The topic for Module 3 has been computation, and this is the element of the course that I was most familiar with before having taken it! Aaron Reed's writings on AI Dungeon and Oregon Trail are two that I already know a fair bit about, having lightly played each. While I cannot claim to have taken the Oregon Trail myself, I'm well familiar with the tabletop games that AI dungeon seeks to emulate, and find it's been very interesting in its approach to doing so. Most games, such as the Legendary Divinity Original Sin 2, or Pathfinder: Wrath of the Righteous, take a tabletop RPG system and translate it into mechanics and rules. It can be a bit stiff, a lot unforgiving, but still a ton of fun because they only have to make one good adventure for the player to run though. It would be nice to have the variety to have a new game every time, but that's what playing real TTRGS with friends is for. Or so thought before we had the AI generated version.

See the below for a sampling of my fondness for these kinds of games! (I've played the below maybe 6 times with different groups, but only once all the way through.)
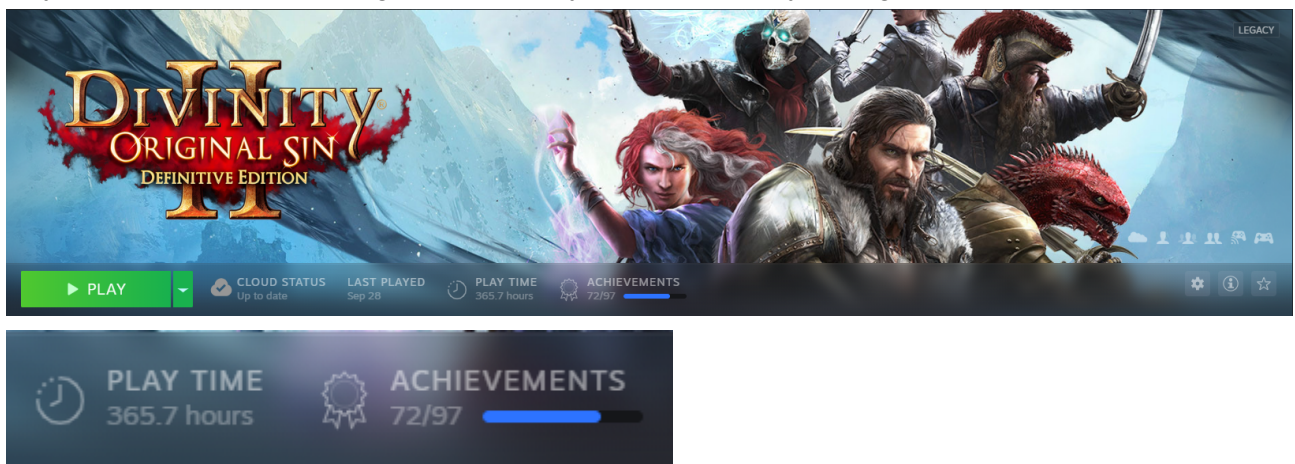
AI dungeon doesn't emulate any of the rules, but it takes the creative spirit of someone running the game for you. A personal experience, that's new each time and… *Usually mostly* makes sense. You can still, in the midst of any scene, 'pick up the cat' and have the system invent a cat for you to interact with, but it seems through this to more closely follow the rules of improv than anything. The tried and true 'Yes, And.' I was fascinated that this system used the same text generation that we had prior (GPT2). Of course, they've since moved to the modern GPT3, which he predicts is the iPhone of the next decade. That is to say, a revolutionary technology that will shape how the world develops. Of all the technology we've attempted to use this term, I think that actually getting my hands on the computational power of google and these AI generation networks is by far the coolest. It's not been something that I have had as much time to play with as I would have liked, but with my foot in the door it can be counted on that my curiosity will be piqued and in use during the winter break… And also for the unessay before it.

Which brings me to the topic that I have considered for this exciting task: I will be using Stable Diffusion to generate images of notable historical figures or current celebrities (and myself) with fun 'twists'. Broadly, I'll be following this guide by James Cunliffe, and I'll be embarking on this task alone. Not entirely alone, though, as a good friend of mine Justin Zhang has been playing with image generation of this nature for the last few months, and is quite happy to guide me to success when I am led astray. Combining Computation and playfulness, we may be able to tell a story through several generated images in a row. Something like a 0.1fps movie, if it works as well as I think it will. Hopefully it's a good way to represent the topics covered by the course!

When moving into Playfulness and Computation, using these elements historically is actually what I find to be the most difficult component. The systems we are practising are very versatile and

novel, but as a computer science student my mind isn't naturally inclined toward historical connections the same way that others in the class are. This is why sonifying data found in the field was so abstract to me! It was certainly cool, but I really had to wrap my head around what was going on and how this is in a way taking elements of the past and experiencing them honestly. More honestly than even a recreation or a movie might, in the case of something along the lines of the archaeology dig jingle that was presented to the class. While it was tweaked to sound more interesting (something I think that it succeeded with, it was actually pretty good), it's minor alterations to core data that makes it fun to experience. I've seen tables, and even though I'm a spreadsheets kind of guy I'll be the first to admit they aren't naturally fun. What is fun about data is thinking about what can be done with it, and this broader application really stretched my imagination.

I missed the day when everyone presented their songs for suspected illness, but Aidan told me about it and it sounds like this has fostered a long-term interest within him. As a digital humanities course, I expected this to push the envelope as to what can be considered when applying technology to other mediums - but I'm very pleasantly surprised by how philosophical things seem at times. Computers work in small, fundamental truths of on or off. Truths that we can build the entire operating system from, which makes, in a way, agent based models a lot like their own computing system. And those show how many things in reality, complex though they may be, have a few axioms of true or false that can define significant events. I once read a paper about how in a deterministic universe we may one day have enough information to predict the entire course of the future - to know what will happen from that moment until the end of time, if nothing at all is truly random. I don't believe that nothing is random and we have no 'real' free will, but these agent based models make me think that this could be the start of building such a system. A simulation of reality, where when every agent gets more and more complex and the rules so accurate as to model reality, we may essentially create a pocket-version of our own world. It feels almost silly to say, but these pocket-worlds are what we create with the models.

A great example of a pocket version of a world more directly is the creativity2/worldbuilding repository that was shared with me after interstitial 2's feedback. It's not Earth, but it is a rather lovely, changing map that gains its own history as the simulation plays. Populating it with histories and titles gives it a sense of authenticity, and it feels like the kind of thing that I would enjoy basing a Dungeons and Dragons setting on. However, we need to acknowledge that the purpose is to simulate the dynamics of political entities over time - the rise and fall of empires. Weaving in additional systems like the tributes and the like make this more than an agent based model, and provide a fascinating example of how the intersection of new mechanics can create very difficult results from either in isolation. I believe that a plague mechanic, a monster invasion mechanic, and a technology mechanic for example would each fundamentally alter the simulation through both its message and results.

Many, many systems exist in larger games. Especially in games that are based on world generation like Minecraft and Starbound. I bring up Starbound especially because after reaching Sean Graham's "An Approach to the Ethics of Archaeogaming", I recognized that this is one game that I naturally approached like an archaeologist when playing. Starbound generates a galaxy full of life, diversity, and meaning. You explore and exploit these worlds, but where my friends would always loot temples and the like for their unique stone and relics that might make good decor in a base somewhere, I always thought it was a bit of a shame to leave a part of the world in tatters for these ends. It was fun to imagine why one world might have airship pirates and feudal kingdoms beside others that contained toxified worlds with remnants of megacities. Starbound even has unique fossils on each world that can be excavated and restored in museum-style displays. These traits gave a unique story to every planet I visited, and had I some more foresight I would have recorded my specific thoughts at the time for reflection. Part of me thinks that making a journal of

these sorts of things would be a neat unessay, but I don't think it would be technical enough to be as satisfying as other ideas.

I didn't join computer science to do maths, see. I joined to do tech wizardry. I joined for the skills that I wouldn't know where to start with otherwise, and see where my interest takes me. In this way the agent based models and GPT generation have been some of the most fulfilling parts of my university education, and I was charmed to help my fellow students figure out netcode in class last week when we were puzzling out how to get the tutorial working! (It makes me think I should have been sitting up front with more students all year - my bad on that one.)

For this interlude, I will be using netcode to construct a small simulation! I aim to simulate the spread of a hoax, with ideas spreading between individuals that will change how they do their normal routine. Perhaps the people have two food sources, and they won't use one when they believe in the hoax. The second may be too busy and thus cause some sort of starvation or the like. This doesn't have too much of a point to it yet, but the goal above others is just to try the technology and do something neat!