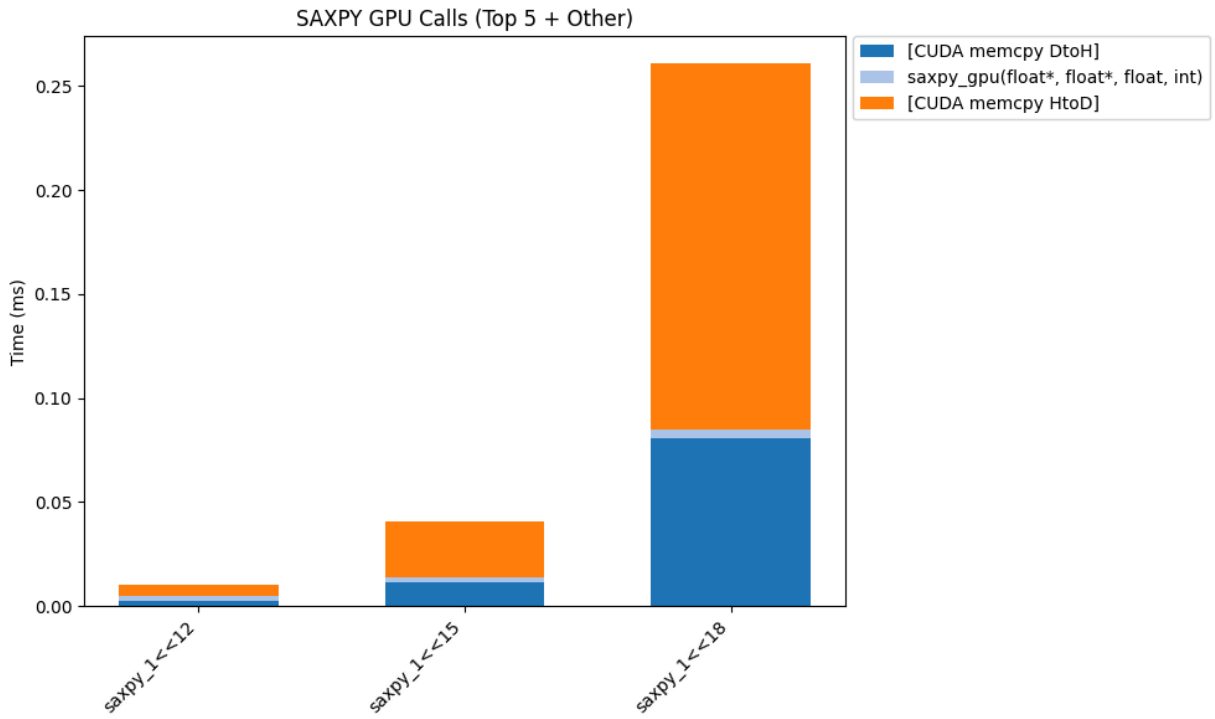
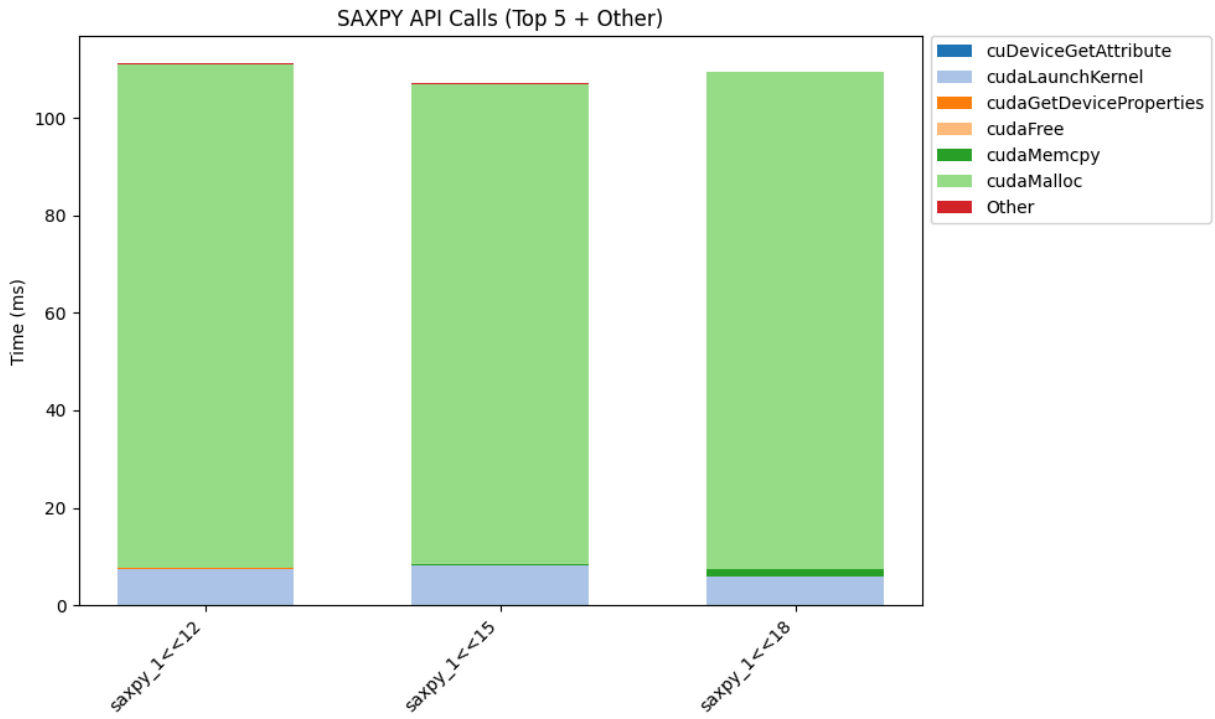
Hyeon Uk Jeong
Github ID: maikjjeong

Lab1

1. SAXPY

For this part, vector sizes of 1<<12, 1<<15, and 1<<18 were tested.

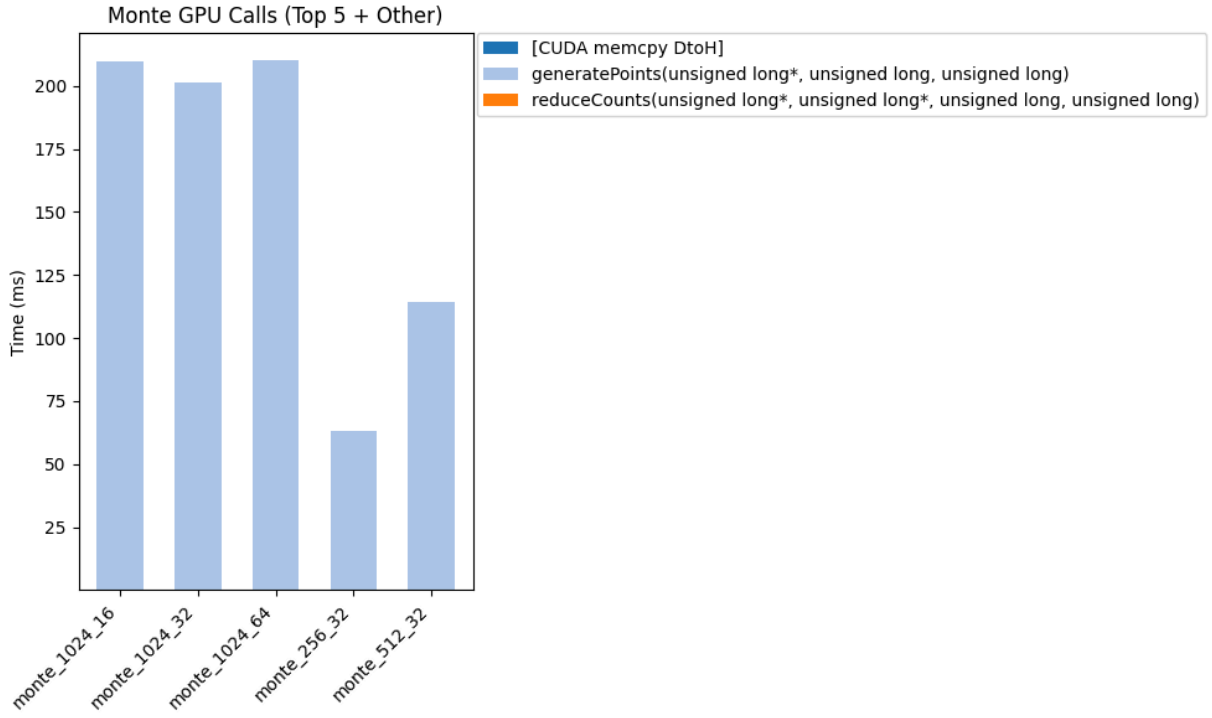


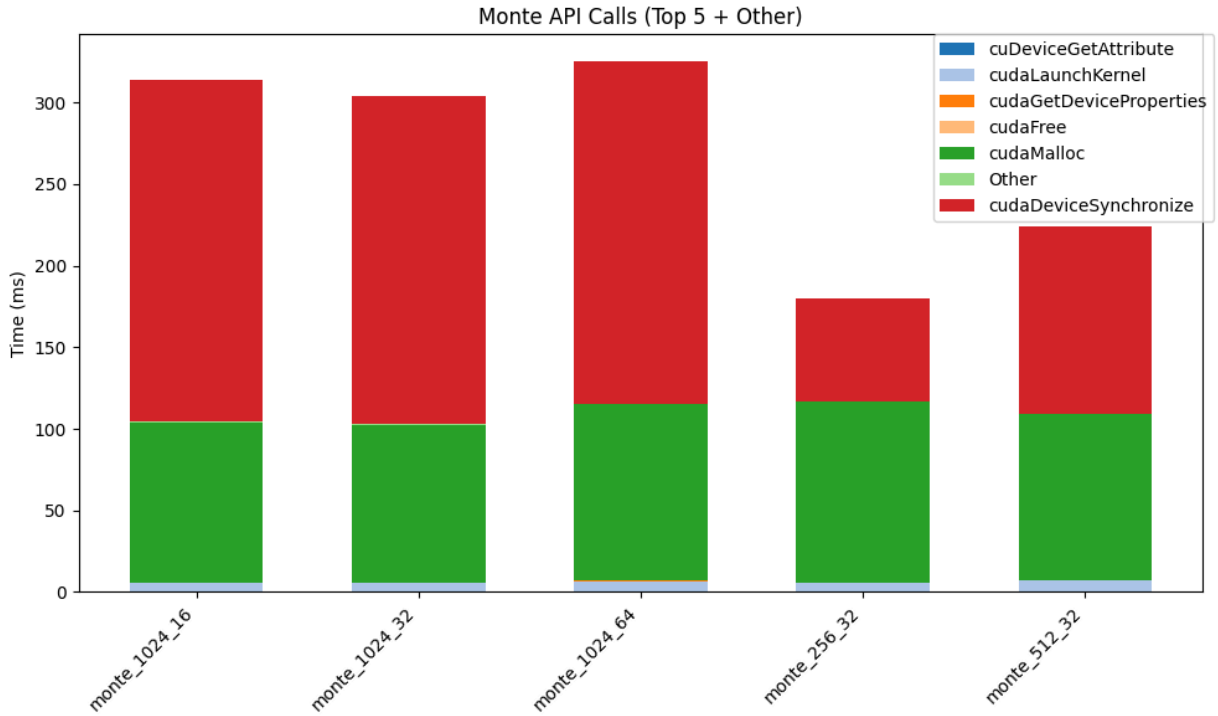


As the vector size increases, time required to copy memory from host to device and device to host are increased linearly. However, the time spent on API calls is similar because the saxpy kernel is very lightweight, so overhead determines the overall time.

2. Monte Carlo Pi

For this part, generate block size and reduce block size were changed from base 1024 generate block and 32 reduce block. For generate blocks, 1024, 512, 256 were tested, and for reduce blocks, 16, 32, 64 were tested.





As generate blocks were decreased, the time spent on the generate kernel decreased linearly. However, for reduce blocks, since the time spent on reduce is very small compared to the time spent on generate, it didn't have greate impact.

In API call time analysis, when generate block sizes were smaller, it took less time to synchronize as there are fewer blocks.