Daily Log

Monday November 25

I added camera controls via the arrows, WASD. I also added pausing and cleaned up some code, and finally fixed an unrecoverable error. I added dragging with middle click later; it doesn't scale perfectly 1:1 and I'm not sure why, but it's still completely useable.

Wednesday-Friday November 27-29

I added previews and improved initial window creation. I think that the window creation worked perfectly before if there was only one monitor, but now it works with more than one so that's cool.

Monday December 2

I updated my entity component system library to the newest git master so that I could start adding trails. There's a somewhat significant performance decrease from about 1100 bodies at 60 iterations per second to around 900 on my desktop. I think it's fixable but I'm not sure how and I think I'll only look at it when the current git master gets published into an actual release.

Wednesday December 4

I added trails and made escape hide the side menu. I also added the entity component system library as a submodule because there might be breaking changes if I just keep cloning the newest version onto new computers.

Friday December 6

Before, I wasn't fully using entity component system design; I was only using entities and components. While preparing to add new things to the GUI I realized that I really shouldn't have a struct with like 20 fields and using the entity component system fully would fix that, so I started to switch. It's a pretty long/annoying process so there's still a bit left to be done, but I'm most of the way there. I also started work on giving previews a different simulation rate than normal bodies so that you can see the full path more quickly.

Timeline

Date	Goal	Met
Today minus 2 weeks	Rewrite Universal Gravitation	Yes
Today minus 1 weeks	Gravity Sim UI	Yes, it just needs a few more sliders but nothing major
Today	Camera Controls	Yes
Today plus 1 week	Graphs, FBDs, etc.	No, I kind of got sidetracked
Today plus 2 weeks	Finish adding systems and start on graphs, fbds, etc.	Switching to systems will also make adding graphs etc. easier

Reflection

In narrative style, talk about your work this week. Successes, failures, changes to timeline, goals. This should also include concrete data, e.g. snippets of code, screenshots, output, analysis, graphs, etc.

Adding camera controls was easier than I expected because I realized that instead of drawing everything in a different place I can just actually move the camera viewport. The only weird thing is how middle click drag movement works because I don't at all understand why it's not 1 to 1. I had to spend a lot of time with the entity component system which should've already been done. I decided to use the fastest library but it's not very mature at all. It's definitely easier to keep going with this library instead of switching to a more complete one though; the biggest problem is that there's no online documentation so I have to build it myself everytime I git pull. The performance decrease happens because the newer version of the ECS library wants a mutable reference to query objects when I'm querying entities even if I don't actually change the entities. Before, it was fine with an immutable one, so I don't understand why that changed.

I always want to include screenshots at the end of these but videos are way better and we don't have harry potter paper, so here's a link (the url is kind of sketchy but the site is convenient to upload to).

https://webm.red/bC7H