

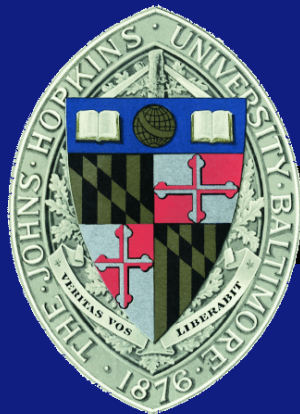
Lecture 10.3

Synchronized Blocks

EN 600.320/420

Instructor: Randal Burns

1 March 2017



Department of Computer Science, *Johns Hopkins University*

Synchronized blocks

See [SynchronizedWorks.java](#)

- A Java synchronized block:
 - Has only one thread accessing the block at a time
 - Is reconciled with memory at start and end of block
 - Allows compiler not to write values back to memory during block (unlike volatile)
 - Implemented with locking
- Easy abstraction
 - Locking and unlocking performed implicitly
- Has performance/parallelism implications
 - A synchronized block is a single lane road that parallel threads go through one at a time



Synchronized Danger!!

See [SynchronizedBug.java](#)

- Synchronized only applies to an object (or class)
 - Frequent mistake is to apply to an object and assume it will synchronize all objects of this class.
- This type of error quite difficult to find and debug

