



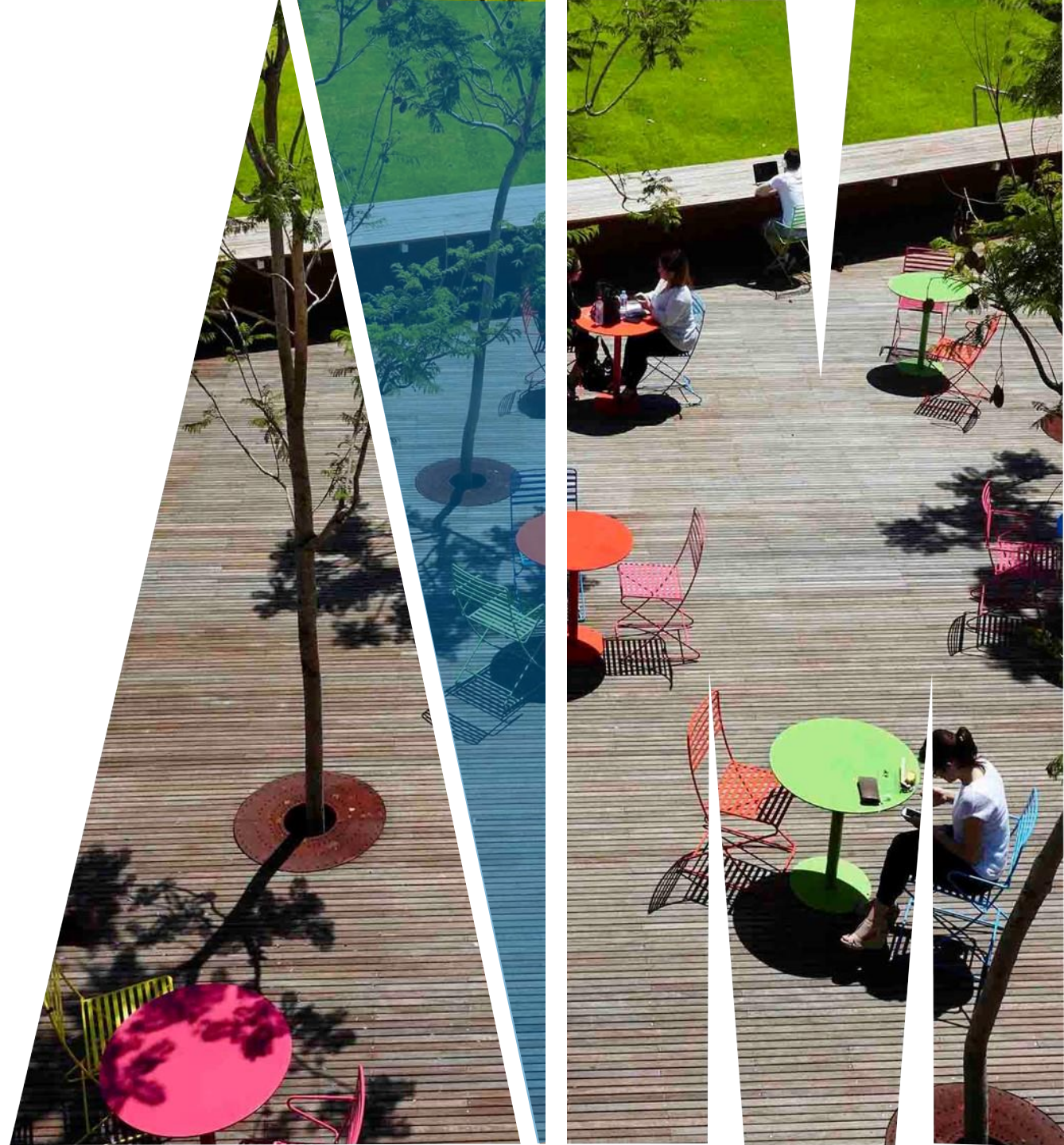
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FIT2099 Object-Oriented Design and Implementation

Refactoring to address code smells



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RECAP

CODE SMELLS AND REFACTORING

Previous topic

- *code smells*: small things in code that indicate design problem

Today's

- *refactoring*: changing code without changing functionality to improve design

THE ILLUSTRATIVE SCENARIO

“Imagine a company of theatrical players who go out to various events performing plays. Typically, a customer will request a few plays and the company charges them based on the size of the audience and the kind of play they perform.

“There are currently **two kinds of plays** that the company performs: tragedies and comedies. As well as providing a bill for the performance, the company gives its customers ‘**volume credits**’ which they can use for discounts on future performances — think of it as a *customer loyalty* mechanism.”

– Martin Fowler, *Refactoring (2nd edition)*, p.2

THE STARTING POINT

Performance and **Play** are plain data classes with trivial setters and getters.

Customer has trivial setters and getters, a collection of **Performances**, and a **statement()** method that produces a customer statement

The starting code is on Moodle if you'd like to play along!

WHY NEED OF REFACTORING?

This code works well, so why do we need to refactor?

- if the code isn't broken, no need to fix, right?

But, the client has additional requirements:

- they would like to be able to **get statements in HTML** as well as **plaintext**
- they plan to add **further types of plays**: *“history, pastoral, pastoral-comical, historical-pastoral, tragical-historical, tragical-comical-historical-pastoral, scene individable, and poem unlimited”*

We want to refactor **to make these changes easier to make**

HOW TO REFACTOR?

Identify a **code smell**

Identify a **refactoring that will fix the code smell**

Apply the refactoring

Test that the code still works

- if not, fix it
- if so, **commit** the refactored code

Keep doing this until code quality is acceptable

Where to start?

`statement()` has a code smell... can you see what it is?

....see you in the next video



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Thanks



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