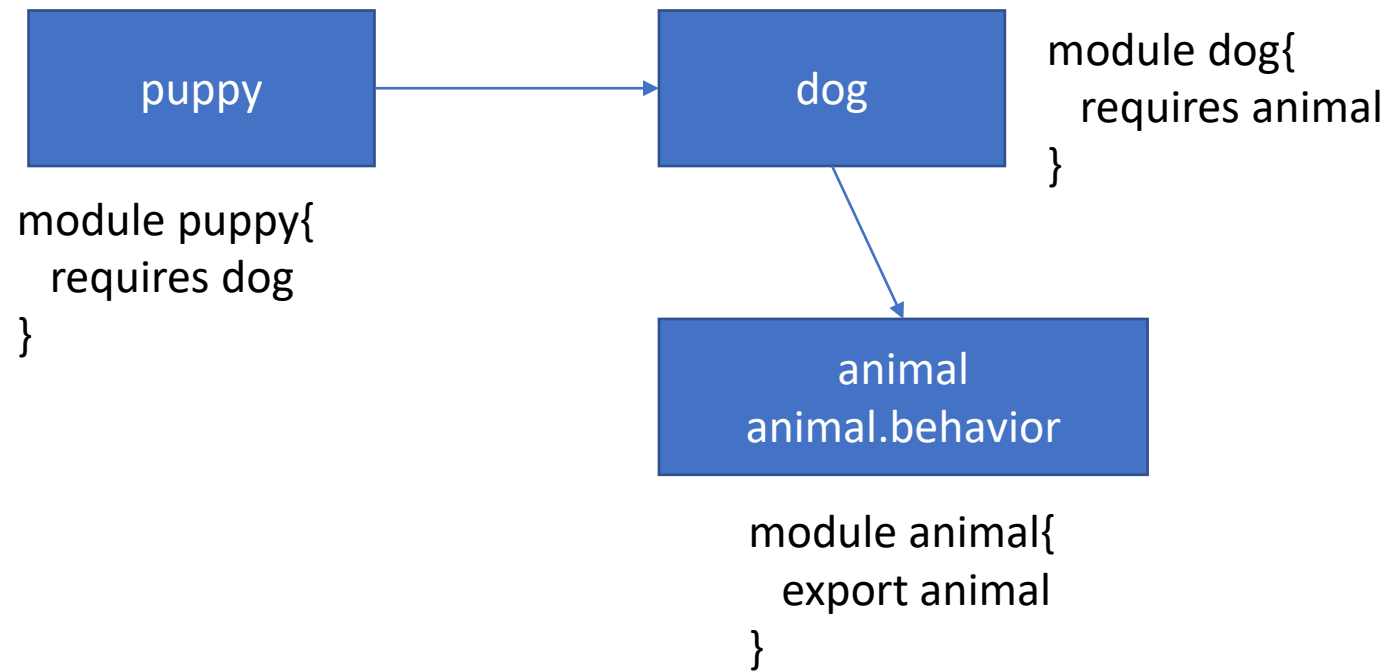


## Zoo

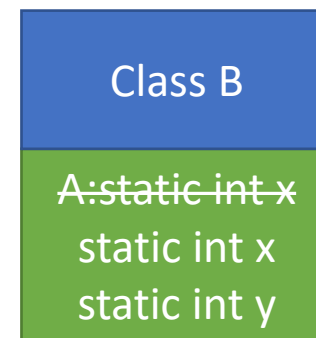
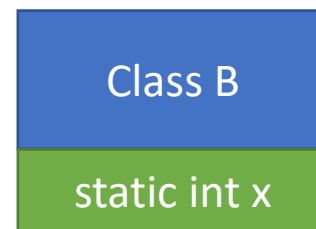
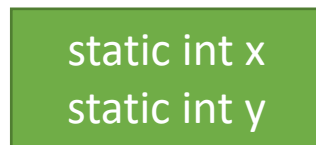
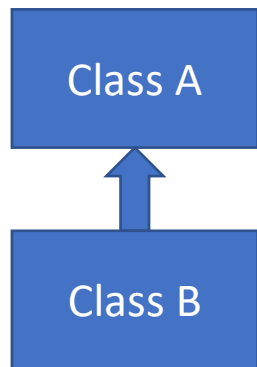
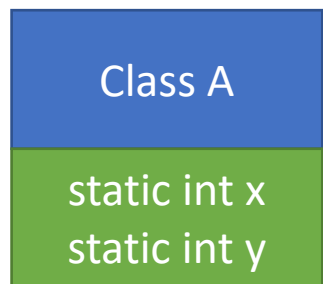




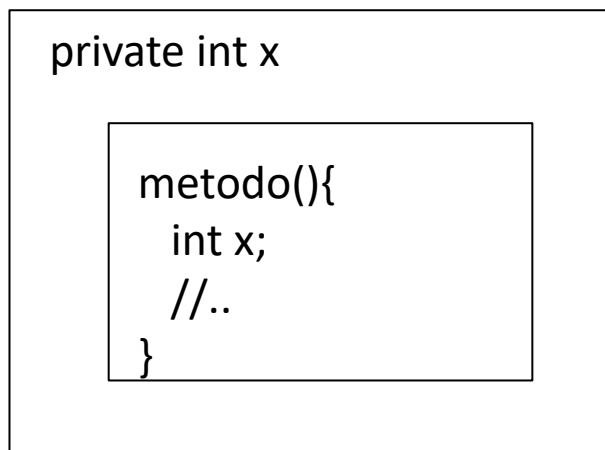




CH12

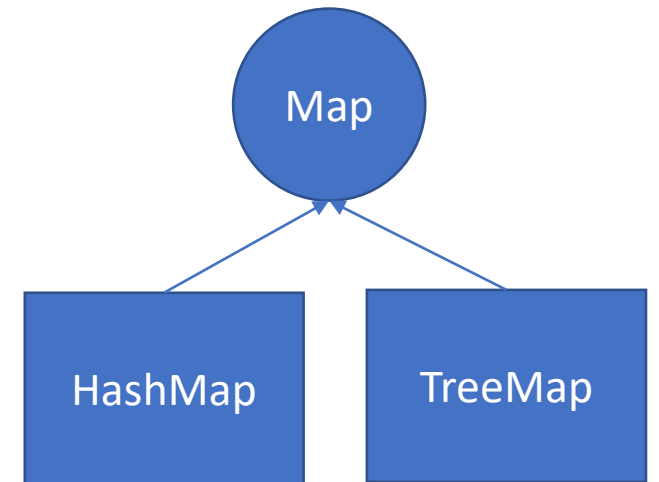
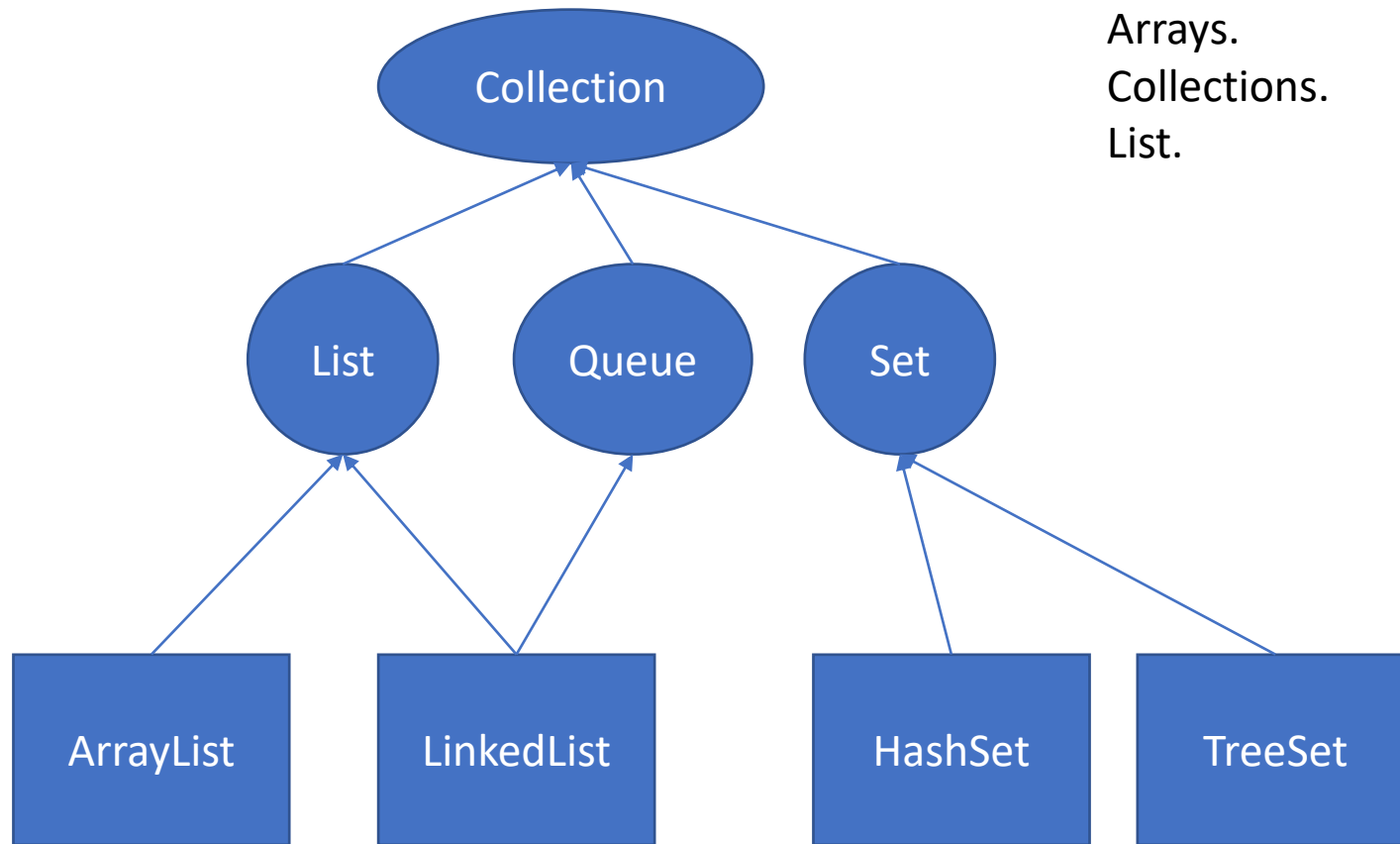


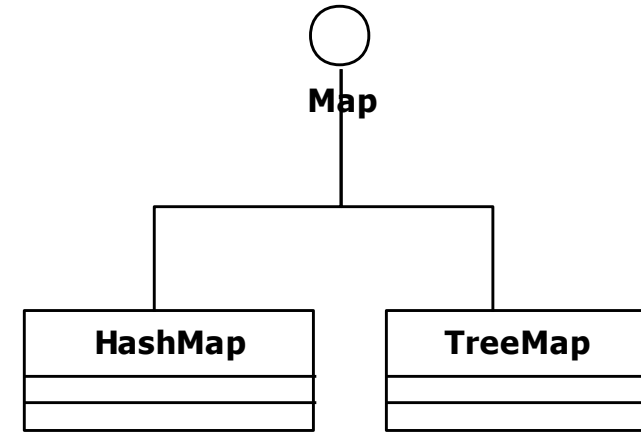
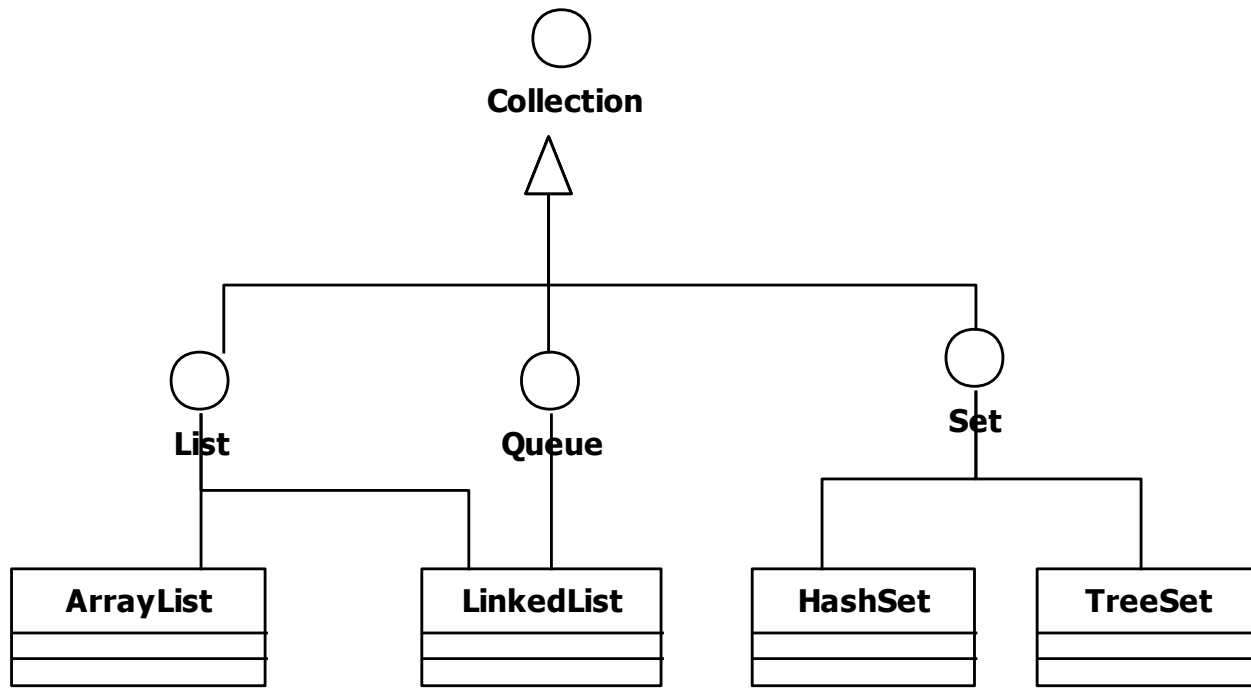
Class A



Repaso

Equals -> hashCode  
Arrays.  
Collections.  
List.





Class A<T>

Class A<? extends String>

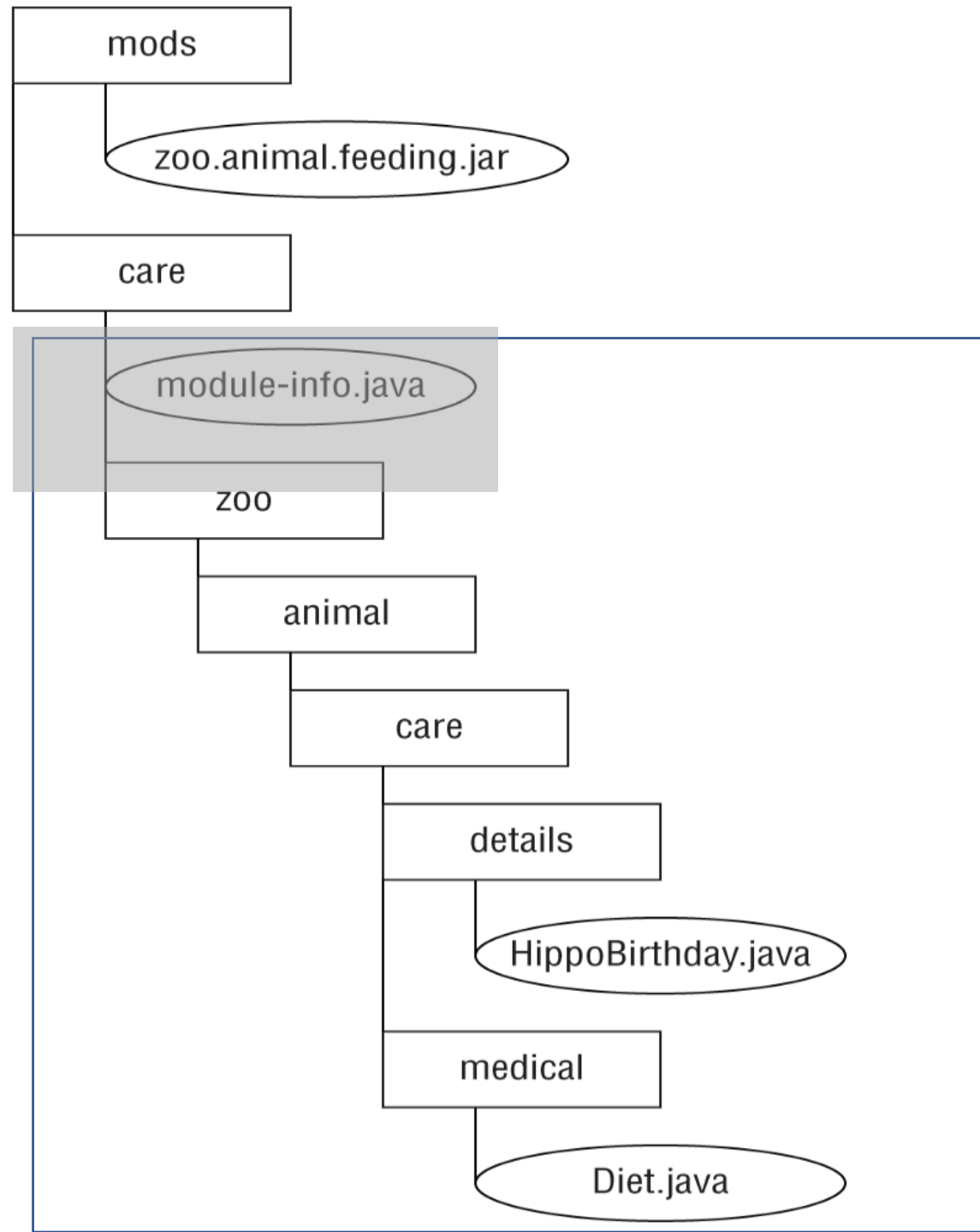
Class A<? super String>

public <T> T método(T x){}

List<String> lista = new ArrayList<>();

# 17 Modular Applications





Derivative	Description
exports <package>	Allows all modules to access the package
exports <package> to <module>	Allows a specific module to access the package
requires <module>	Indicates module is dependent on another module
requires transitive <module>	Indicates the module and that all modules that use this module are dependent on another module
uses <interface>	Indicates that a module uses a service
provides <interface> with <class>	Indicates that a module provides an implementation of a service

## Module path

**zoo.tickets.jar**

**zoo.tickets.cost**

**zoo.tickets.types**

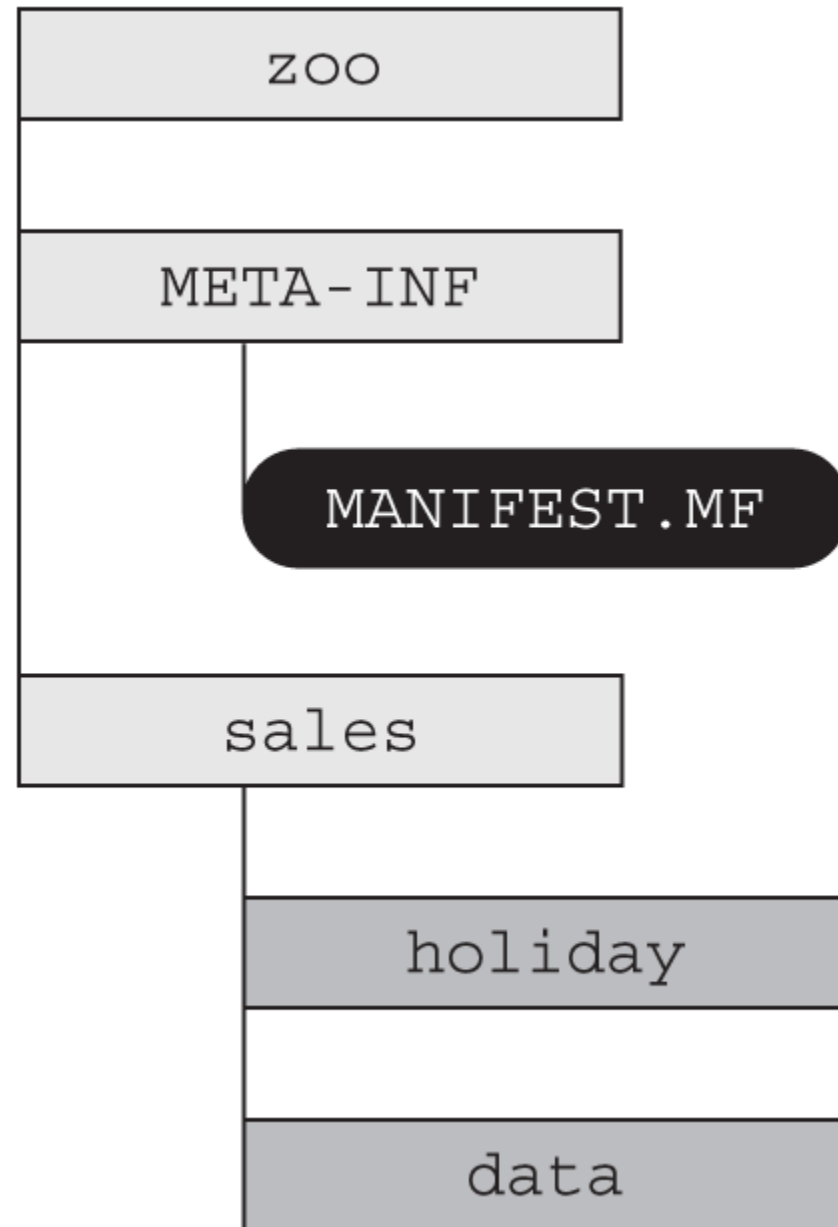
**module-info.class**

## Module path

**zoo.sales.jar**

**zoo.sales.holiday**

**zoo.sales.data**



modulepath

classpath



Property	Named	Automatic	Unnamed
A _____ module contains a module-info file?	Yes	No	Ignored if present
A _____ module exports which packages to other modules?	Those in the module-info file	All packages	No packages
A _____ module is readable by other modules on the module path?	Yes	Yes	No
A _____ module is readable by other JARs on the classpath?	Yes	Yes	Yes

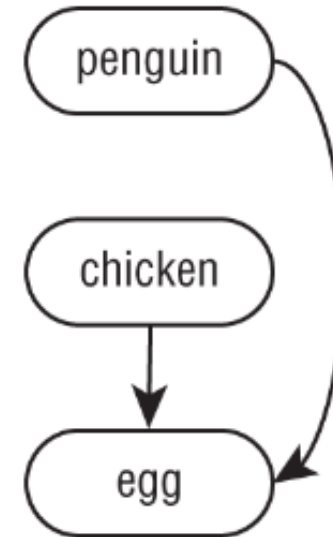
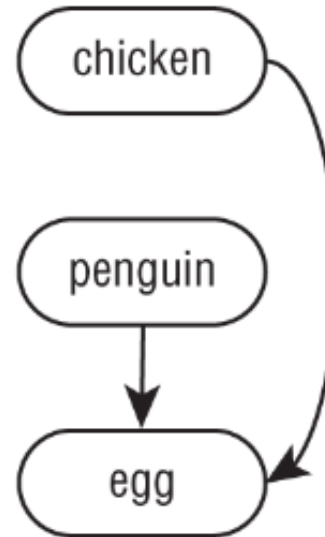
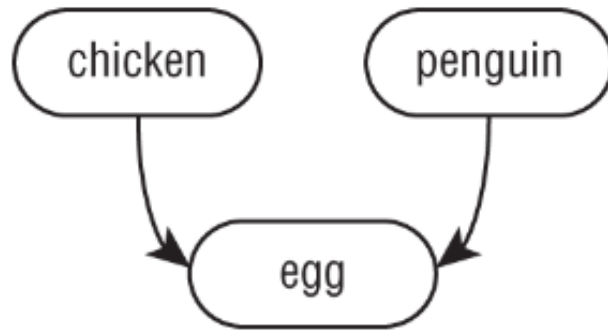
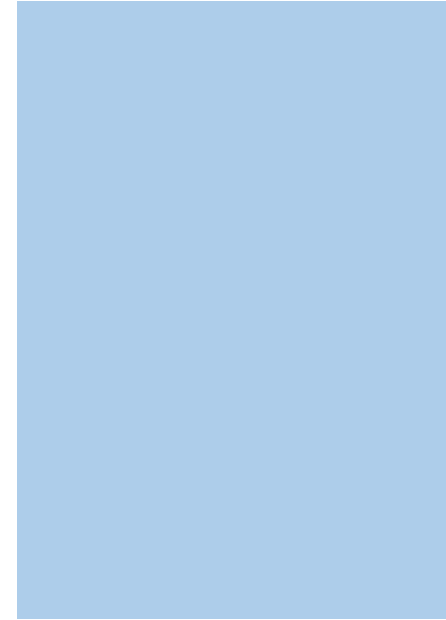
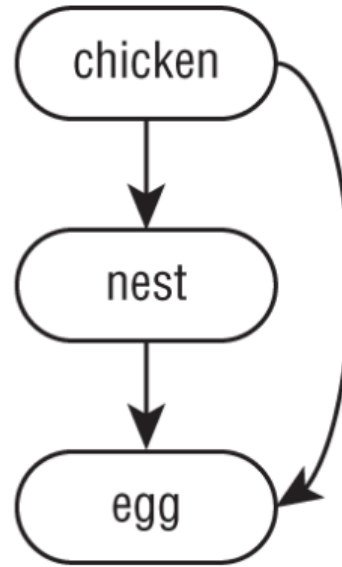
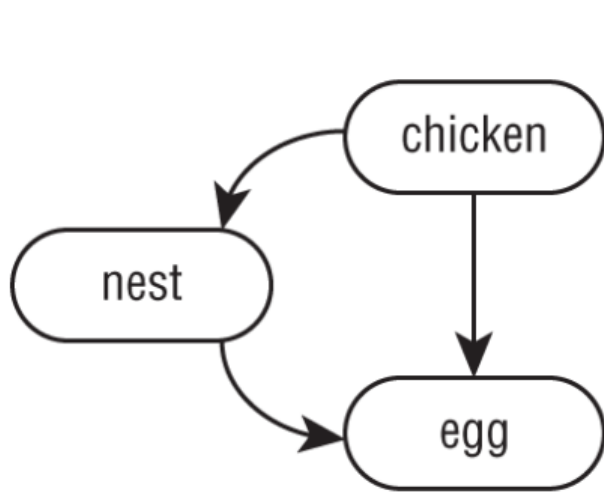
Module name	What it contains	Coverage in book
java.base	Collections, Math, IO, NIO.2, Concurrency, etc.	La mayoría se cubre
java.desktop	Abstract Windows Toolkit (AWT) and Swing	No es parte del examen
java.logging	Logging	No es parte del examen
java.sql	JDBC	Chapter 21, "JDBC"
java.xml	Extensible Markup Language (XML)	No es parte del examen

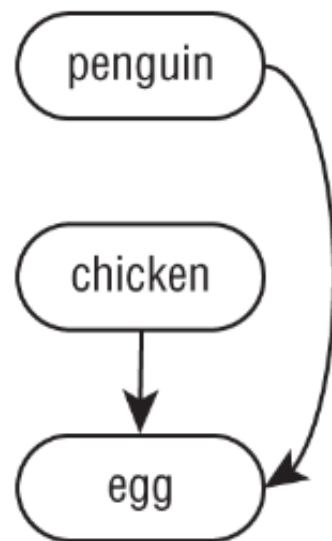
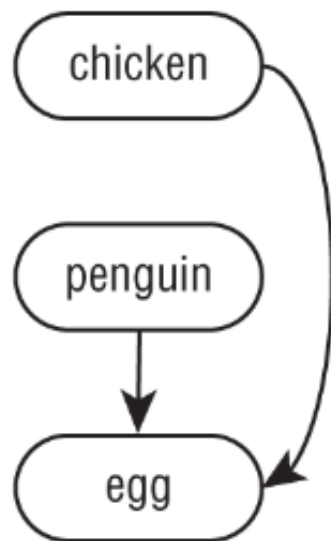
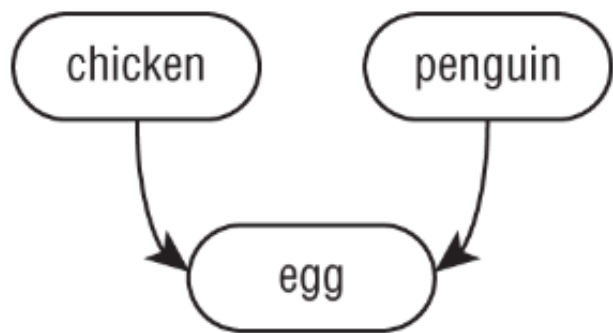
java.base	java.naming	java.smartcardio
java.compiler	java.net .http	java.sql
java.datatransfer	java.prefs	java.sql.rowset
java.desktop	java.rmi	java.transaction.xa
java.instrument	java.scripting	java.xml
java.logging	java.se	java.xml.crypto
java.management	java.security.jgss	
java.management.rmi		
java.security.sasl		

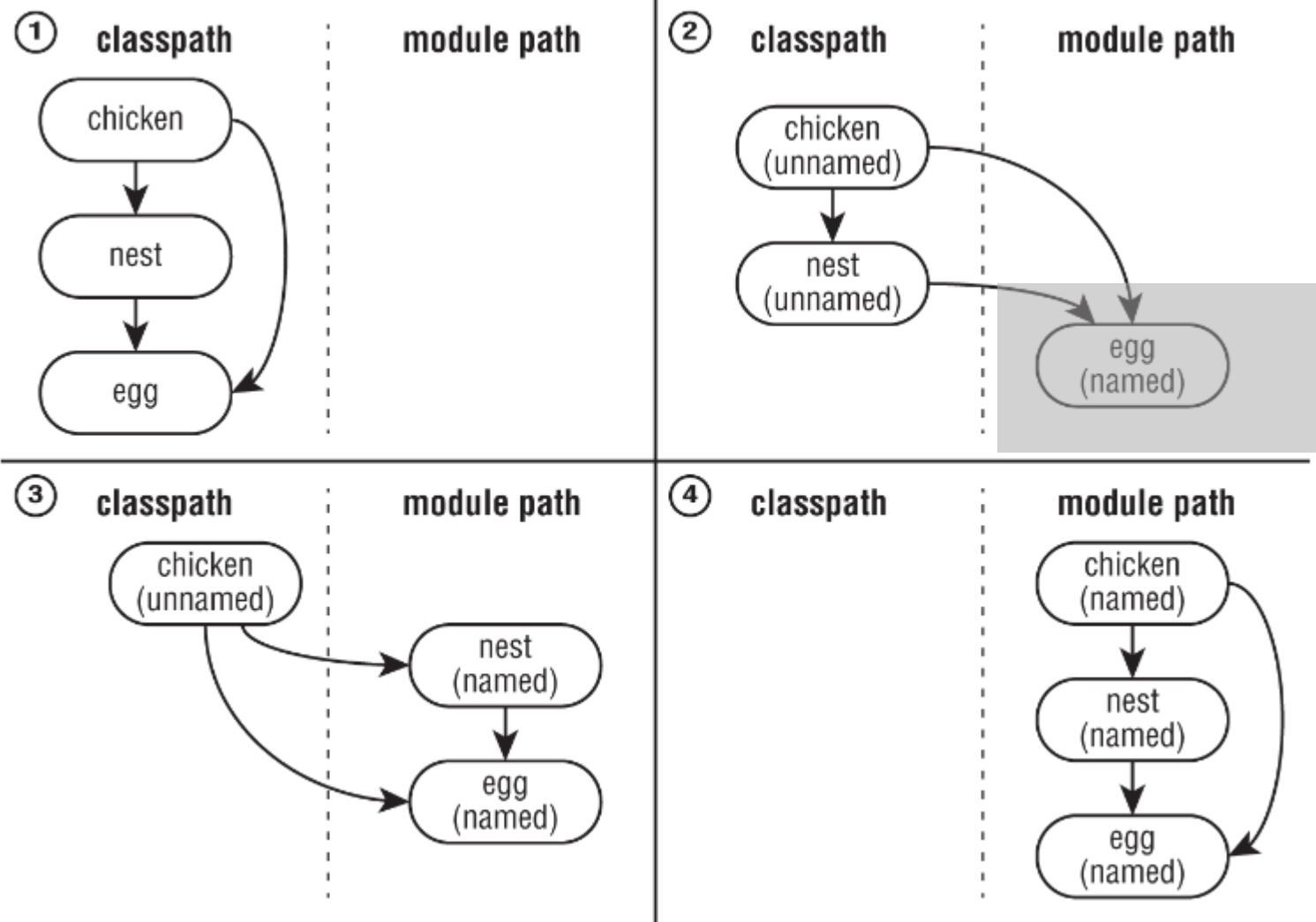
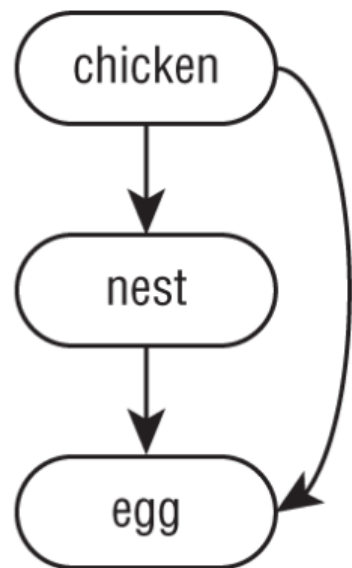


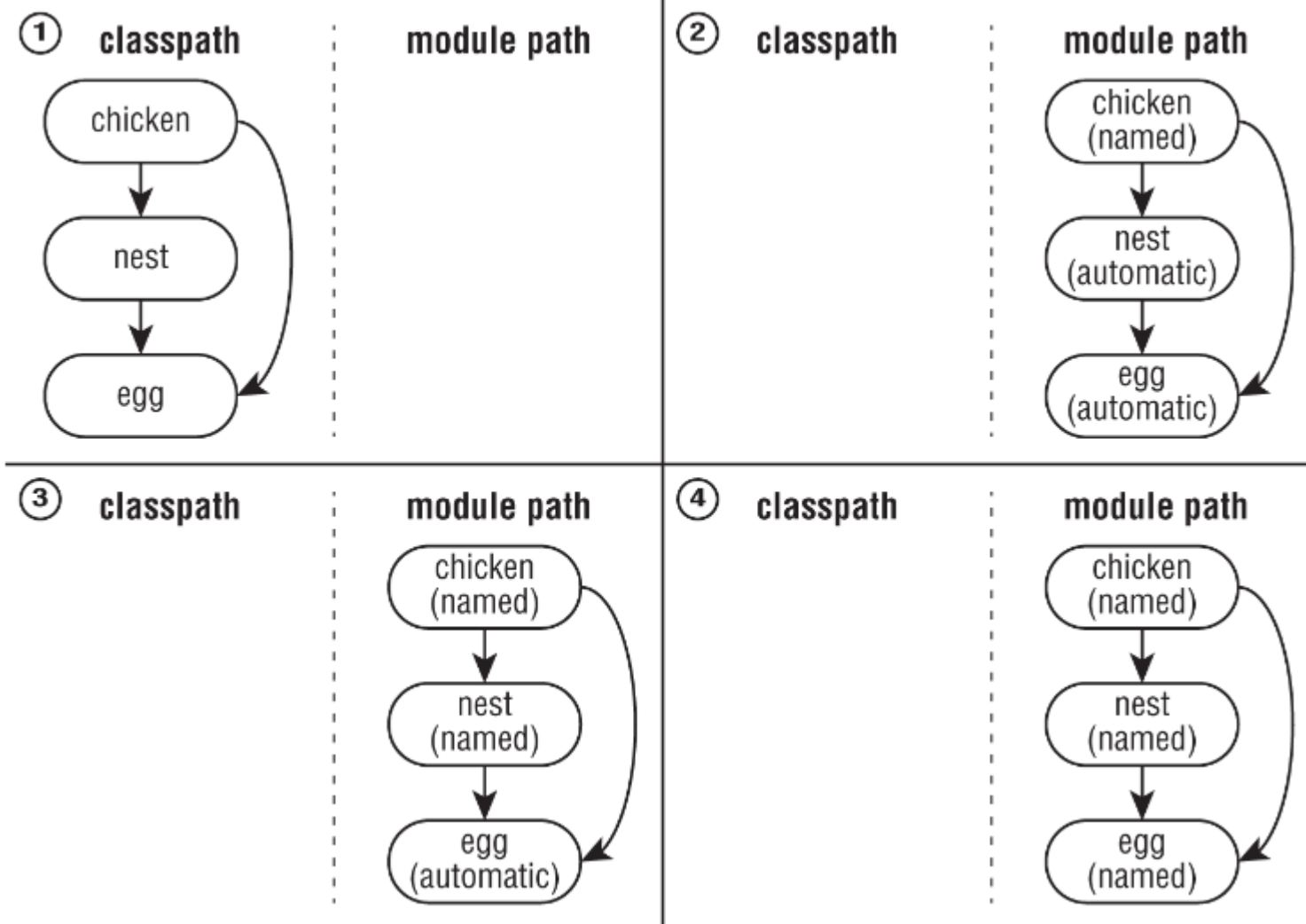
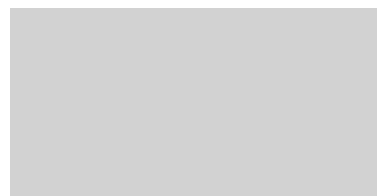
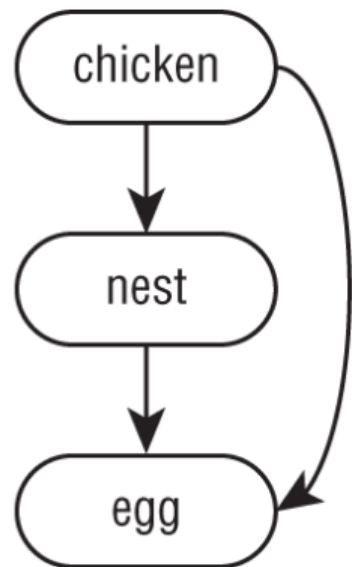
jdk.accessiblity	jdk.jconsole	jdk.naming.dns
jdk.attach	jdk.jdeps	jdk.naming.rmi
jdk.charsets	jdk.jdi	jdk.net
jdk.compiler	jdk.jdwp.agent	jdk.pack
jdk.crypto.cryptoki	jdk.jfr	jdk.rmic
jdk.crypto.ec	jdk.jlink	jdk.scripting.nashorn
jdk.dynalink	jdk.jshell	jdk.sctp
jdk.editpad	jdk.jsobject	jdk.security.auth
jdk.hotspot.agent	jdk.jstatd	jdk.security.jgss
jdk.httpserver	jdk.localdata	jdk.xml.dom
jdk.jartool	jdk.management	jdk.zipfs
jdk.javadoc	jdk.management.agent	
jdk.jcmd	jdk.management.jfr	







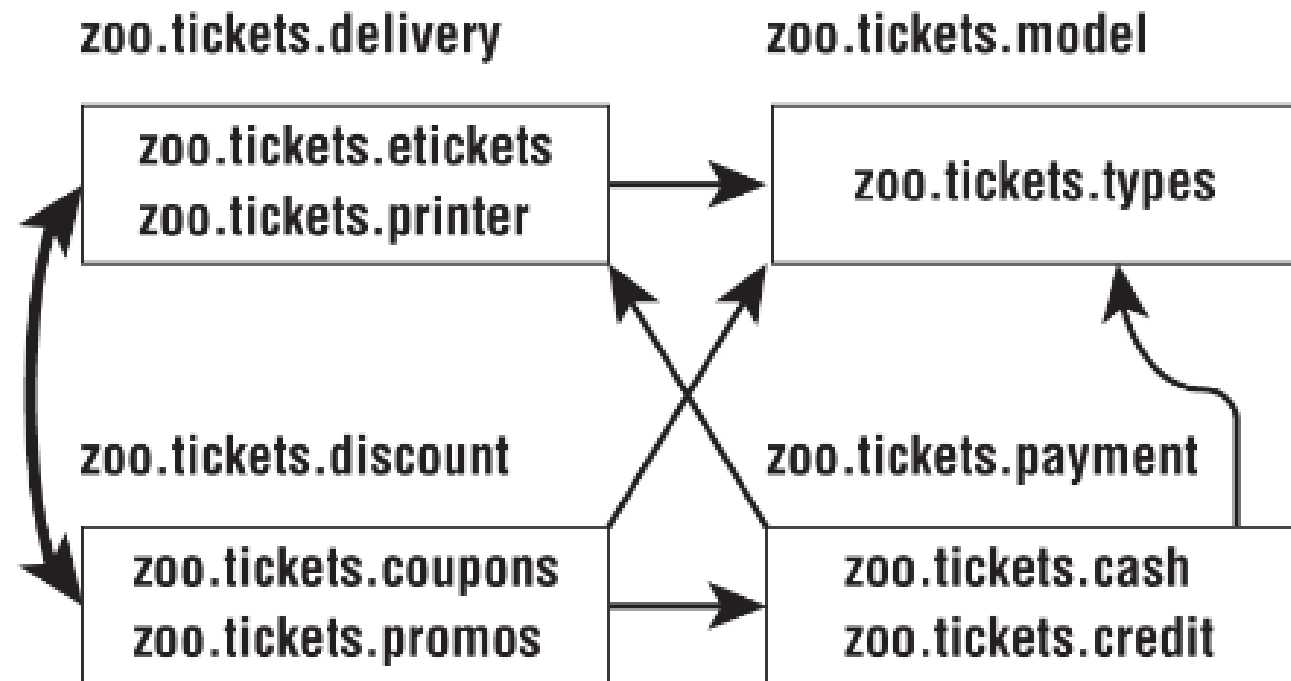




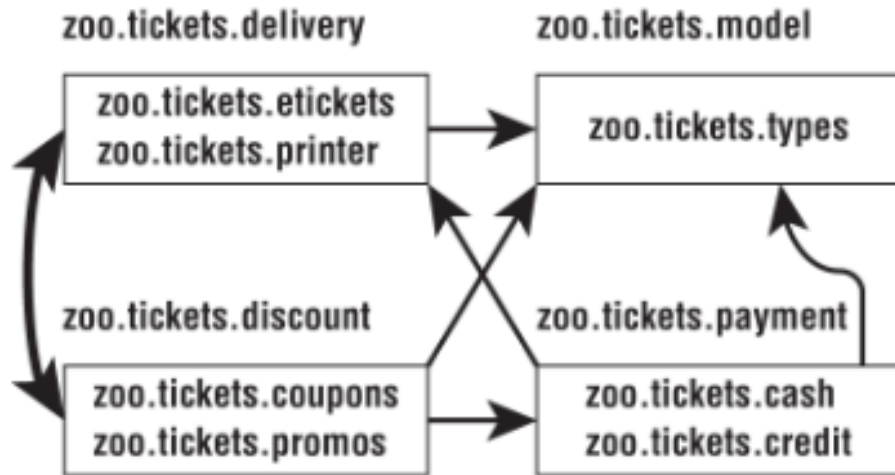
## Before

zoo.tickets.cash  
zoo.tickets.coupons  
zoo.tickets.credit  
zoo.tickets.etickets  
zoo.tickets.promos  
zoo.tickets.printer  
zoo.tickets.types

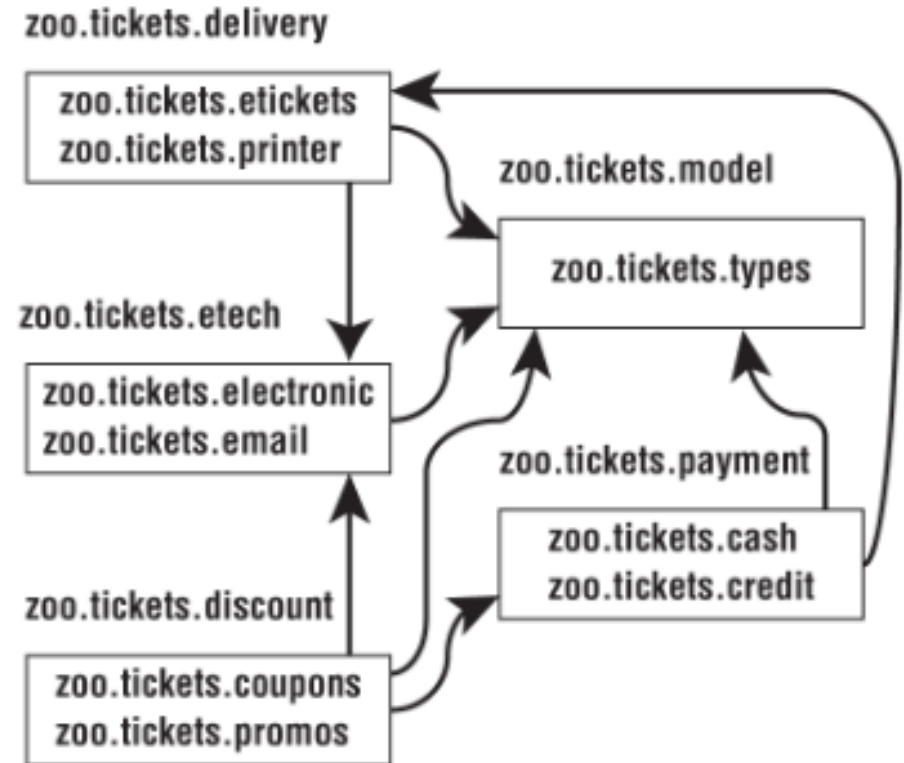
## After



## Before



## After



Modulo: zoo.tours.api

Notificador



```
module zoo.tours.api {  
  exports zoo.tours.api;  
}
```

Modulo: tours.reservations

Locator

```
module zoo.tours.reservations {  
  exports zoo.tours.reservations;  
  requires zoo.tours.api;  
  uses zoo.tours.api.Tour;  
}
```

Modulo: zoo.visitor

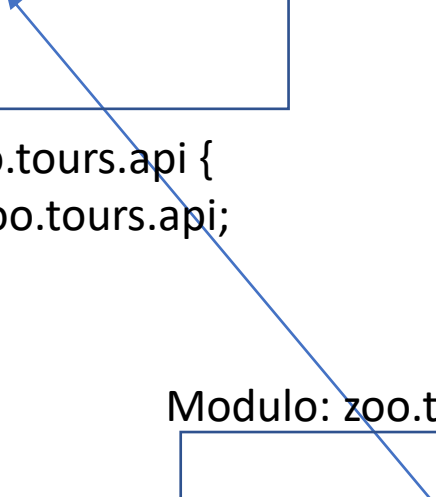
Consumer

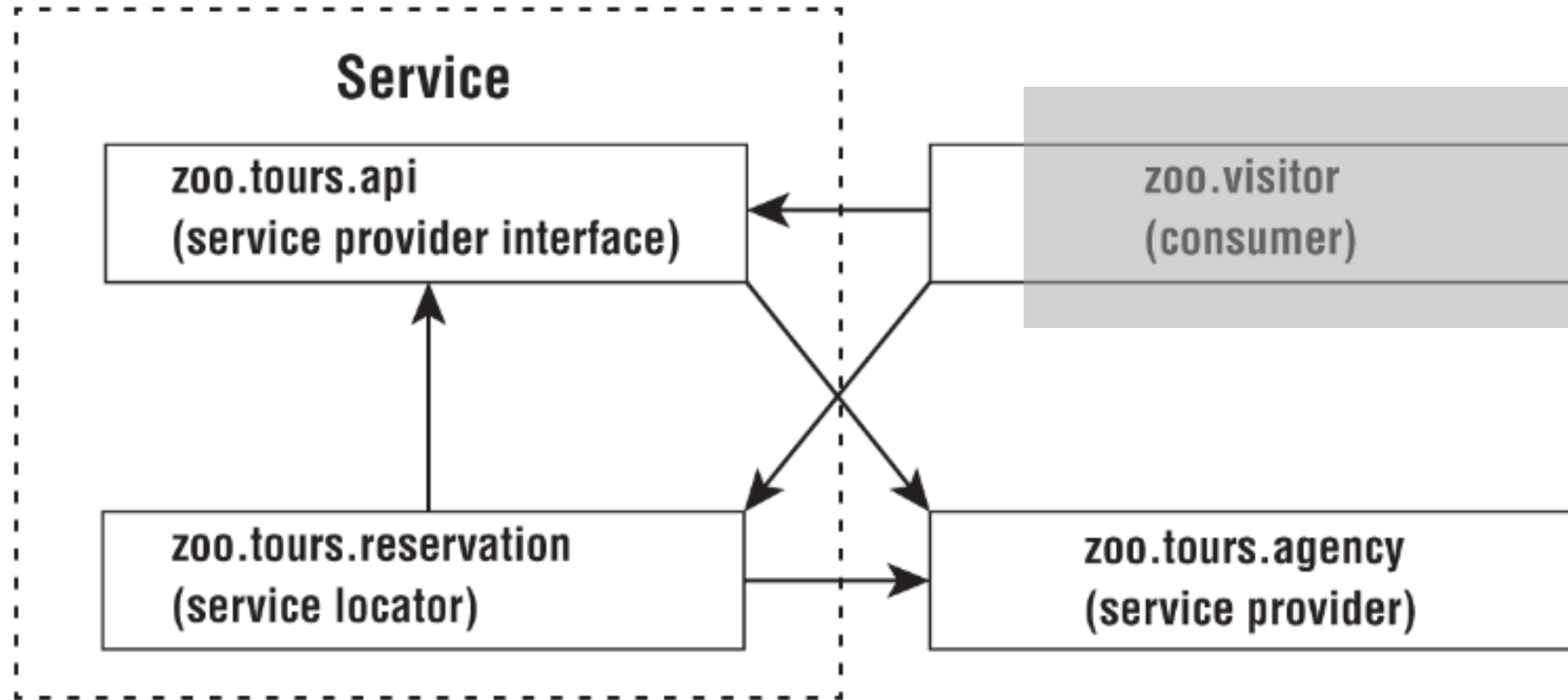
```
module zoo.visitor {  
  requires zoo.tours.api;  
  requires zoo.tours.reservations;  
}
```

Modulo: zoo.tours.agency

NotificadorEmail

```
module zoo.tours.agency {  
  requires zoo.tours.api;  
  provides zoo.tours.api.Tour with zoo.tours.agency.TourImpl;  
}
```







Artifact	Part of the service	Directives required in <code>module-info.java</code>
Service provider interface	Yes	<code>exports</code>
Service provider	No	<code>requires</code> <code>provides</code>
Service locator	Yes	<code>exports</code> <code>requires</code> <code>uses</code>
Consumer	No	<code>requires</code>