University of
South Australia

INFS 2044

Workshop 2b

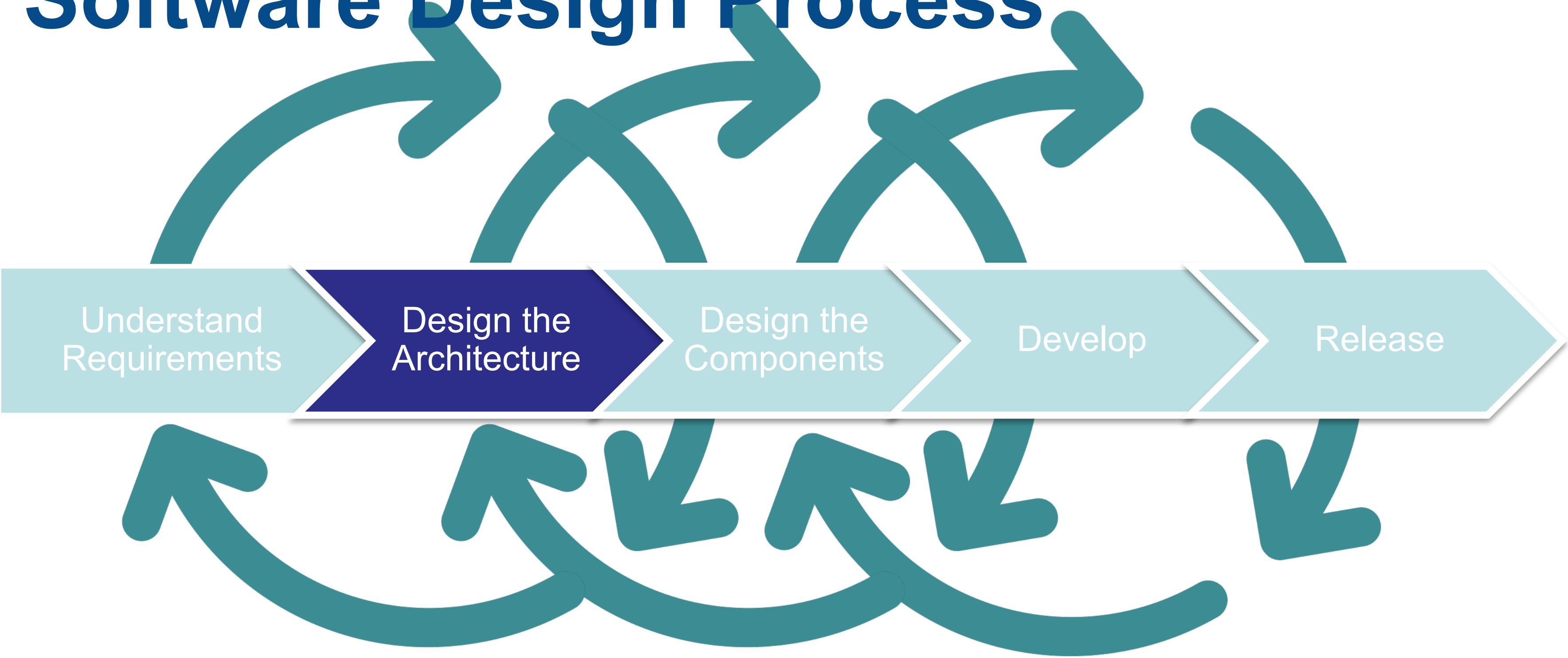
Preparation Already Done

- Read the required readings for this week
- Read and bring a copy of the *Stock Trading System Requirements* to the workshop
- Bring a copy of the workshop instructions (this document) to the workshop

Where We Are At

- Validated requirements and use cases (Week 1)
- Introduction to volatility-based decomposition
- Compositional design to realise use cases

Software Design Process


Understand Requirements

Design the Architecture

Design the Components

Develop

Release

Learning Objectives

- Apply volatility-based architecture design to complex requirements

Task 1. Assess Decomposition

- Read the *Stock Trading System* case study.
- Discuss potential volatility related to this system.
- What changes in the system and its environment may affect the design?

Stock Trading Use Cases (1)

- The system should enable *in-house traders* to:
  - Buy and sell stocks
  - Schedule trades
  - Issue reports
  - Analyse the trades

Stock Trading Requirements (2)

- Users submit request reports and trades via a web browser
- The system confirms requests and delivers information via email to the users
- Data should be stored in a local database.

Categories of Volatility

- User
- Client application
- Security
- Notification
- Storage
- Connection & Synchronisation
- Duration and device
- Workflow
- Locale
- Regulations
- …

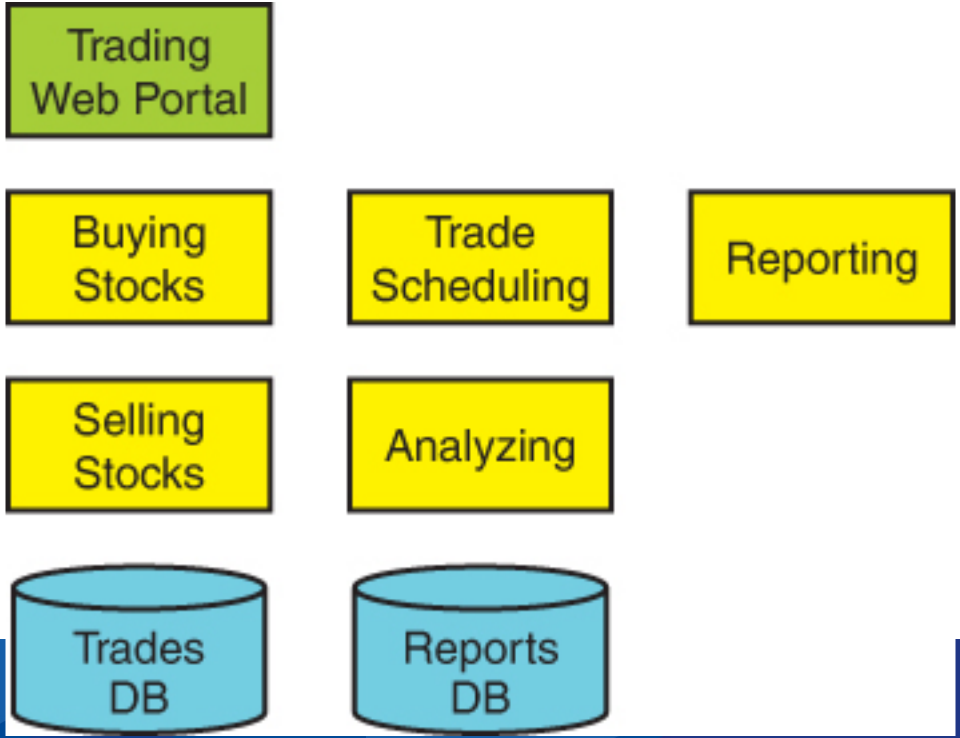
Task 2. Assess Decomposition

- Read the *Stock Trading System* case study on the course site.
- Examine the decomposition given on the next slide.
- Discuss advantages and disadvantages of this design.
- How would changed requirements affect the design?

Recall Stock Trading Use Cases

- Buy and sell stocks
- Schedule trades
- Issue reports
- Analyse the trades

Stock Trading System: Design 1



Task 3: Component Design

- Create a decomposition for the Stock *Trading System* that accounts for the identified volatilities.

- Show how the volatilities map to components.

- Identify strengths and weaknesses of the decomposition.

- Does it isolate change and promote evolution and reuse?

Task 4: Validation

- Validate the architecture by creating a Communication Diagram or a Sequence Diagram for use case *Buy Stocks*

You Should Know

- Identify volatilities in system requirements
- Identify components based on volatility and design principles
- Validate a component design on use cases

Activities this Week

- Complete Quiz 2

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