

Concurrency Library

2-1-2012

Opening Discussion

- Minute essay comments
 - Making more threads than cores.
- IcP solutions

java.util.concurrent

- Java 5 added the `java.util.concurrent` package and others below it.
- Provides better ways to do common tasks for parallel.

Executors

- Use the proper one of these to start threads instead of making them manually.
- Allows `Callable[A]` and `Future[A]` which return a value.

Parallel Data Structures

- BlockingQueue
- ConcurrentMap
- CountdownLatch
- CyclicBarrier
- Exchanger
- PriorityBlockingQueue
- Semaphore
- Scala provides some support for basic collections.

Locks

- More flexible than synchronized.
- Provides extra power when needed. Particularly for locking across method calls.

Atomics

- Data values with atomic access.
- Faster and easier than doing your own synchronization.

Code

- I want to get commands working so that we can play with some of this in the drawing program.

Minute Essay

- How might you break parts of your project code into different threads to take advantage of many cores?