Concurrency & Parallelism

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1.1   a

- High-level Data Race
- Stale-value Error

1.2   b

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Since we have a fixed input size we can use Amdahl's Law.

$$S_p \leq \frac{1}{f + \frac{1-f}{p}}$$
$$S_p \leq \frac{1}{0.6 - \frac{0.4}{8}}$$
$$S_p \leq 1.538$$

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It compiles, runs and terminates with

```
Exception in thread "main"
java.lang.IllegalMonitorStateException
    at java.lang.Object.wait(Native Method)
    at java.lang.Object.wait(Object.java:502)
    at WaNot.amethod(WaNot.java:11)
    at WaNot.main(WaNot.java:5)
```

This happens because the thread is not the owner of the object monitor. If `amethod` was `synchronized` the program just blocks.

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