

# User Manual

for GPP Assignment 1 by Jason Thompson 153103338

Run the  
application

*Interacting with the  
simulation*

- **Holding the left mouse button and moving the mouse will move a large transparent sphere that applies a force to the particles.**
- **Holding the right mouse button and moving the mouse will rotate the camera around the origin.**

Executable	Features
GPP_Assignment_ST	single threaded
GPP_Assignment_ST_SSE2	Single threaded + SSE2
GPP_Assignment_MT	Physics multi threaded
GPP_Assignment_MT_SSE2	Physics multi threaded + SSE2
GPP_Assignment_MTR	Physics & render multi threaded
GPP_Assignment_MTR_SSE2	Physics & render multi threaded + SSE2

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for GPP Assignment 1 by Jason Thompson 15310338

## *The user interface*

- The **user interface** has a number of **metrics**:
  - fps avg**, this is an **average** of the number of **frames rendered per second**. Note that the frame rate is **limited** to ~40Hz
  - sps avg**, this is an **average** of the number of **simulation steps per second**. Note that the simulation steps per second is **limited** to ~90Hz
  - sim avg**, this is **average time** it takes for one **simulation step** to occur.
  - ren avg**, this is **average time** it takes to **render one frame**.
  - particles**, this is the number of particles in the simulation
  - threads**, how many threads are allocated for physics and rendering. If no threads are allocated then main is displayed.
  - processors**, number of physical processors. **Cores**, number of cores on each processor. **Logical processors**, the total number of processing units i.e. total **cores** or total **CPUs**.