

Rebooting the UML

Emphasising “Language” Over “Modelling”

Phil Robinson



1

**AUSOUG
Conference
1999**



2



Formed or united into a whole



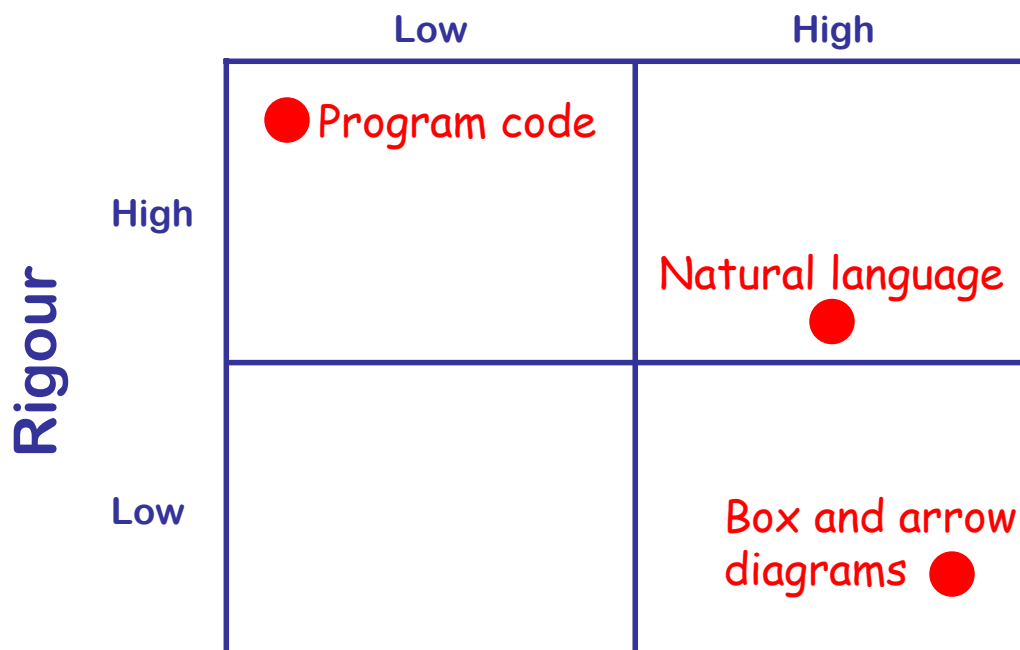
The act of representing something (usually on a smaller scale)



A systematic means of communicating by the use of sounds or conventional symbols

Software Development Languages

Ambiguity



Program Code

```
10 C=0
20 For I=1 To 10
30 Cls
40 X=RND(12)
50 Y=RND(12)
60 Z=X*Y
70 Print X;" * ";Y;" = ";
80 INPUT A
90 IF A < > Z Goto 130
100 Sound 100,1
110 C=C+1
120 Goto 190
130 Sound 1,1
140 Print "Correct Answer: ";
150 Print Z
160 Print "Hit keyboard to continue..."
170 A$=INKEY$
180 IF A$="" Goto 170
190 Next I
200 Print INT(C/(I-1)*100);
210 Print "% Correct"
220 Print "Again";
230 A$=INKEY$
240 IF A$="" Goto 230
```

- Compiler enforces rigour
- Testing resolves ambiguity

Natural Language Rigour

- Word types
 - Noun
 - Adjective
 - Verb
 - Adverb
- Word order
 - Subject Verb Object



Mary had a little lamb

Natural language

Ambiguity

- ... the 500 words used most in the English language ...
- ... each have an average of 23 different meanings ...

Oxford English Dictionary

“Have” verb and auxiliary verb; past plural “Had”

1. to possess; own; hold for use; contain
2. to hold, possess, or accept in some relation, as of kindred or relative position
3. to get, receive, or take
4. to experience, undergo, or endure, as joy or
5. to hold in mind, sight, etc
6. to cause to, as by command or invitation
7. to be related to or be in a certain relation to
8. to show or exhibit in action or words
9. to be identified or distinguished by; possess the characteristic of
10. to engage in or carry on
11. to partake of; eat or drink
12. to permit or allow
13. to assert, maintain, or represent as being
14. to know, understand, or be skilled in
15. to beget or give birth to
16. to hold an advantage over
17. to outwit, deceive, or cheat
18. to control or possess through bribery; bribe
19. to gain possession of
20. to hold or put in a certain position or situation
21. to exercise, display, or make use of
22. to invite or cause to be present as a companion or guest

“Lamb” noun

1. a young sheep
2. the meat of a young sheep
3. a person who is gentle, meek or innocent
4. a person who is easily cheated or outsmarted

Natural Language Ambiguity

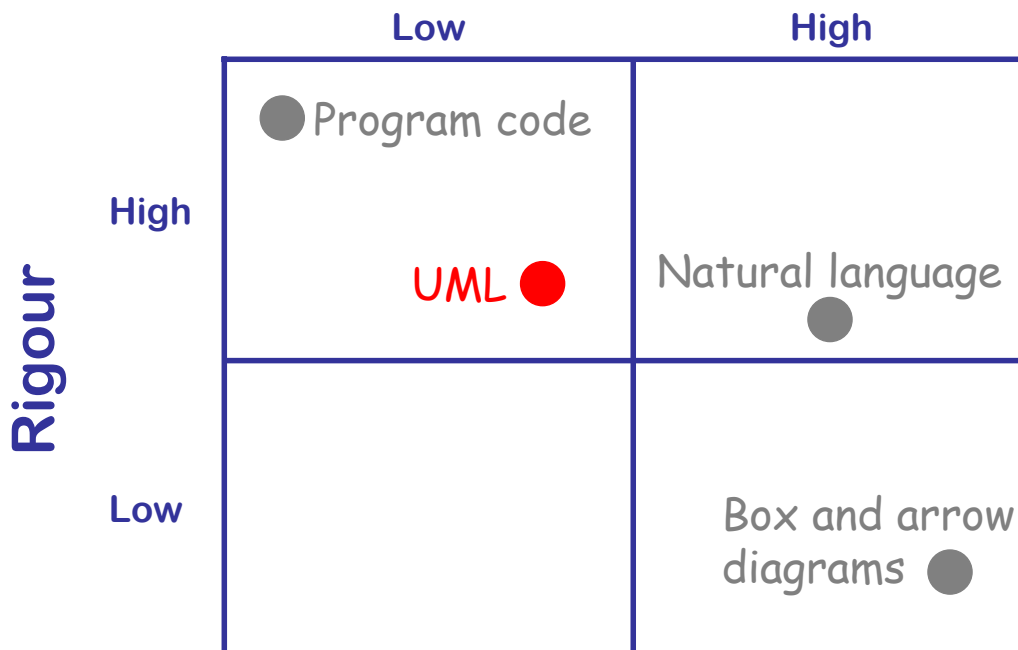
- Mary possessed a young sheep
- Mary eat a small portion of meat from a young sheep
- Mary received a small portion of meat from a young sheep
- Mary took a small portion of meat from a young sheep
- Mary gave birth to a young sheep
- Mary had in mind a gentle person
- Mary possessed the characteristics of an innocent person
- Mary invited an innocent person
- Mary cheated a naive person
- Mary controlled an inexperienced person

Box and Arrow Diagrams



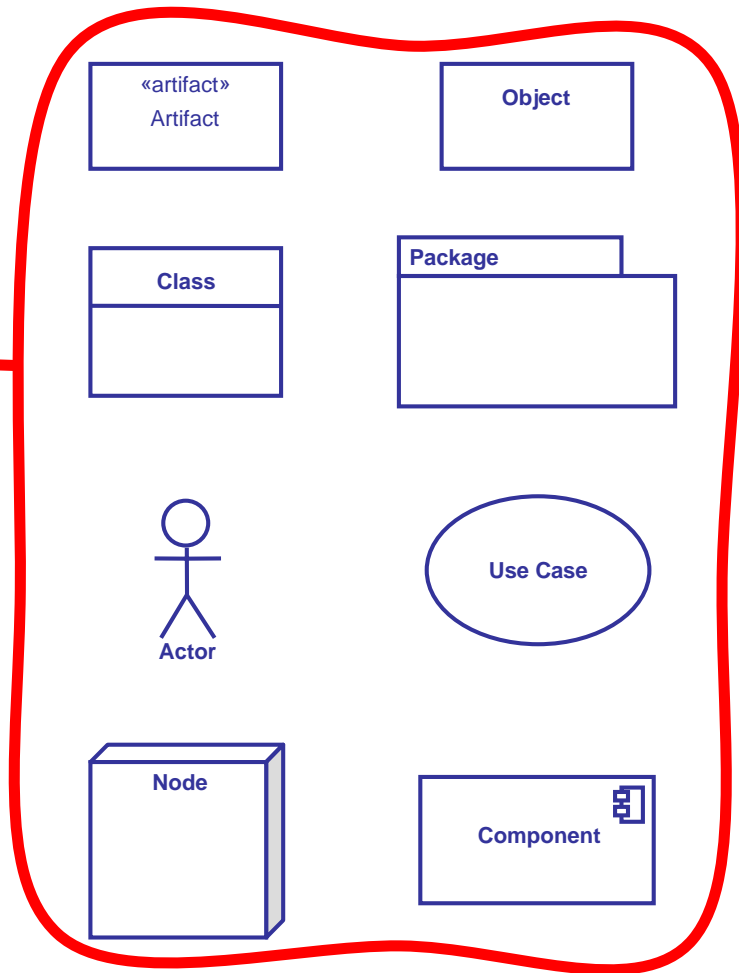
Languages and Software Development

Ambiguity



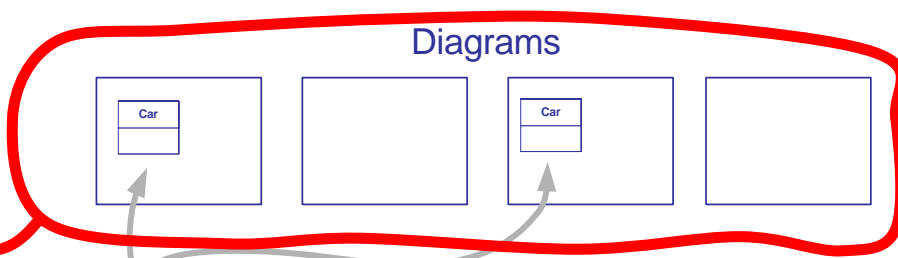
UML Symbols

Vocabulary

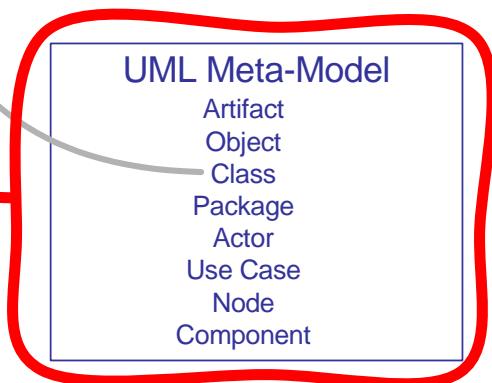
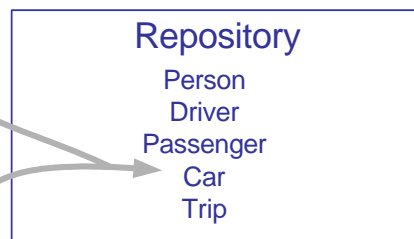


UML Repository

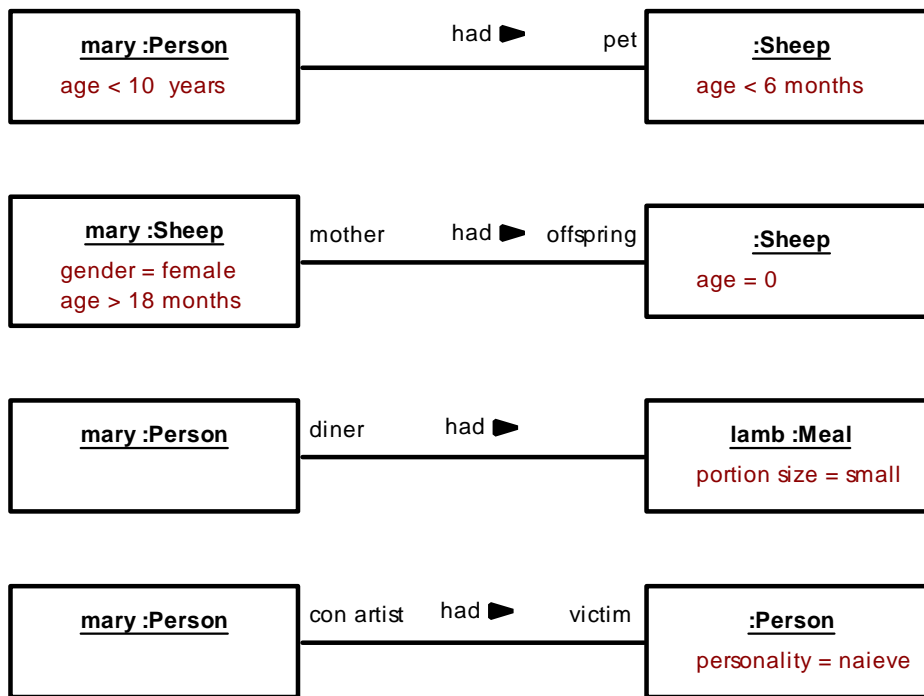
Box and arrow diagrams



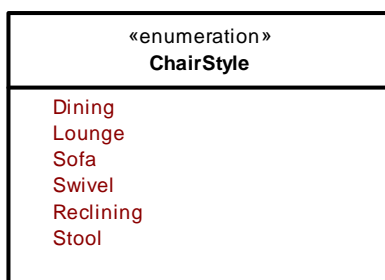
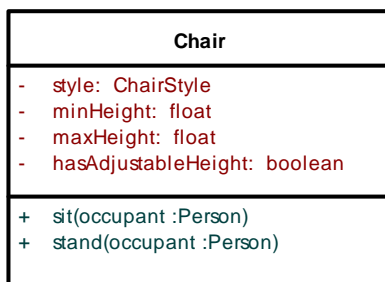
Grammar



UML Object Diagrams



UML Class Diagrams



```

public class Chair {

    private ChairStyle style;
    private float minHeight;
    private float maxHeight;
    private boolean isAdjustableHeight;

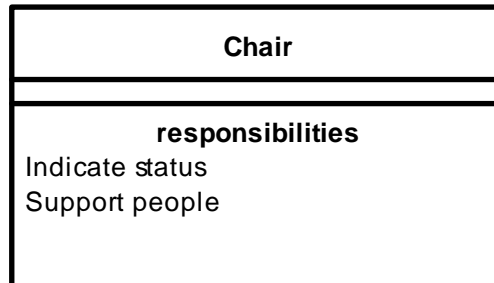
    public sit(Person occupant){
        ...
    }

    public stand(Person occupant){
        ...
    }

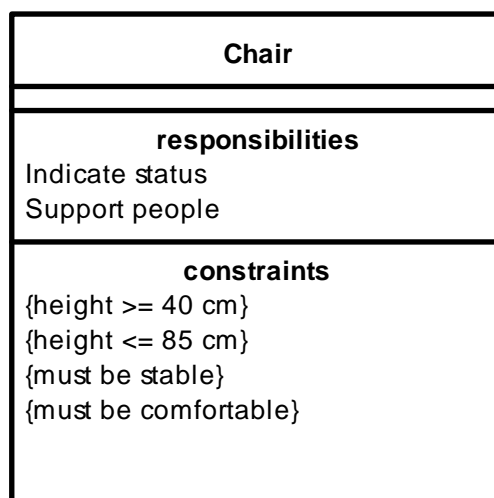
}

public enum ChairStyle {
    Dining,
    Lounge,
    Sofa,
    Swivel,
    Reclining,
    Stool
}
    
```

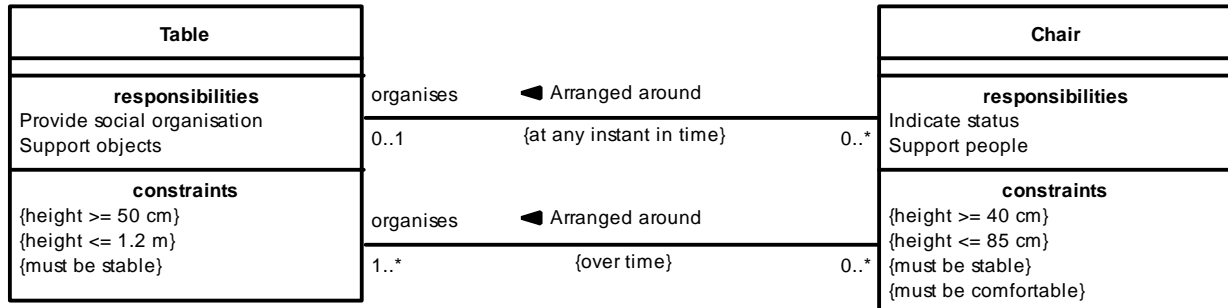
UML Class Diagrams



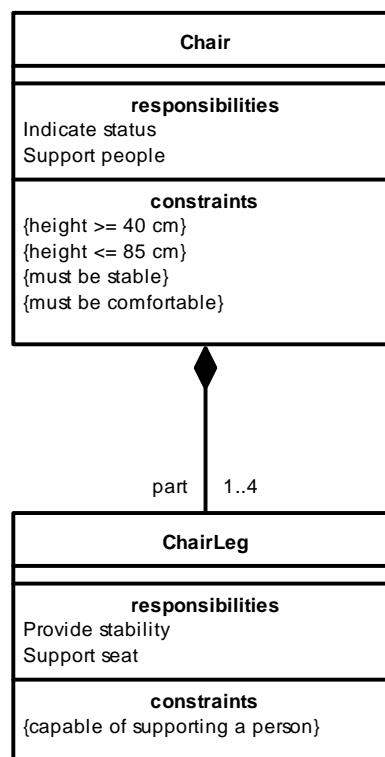
UML Class Diagrams



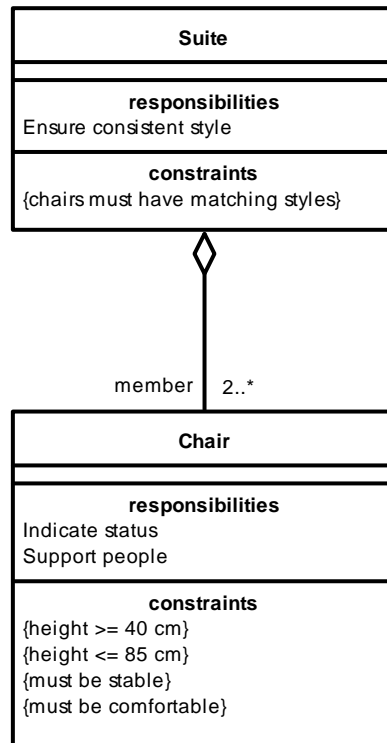
UML Class Diagrams



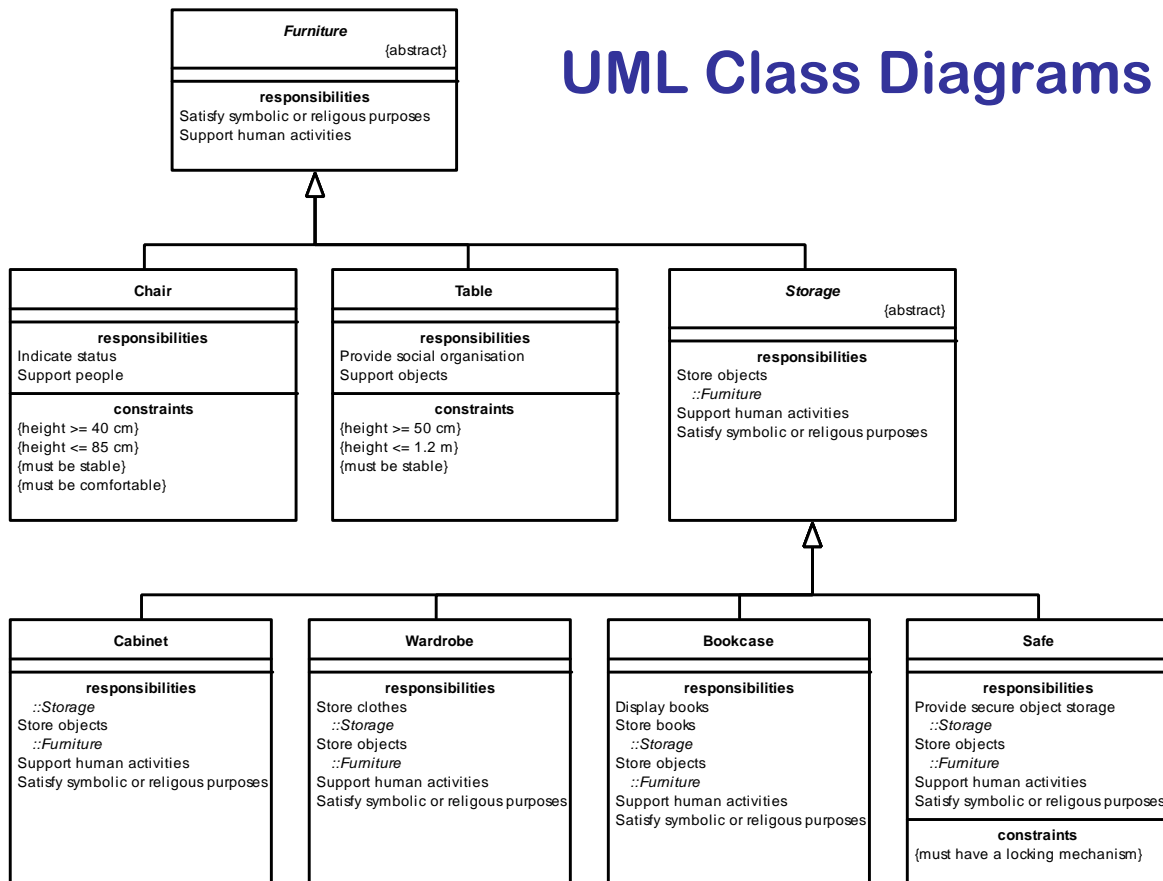
UML Class Diagrams



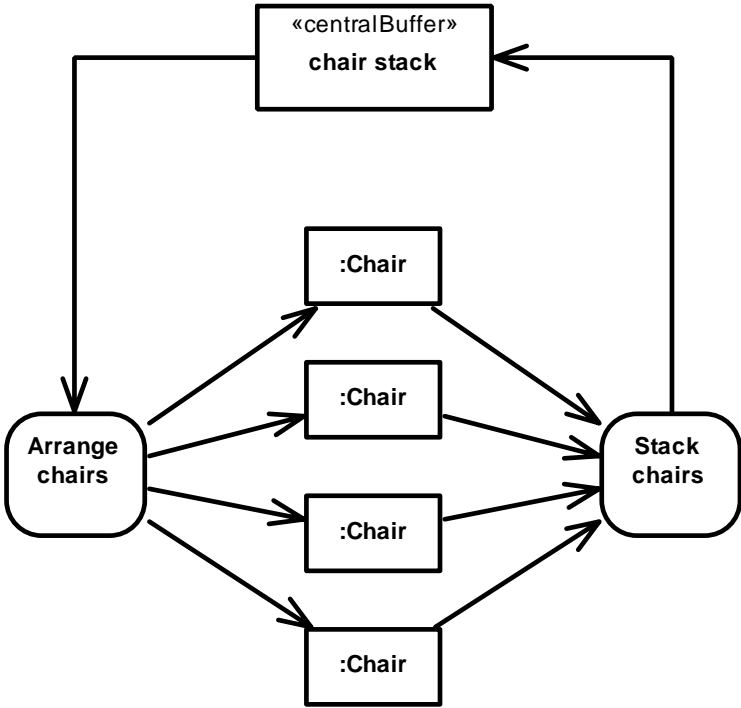
UML Class Diagrams



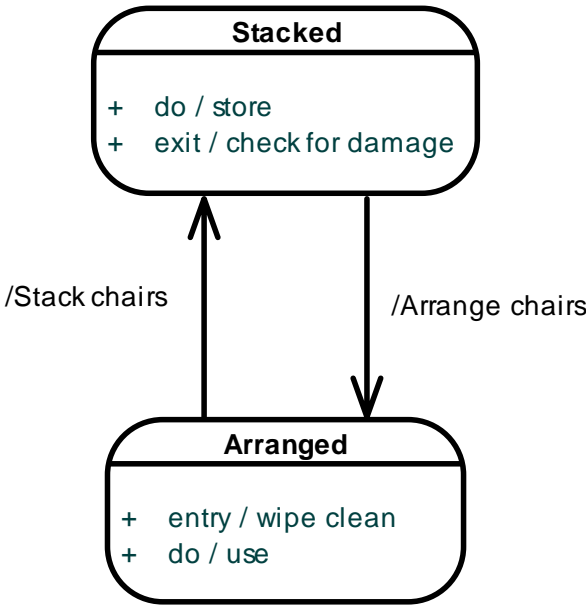
UML Class Diagrams



UML Activity Diagram



UML State Machine Diagram



Rebooting the UML

Emphasising “Language” Over “Modelling”

Questions



conference.lonsdalesystems.com