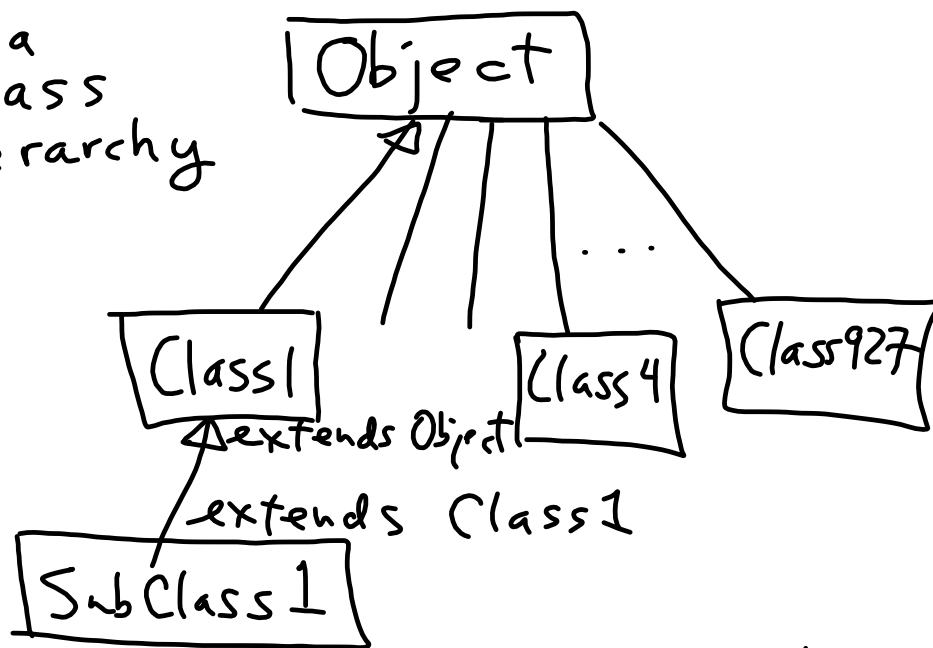


Java
class
hierarchy



SubClass1 IS-A Class1
public methods, constants,
available to SubClass1

interface DigitalPicture

- behavior abstraction
- only declarations of methods, no code

class SimplePicture

implements DigitalPicture

- all methods declared in DigitalPicture will be defined (given code) in either
 - SimplePicture class
 - some sub-class of SimplePicture
- also contains a reference to a PictureFrame object - that is, SimplePicture HAS-A PictureFrame

To Summarize:

IS-A: extends class
or implements interface

HAS-A: has an object as
as instance variable

a class can only
extend one class
a class can implement
any number of
interfaces

Topic: abstract classes.

abstract class has one or more methods (lacking code for the method)

e.g. `public void method3();`

subclass must define ^{no} those methods, ^{code} called abstract methods

Important feature of interfaces and abstract classes:

THEY CANNOT BE INSTANTIATED WITH "new"

So: `new DigitalPicture()` will not compile