Course Overview

Software Architecture

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University of Queensland

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- Using *architecture patterns* to structure software systems to be *maintainable*.
- How to build software that is *reliable* and *fault tolerant*.
- How to build software that is *scalable*.

What will we be doing?

Lectures

- Learn common *architecture patterns*.

Case Studies

Practicals

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- Develop stateless and persistent *RESTful web APIs*.

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- Package software components into *Docker* containers.

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Practicals

- Develop stateless and persistent *RESTful web APIs*.
- Package software components into *Docker* containers.
- Deploy containers to cloud platforms using *Terraform*.

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- Package software components into *Docker* containers.
- Deploy containers to cloud platforms using *Terraform*.
- Use cloud platform tools to *monitor* and *scale* applications.

§ *Assessment*

Assessment

Project Proposal	5%
Cloud Infrastructure Assignment	35%
API Functionality	14%
Deployed to Cloud	8.75%
Scalable Application	12.25%
Architecture Presentation	25%
Capstone Project	35%
(Delivering Quality Attributes Project)	

Building a Scalable Architecture

1. Build a *RESTful web API* according to our specification.
2. *Test* that the API satisfies the specification.
3. *Deploy* the API to a cloud platform.
4. *Scale* the API to handle *high loads*.

Capstone Project

1. *Propose* a *software system* that you would like to build.
2. Vote on other proposals on which you would like to work.
3. Teams will be assigned to work on selected projects.
4. *Design* and *implement* the project.

Architecture Presentation

- Team presents details of project architecture.
  - *Everyone* presents.

- *Individuals* present on different sets of questions.
  - Compare and contrast with another architectural pattern.
  - Pros and cons of architecture.
  - Implementation characteristics of design.
  - Potential security risks of architecture.

- *Everyone* is expected to understand entire architecture.
  - Questions can be directed to *anyone*.

§ You and Us

Richard Thomas

Evan Hughes

Riza Wibawa

Zaidul Alam

Question

Who are *you*?

Course Website

All course material is hosted on the course website:
https://csse6400.uqcloud.net

If you find any *errors* or have any *improvements*, please submit a pull request on GitHub:
https://github.com/CSSE6400/software-architecture

GitHub Username Registration Form

You need access to the CSSE6400 organisation on GitHub.

- *Practicals* – Access to code.
- *Assessment* – Most submissions.

https://tiny.cc/csse6400reg