HW1 Report

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1. Description

Under the ”b10505047_HW1” directory, my source code is in vecADD2D.cu, and the inputs files and outputs results are put under the “tests” directory. I mainly use 8 inputs files Input_4, Input_8, …, Input_32 for testing the results. The numbers in files’ names represents the block sizes (4, 4), (8, 8), …, (32, 32). To run the code, run “make” first and then run “condor_submit cmd” to submit the job. Change Initialdir into your working directory and Arguments into different input and output files.

2. Results

The 8 output results Output_4, Output _8, …, Output _32 are put under the “tests” directory. I tested each input case for several times for a more reliable result. Below figure shows the total time for GPU for the 6 different block sizes:

```
Output_4 : Total time for GPU: 119.365540 (ms)
Output_8 : Total time for GPU: 103.309471 (ms)
Output_12: Total time for GPU: 104.997284 (ms)
Output_16: Total time for GPU: 104.368225 (ms)
Output_20: Total time for GPU: 105.836830 (ms)
Output_24: Total time for GPU: 103.181374 (ms)
Output_28: Total time for GPU: 104.255325 (ms)
Output_32: Total time for GPU: 105.014786 (ms)
```

3. Discussion

According to the results, we can see that Output _8 has the minimum total time for GPU, which means that optimal block size is (8, 8). Thus, the optimal block size is not the smallest block size. We can also see that the the total time for block size (4, 4) is much longer than the other cases. I also observe that the results for 12~32 have not much difference.