Introduction to Software Engineering Design

Objectives

In Lecture 1 you will learn what to expect in this unit on software engineering design: the main issues and problems which arise in software engineering in general, and in design in particular. You will be able to discuss the notions of complexity, change, abstraction, product and process in software engineering, and to outline three software process models.

Key Points

- Software engineering involves modelling, creative problem solving, and knowledge acquisition. It is rationale driven.
- The two fundamental problems of software engineering are the management of complexity and change.
- Abstraction enables us to focus only on relevant details of a complex problem.
- A software product is a software system delivered to a customer with the documentation which describes how to install and use the system.
- Software process controls the way in which a SW product is developed.
- Three software process models: waterfall, V-model and spiral model.

Core reading

Bruegge & Dutoit, 1.2 What is SE? 1.3 SE concepts, 1.4 SE Development activities, 15.4 life cycle models 15.4.1 waterfall, V-model, 15.4.2 spiral model

Sommerville (7th ed) 4.1 software process models 4.1.1 waterfall, 4.2.2 spiral

Pressman (5th ed) 1.2 Software, 1.3 SW Crisis?, 1.4 SW Myths, 2.3 SW process models, 2.4 linear sequential model, 2.7.2 spiral model

Pressman (6th ed) 1.2 Software, 1.3 SW Crisis?, 1.5 SW Myths, 3.1 SW process models, 3.2 linear sequential model, 3.4.2 spiral model

UWA CITS 2220 semester 1, 2011