Project Overview *[Maximum 100 words]*

Our project is to create a simulation of the *Plague* game. The point of the game is fairly simple, infect as many people in the world with a new type of killer pathogen. The user is able to choose the starter country to spread his disease and then he is able to see how long his disease will take to infect the entire population.

Results *[~2-3 paragraphs + figures/examples]*

At the moment we have three different countries for the user to choose where his disease will propagate from (screenshot #1) Once this is done, the disease starts to spread and infect more and more people. There are a few counters in the bottom right hand corner which allow the user to see at a glance how many people are infected, how many are dead, and how many are left alive (screenshot #2)

We have added the ability to upgrade the disease's features to make it even more contagious. The user is therefore allowed to press T, S, or A to upgrade a different disease ability. The first one is the infection rate, the second one is the death rate, and the third is the airborne rate which makes it easier to reach other countries.

Implementation *[~2-3 paragraphs + UML diagram]*

One design decision which impacted our overall project was how the game was going to function on the back end. We thought that we could have a doctor class and a virus class work alongside each other and that everything could be brought within a UI class. This brought in a whole realm of issues because we had to figure out if there were going to be rounds within the game, or if the game was going to function off of time. Yet we realized that it was easier to create a country object which would be responsible for its own population and how quickly the infection spread within it.

For our design, we had the game run with one class called "Countries" and a step function that allowed the country to perform certain tasks like spreading of the infection. We did that by keeping an infection rate and multiplying that by populations. With upgrades, we were able to allow the player to gain points and use those points to upgrade the infection rate. At a certain time/population infection rate, people would start dying and you can increase this rate by upgrading the kill rate. At the end when everyone is dead the

game would pause and you would be sent to an end game screen and the game is over.

Reflection *[~2 paragraphs]*

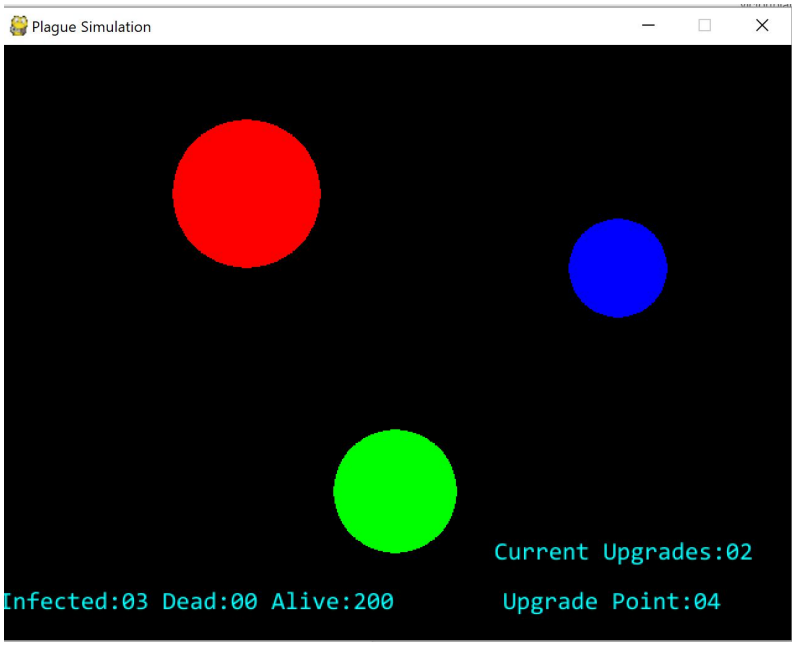
Our project started from the idea that we wanted to replicate the game called *Plague*. The game was fairly easy to understand and we believed that it was well within our abilities to replicate and within the scope of the class.

We started out the project by dividing up the code into three different parts; virus, doctor, UI. This proved to be a bad idea because we all write code differently and should have figured out the correct game mechanics first. Were we going to use time ? Or have multiple rounds ? These questions could have been solved by coding together instead of working separately.

Besides a few issues of scheduling meetings times, our group worked well together. We managed to figure out the different components to each function and appropriately divvy up the work. Going forward, a huge benefit to this group project would have been a communal brainstorming in the beginning to lay out the inner workings of the program and how each piece was going to interact with the others.

Screenshots:
1)

2)


Plague Simulation
Current Upgrades:02
Infected:03 Dead:00 Alive:200
Upgrade Point:04