Quiz 6

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CMPT166
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Review last time: creational

- **Design patterns**:
  Reusable templates for designing programs
  May be very high-level, indep. of prog. language

- Creational patterns
  - Factory method
  - Abstract factory
  - Builder
  - Prototype
  - Singleton

- Structural patterns, behavioural patterns

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Quiz 6: 15min, 20pts

- What is a private IP address? Give an example. **[2]**

- 7 OSI layers of networks!
  - For each: name, description, example **[7]**

- A little-endian machine stores four bytes:
  - ◆ 00 12 0a 01
  - What unsigned int does this represent? **[4]**
    - ◆ (Math expr is OK)

- What is deadlock, and why is it bad? **[4]**

- Name at least 3 times when
you should be writing test cases. **[3]**

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Quiz 6 answers: #1-2

- What is a private IP address? Give an example. **[2]**
  - For LAN, not pub. routable: 192.168.*, 10.*
- 7 OSI layers of networks! **[7]**
  - Application: end user (HTTP, SMTP)
  - Presentation: data rep, encrypt. (SSL)
  - Session: save/restore, auth. (sockets, SSH)
  - Transport: connection, reliability (TCP, UDP)
  - Network: routing, IP addresses (IP)
  - Data link: physical addressing (Ethernet)
  - Physical: electrons, photons (fiber, radio)

Quiz 6 answers: #3-4

- A little-endian machine stores four bytes: **[4]**
  - 00 12 0a 03
  - big-endian within each byte
  - little-endian byte order
  - $0(1) + 18(256) + 10(256^2) + 3(256^3)$
    - (= 50,991,616)
- What is deadlock, and why is it bad? **[4]**
  - 2 threads, 2 shared resources
  - Each thread first locks its own resource, then wants other's resource: wait forever

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Quiz 6 answers: #5

- Name at least 3 times when
  you should be writing test cases. **[3]**
  - Before you code, once you have the
    pre-/post-conditions (contract)
  - As you code: test each chunk
  - Right after you code

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