



MONASH
University

MALAYSIA

FIT 2099 Object oriented design and implementation

S1 2022

28 March 2022



Agenda

- Walk through
 - Week 5
 - Assignment 1
- Q & A sessions



Week 5: Design by contract

What is Specification?

Specifications give us a way to think about the correctness of a class/method, and the way it is used by clients.

Ideally, the public interface of a class is the specification, including

- **comments**
- method **signatures** (name and typed arguments)
- preconditions, postconditions, and invariants

Week 5: Design by contract

Client and Supplier

A **supplier** provides services to a **client**.

In UML, the client-supplier relationship is shown as an **association** or a **dependency**

- an association is used if Client has an attribute of type Supplier. For instance, **CarAuction** – client, **Car** – supplier (Bootcamp 3). **BidsManager** – client, **Bid** – supplier (Bootcamp 4).
- a dependency is used if it's a local variable or parameter. For instance, **CarAuctionDriver** – client, **CarAuction** – supplier (Bootcamp 3, 4)

Good OO design

Subcontracting and subclasses

Liskov Substitution Principle

If a task is subcontracted by a supplier, the client should not need to know this.

Command-Query Separation Principle

software design principle states that every method should be either a command or a query.

(mutator or accessor)

Thank you

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Assignment 1 rules

- ✓ **Working in a team (2-3 students).**
- ✓ **Create a simple Work Breakdown Agreement (WBA) – who, dates, deliverable, review (txt, md), “I accept this WBA”.**
- ✓ **Using Git (<https://git.infotech.monash.edu>). Frequent commits.**
- ✓ produce ***UML class diagrams*** and ***UML interaction diagrams*** (i.e. sequence diagrams and/or collaboration diagrams)
- ✓ Submission: a PDF file that contains all your UML diagrams, design rationale, and a copy of your WBA. (at least one team member should submit the docs to Moodle)

Assignment 1: Design

- ✓ Team of 2 students → REQ 1 – 5, 7
- ✓ Team of 3 students → REQ 1 – 7
- ✓ Revisit the REQs as it will be updated to clear doubts/ambiguity.
- ✓ Read posts in EdForums

Assignment 1: Tips

- ✓ Use different color for class diagram. For instance, black colour for default (engine class) diagram, blue color for new classes
- ✓ For each REQ, give a class diagram, design rationale.