

Design and Implementation [Iteration 1, Phase 3 & 4]

Slide Series 5

Remainder: Domain Driven Design

We don't bother about all the services the model needs to become a fully functional program. Not part of the core solution...!!

- Will blur the model, leave out for..
- We only need simplest possible input and output.

We focus on the model

- The model is the solution to the problem!

Must Run Week 3

The task for now is to create a very basic runnable version of the model

To be able to fulfil this we need to simplify

- Only a small part of application implemented (i.e part of the model)
- Normal flow, no exception handling, simplest possible IO, no MVC, no subsystems, hard coding values, everything in same package, ...
- Basic (possible clumsy) design

Need a running version to deepening our understanding, as a start point for further explorations

Starting Out

From RE and analysis in RAD we have

- A few high priority use cases
- The analysis model (class diagram)
- A GUI (mockup or possible some basic implementation)

We pick 1-2 high priority use cases and classes involved!

Developing the Design Model

The design model is a executable version of the analysis model

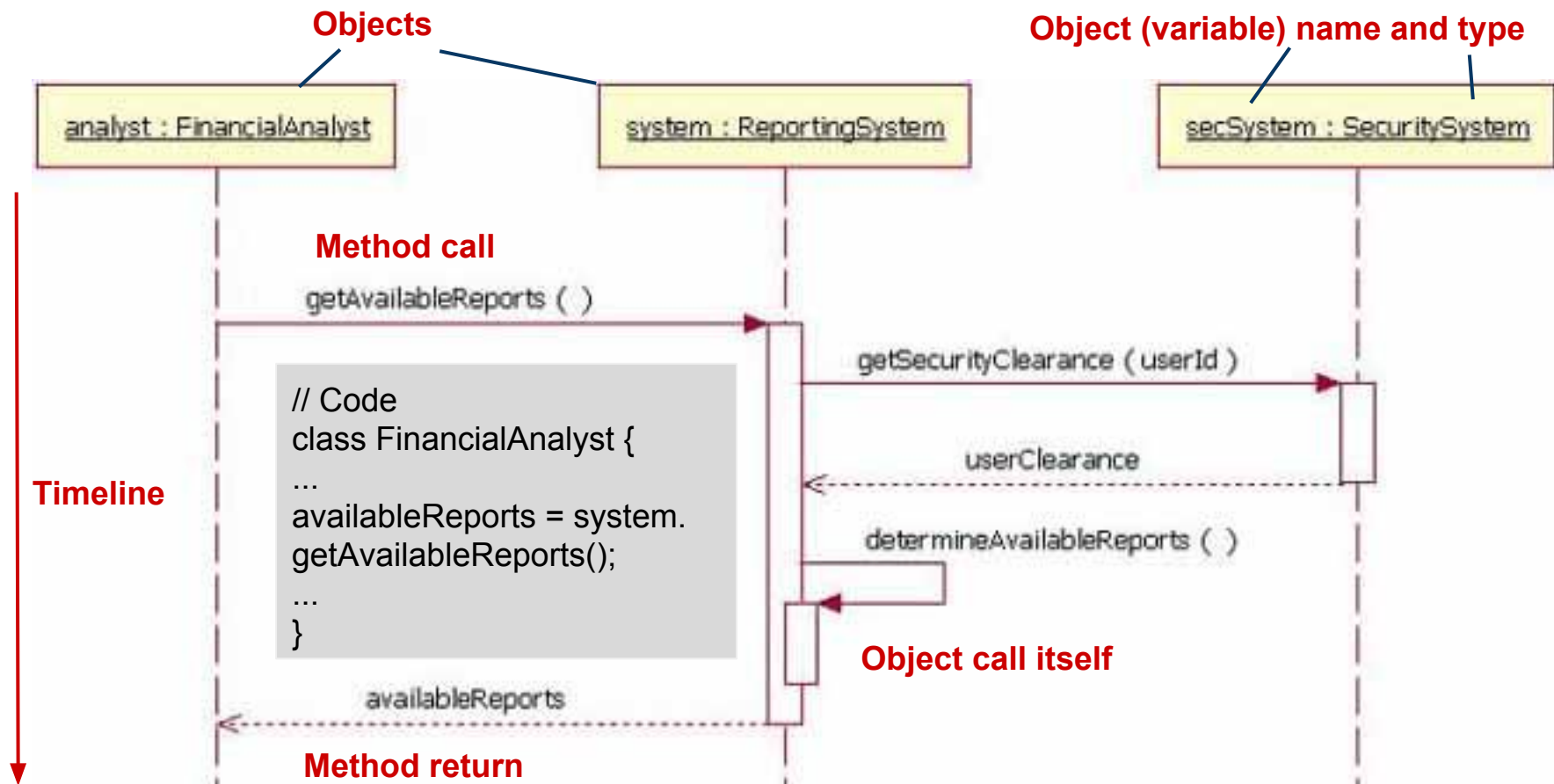
Common techniques

- Using UML sequence diagrams, upcoming ...
- Prototyping (quick'n'dirty coding)

...the above interact

- diagram gives overview
- prototyping clarify details, use in parallel

UML Sequence Diagram

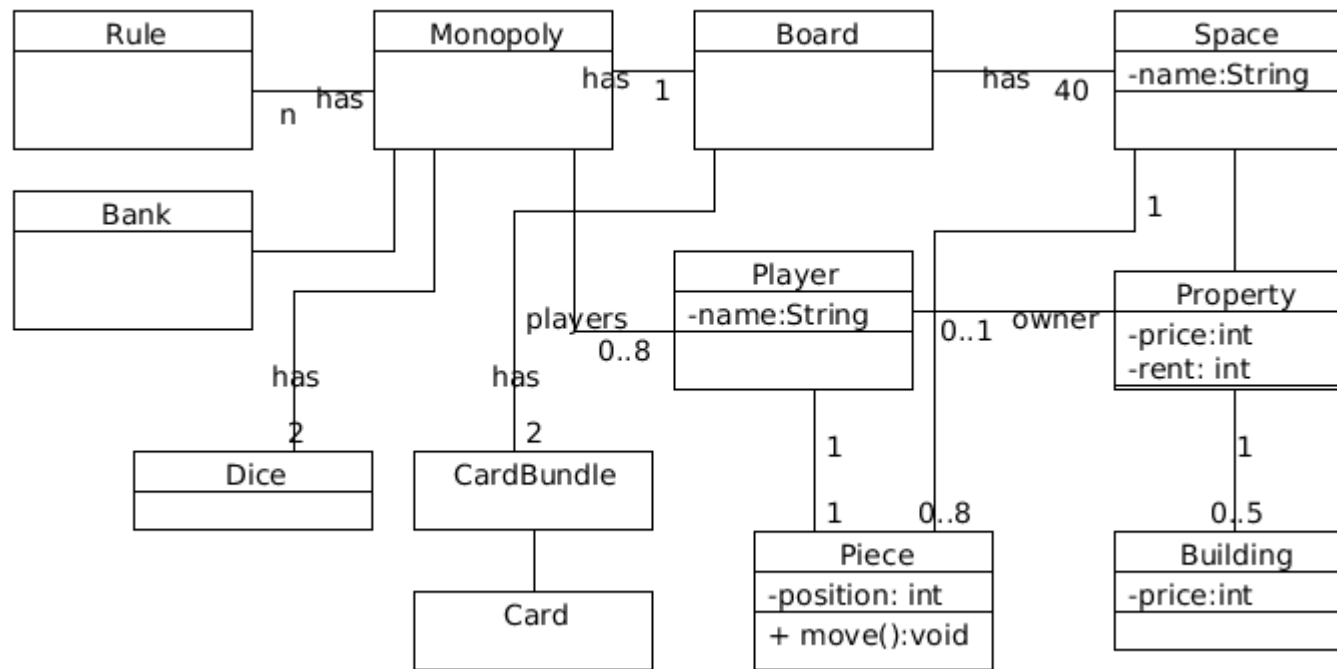


First Running UC for **MP**

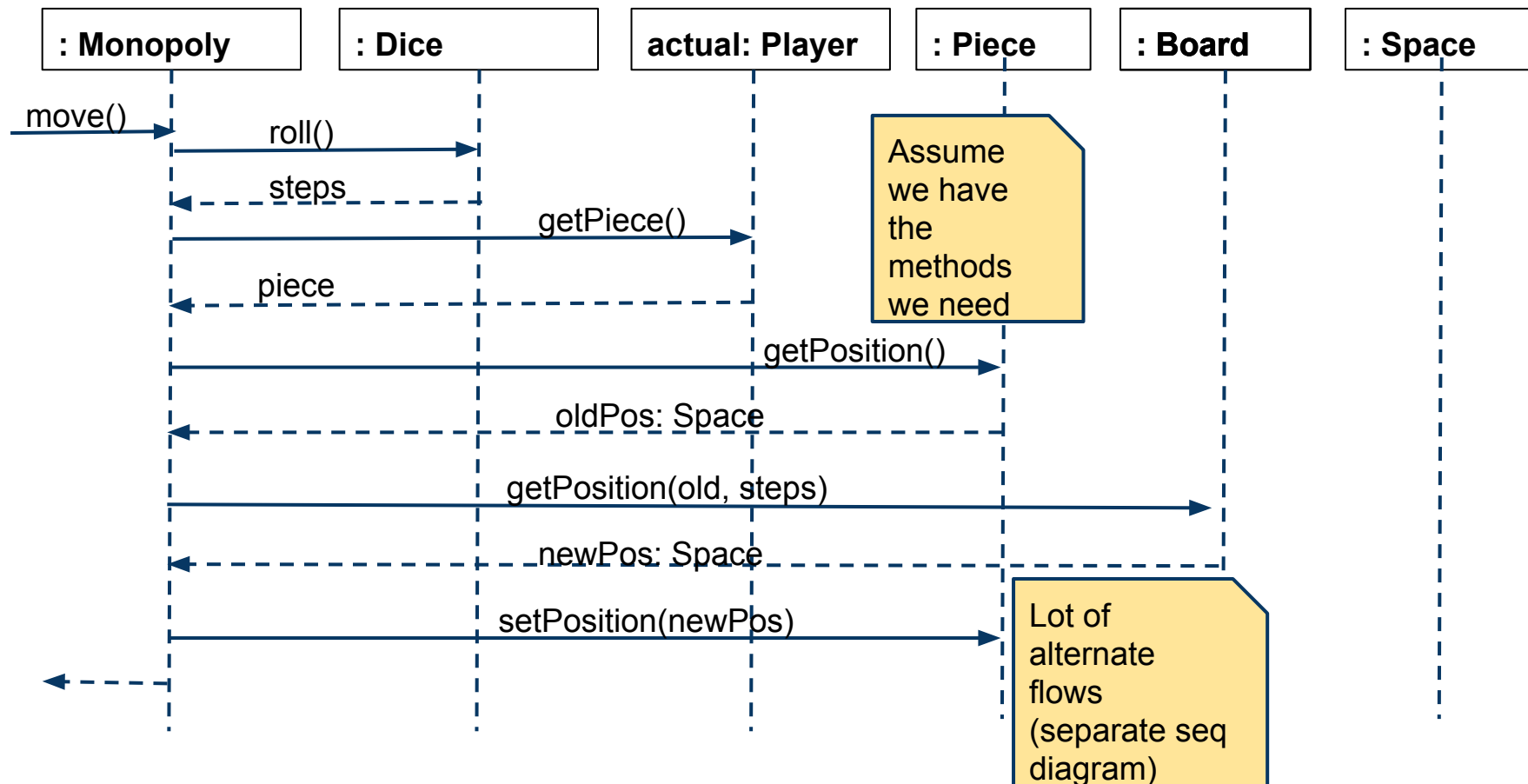
Selected UCs: Move (first to be implemented), EndTurn

Classes: .. at least Piece and Board, we'll see...

Analysis
model from
RAD



Sequence Diagram for UC Move from **MP**



This is one way to do it, there are others...

Design Model for **MP**

Not much to design right now, small part of model and no services (possible GUI))

Anyway...

- Direction of associations given by sequence diagram
- Must construct the model, add constructors realizing the associations (pass in association as constructor argument)
- Create a Factory to build complete model
- Parameters to model (number of spaces, how much money, ...), create Options class
- Main class for main method
- Package core, other packages ...?

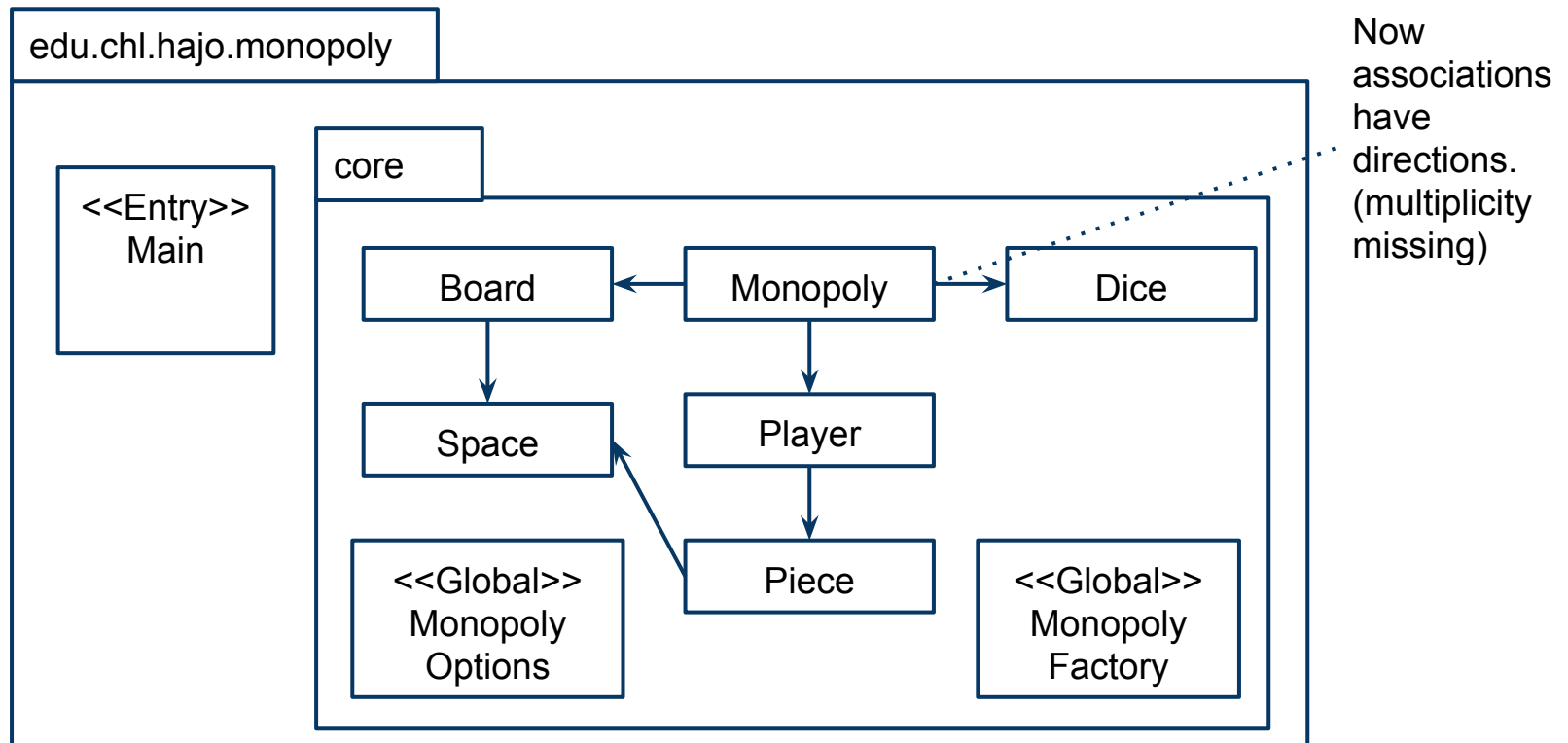
Design Model for **MP**, cont

Design is a multilevel activity

- Design of individual classes and methods not stressed right now
- Will do design review next iteration

Design Model for **MP 0.1**

From class diagram, sequence diagram and code we get (something like) this (good no mutual or circular associations!)



**This will
change
don't
overdo**

Implement UC Move **MP**

Should be fairly straightforward

- Create Project
- Create packages
- Create classes
- Add constructors, behaviour

Final Step to Run **MP** UC Move

Have GUI but simpler to run using a command line
- No obscuring GUI code

Create CommandLine class to run design model

- Input: method Scanner in CommandLine class
- Output: override toString() using System.out.println()

DEMO time...version 0.1

Summary

Using RAD as input

- We selected a 1-2 high priority use case
- Created some UML sequence diagram from the use cases (a dynamic model) using the objects (classes) from analysis model
- We got something very basic up and running
- From the above we got a basic design model (class diagrams, package diagram)
- Started to expand the running model, putting a simple GUI over model, started to do some serious testing

Next: Iteration 2