

## **CSE 542 Small Home Work Project 5**

***Assigned: Tues, Oct 5***

***Due: Thurs, Oct 14, 11:00AM***

***Late submissions will not be accepted***

***Group effort***

The primary goal for this project is to use the threads mechanisms available in Linux. Implement the classical dining philosophers problem using the pthreads package (the philosophers sleep for a random interval, take the left and right forks, print a statement stating the thread that got the forks, release the forks and go back to sleep/think).

```
While (1) {  
    Sleep(random()%10); // Thinking for a while  
    Acquire forks();  
    Sleep(random()%2); // Eating for some time  
    Printf("Philosopher P eating\n");  
    Release forks();  
}
```

Show a trace run that shows a deadlock. You should develop your program using libpthreads on the Quad processor Itaniums. Now, try your program on the Dual processor Itaniums. Does it deadlock sooner on one machine compared to the other?

Now, develop a deadlock free version of this program.

A tutorial on the libpthreads is available at

<http://www.llnl.gov/computing/tutorials/workshops/workshop/pthreads/index.html>