Meeting Assignment

Assignment 1

Meeting group 3:
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Q1: In Ex1-Q4, the previously measured bandwidth seems to be abnormal.
A1: We don't know! Maybe the environment was not correctly set.

Q2: In Bonus Assignment, the results reported by PERF should be miss rate rather than hit rate.
A2: Yes! It was a mistake.

Q3: In Ex5, why the performance reported in N=2049 is better than in N=2048?
A3: The cache miss ratio in N=2049 is actually higher than in N=2048. However, we observed that the execution time and bandwidth measured in N=2049 are far better than in N=2048, which is quite confusing. **We cannot figure it out at this moment.**

Q4: What is elapsed time exactly compared to execution time?
A4: Elapsed time includes all the code's running time and PERF statistics runtime.

Q5: In Ex5, why choose 45 for block size?
A5: 45 x 45 x 8B x 2 = 32400 B < 32768 B (L1 D-cache). Thus the codes can make full use of our caches.

Q6: In Ex6, should we switch the Dardel to GNU environment to generate the vectorization report using "-fopt-info-vec-missed" and "-fopt-info-vec"?
A6: Yes. Using Cray environment may be inappropriate.

Q7: In Bonus Assignment, which benchmark (simple and reduced) better utilize the caches?
A7: Simple has better utilization of caches.

Q8: In bonus assignment, in the calculation of overhead of data movement, do we count the delta_t in the data movement?
A8: It shouldn't be counted as it is a predefined variable which is always in the cache or register when running the code of "Particle Mover".