University of
South Australia

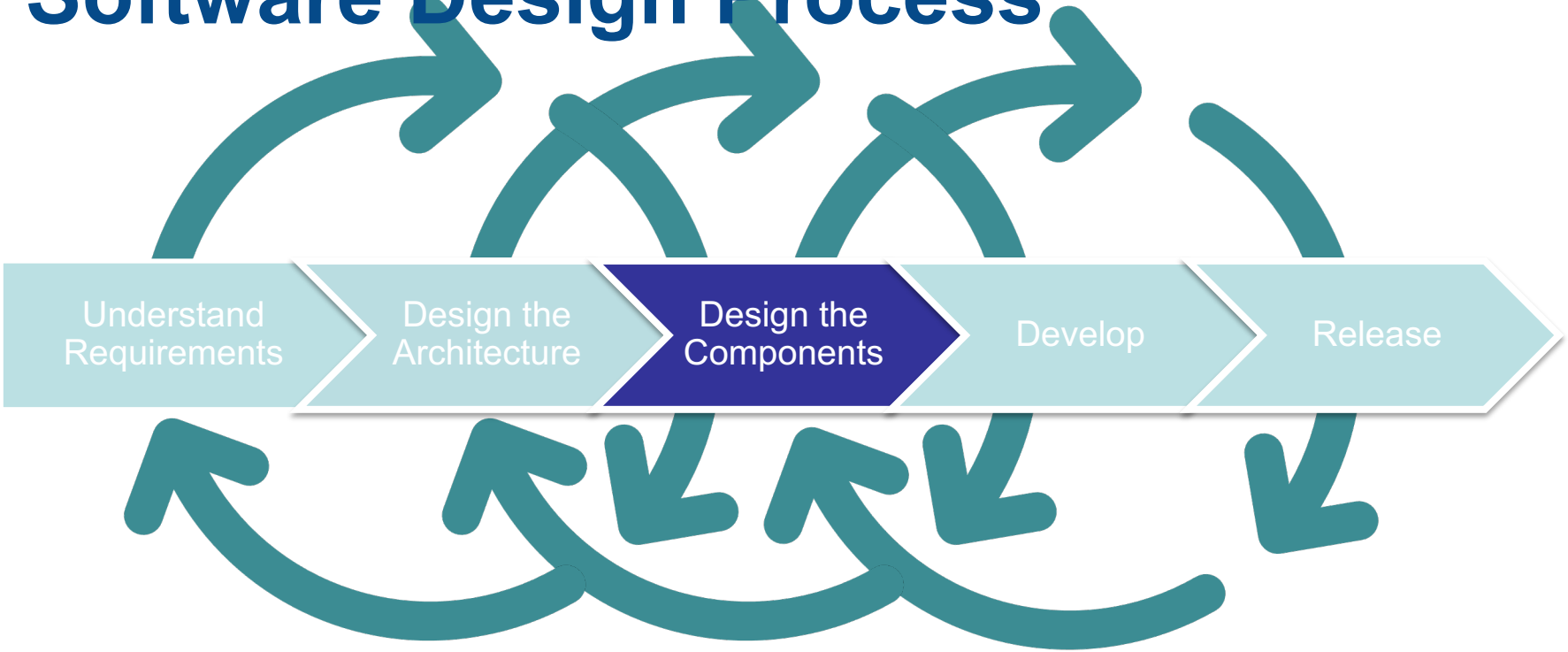
INFS 2044

Workshop 4a

Preparation

- Read the required readings
- Watch the Week 4 Lecture
- Bring a copy of the workshop instructions (this document) to the workshop
- Bring a copy of the Find a Meeting Script to the workshop

Software Design Process



Where We Are At

- Designed system-level and component interfaces
- Drew Sequence Diagrams

Learning Objectives

- Understand object interactions
- Document implementation design using UML diagrams
- Determine feasibility of implementation designs

Task 1. Play Out an Interaction

- Conduct this activity in groups of 6 students.
- Play out the interactions defined in the *Find a Meeting Script* document on the course site.
- Allocate each of the 6 objects to a different student.

Find a Meeting Scenario

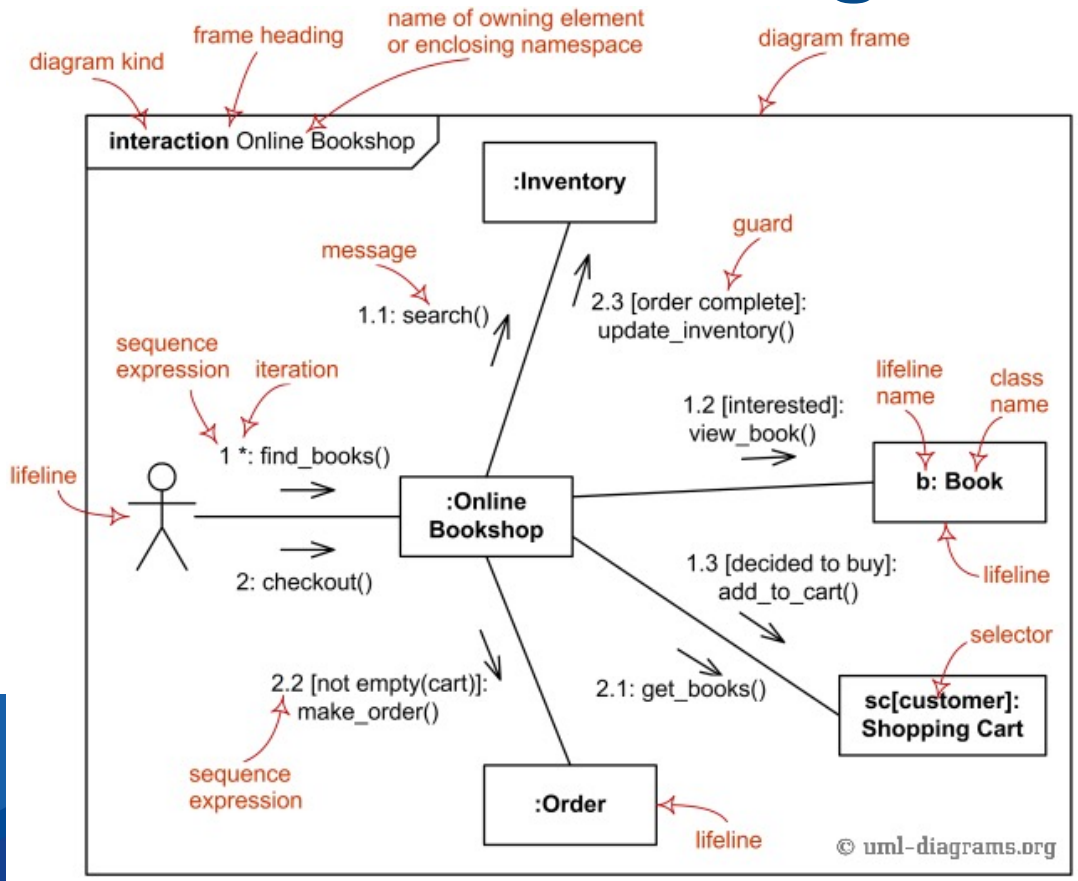
- There are the following objects:
  - 1 Controller
  - 1 Calendar
  - 2 Meetings
  - 2 Contact
- The calendar collects all meetings, which are scheduled at a day/time and include contacts.
- The objective is to find when the next meeting is scheduled that includes a given contact

Task 2. Draw Communication Diagram

- The UML defines two diagrams for showing interactions
  - Sequence Diagram
  - Communication Diagram

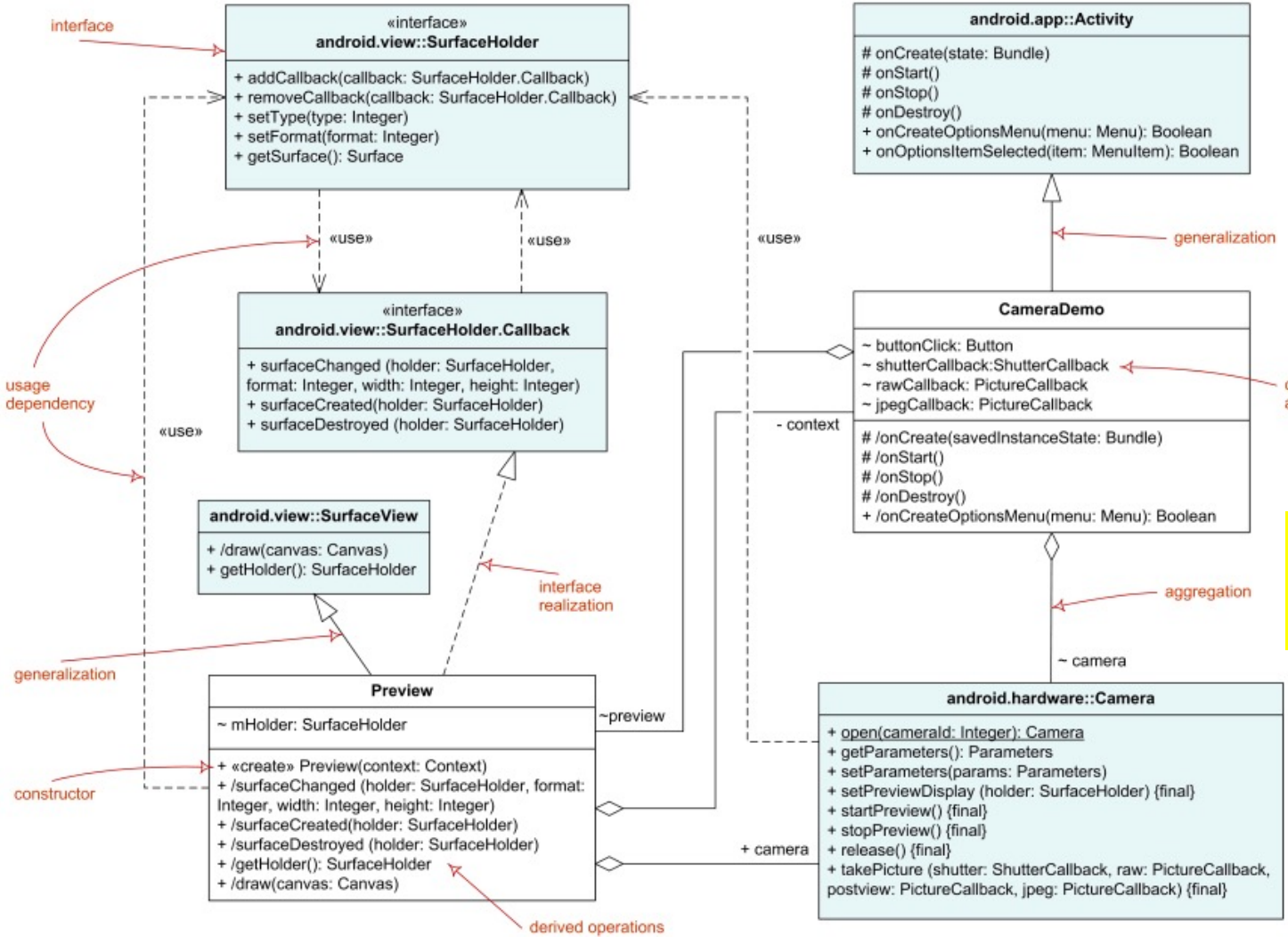
- Draw a *UML Communication Diagram* for the interaction in Task 1

UML Communication Diagram Syntax



Task 3. UML Class Diagram

- Draw a UML Class Diagram showing the classes participating in the interaction defined in Task 1
- Ensure that the diagram is consistent with the interaction diagram drawn in Tasks 2.



The associations should be directed, not use aggregation

Diagram Consistency

- Operations received by objects in the interaction diagrams occur in the corresponding class in the Class Diagram
- The classes have attributes for their encapsulated data
  - No attributes for transient data elements should be introduced
- Relationships between classes are defined
  - Directed, labelled with role and multiplicity

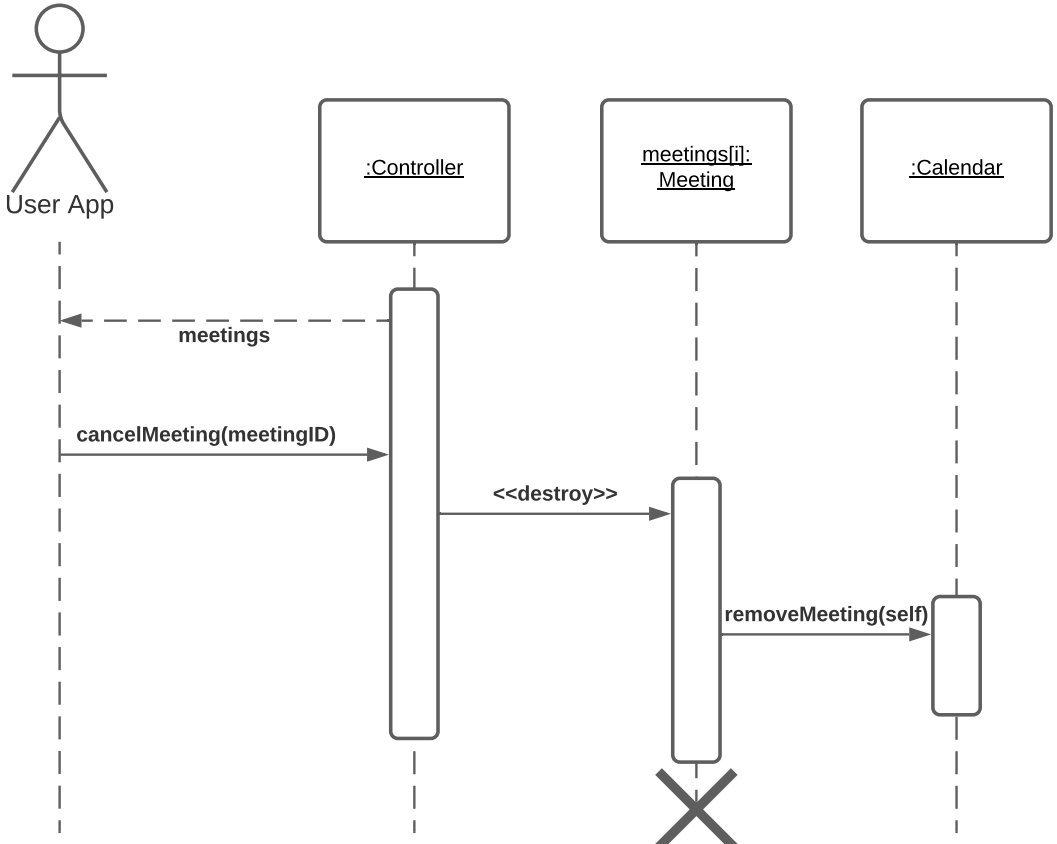
Task 4. Assess a Design

- Assess the interaction design for the use case *Cancel Meeting* given on the subsequent slide
- Is the interaction feasible?
- Does the interaction achieve all desired effects?
- Does the interaction satisfy design principles?

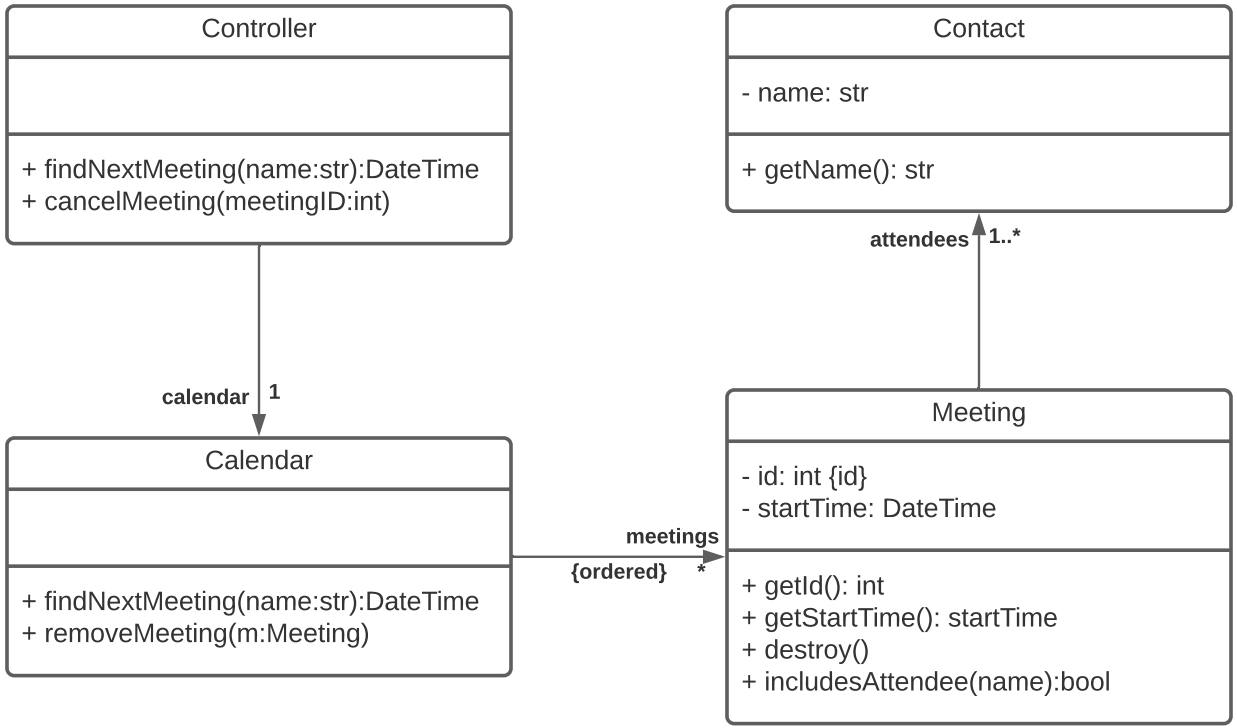
UC99 Cancel Meeting

1. User selects a meeting and requests deletion of the meeting
2. System deletes the meeting from calendar

Proposed Interaction Design



Class Diagram for Previous Slide



You Should Know

- How objects interact at runtime
- Document program structure and interactions using UML Diagrams
- Identify deficiencies in an interaction design

Activities this Week

- Attend second Workshop session
- Complete Quiz 4
- Start working on Assignment 1

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