

Grant Joyner

April 19, 2019

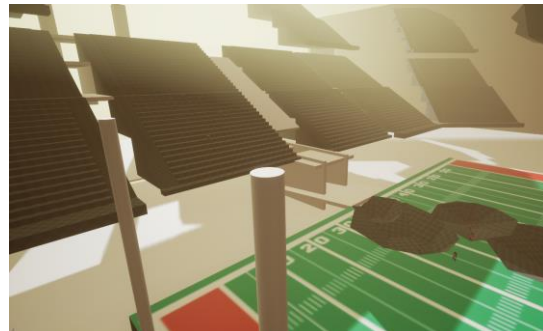
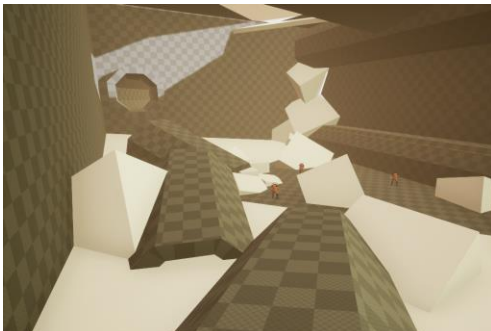
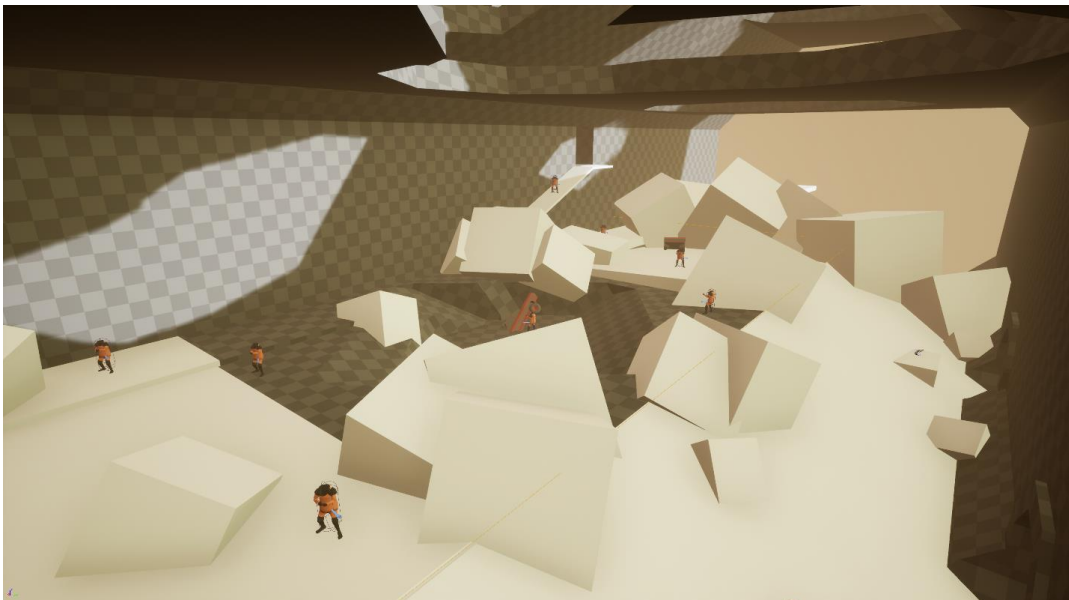
GAM450

Professor Jen Sward

Perdition: Crumbling Castle – Post-Mortem

Project Goals

- Exercise spatial design skills to design an engaging interior gameplay environment for an FPS
- Exercise user flow design skills through scene composition and implementing environmental mechanics that simultaneously guide the player and control pacing as the player learns how to interact with it
- Develop storytelling skills using environment as a primary tool to deliver and structure a narrative
- Develop pacing and difficulty design by creating encounters that use previously-taught FPS mechanics as well as challenge the player to experiment with new mechanics



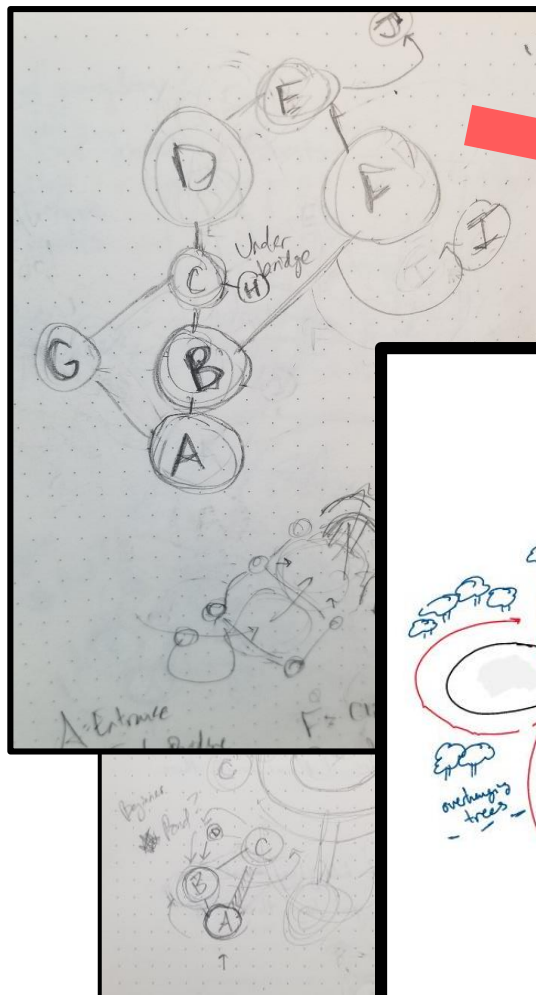
Accomplishments

Growing my level design toolkit - Molecular level design

For this project, I wanted to explore a new level design technique for pre-production called molecular level design. This technique allows the designer to consider how a level is mapped out in terms of player paths and directionality, time spent in different areas, challenge level of different areas, and other metrics. For this, the designer would draw a visual map with edges and vertices to illustrate these metrics without necessarily impacting the spatial design. Ideally, this technique would be used before even designing the physical space, since the alternative can restrict and repel the designer's ability to design these crucial aspects later on.

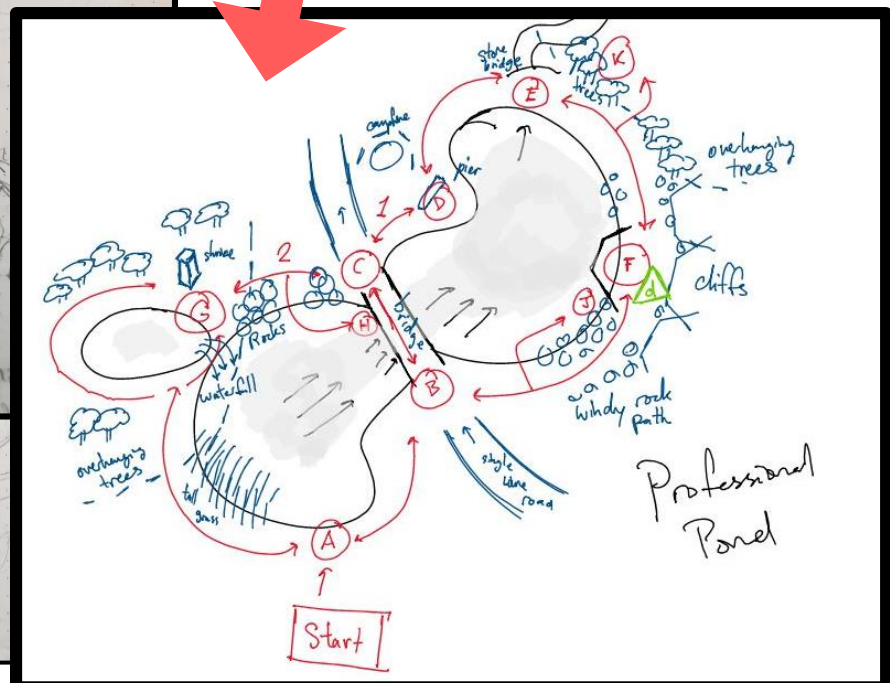
I employed this technique as quickly as possible, after writing my concept and before opening up the level editor. I started by using [this Gamasutra article](#) (URL included in References, since I have learned to never trust embedded hyperlinks) to research molecular level design concepts and see some examples.

I studied further just by browsing the internet for examples, and then I practiced by using this technique to design a fishing pond for a fishing game that I developed for GAT315.



With his newly-equipped skill, Grant could turn abstract, low-level graphs representing basic ideas like **player paths** (connected nodes), **area importance** (node size) and **pacing** (edge length)...

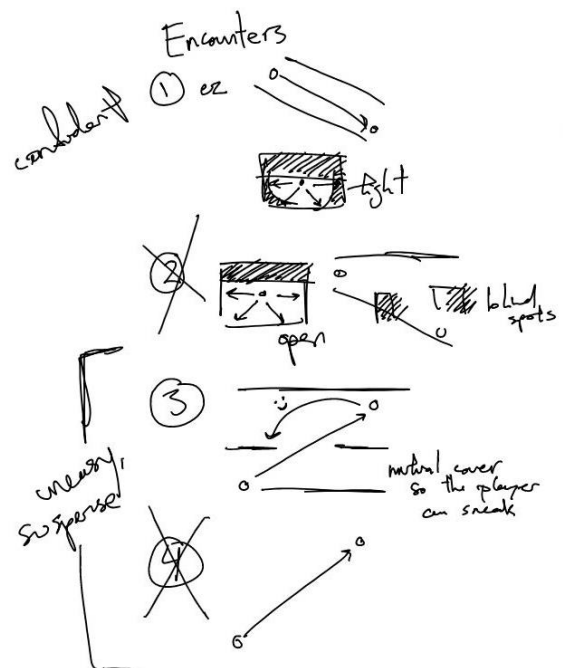
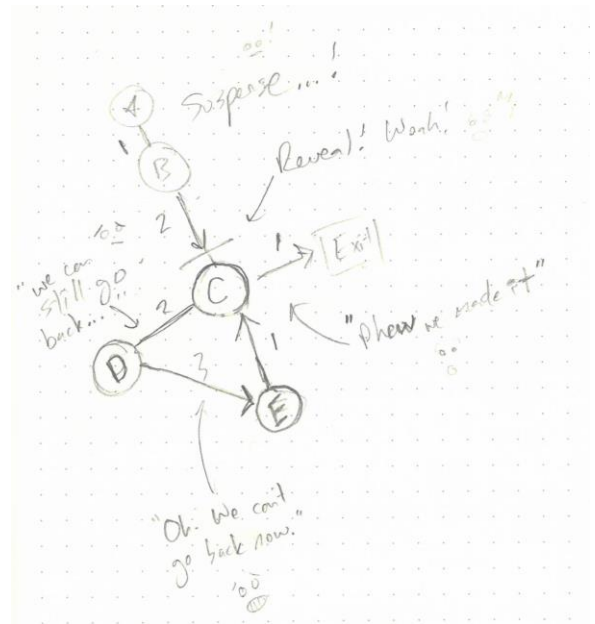
...into actionable overhead maps, detailing a layout for a level space!

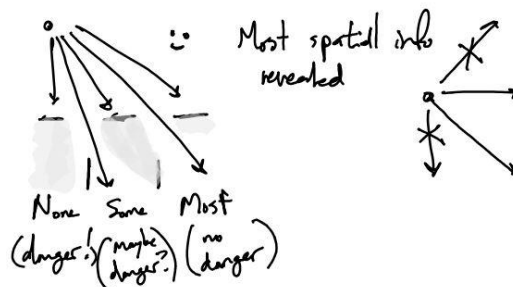
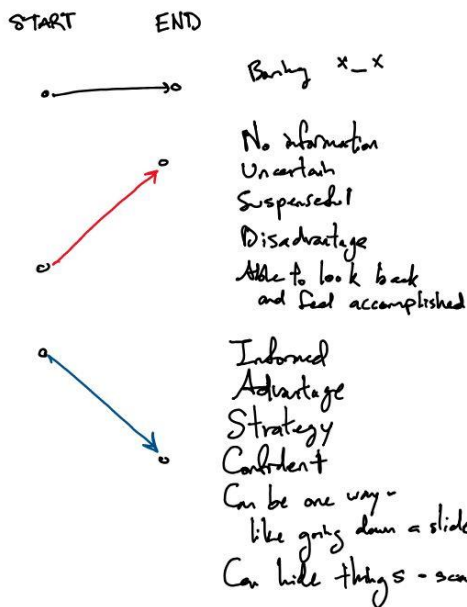


Finally, I used this technique to map out the level I wanted to make for Crumbling Castle! I also used these ideas to draw abstract concepts for encounters. In these models, I considered things like elevation, entry and exit points, range of sight, number of enemies, and the player's information of the space to tune my encounters based on the difficulty I wanted and the emotions I wanted to spark in the player. The first and second encounters in the level make great examples. (You can see more examples in my GDD!)

The first encounter is a warm-up encounter that is intended to remind the player of the shooter mechanics from the original Perdition. By starting the player at a high point and making the space open, I provide clear information of the space to the player and give them a killer advantage against their enemies. Additionally, I keep the player's range of vision tight by placing plenty of cover for them to use and limiting the boundaries of the space so they can pick their fights more easily. With all of these features, the player will have no trouble taking out the three enemies in the encounter, which is just enough to remind the player how the gameplay works and force them to have to throw their gun at least once. The latter is a key element of the gameplay that the player will appreciate being reminded of. The next encounter is a bit more difficult, offering a great chance for the player to use the Overdrive mechanic!

The second encounter is tricky because I subvert many of the things I did to help the player in the first encounter. Now that the player is tuned to Perdition's unique gameplay, I can challenge the player with a more difficult encounter that involves creating suspense and surprise. To do this, I cover the space in obstructions that make it difficult for the player to evaluate the space. I also place the player at a very low point of entry compared to the enemies to put the player at a disadvantage. They are below the playing field as they approach the encounter, and thus, they have less information about the space before going in. I use this to play a dastardly trick on the player by surprising them with a giant sinkhole on the field that they couldn't possibly predict from their initial position. This will throw the player off balance and force them to improvise in the middle of the encounter upon discovering this new development. By this point, the player probably has an Overdrive charged up, which they can use for when things get heated up!

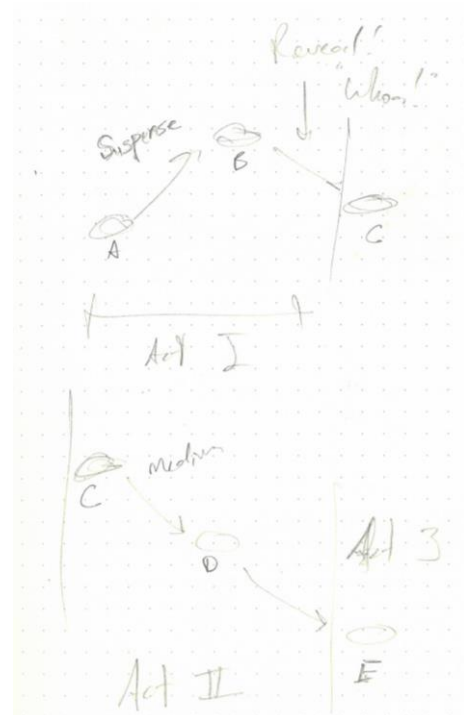
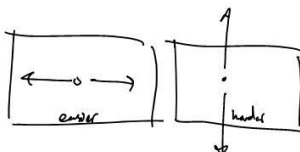
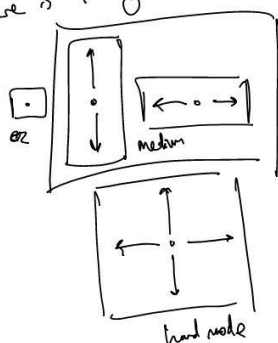
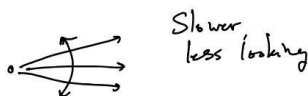
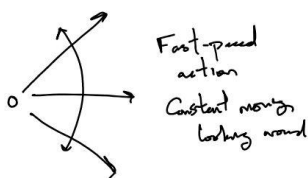




V. little spatial
info revealed



Which areas are we
looking at?
How many?
What is the range?
Where are we starting?
Where is the goal?



These are just a handful of the notes and ideas I wrote while designing my encounters that I used to draw up my concepts. Most of the challenge was delivering information to the player that would cause them to make informed decisions on how to enter or navigate through an encounter.

Depending on the information I deliver, the player will form a strategy for completing the encounter, and I can control how much information I throw at the player based on scene composition at entry points, considering elevation and obstructions.

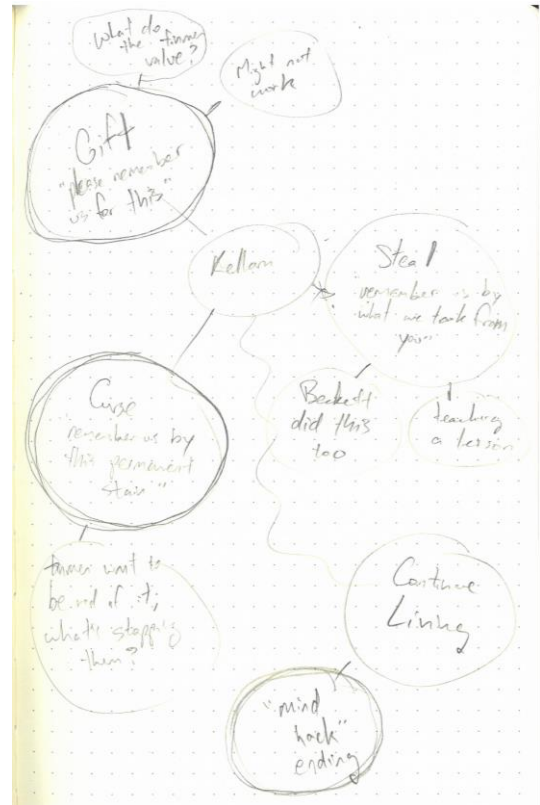
Additionally, I found that limiting or expanding the player's range of sight (i.e. how much they would need to look around and which directions they would need to look) would help or hinder their ability to strategize while in the heat of battle.

Exercising my Narrative Design skills

While designing the narrative, I also got a lot of practice in crafting a compelling narrative and a level space that feels fun to explore with the help of my teammates and the GAM professor Jen Sward.

My initial concept was ambitious; I wanted to take a world that already existed for *Perdition* and tell a completely new story in it with a new protagonist and a new setting. My idea started with a hero who wasn't seeking revenge in the way Beckett was in the original game. Beckett was motivated by anger towards the invaders and was willing to sacrifice himself to send a message to them. I wanted to tell a story about a person who was driven more by loneliness and felt confused about his own existence in this same world. I wanted this character to engage with the invaders in a different way than Beckett had, namely to engage with them out of desperation. If this character was threatened with being completely alone after his home planet had been taken from him, but the only source of companionship was the invaders who had destroyed it, what would he do?

I found this idea very enticing and exciting to think about, but I had trouble figuring out how to develop it and integrate it with my level. After creating the concept, I talked about it with previous teammates and the professor, who all helped me think about the motivations of the protagonist and the invaders. They also helped me think about the backstory behind the new protagonist and how the world changed after *Perdition* ended. Being asked these questions and continually asking more detailed and granular questions over time helped me develop the story of *Crumbling Castle* into what it currently is. It also helped me exercise a process that I can use for other narratives in the future.



People are like rabbits - defenseless, hopeless, doomed to live in hiding.
How does a rabbit survive? Does it become a carnivore? Does it mutate?
The tinmen come from another planet. They are an autonomous servant force that is sent out to harvest energy from other planets and bring it back to their masters.

Above, transcribed:

"[In *Perdition*,] People are like rabbits – defenseless, hopeless, doomed to live in hiding."

"How does a rabbit survive? Does it become a carnivore? Does it mutate?"

"The tinmen come from another planet. They are an autonomous servant force that is sent out to harvest energy from other planets and bring it back to their masters."

One of the challenges I faced in building the narrative was thinking about the relationship between my protagonist, Anthony Tucker, and the antagonist force known as the tinmen. Exercises like the ones pictured above were accomplishments in helping me overcome the roadblocks I was facing as I was building the backstory. This backstory was not only an important part of my project goals; it also helped me shape the level space to reflect and inform the player of the history of the world.

Challenges

My biggest failure on this project was getting distracted from solving problems and following my own process. This would usually happen due to trying to complete tasks earlier than I needed to, which would then restrict myself later on when I needed to go back and fix old problems without jeopardizing my work. This happened with both the narrative design and the level design, and the best solution was usually to recognize my mistake in working ahead and go back to do things correctly. Talking to people and showing them what I was struggling with helped me recognize my mistakes sooner.

One example was when I got stuck thinking about how to fill the space between the opening area and the football stadium. I had caught myself in a creative loop by trying to prototype the football stadium to see the scale of it and place it relative to the opening area. I wanted to frame the stadium in the distance so that a player might not know what it was at the beginning, which would set up a cool reveal later on. After whipping up the stadium prototype, I had a good idea of how large it would be, but now I was struggling to think of how to fill the gap between my opening area and the football stadium. My first idea was to fill the space with static objects like highways and billboards and roads and cars to engage the player until they hit the next narrative beat that I wanted. But each attempt I made felt shallow and empty, and trying to turn the space into an encounter didn't work since the space wasn't designed for it. I spent hours and hours repeating the same process of starting a new attempt and then getting frustrated when the effort didn't amount to something that was fun. It wasn't until I talked to the professor that I realized that I had trapped myself. I was focusing on work that needed to happen after the space had been designed. It didn't matter that the physical space abided by the molecular map I had designed; it wasn't going to feel engaging and draw the player along if that space didn't serve any purpose. So I cut my losses and hid the football stadium from the editor, and then I turned my focus towards designing encounter spaces forward from the opening area. This would let me think more about pulling the player through the space with each new area. It made the space easier for me to design since I wasn't restricting myself, and ultimately, it will help the player trust the design more.

What Should Be Done in the Future

In the future, I will always employ molecular level design during preproduction of my levels. It has been great for helping me visualize metrics across the level space which are otherwise difficult to think about. I will also try to use this to design other things, especially things that are non-linear. I would love to try designing a UI using the same technique.

I will also always gather feedback from peers about the things I'm designing. In past GAT classes, I have sometimes shut myself in a vacuum and promised myself that I would come out of the vacuum with something great. Playtesting is a particular challenge with any GAT class because it involves showing an incomplete product and asking another student to spend valuable time away from their own work on focus on mine. I'm trying to improve at recognizing that this way of thinking is a bad trap to fall into. I'm slowly becoming more comfortable with showing people an incomplete product, even showing them something I know is bad, to see if they can help me figure out what's bad about it. I think this will help me stop from walking into the traps that I might accidentally set for myself, like what happened on this project with getting stuck having to work backwards.

Lastly, I will keep the notes that I have taken from this project in terms of encounter design. I have made a lot of great notes from my own research of techniques to use to make players feel weak or strong, informed or uncertain, hopeful or hopeless, and in-control or overwhelmed, all just from the space. I always learn new things just from building new levels, and this project was incredibly fruitful for growing my toolkit for guiding the player's emotions through an experience. I was able to overcome some of my past confusions from lackluster GAT projects by revisiting these design concepts during this project, and I feel a lot more confident with being asked to craft an encounter space to meet certain parameters.

References

Gamasutra - The Metrics of Space: Molecule Design

https://www.gamasutra.com/view/feature/184783/the_metrics_of_space_molecule_.php