

Review; Quiz 5

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CMPT166

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Review last time: networks

- Reserved IP addresses:
 - Private, broadcast, multicast, localhost
- DNS:
 - Authoritative servers, root servers
 - gethostbyname()
- Ports:
 - Reserved (0-1023), registered, dynamic
- Endianness (byte order):
 - Little-endian vs big-endian; network order

Quiz 5: 15mins

- What is **network address translation** (NAT)? Why is it useful?
- Describe the sequence of steps needed for a **TCP server** using BSD sockets. (The concepts are more important than the function names.)
- Write a **templated** function that **adds** two **objects** of the same type. Consider what if they are large objects and you don't want to call-by-value (hint: similar to overloading '+').
- Draw a **use-case** diagram for an **online banking** system.

Quiz 5 answers: #1-2

- What is **network address translation** (NAT)?
Why is it useful?
 - Hosts on **LAN** get **private** IPs; connections to outside go through **gateway** and get mapped to **ports** on the gateway.
Running out of **IPv4** addresses!
- Describe the sequence of steps needed for a **TCP server** using BSD sockets. (The concepts are more important than the function names.)
 - **socket()**, **bind()**, **listen()** (**phone** analogy)
 - **accept()** → **send/recv()** → **shutdown()**,
close()

Quiz 5 answers: #3-4

- Write a **templated** function that **adds** two objects of the same type.
 - ◆ `template <typename T>`
 - ◆ `const T& add(const T& x, const &T y) {`
`return x + y;`
 - ◆ `}`
 - use const refs
- Draw a **use-case** diagram for an **online banking** system.