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post sample exams

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reminders - practice tasks due tonight
when in doubt
contact your
IA mentor team requirements & wireframes
due Thursday

next week deadlines

NO practice assignment - yay!

instead 1st 360-degree feedback
- boo??

individual assignment
complete / incomplete
→ show

then Thursday is team
architecture & project planning
will discuss the Thursday
along w/ MVC

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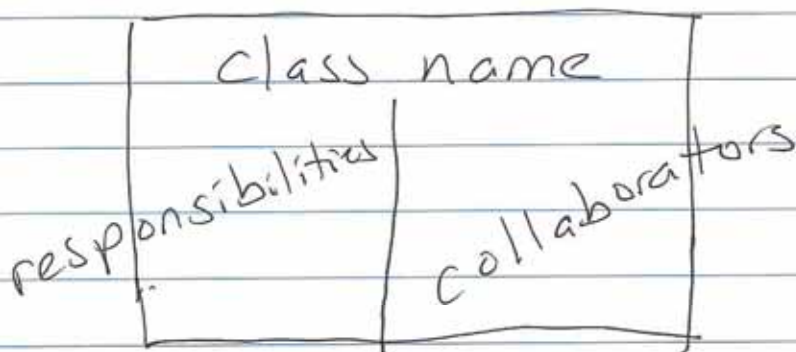
last week covered external application
& UI design

now internal code design

Object-oriented design & analysis
applies even when using
non-oo programming language

1st rule - do not start coding
no editor
instead use index cards,
paper, whiteboard

CRC cards - show images



responsibilities - what it needs to do

collaborators - other classes it
interacts with

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look for nouns & verbs in your
user stories or use cases

noun → class

verb → responsibility

classes should be the objects that
"do" operations, not the
actors who initiate operations

When the "system" does something,
this means some class in the
system does it

- avoid global master objects

combine & split

split classes with too many
responsibilities

combine classes with too few
remove duplicates

avoid classes that just
do CRUD - create
read
update
delete

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walk through the workflow of each user story / use case

make sure everything is handled by some class

identify class collaborators

only consider the user stories or use cases for the current iteration, do not consider responsibilities & collaborations that may come up later

in class exercise, pick up paper

Back to
images

sit with your team, next to your pair partner

each pair (not whole team)
pick one user story you expect for the 1st iteration of your project

10 minutes to devise CRC cards
first write down user story
then CRC card(s)

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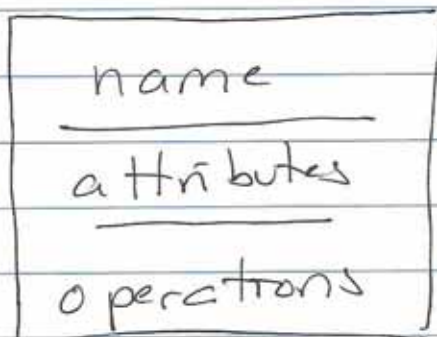
now 5 minutes, discuss the
two user stories & sets of
CRC cards with whole team

end- you will need to do this
later for all your user stories

probably divide up between
pairs rather than risk
duplication, although
duplication of work might
lead to better understanding
&/or uncover misunderstandings

once CRC cards have been defined
for all the user stories in an iteration

next step is class diagrams
→ show images



everything except
class name is optional

Omit CRUP

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name - what is it? type or singleton

attributes - what describes it?

properties, data
may be primitive or
references to other
classes (collaborators)

operations - what does it do? behaviors
(responsibilities)

again, focus on what you need for
this iteration, not future

YAGNI - you ain't gonna need it

other sanity checks:

SRP - single responsibility
principle (cohesion)
one reason to exist
one purpose

DRY - don't repeat yourself

avoid objects with only data,
attributes, no or only CRUD operations

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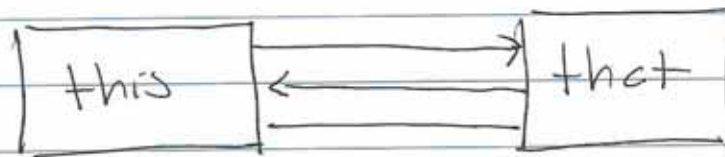
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after diagrams defined for individual classes, next examine relationships among classes

→ show images again
note focus on relationships among classes

association - most general relationship

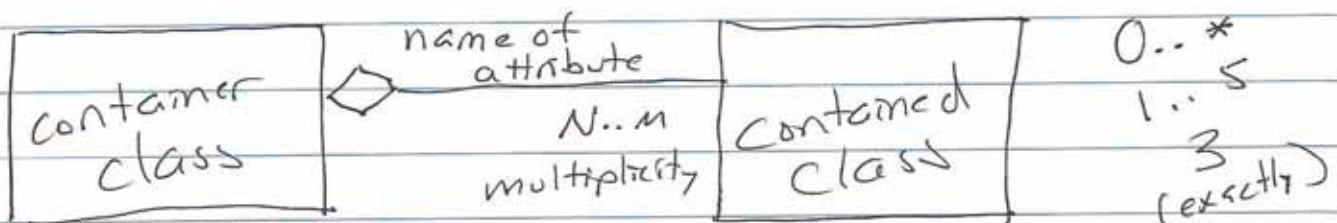
instances of one class "know about" or "communicate with" instances of another class (or same class)



unidirectional (arrow) or
bidirectional (no arrow)

many special cases of association

open aggregation HAS-A  open diamond

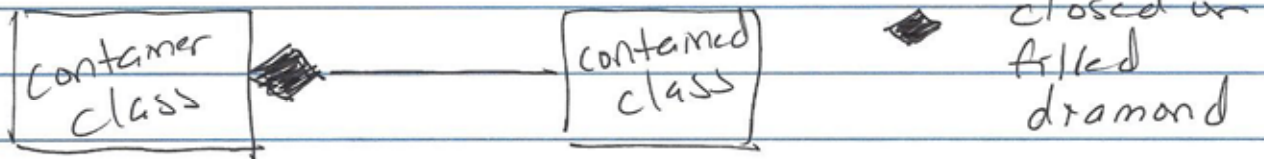


open means contained objects exist independently

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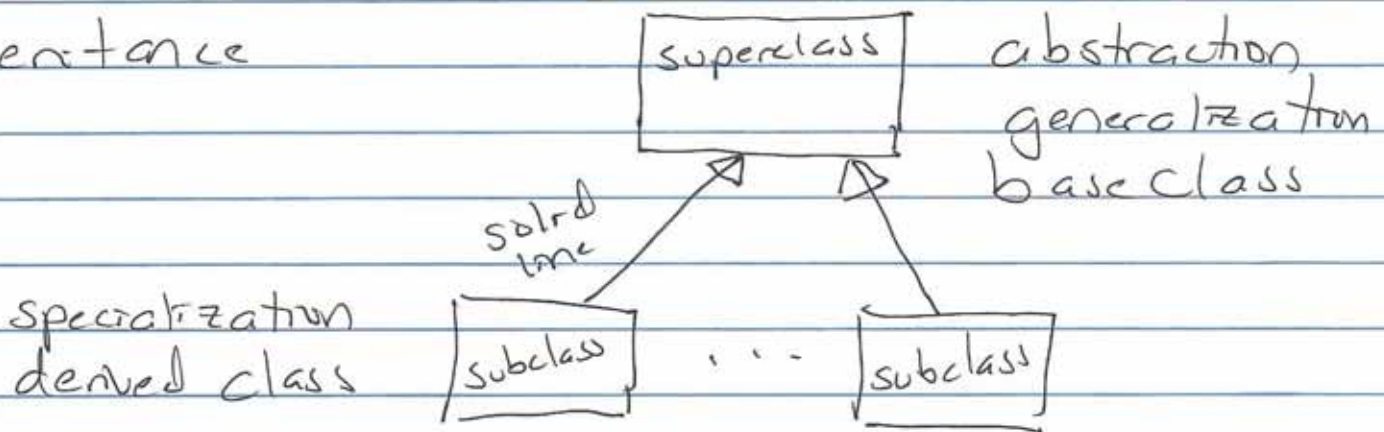
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closed aggregation - strong
life cycle relationship

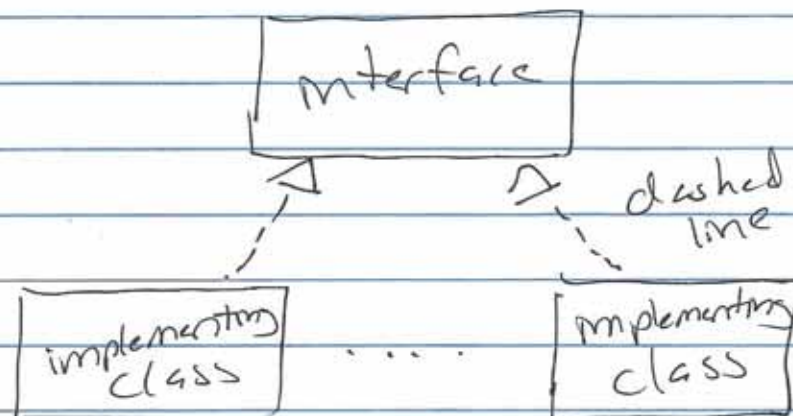


closed means deleting parent also
deletes all children, or perhaps
all children must already have
been deleted before parent
can be deleted

inheritance



implements
interface



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if enough time left

10 minutes teams turn CRC cards
into class diagrams