# MPCS 51087 Project 2, Milestone 1
# Ray Tracing - Serial Implementation

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This milestone shows a serial implementation of ray tracing to render a three-dimensional sphere illuminated by a single light source.

Methodology:

The ray-tracing algorithm was implemented in C and the results were visualized in python using MatPlotLib.

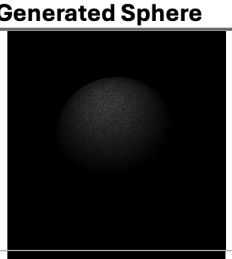
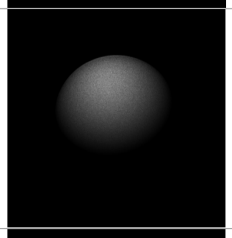
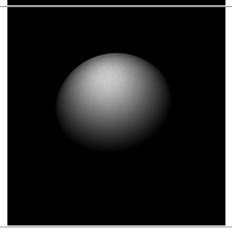
| Number of Rays | Time (s) | G: Generated Sphere |
|---|---|---|
| **1 million**<br>**1e6** | **0.400753** |  |
| **10 million**<br>**1e7** | **4.065462** |  |
| **100 million**<br>**1e8** | **40.059221** |  |
| | | |

Figure 1: Times and plots of G for different number of rays.

Usage:

On command line:

Compile:

```
$ gcc -fopenmp -O3 -o serial ray_tracing_serial.c -lm
```

Run: Two command line arguments – number of rays, grid dimension.

```
$ ./serial N_rays n
```