UML Basics

by Ronald Koster (http://www.ronaldkoster.net)
Any Rectangle is a Class

MyClassName

Special Classes (Stereotypes)

<<actor>> =def  

<<boundary>> =def  

<<control>> =def  

<<entity>> =def  

<<interface>> =def  

<<component>> =def  

<<subsystem>> =def  

<<interface>> =def  

<<component>> =def  

<<subsystem>> =def  

<<subsystem>> =def  

<<database>>
Associations

A ——— B  Association: A and B have some sort of relation.

A ———> B  Directed Association: A can find B (A has a B).

A ---> B  Dependence: A depends on B. NB.: ---> =def <<depends-on>>

A ——▷ B  Extension: A extends B (A is a B). NB.: ——▷ =def <<extends>>

A ——>>> B  Realization: A realizes (=implements) B (A is a B). NB.:

A —— ◻ B  Aggregation: A is an aggregation of Bs, B can exist without A.

A ——◆ B  Composition: A is a composition of Bs, B cannot exist without A.
Packages

A group of things can be enclosed by a package symbol: The package represents the group, ie. group = package.

Group of Classes:

Class1

Class2

Class3

Group of Use Cases:

UC xxx

UC yyy

UC zzz
Isomorphisms 1/2

Lollypop style

A

B

Lollypop style

<<interface>>

A

B

A

BImpl

B

A

BImpl

A

B

A

B

B

A

BImpl

B

A

B

A

B
Isomorphisms 2/2

MySystem

A

B

C

MySystem

A

B

C

Use Case Diagram style

Catalysis style (superior)

User

MySystem

UC xxx

UC yyy

User

UC xxx

UC yyy

MySystem

UC xxx

UC yyy

MySystem
Duck on Skies: any (Sub)System is an Aggregation of Analysis Classes.
Duck on Skies and Software Layers.

Considered *not* part of MySystem

Message Queue Server

Considered part of MySystem

User

OtherSystem

<<layer>>
Presentation

<<layer>>
Service

<<layer>>
Access

<<model>>
Domain

<<system>>
MySystem

<<subsystem>>
Database

Message Queue Server

Considered part of MySystem
Objects

• Definition: Object = def Runtime instance of a class.
• Object diagrams are similar to Class diagrams. Main difference: class and instance name (if any) is underlined.

Conventions

• Class name: noun, starts with a capital letter.
• Method name: verb, starts with a lower case letter.
• Instance name: noun, starts with a lower case letter.
• Variable name: = Instance name.
Further readings

Superb Modelling Method from Catalysis:

- http://www.catalysis.org/books/ocf/ch01.pdf
  (see also http://www.catalysis.org/books/ocf/index.htm)

UML Reference Guides:

- http://www.holub.com/goodies/uml
- http://www.agilemodeling.com/artifacts

UML Tools:

- http://www.umlet.com