§14.8: Byte-based I/O

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CMPT167
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Review last time

- Exceptions in I/O
- Serializable objects
- Object-based I/O: ObjectInputStream
- Random-access files

Classes for byte-based I/O

- OutputStream: abstract class for byte-based I/O
  - FileOutputStream: subclass of OutputStream
  - ObjectOutputStream: wrapper for objects
  - PipedOutputStream: between threads
- FilterOutputStream: filter/aggregate data
  - PrintStream: text output to the stream
    - System.out, System.err
  - DataOutputStream: byte output
- Also Input versions of all these

Interfaces for byte-based I/O

- DataOutput: writing primitive types to a stream
  - Implemented by class DataOutputStream
  - Also implemented by class RandomAccessFile
  - .write(), .writeBoolean(), .writeChar(), .writeChars(), .writeFloat(), .writeInt(), etc.
- ObjectOutput: writing objects to a stream
  - Implemented by class ObjectOutputStream
  - .writeObject()
- Also Input versions of all these

Buffered streams

- A buffer is intermediate storage for reads/writes before they are committed
- Speed/efficiency: hard-disk has high latency, so accumulate multiple I/O and execute as a group
  - Writes might not happen right away!
    - What happens in a power outage?
- BufferedOutputStream
  - Subclass of FilterOutputStream
  - .flush(): returns only after I/O is completed

TODO

- Lab5 due Wed 11Apr:
  - File I/O
  - Store inventory and point-of-sale system
  - Worth 60 points
- Last day for submitting late labs is Fri 13Apr
- Last day of classes is Mon 16Apr
- Final exam is Fri 20Apr 2-4pm