Homework 8

Please submit your solutions via NYUClasses. Solutions to programming exercises should be submitted as plain text files. No exotic formats, please!

The deadline for Homework 8 is April 21, before class.

Synchronization of Concurrent Objects (25 Points)

- AMP, p. 449: Exercise 216 (**6 Points**)

- AMP, p. 449: Exercise 218 (**6 Points**). Implement your `AtomicArray` class using the ScalaSTM. Your class should have the following signature:

```scala
class AtomicArray[T](length: Int) {
  def compareAndSet(i: Int, expect: T, update: T): Boolean;
  def get(i: Int): T;
  def set(i: Int, newValue: T): Unit;
}
```

- Use the ScalaSTM to implement a transactional stack with an elimination array for exponential backoff (**13 Points**).