



Antal blad /
Number of sheets

09 ✓

TENTAMEN / EXAMINATION

Anvisningar:

Skriv din anonymitetskod på varje blad.
Endast en uppgift får lösas på varje blad.
Var vänlig skriv tydligt!

Instructions:

Write your anonymous code on each sheet.
Answer only one question on each sheet.
Please write clearly!

Vänligen texta anonymitetskoden i textboxen enligt exempel nedan!
Please write the Anonymous Code clearly in the textbox like example below!

Bokstäver/Letters:

A-B-C-D-E-F-G-H-I-J-K-L-M-N-O
P-Q-R-S-T-U-V-W-X-Y-Z-Å-Ä-Ö

Siffror/Numbers:

0-1-2-3-4-5-6-7-8-9

Exempel:

A	B	C	1	7	0	-	0	1	7
---	---	---	---	---	---	---	---	---	---

ISGB24 Webbutvecklingsprojekt

Kurskod + Kurs / Course Code + Course:

Objektorienterad Modellering

Delkurs / Part course:

Anonymitetskod / Anonymous code =
Kurskod + kodnr / course code + code number

I	S	G	B	2	4	-	0	0	2
---	---	---	---	---	---	---	---	---	---

Tentamensdatum /
Examination date:

3/10-2016

Behandlade uppgifter / Solved problems

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
✓	✓	✓	✓	✓	✓									
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Ifylles av lärare / To be completed by the examiner

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Poäng / Marks gained:

20

Betyg / Grade:

G

Examin. lärare / Kursansvarig signatur / Signature of the examiner

[Signature]

Max poäng / Total marks gained:

Namnförtydligande / Clarification of the signature

För Gk poäng / Marks gained to be passed:



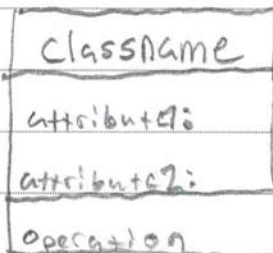
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1

1

A) We use classes to group identities/objects by their similarities and differences. The objects within the class share attribute and operations (features) - names but each object (identity) is unique.

Class notation:
(simple)



1,5

B) Method is the implementation name for an operation. Each operation is shared within the class (all objects can use a specific operation within the class).

And we use signatures if we want to use an operation

? more than once in a diagram, to separate them.

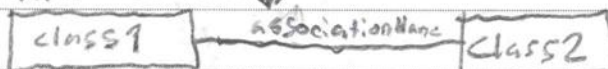
It's also important to give the signatures same names.

1

C) An association is an relationship between classes

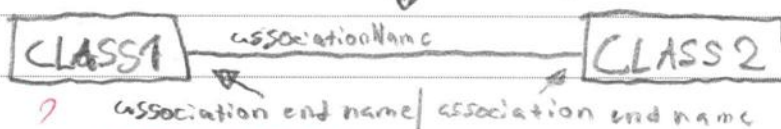
It's notation is: (simple notation)

(there's two kinds of associations
one-way and two-way)



Association can also have an association class and share objects and operations between the classes.

An association end name is the multiplicity or constraints for each class. Simple example number one



1



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(For non-anonymous exams write the course code + name + civic registration number)

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Löpande sidnr
Consecutive no:

2

Uppgift nr /
Question no:

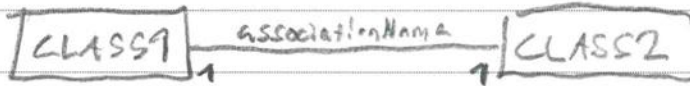
1

Poäng / Points
awarded:

Lärarens
anteckning
Examiner's remarks:

(fosts)

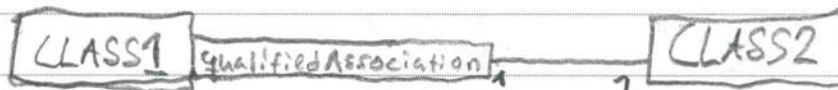
Simple example number two:



In this example, the association end name is the multiplicity between the state. It can also have the constraint: {ordered}, {bag} or {sequence}

D) A qualified association is used to use one element from another class. And instead of connecting the two classes, we only connect a class's object to another class. This is just a way to specify the diagram even better.

Simple example:



1



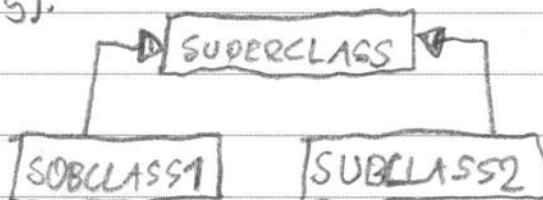
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3

2

A) An inheritance hierarchy is the level of all associated classes in a tree, such as superclasses and subclasses. (parents, children, ascending, descending).

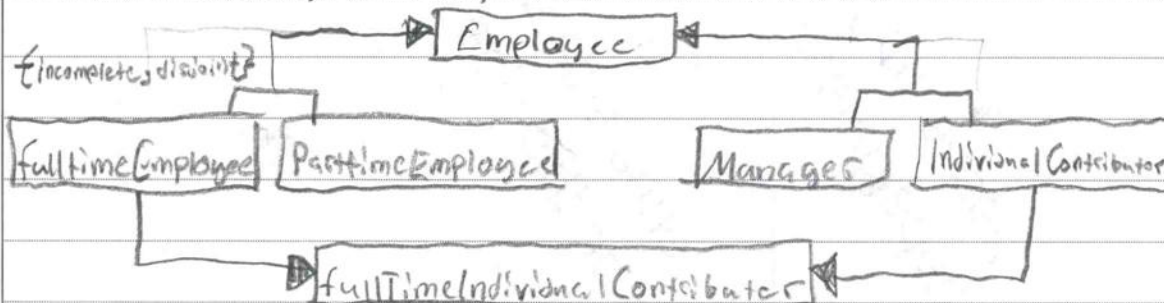
Simple example:



All subclasses is said to inherit features from its parent.

1.5

B) Constraints is a way of representing the status of a class tree (for example). The sets can have the status {complete}, {incomplete} which means that the generalization IS or IS NOT complete. And {disjoint} means that one class is a part of two ascending classes. Simple example:



0.5

?

?

C) You can override a feature to gain faster access. You override by redefine a name of a feature in the subclass to the name of the operation in the superclass to temporarily "steal" the feature. Be sure to permanently write over the feature tho. + fast access + greater power in specifying behavior

0.5



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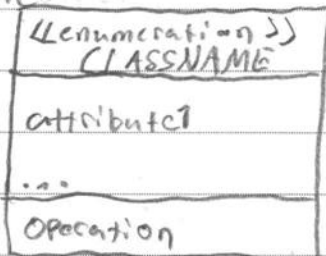
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Löpande sidnr
Consecutive no:

4

D) An enumeration is a type of constancy because
it lets you strict incoming values/objects.

Simple example:



Uppgift nr /
Question no:

2

Poäng / Points
awarded:

Lärarens
anteckning
Examiner's remarks:

(0,5)

Generalization let us group objects by differences
and similarities and its easier to work with,
change, overview and best of all: Reuse of code.

example?



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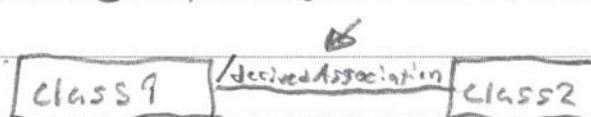
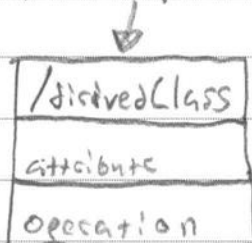
5

3

A) A derived element is represented by a slash (/) in front of the element's name.

Example 1: (derived class)

example 2: (derived association)

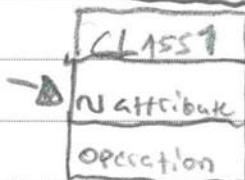


A derived element is redundant, because it can / is represented in another way. (the values can be found without the derived element).

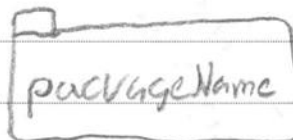
1,5

B)

Packages can be placed on an object to show that it is a part of a package. The notation is ~ in front of an object in a class. Or as a folder in a diagram. Examples;



and



0,5

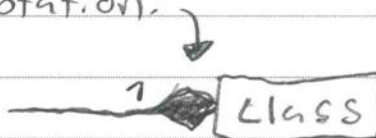
NOTE the "D". C on next page!

D) A composition is a strict form of aggregation (who is a type of association) and it explains that there can only be one or the other. (not like aggregation where a class can consist of different parts).

Composition: - One way (restrict multiple associations)
 - The extended objects will "die" if the connection is deleted.

0,5

Simple example of notation:





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6

Uppgift nr /
Question no:

3

Poäng / Points
awarded:

Lärarens
anteckning
Examiner's remarks:

(Note that this is the C) answer!

C) You can restrict aggregation (associations) between classes by using composition.

It creates an exclusive one-way opportunity to let a class share an object with another class, but still remain the same way (not affected by the other class)

Simple notation:



1.5



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7

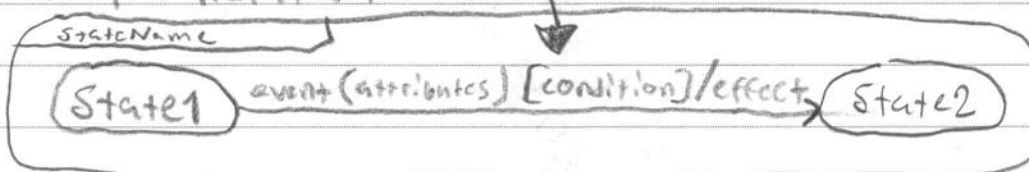
4

A)

A change event only occur by the result of a boolean expression (true/false).

The event is tested until it becomes true or false and fires an event (which leads us to the next state). [condition]

Simple notation:



A time event triggers only when its said to. (specified). And by that I mean:

- A date (like today) 10/3-2016 00:00 or
- Trough intervals of time (like 10 seconds).

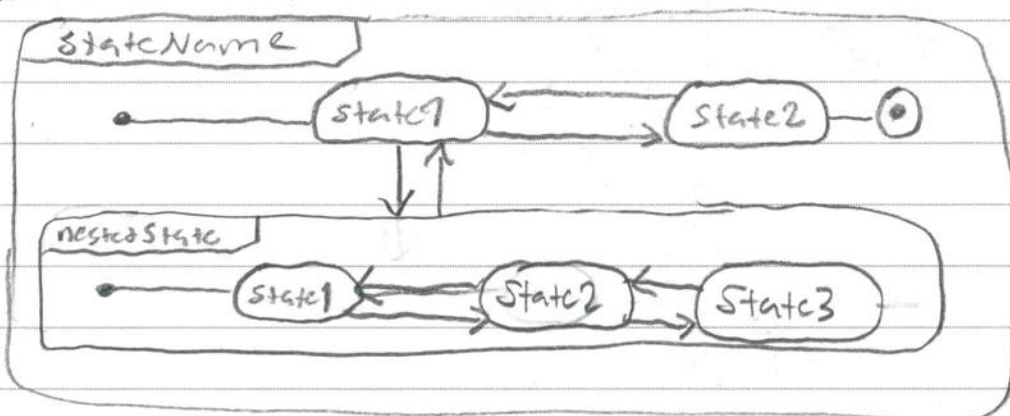
1,5

B)

A nested state is a state within a state.

The two states communicate with each other.

Simple example:



1,5

C) The object will not be performed.

0



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Consecutive no:

8

Uppgift nr /
Question no:

5

Poäng / Points
awarded:

Lärarens
anteckning
Examiner's remarks:

Häftområde

Skriv ej i detta område
Leave this area blank

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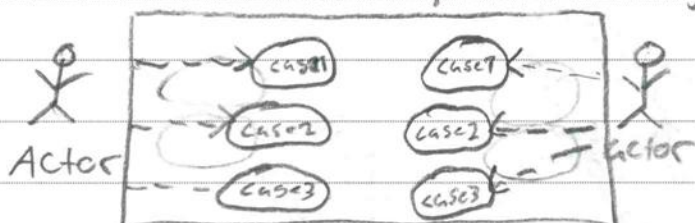
A)

A use case description helps us overview a project at different levels (perspectives)

The different views are:

1. Use-case diagrams. (describes actors and system)
2. Sequence diagrams. (objects steps)
3. Activity diagrams. (steps by the actor)

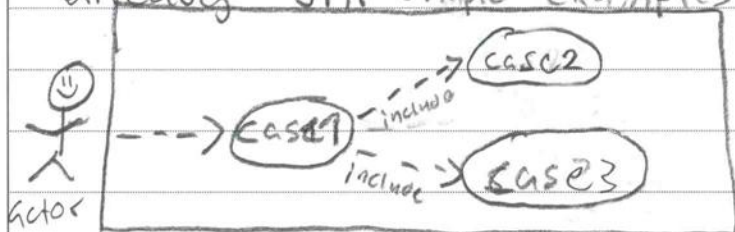
A use-case is represented by: Actors and



cases!

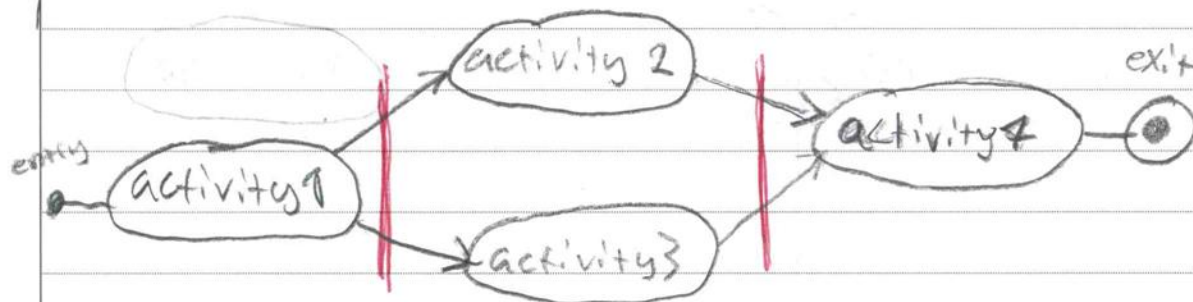
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B) the include → or ← extend is used to show alternative / or extend a path that you're already on. Simple examples (cases)



1,5

C) A concurrent activity is an activity that may occur at the same time as another activity.



1

There is no option ◇ - element in a concurrent activity because the activities run at the same time!



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4

6

A) Back room modeling is one of the slowest
(phased) development model. It is used to
combine the developers, experts and customer
in the development of a system.

Computers, paper, pens, boards, projectors etc are
used to make it easier for the customer to
understand the system.

The time it takes to do back room modeling
is about 15×2 hours and involves customer
and some medium-grade experts in the development team
(sometimes advanced experts join).

Customer take notes, ask questions.

+ customers can customize application and develop the system.

- time consuming (customer might not know what's best)

B) Live modeling is a very fast phase development
of a system developed by expert who master
the subject. In these scenarios the developers
usually program software as they discuss it
as a group. The time it takes to develop a
system using the Live modeling model is
usually: 3×6 hours (with experts and developers).

The customer may join but will probably
slow down the development. It is better that
an expert describe the system for the
customer.

+ fast development

+ made by experts

- customer not involved/familiar with the
application/system

1,5

1

?