**Project-2**

The block size I define in this project is 128.

**Comparison of prefix sum using global and shared memory**

|  |  |  |
| --- | --- | --- |
| **N** | **Global Memory** | **Shared Memory** |
| 20 | 0.3567 | 0.8245 |
| 40 | 0.5482 | 0.5309 |
| 60 | 0.7147 | 0.6573 |
| 80 | 0.7513 | 0.7019 |
| 100 | 0.7996 | 0.7858 |
| 120 | 0.8311 | 0.8053 |

It shows that when n increases, shared memory may be a little more efficient than the one using global memory. As the block uses shared memory will decrease the time to access data.

**Comparison of different Stream Compaction**

|  |  |  |  |
| --- | --- | --- | --- |
| n | Serial | Parallel | Thrust |
| 100 | 1 | 0.6046 | 0.0016 |
| 1000 | 1 | 1.0405 | 0.0016 |
| 10000 | 1 | 2.9445 | 0.0016 |
| 100000 | 5 | 3.0703 | 0.0017 |

When the size of array grows, the serial method is of low efficiency. And the functions in thrust is far more efficient than mine. There’s a long way to go.