CS6023 GPU Programming

Problem Set 3: Synchronization

1. Write a kernel wherein a kernel is launched with 64 threads. Thread 0 prints 0, then thread 32 prints 1, then thread 1 prints 2, then thread 33 prints 3, and so on. Note that the output should be sorted.
2. Use prefix-sum to compute area under the curve where various coefficients of the curve's equation are passed as array elements to the computing kernel.
3. Given a sequence of dependencies between various project elements, simulate the project using multiple threads, and find the critical paths in the project (which take the longest time).

   e.g., a b 5, a c 10, b c 7 indicate three edges. The critical path is a-b-c with cost 12.
4. Implement a concurrent hash table. (i) support insert and find. (ii) support deletion.