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Operating Systems
Due 03/23/16

Homework 6

Question 1b. Do you need to include any locks in your parallel implementation of the matrix multiplication algorithm? Justify your answer.

No locks are required for this parallel implementation of the matrix multiplication algorithm. The different threads do read from the same memory locations, but they only write to separate memory locations (different elements of the C array). Since reading alone is thread-safe, this is not an issue. To pass the induction variable “i” in a safe manner, a separate array of indices is created. This way, “i” is not passed by reference to the different threads, which would not be safe. The void* could also be cast to/from a variable of type int/long int/etc., but since the size of int/long int/etc. and the size of pointers are both dependent on the architecture, this is a less stable method.