

Problem 2 part 1

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Contents

1	Theory	3
1.1	Threads and processes	3
1.2	Race condition	3
1.3	Critical section	3

1 Theory

1.1 Threads and processes

A process is an executing instance of a program which can contain multiple threads. Threads are generally smaller processes in complexity than processes. A thread has shared memory while a process has a private memory blocks.

1.2 Race condition

When threads or processors attempt to simultaneously access a resource, and the accesses can result in an error, the threads have a race condition. A race condition will leave the computation output depend on which thread "wins the race".

1.3 Critical section

A block of code that can only be executed by one thread at a time, to avoid a race condition, is called a critical section.