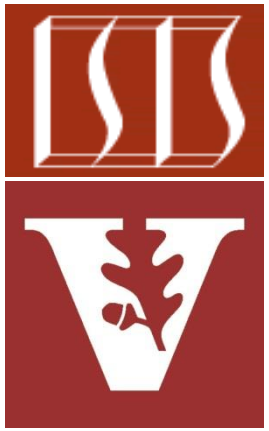
Common Use Cases for Condition Variables



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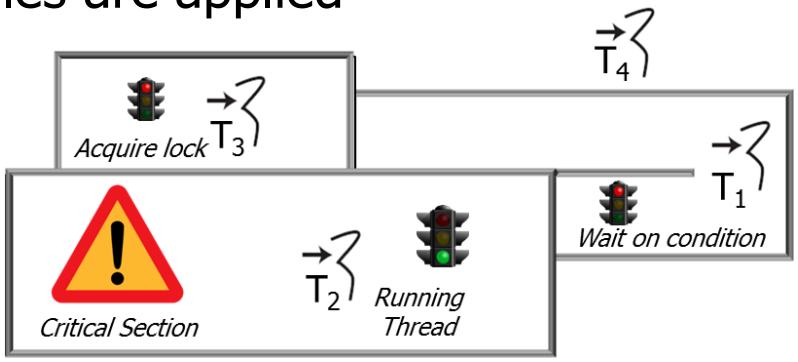
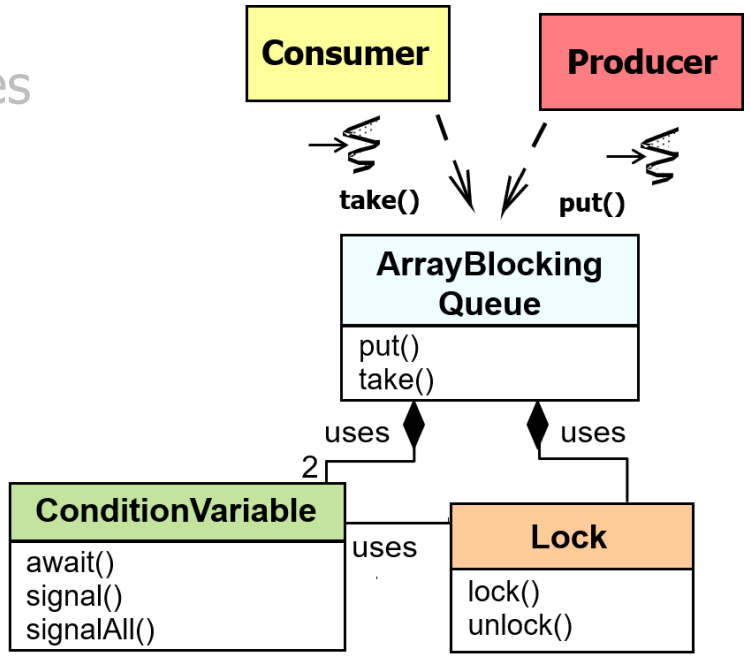
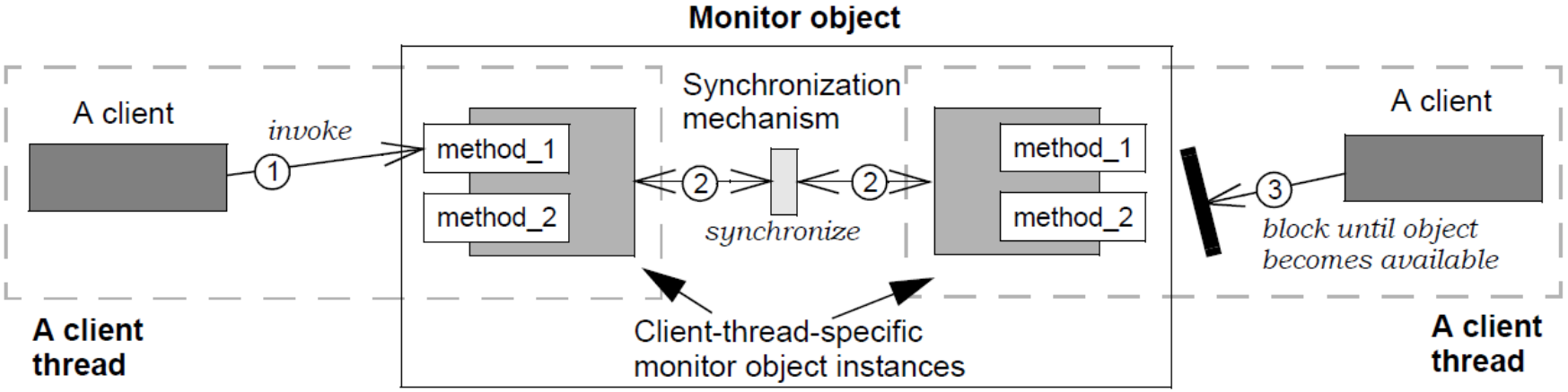
Learning Objectives in this Part of the Lesson

- Understand what condition variables are
- Note a human known use of condition variables
- Know what pattern they implement
- Recognize common use cases where condition variables are applied



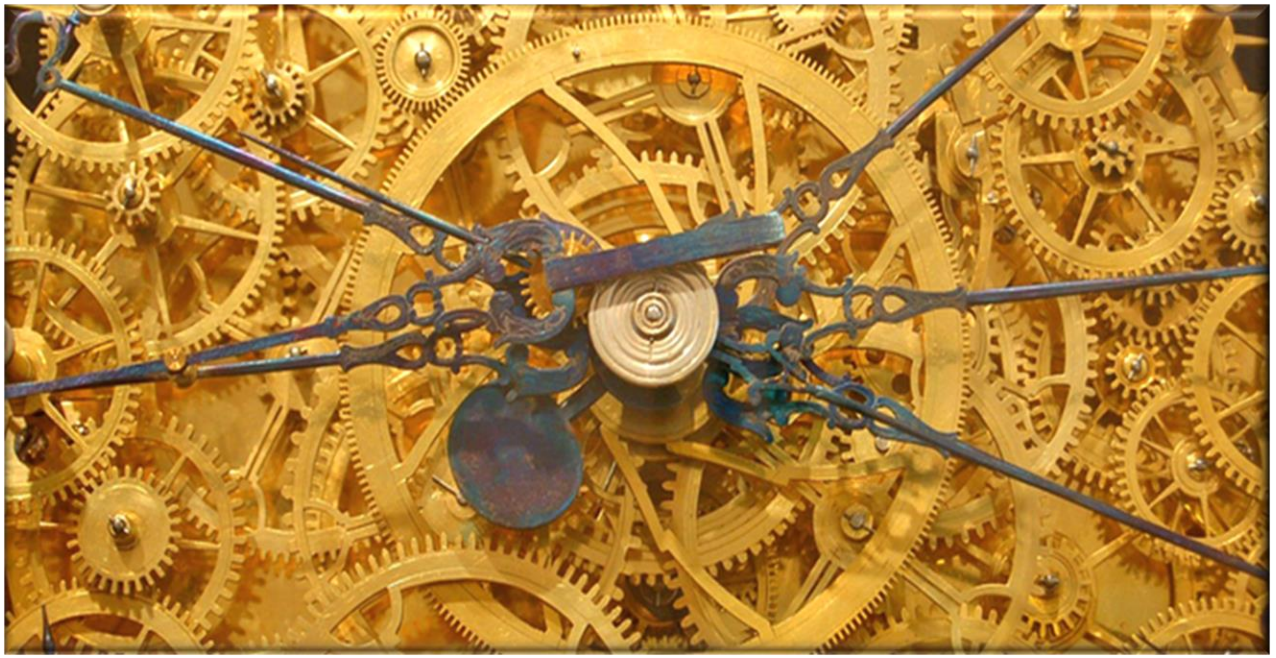




Applying Condition Variables in Practice

Applying Condition Variables in Practice

- CVs are powerful, but can be hard to grok & apply correctly



See en.wikipedia.org/wiki/Grok

Applying Condition Variables in Practice

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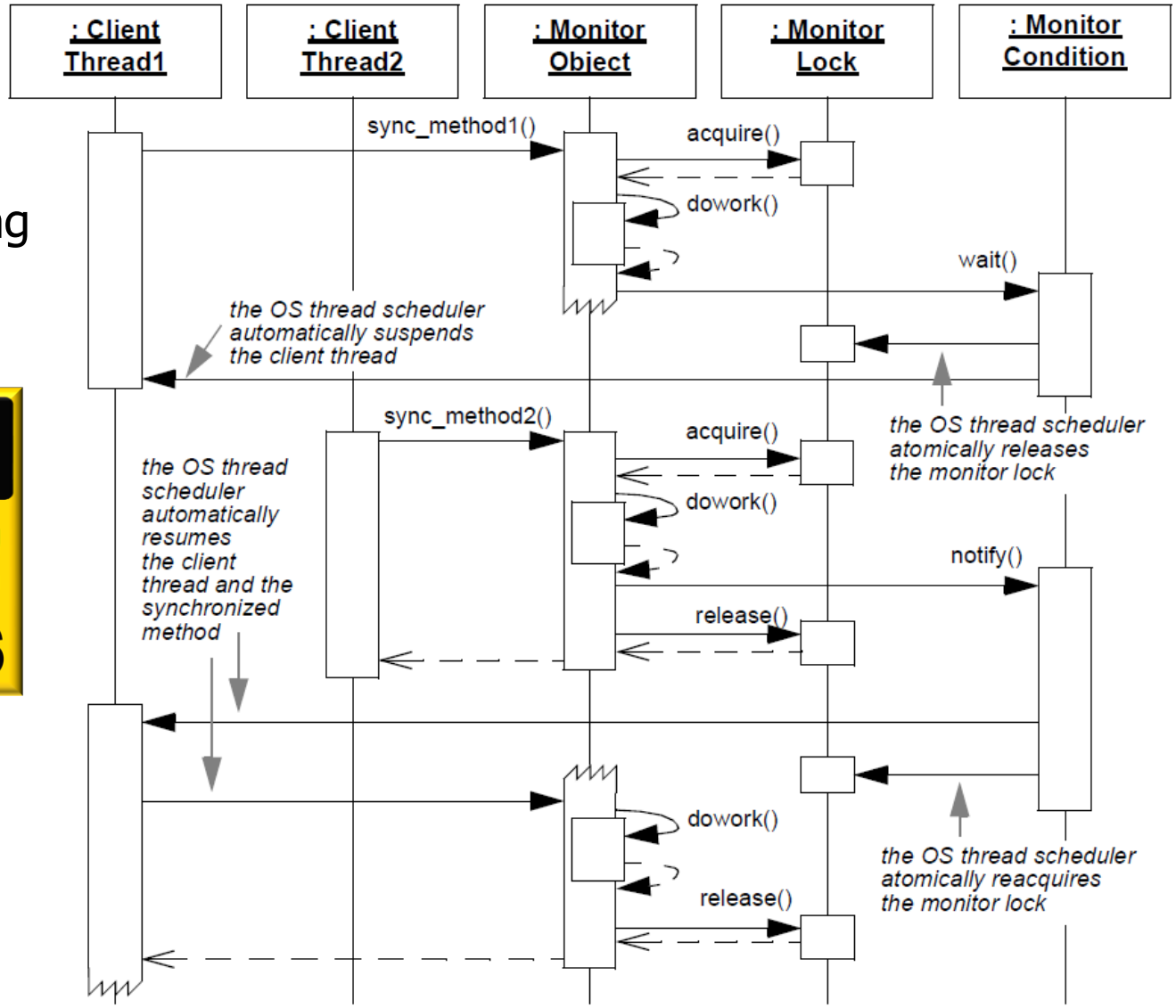
  - The protocol for using CVs involves several "moving parts"



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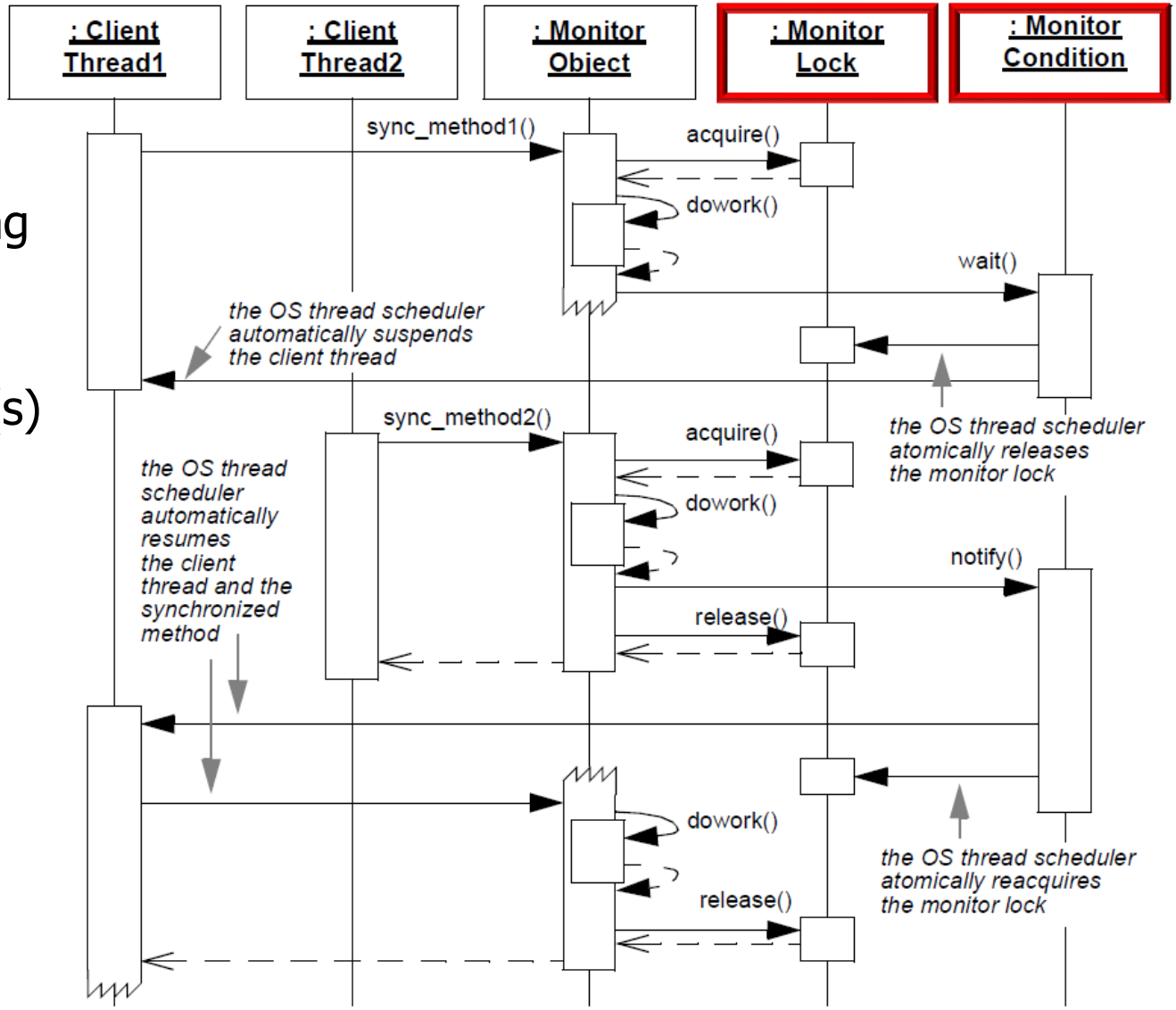

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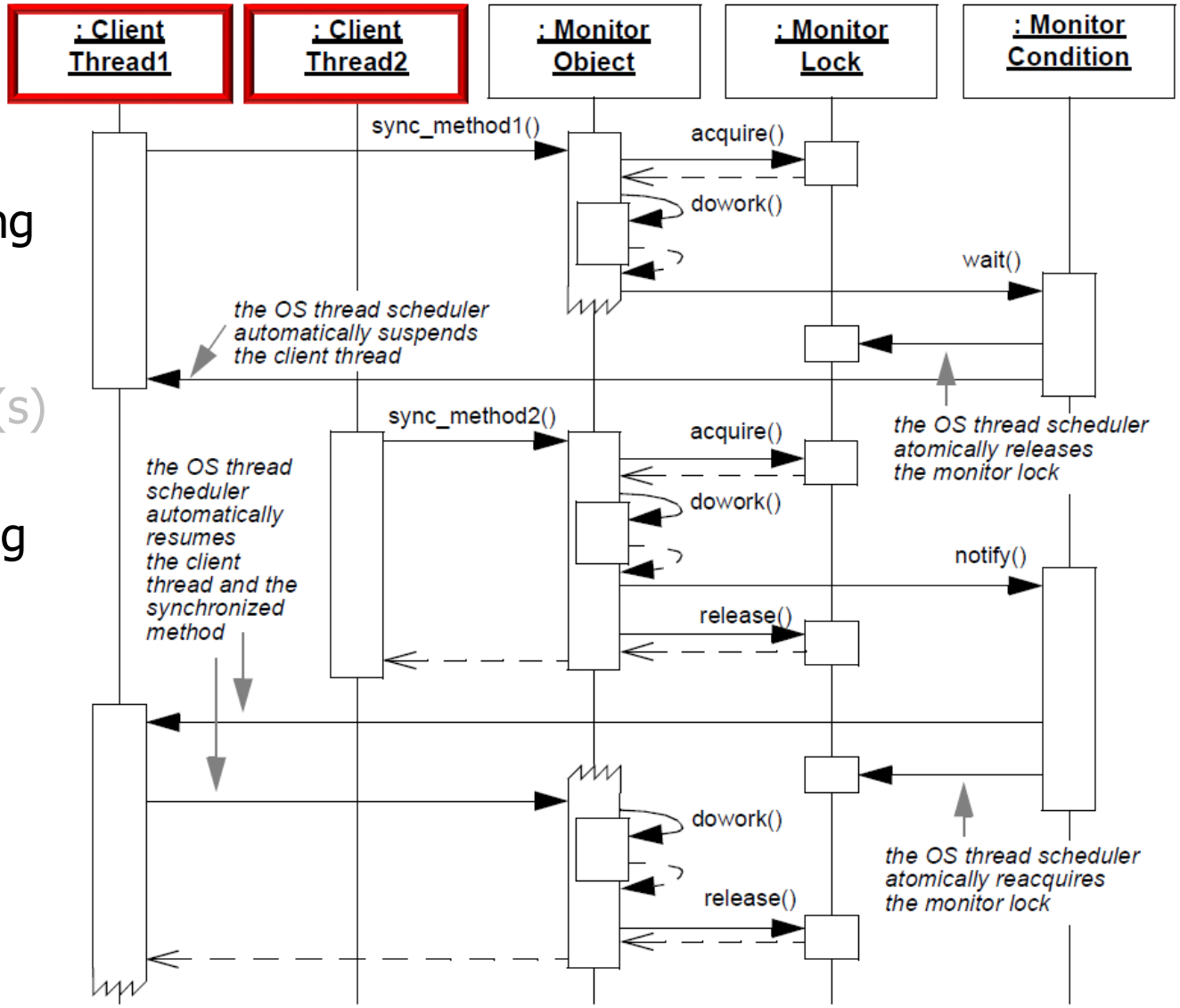

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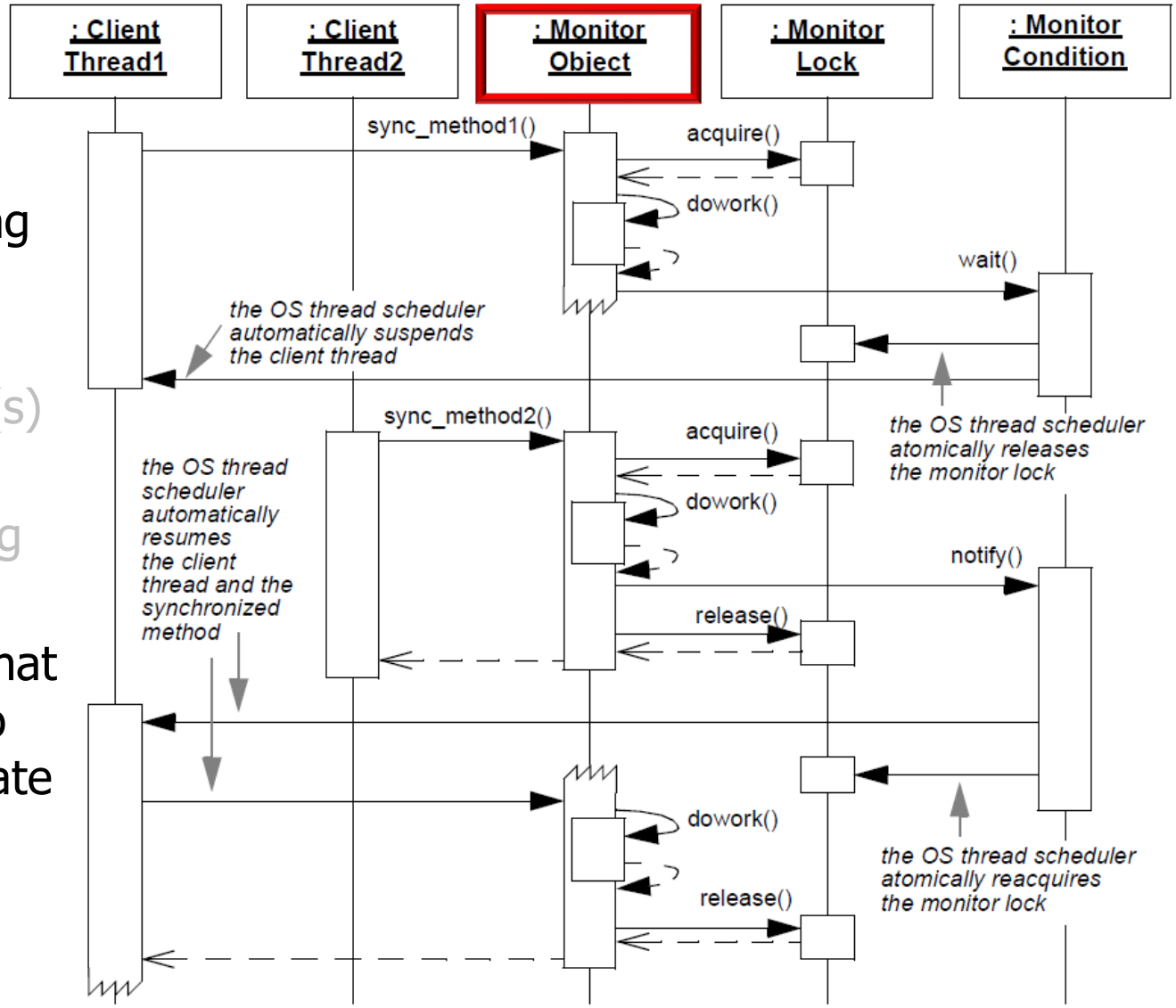

See www.dre.vanderbilt.edu/~schmidt/PDF/monitor.pdf

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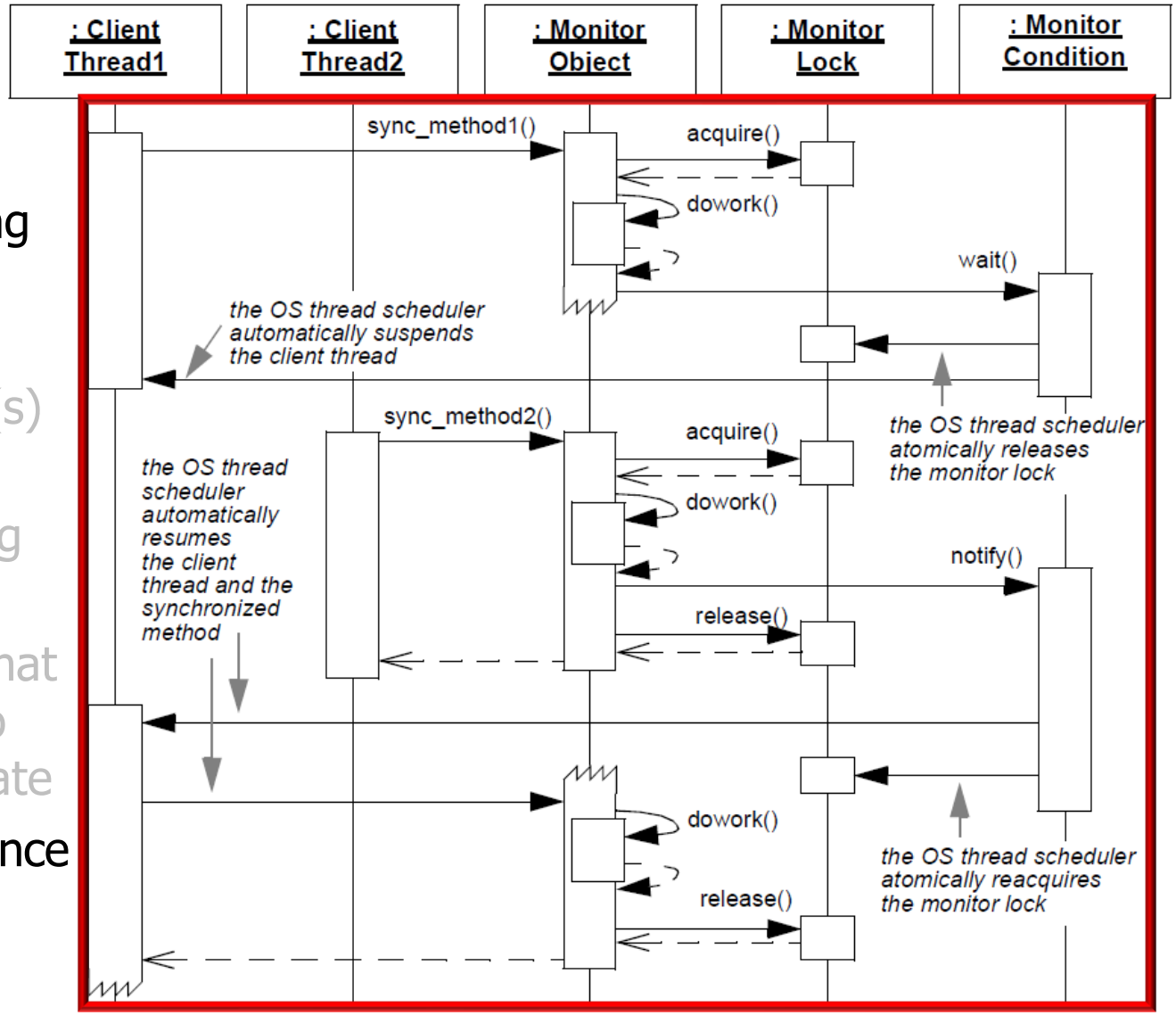
    - A monitor object that mediates access to mutable shared state
  - An idiomatic sequence of steps



Applying Condition Variables in Practice

- CVs are powerful, but can be hard to grok & apply correctly, e.g.
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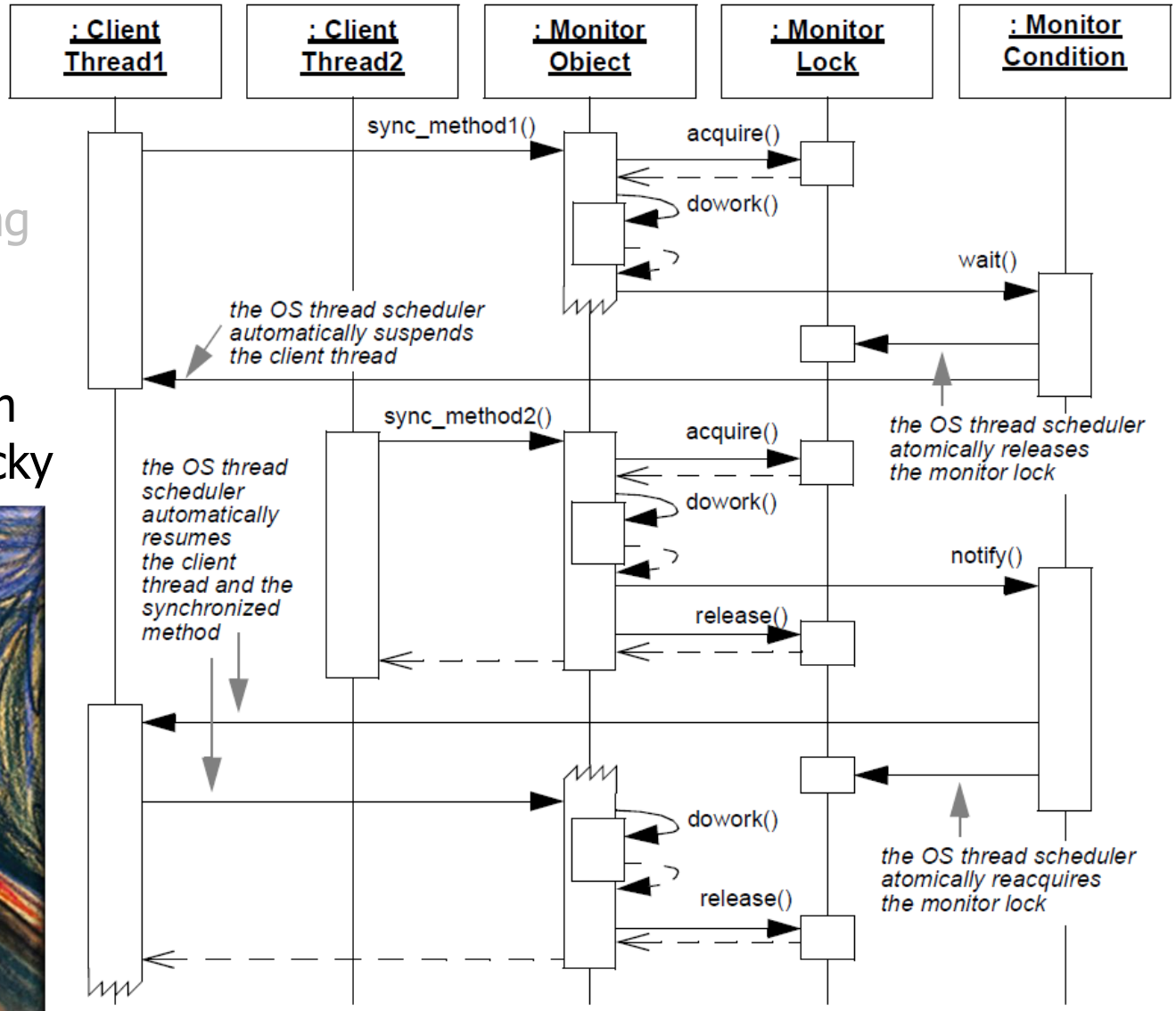
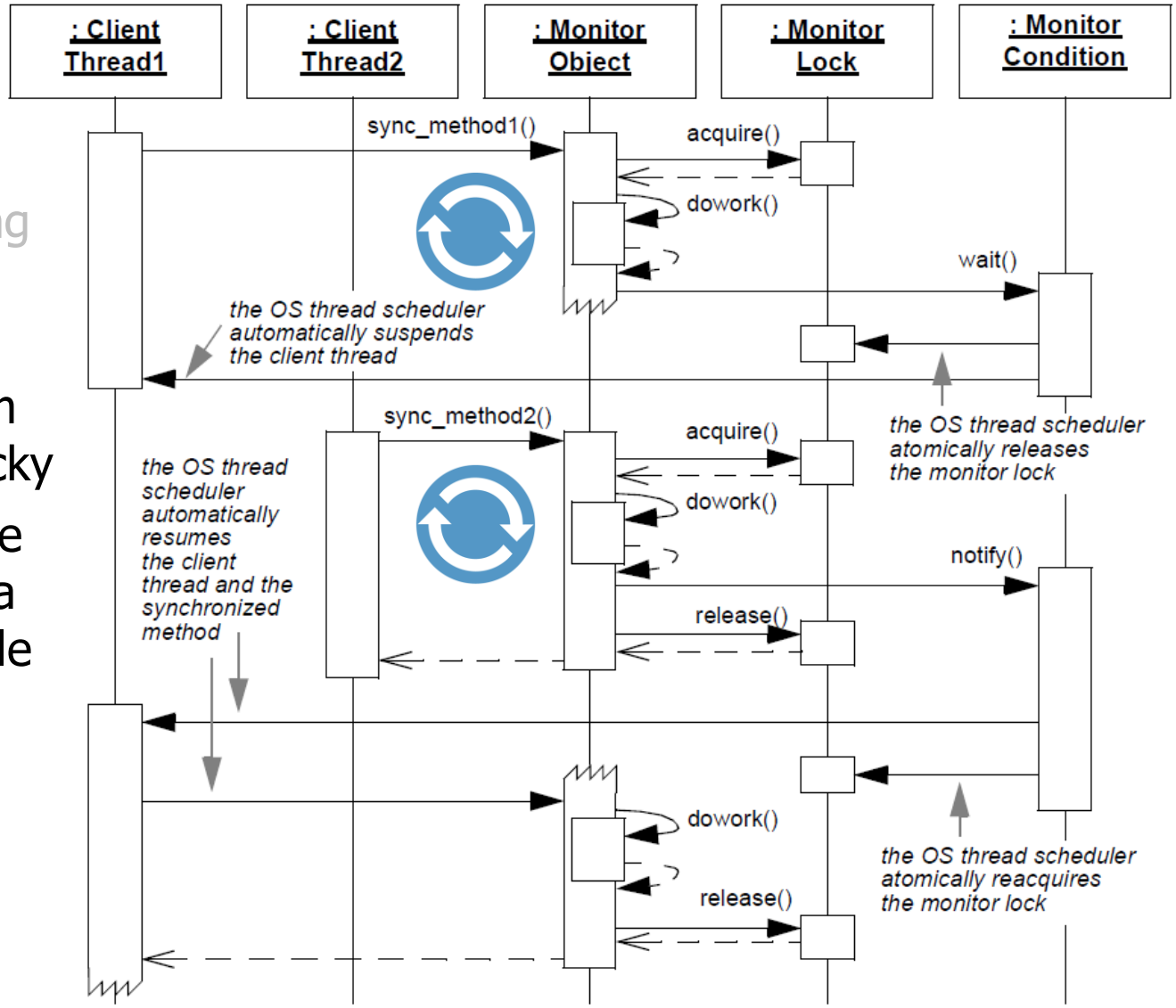


See en.wikipedia.org/wiki/Nondeterministic_algorithm

Applying Condition Variables in Practice

- CVs are powerful, but can be hard to grok & apply correctly, e.g.
  - The protocol for using CVs involves several "moving parts"
  - The non-determinism of concurrency is tricky
    - i.e., looping may be needed to ensure a resource is available



See stackoverflow.com/a/38313778

Applying Condition Variables in Practice

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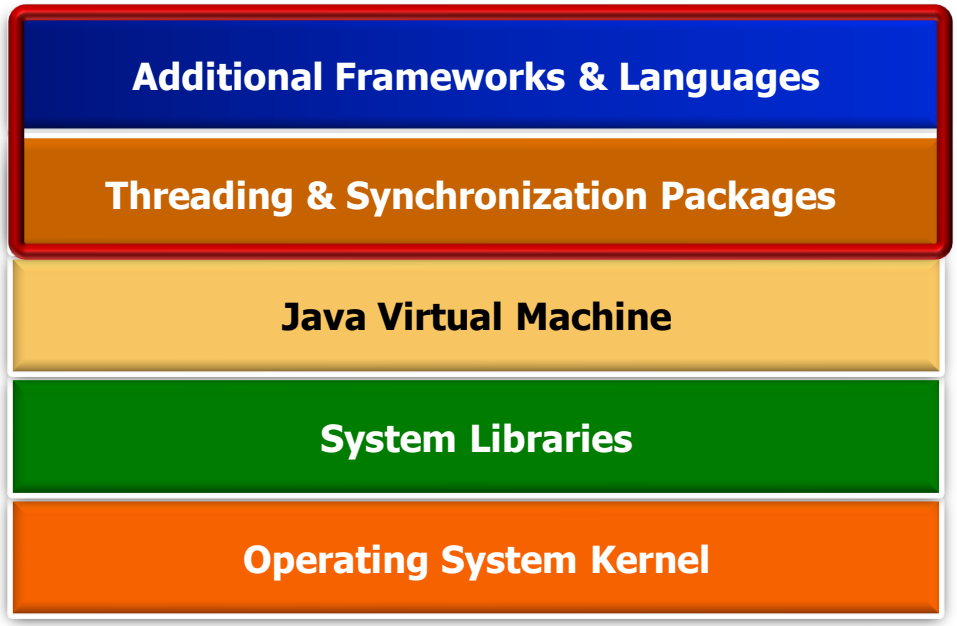

See docs.oracle.com/javase/8/docs/api/java/util/concurrent/locks/AbstractQueuedSynchronizer.ConditionObject.html

Applying Condition Variables in Practice

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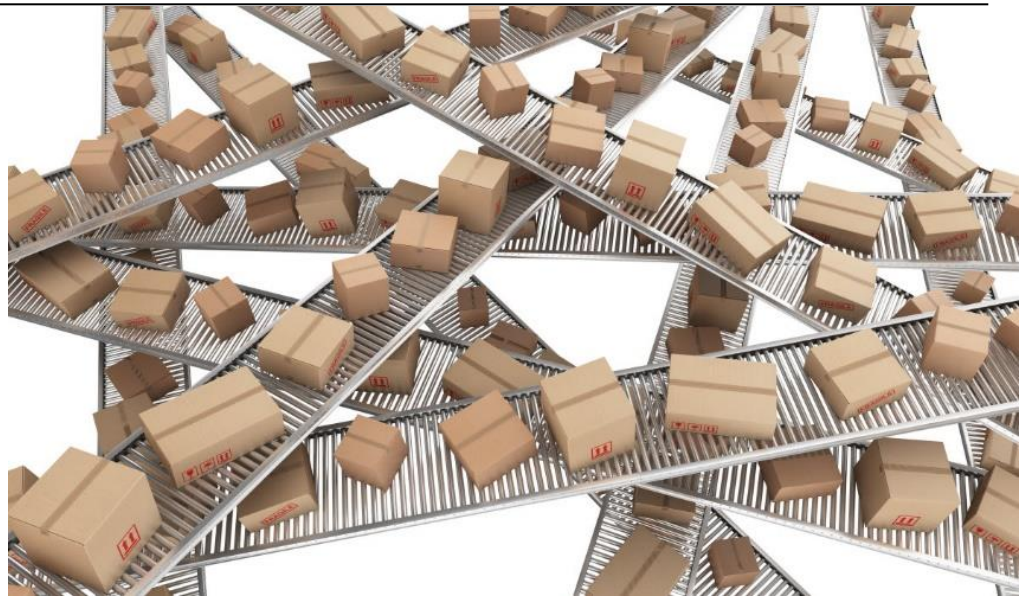

See docs.oracle.com/javase/tutorial/collections/implementations/queue.html

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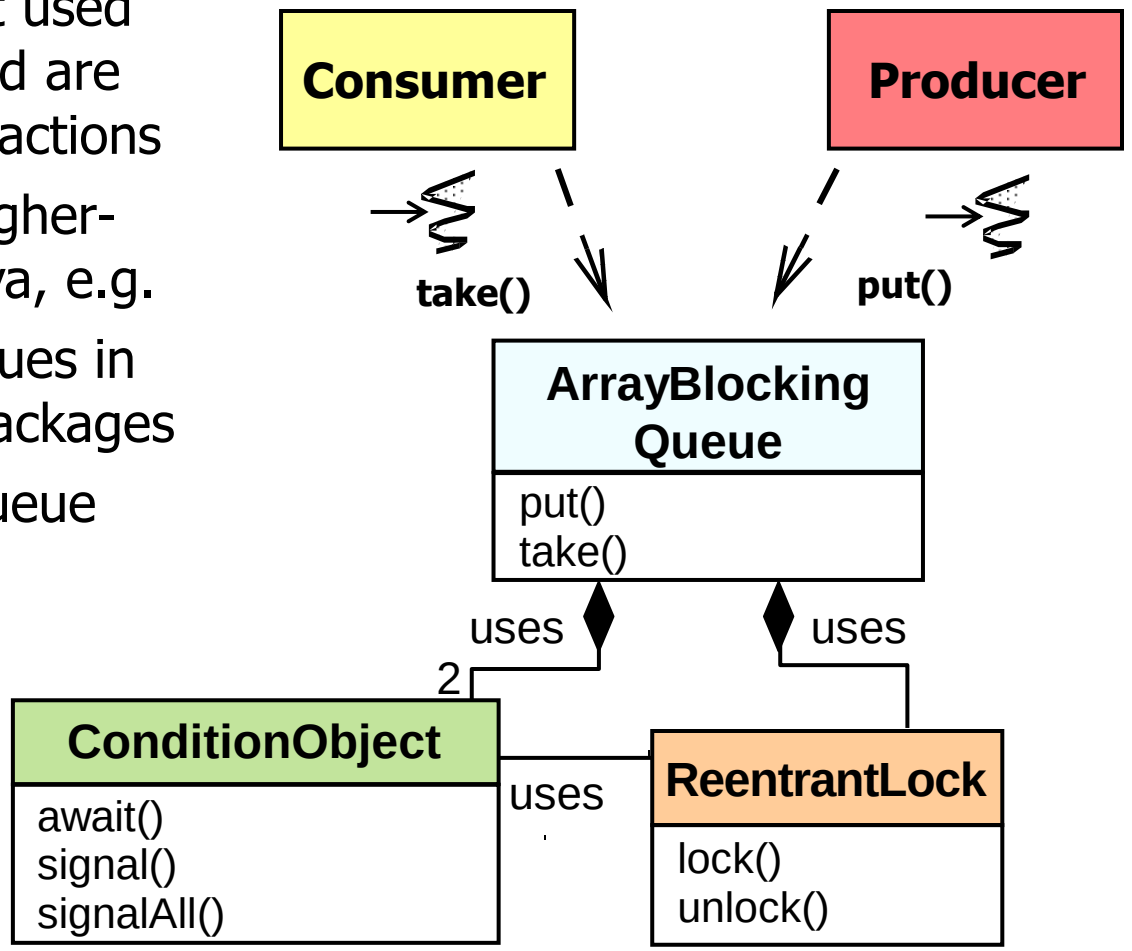
      - e.g., ArrayBlockingQueue



See upcoming discussion in "*Example Application of Java ConditionObject*"

Applying Condition Variables in Practice

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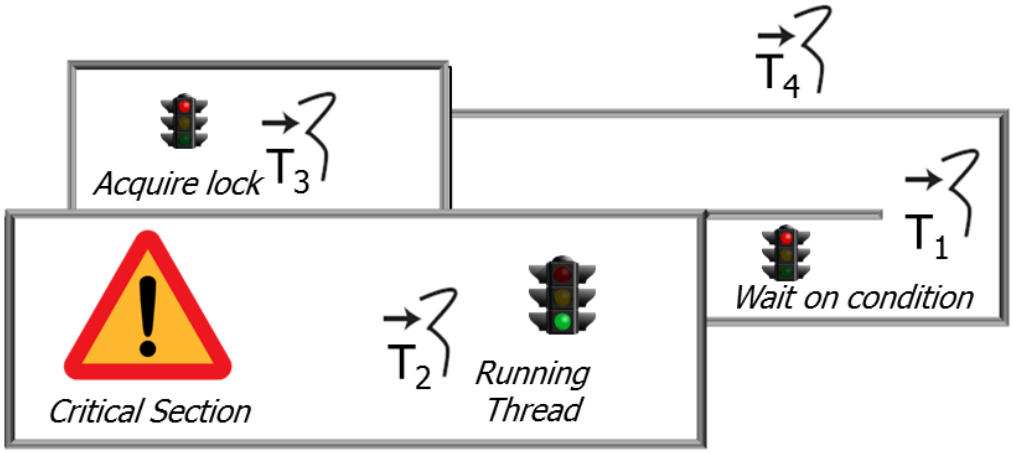

See upcoming lesson on "*Java Built-in Monitor Objects*"

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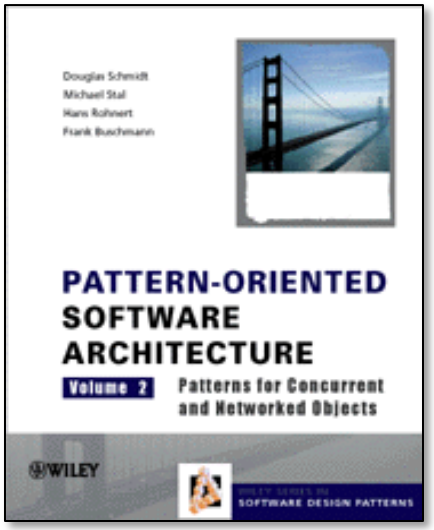
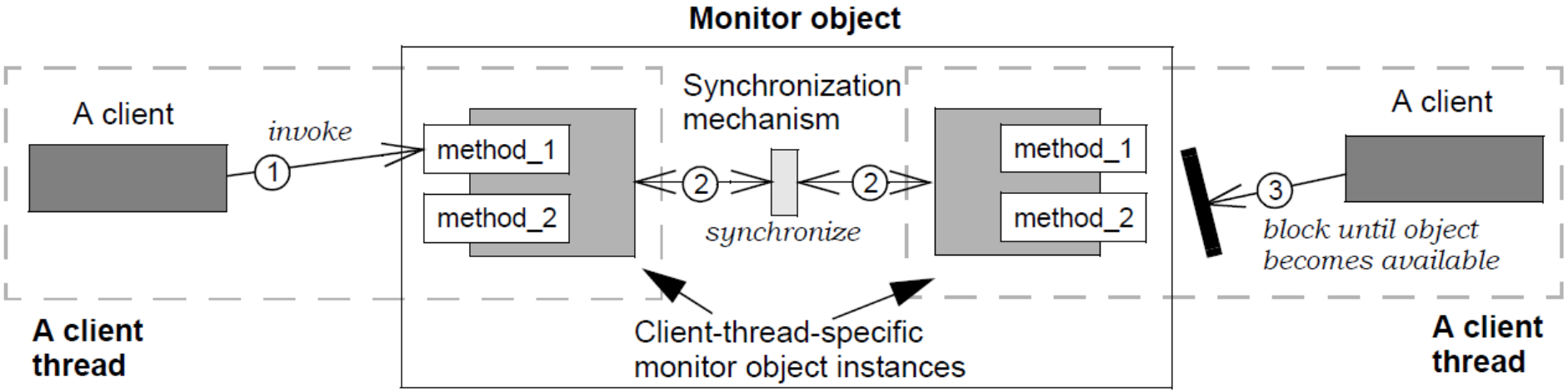
    - The *Monitor Object* pattern





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End of Common Use Cases for Condition Variables