1. Introduction: Provide a title and list of group members. Provide a description and overview of your project. Provide a description of your application design and details about the application software, possibly including a high-level diagram or description of the structure and flow of the application. (1-2 pages)  
     
   2) Project Results: Include a description of what you accomplished. Include specific successes and pitfalls in your project experience. Provide specific outputs or screen shots as part of the explanation of your results. Provide suggestions for future potential improvements. (1-2 pages)  
     
   3) Division of Work: For those working alone, provide a clear document of work accomplished. For those working in a group, describe and summarize the individual responsibilities and individual project work accomplishments. Each team member should submit a self-assessment paragraph describing details of his or her contribution to the project. (1-2 pages)  
     
   4) Bibliography:  Provide appropriate references for all articles, websites, and all code libraries you used in your project. (1 page)  
     
   5) Code Appendix: Provide the code you developed for the project. You may provide a link to a public code repository.

I have always loved the [Powder Game](https://dan-ball.jp/en/javagame/dust/) and [Langton's Ant](https://en.wikipedia.org/wiki/Langton%27s_ant) concept so I wondered if it would be possible to combine the two. I never found the perfect engine that has an easy way to manipulate pixels on the screen until I started programming in python. I decided to make a test simulation.  
  
This simulation started out as a basic proof of concept and was a way for me to learn Python and the API Pygame for a future class project at the end of a college semester. Overtime, I just added features here and there while I was studying in college and it began to grow into a game/simulation like program. Towards the end of the semester I was able to use my basic simulation for my final Python project! This allowed me to pour way more time into it then I had before.

It took many hours to create this simulation; mainly due to learning Pygame as I went but also due to the fact that I wanted to create everything from scratch (Not using 3rd party code other than Pygame/Python APIs). This includes all the sound effects you hear in the game which were made using my laptop and stuff around my desk. The music was downloaded from an opensource website (Credited in game). All art was created and is owned by me.