

B345 Internet Science and Technology

Week 7 lecture 2

Today's Lecture Learning Objective

- Understand the concept of *Patterns*.
- Look at example software patterns.
- Relate patterns to software methodologies.

A note...

- About changes to topic reading 6.

Reusable solutions for recurring problems

- In software development
 - Software libraries
 - Example code
 - Algorithms
- Are they effective? What's missing?

Introducing Patterns

- What are patterns?
- Types of patterns.

Urban Planning and Building Architecture

- From the writings of Christopher Alexander:
 - The Quality (or the QWAN)
 - The Gate
 - The Way

Elements of Patterns

- Name
- Problem
- Context
- Forces
- Solution
- Examples
- Resulting Context
- Rationale
- Related Patterns
- Known Uses

Patterns and Algorithms

- Are they the same thing?

Issues of Patterns

- Generative patterns.
- Anti-patterns.
- Piecemeal growth.
- Pattern languages.
- Pattern mining.

Example Patterns

- From www.patterndepot.com
 - www.patterndepot.com/put/12/parsepat.html

Contribution in Development Methodologies

- Reusability.
- Understanding of context.
- Formulating architectures with patterns and pattern languages.

Pattern Development

- Is a particular development methodology founded on using patterns?

Guides to Writing Patterns

- Look for example patterns already defined.
- Look for patterns in existing software (pattern mining).
- Pick solutions proven to be useful in definite contexts. Know why that solution exists in the first place.
- Pick a format to write it in.
- Circulate for feedback. Submit for reviews.
- Iterate and refine.