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CS 475
Professor Bailey
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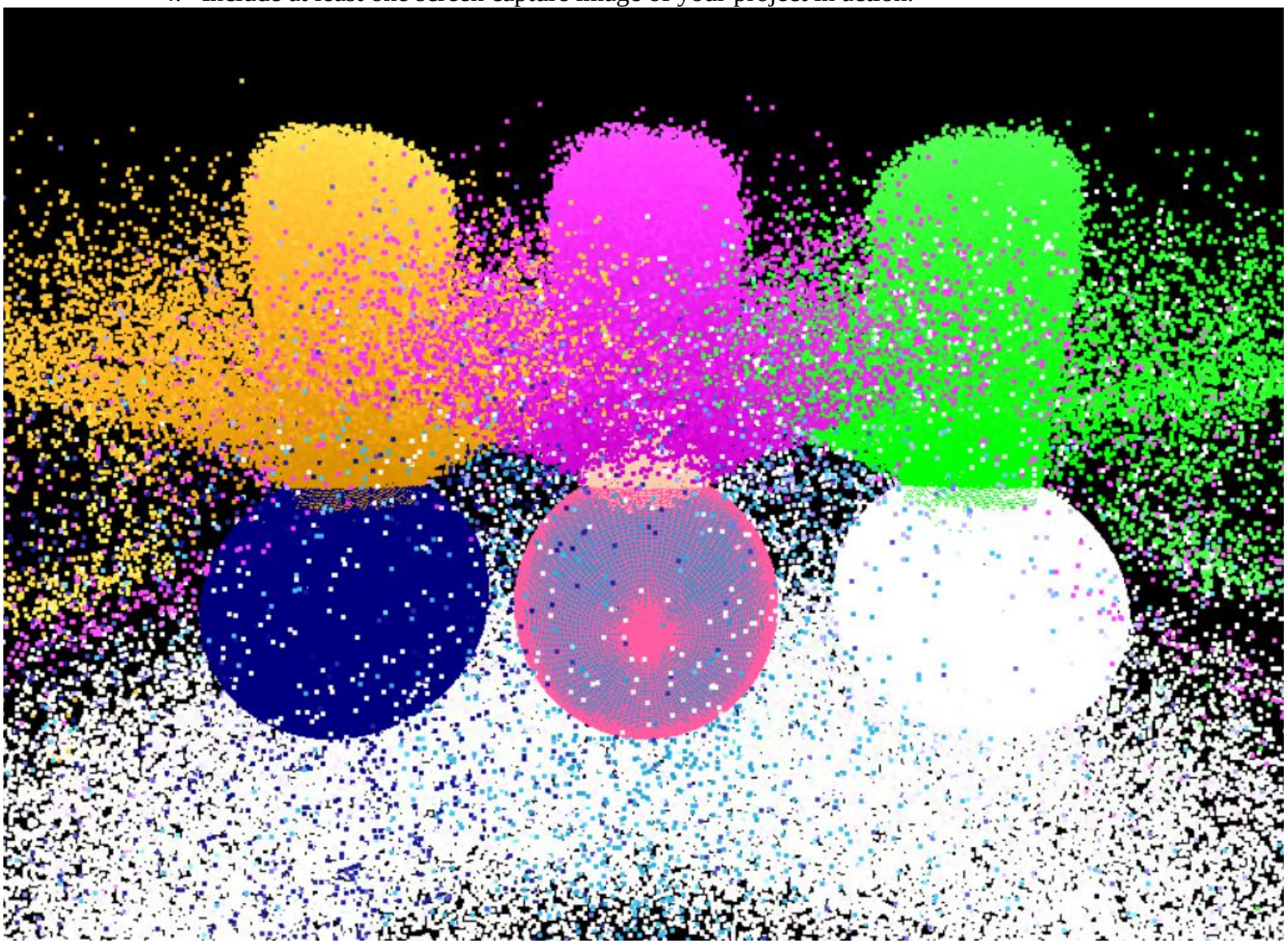
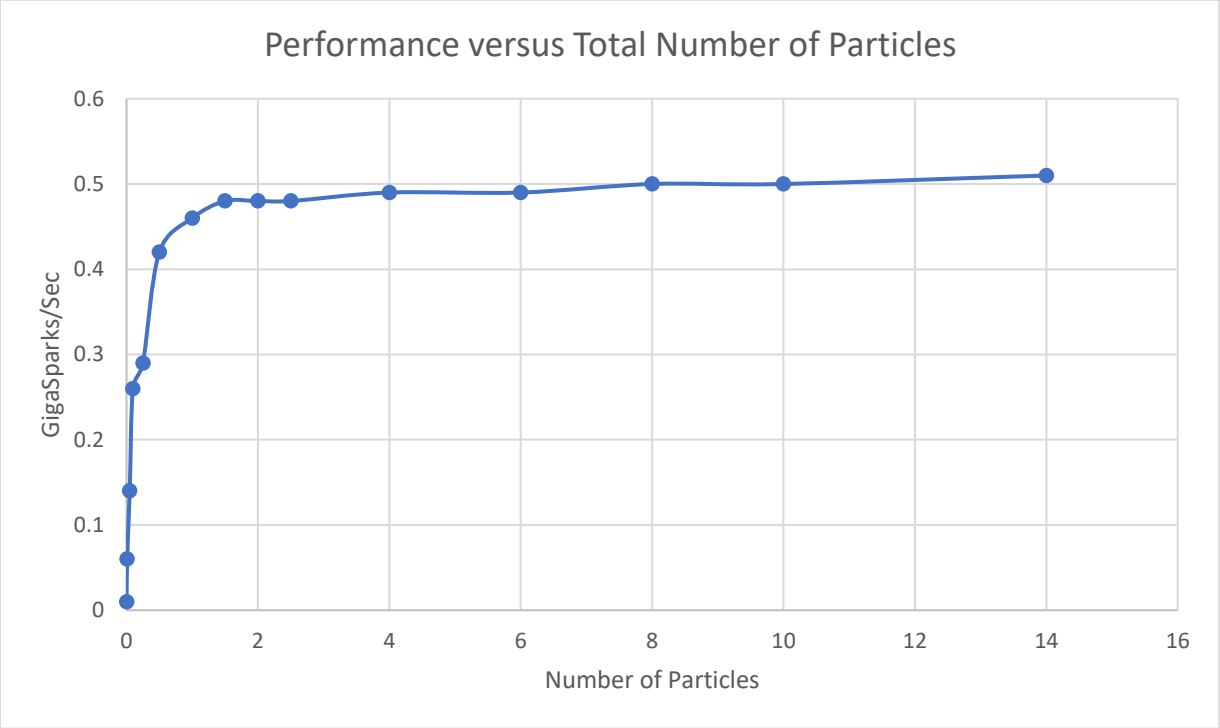
Assignment 7A

1. **A web link to the video showing your program in action -- be sure your video is Unlisted.**
   https://youtu.be/lObQwscjtbs
2. What machine you ran this on
   I ran this on my PC
3. What predictable dynamic thing did you do with the particle colors (random changes are not good enough)
   When the particles hit a certain circle it would change that color, then the color would start to brighten and turn white.
4. Include at least one screen capture image of your project in action.



5. Show the table and graph

Size	Number of particles	GigaSparks/Sec
1024	0.000976563	0.01
10*1024	0.009765625	0.06
50*1024	0.048828125	0.14
100*1024	0.09765625	0.26
.25*(1024^2)	0.25	0.29
.5*(1024^2)	0.5	0.42
1024^2	1	0.46
1.5*(1024^2)	1.5	0.48
2*(1024^2)	2	0.48
2.5*(1024^2)	2.5	0.48
4*(1024^2)	4	0.49
6*(1024^2)	6	0.49
8*(1024^2)	8	0.5
10*(1024^2)	10	0.5
14*(1024^2)	14	0.51



6. What patterns are you seeing in the performance curve?
When the numbers of particles are less than 1(1024*1024) the performance speed increases quickly, but once reaching the 2(1024*1024) number of particles, the performance flattens out.

7. Why do you think the patterns look this way?
   I noticed that when the size of the particle was smaller the performance is small. As I increase the size the performance increases before reaching the max point where the performance stays around the similar performance. This shows that the program is being run efficiently.
8. What does that mean for the proper use of GPU parallel computing?
   In this case the proper use of GPU parallel computing would be using a lot of particles (larger GigaSparks/Sec) without the performance speeds being constant or close to other performance speeds. Also begin able to see the change where the program has low efficiency (with smaller GigaSparks/Sec), to when the program has higher efficiency (with larger GigaSparks/Sec).