

Double Table:

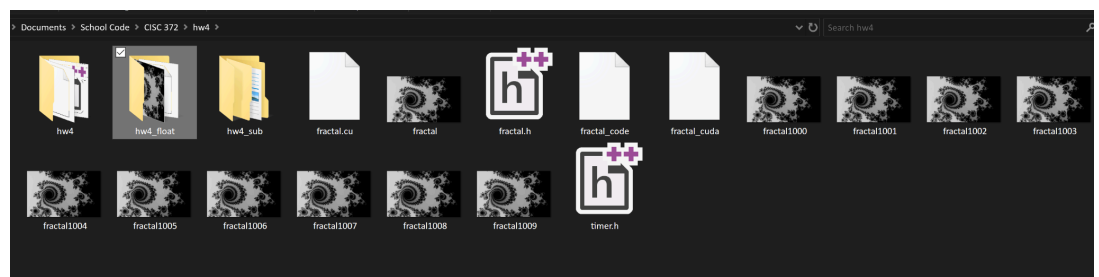
Run Number	Frames	Resolutions	Serial Time	Parallel Time	Speedup
1	10	1920x1080	56.70471202	0.08304	682.8602
2	25	1920x1080	58.1352719	0.12064	481.8905
3	60	1920x1080	63.170377	0.1368	461.7718
4	25	2560x1440	73.78154844	0.10368	711.6276
5	60	2560x1440	80.88758026	0.23256	347.8138
6	25	3840x2160	83.25020538	0.23688	351.4446
7	60	3840x2160	95.65815438	0.5016	190.7060
8	10	4096x2160	98.661222	0.1428	690.9049
9	25	4096x2160	109.475461	0.2352	465.4569
10	60	4096x2160	114.66661	0.54264	211.3125

Float Table:

Run Number	Frames	Resolutions	Serial Time	Parallel Time	Speedup
1	10	1920x1080	58.458466	0.0368	1588.5453
2	25	1920x1080	59.93327	0.0404	1483.4968
3	60	1920x1080	65.1241	0.0608	1071.1201
4	25	2560x1440	76.063452	0.07002	1086.3104
5	60	2560x1440	83.389258	0.10064	828.5896
6	25	3840x2160	85.824954	0.11736	731.2965
7	60	3840x2160	98.616654	0.1586148	621.7368
8	10	4096x2160	101.7126	0.07752	1312.0820
9	25	4096x2160	112.8613	0.1767	638.7170
10	60	4096x2160	118.213	0.1244	950.2653

Darwin Run:

Forgot to grab a screenshot of the run. Tried to get it again however the queue is not letting me get the resources. I did run it in front of the professor and I'll also include screenshots of the output images and gif I created. I don't know how else I could show that I run the code on

[illegible]

Analysis:

We can clearly see that the speedup significantly increases in the float point implementation this is probably due to the fact that float points use less memory than doubles, therefore helping the program compute faster and store less amounts of data. While float points take only 4bytes, doubles take 8bytes. Because of this, we also lose data as float points are less precise due to their small memory size. We can also notice diminishing returns as the resolutions size increases, since it takes way longer than the previous resolutions. In my calculations I measured the time at varying frame rates and resolutions. Allowing us to analyze the program at varying levels. We can see that generally the performance at 60 fps of a lower resolution matches the performance at 10fps of the next tier resolution. This shows that they are both similar in computational complexity despite have different values. This goes to show that using float points will offer a faster program, at the cost of precision and that increasing the resolution is more intensive than increasing frames per second.