

Topic: Polymorphism

many forms

- feature of object-oriented programming
- implemented in different ways in different languages (Java, C++, Python)

Java uses class inheritance ("extends") and behavior model ("implements" an interface)

How polymorphism works in Java

interface Eater
(method headers,
constants only)

class Object

class A extends Object

class C extends A implements Eater
IS-A

class B extends A implements Eater
IS-A

① List<Eater> eaters;
eaters.add(new C())...
eaters.add(new B())...

classes B and C
are formally Eater
classes

② List<A> aGuys;
aGuys.add(new B())...
aGuys.add(new C())...
aGuys.add(new A())...

classes A, B, and C are
all formally A objects

③ List bGuys;

bGuys.add(new B())...
class B is formally
a B object