

CS 6301: Special Topics in Computer Science—Concurrent Data
Structures for Multi-Core Systems
Section 004
Programming Assignment 1

Instructor: Neeraj Mittal

Assigned on: Monday September 23, 2013
Due date: Monday October 7, 2013 (at midnight)

This is an individual assignment. Code sharing among students is strictly prohibited and will result in disciplinary action being taken. You can do this assignment in C, C++ or Java.

The assignment has to be done on either `cs1.utdallas.edu` or `cs2.utdallas.edu`.

1 Project Description

It consists of the following parts:

1. Implement Filter algorithm for solving the mutual exclusion problem.
2. List all atomic instructions supported by one of the cs machines (`cs1` or `cs2`).
3. Implement a solution for the mutual exclusion problem using any two of the atomic instructions in the above list. To invoke atomic instructions, use `java.util.concurrent.atomic` package for Java and `atomic_ops` library for C/C++.
4. Compare the performance of achieving mutual exclusion using Filter algorithm with the one obtained using an atomic instruction (of your choice).

2 Submission Information

You will have to submit your project using eLearning. Submit all the source files necessary to compile the program and run it. Also, submit a README file that contains instructions to compile and run your program.