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Project: Orbital Mechanics Simulator

Total Hours per Week by Type of Activity

Week	Start	End	Supervisor discussion	Team discussion	Design	Coding	Documentation	Testing, debugging	Research, training, learning	Other	Total hours for the week
1	1/26	2/1	0.0	0.0	0.0	0.0	5.8	0.0	4.0	7.1	16.9
2	2/2	2/8	0.0	0.0	0.0	0.5	8.8	0.0	6.7	0.0	16.0
3	2/9	2/15	2.0	0.0	0.0	0.0	5.0	0.0	16.3	0.0	23.3
4	2/16	2/22	0.0	0.0	0.0	15.1	2.5	0.0	6.5	0.0	24.1
5	2/23	3/1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	3/2	3/8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	3/9	3/15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	3/16	3/22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	3/23	3/29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	3/30	4/5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	4/6	4/12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	4/13	4/19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	4/20	4/26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	4/27	5/3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	5/4	5/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	5/11	5/17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Semester Total			2.0	0.0	0.0	15.6	22.1	0.0	33.5	7.1	80.3

Activities Completed

Date	Start	End	Hours	Category	Description of completed task	Challenges and/or next steps	Reflection
Sun 1/26/25	4:00 PM	5:30 PM	1.5	Other	Reviewed course materials and communications on Blackboard & updated my calendar app with course calendar	Set up Fastmail so Blackboard notifications are not filtered as spam	
Sun 1/26/25	6:00 PM	9:00 PM	3.0	Other	Started filling out intake survey, preparing resume, and reviewing project proposal requirements	Finish intake survey and continue working on project proposal	
Mon 1/27/25	5:00 PM	7:05 PM	2.1	Other	Attended orientation & took quiz		
Wed 1/29/25	5:00 PM	7:00 PM	2.0	Documentation	Brainstormed ideas for project proposal. Talked to supervisor over text messages.	Design a project that meets course requirements & that I want to work on	Project needs to be complex enough, and ideally would solve a real-world need.
Wed 1/29/25	11:00 PM	11:30 PM	0.5	Documentation	Looked into timelog template and examples to determine what it needs to do		
Thu 1/30/25	12:30 AM	2:00 AM	1.5	Documentation	Adapted timelog template for my own needs		Added start and end times so it can calculate hours, and changed formatting.
Thu 1/30/25	3:30 AM	5:00 AM	1.5	Documentation	Filled out and submitted intake survey. Uploaded resume and saved as draft. Worked on project proposal.	Upload first timelog when it is done. Work on refining project proposal.	I have a supervisor but the project proposal is still very nebulous.
Thu 1/30/25	6:40 AM	8:40 AM	2.0	Research, training, learning	Research into project proposals and games that could be used as inspiration.		Could go back to ideas for projects I've been wanting to do going years back.
Fri 1/31/25			0.5	Other	Download and install Unity, Adobe CC, Maya, and other software that might be used for project.		
Fri 1/31/25	9:00 AM	11:00 AM	2.0	Research, training, learning	Research into game engines, physics, procedural generation, and other game-related topics	Pick a game engine & decide which area to focus on for differentiating this project from others	Orbital mechanics simulator suggested by ChatGPT seems like the best idea
Sat 2/1/25			0.3	Documentation	Write out reflections on time spent and submit time logs along with resume		
Wed 2/5/25	10:00 PM	11:59 PM	2.0	Research, training, learning	Researched terms and concepts used in project proposal survey		
Thu 2/6/25	12:01 AM	4:00 AM	4.0	Documentation	Updated project proposal & filled out related survey. Created GitHub Project issue tracker.		
Thu 2/6/25	5:30 AM	6:00 AM	0.5	Coding	Created & set up GitHub repo for the project		
Thu 2/6/25	6:00 AM	7:00 AM	1.0	Research, training, learning	Researched workflow & project management software involving Unity, Git, and Github	Go through Unity 3D tutorials	
Fri 2/7/25	1:50 PM	3:50 PM	2.0	Documentation	Further updated project proposal and survey		
Sat 2/8/25	12:01 AM	2:30 AM	2.5	Documentation	Completed and submitted project proposal and survey	Work out project schedule and scope	
Sat 2/8/25	11:20 AM	3:00 PM	3.7	Research, training, learning	Completed a Unity Beginning 3D Game Development tutorial	Continue with 3D tutorials	
Sat 2/8/25			0.3	Documentation	Worked on time logs and writing reflections		
Sun 2/9/25	12:01 AM	3:00 AM	3.0	Research, training, learning	Worked on another Unity 3D tutorial		
Mon 2/10/25	12:01 PM	2:00 PM	2.0	Supervisor discussion	Meeting with supervisor		
Wed 2/12/25	10:30 AM	11:30 AM	1.0	Research, training, learning	Research for Diagrams deliverables & GitHub Projects		
Wed 2/12/25	12:01 PM	2:00 PM	2.0	Documentation	Work on Diagrams slide deck		
Wed 2/12/25	2:00 PM	4:00 PM	2.0	Research, training, learning	Work through Unity 3D tutorials		
Thu 2/13/25	12:15 AM	1:30 AM	1.3	Research, training, learning	Work through Unity 3D tutorials	Tutorials are too basic or have irrelevant info for my project.	WIll probably have to figure it out on my own with Google searches.

Activities Completed

Date	Start	End	Hours	Category	Description of completed task	Challenges and/or next steps	Reflection
Thu 2/13/25	3:15 PM	4:45 PM	1.5	Documentation	Work on diagrams	Start sketching out UI next	
Fri 2/14/25	7:00 AM	8:00 AM	1.0	Documentation	Submit project tools survey. Create changelog and readme docs.		
Fri 2/14/25	10:30 AM	3:30 PM	5.0	Research, training, learning	Work through Unity Essentials tutorials		
Sat 2/15/25	7:00 AM	11:00 AM	4.0	Research, training, learning	Work through Unity Essentials tutorials		
Sat 2/15/25			0.5	Documentation	Update and reformat timelogs. Write reflections.		
Tue 2/18/25	1:50 PM	2:50 PM	1.0	Research, training, learning	Research on how to do various things in Unity, such Git LFS usage, floating origin, 64-bit precision, and custom models		
Wed 2/19/25	3:45 AM	5:30 AM	1.8	Coding	Create new project in Unity, set it up for Git, and check in to repo	Had to configure GitHub Desktop on Windows for long filenames & CRLF conversion	After doing some research, I think it would be better to use URP instead of HDRP, and to consistently use LF for line endings even on Windows.
Wed 2/19/25	8:30 AM	1:00 PM	4.5	Coding	Work on creating a solar system in Unity project. Convert to URP & set line endings to be LF. Delete old repo and start afresh with a new repo in order to stay within LFS limits.	Challenges: Solar system distances with 32-bit floats in Unity engine; Understanding how Git LFS works	Due to configuration issues, many large files were checked in to git. To undo this mistake, the old repo was deleted and a new one created in its place.
Wed 2/19/25			1.0	Documentation	Migrate issues to new project and add more tasks to do. Take screenshots of GitHub repo and project for slide deck.	Challenge was understanding how GitHub Projects work.	I created a new project in GitHub but I didn't need to. Now the URL needs to be updated.
Wed 2/19/25	9:00 PM	10:30 PM	1.5	Research, training, learning	Research how to add 2D and UI elements to a 3D scene	Challenges: finding the best practices for adding UI elements. I can think of many ways to do this, but what is the best way?	
Thu 2/20/25	12:30 PM	4:00 PM	3.5	Research, training, learning	Research orbital mechanics, Keplerian elements, and planetary data.	I found several sources of data with varying levels of precision and slightly different values. Challenge is deciding which to use and what level of precision is needed.	
Thu 2/20/25	9:00 PM	11:30 PM	2.5	Coding	Work on rendering orbit lines & camera control.	Challenge: getting used to how Unity scripting works	
Fri 2/21/25	2:15 PM	5:45 PM	3.5	Coding	Work on camera controls		
Fri 2/21/25	9:30 PM	10:00 PM	0.5	Research, training, learning	Research coordinate systems		Tricky part is when I need to apply rotations in 3d space so that the orbits have the proper shape and inclination
Fri 2/21/25	10:00 PM	10:30 PM	0.5	Documentation	Manage items in issue tracker		
Sat 2/22/25	10:00 AM	11:00 AM	1.0	Coding	Work on ability to change the camera's target		Half of coding time is looking up how to do things and could be categorized as research.
Sat 2/22/25	3:00 PM	4:45 PM	1.8	Coding	More work on camera control	Next steps: work on UI	
Sat 2/22/25			1.0	Documentation	Managing issues and recording time spent on tasks. Update diagrams slide deck & timelog.		Managing the project takes time away from research and coding, but it does help in prioritizing tasks and keeping on track towards a goal.
				Design			