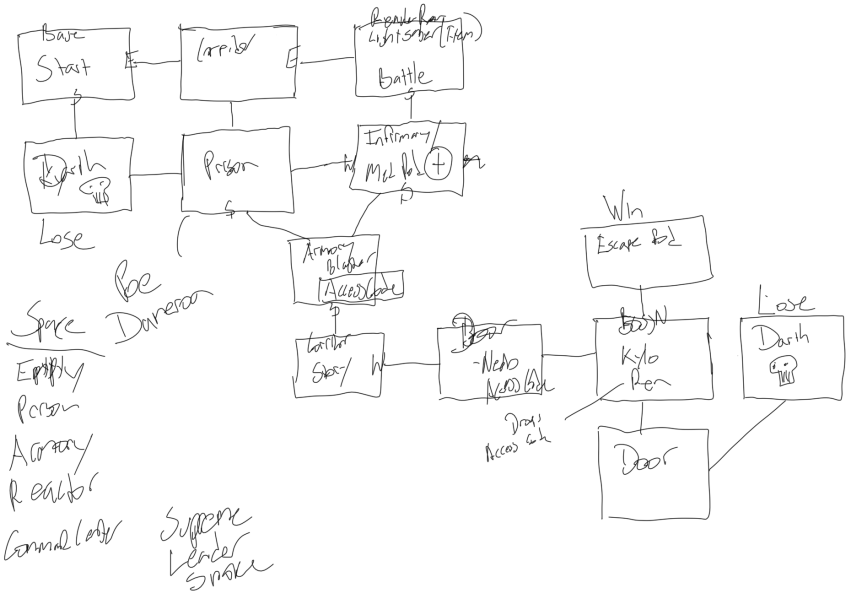
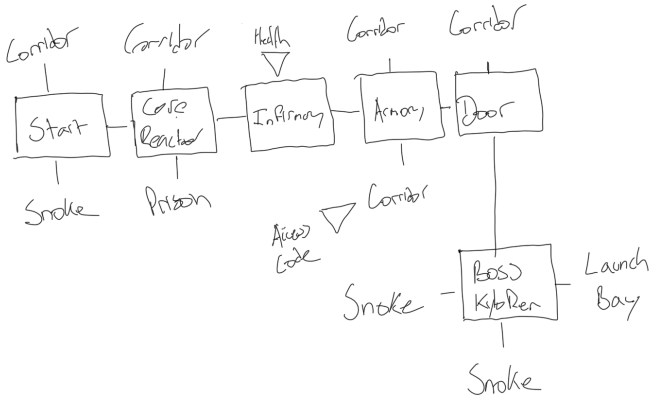
Name: Dustin Jones
Date: 12/5/17
Description: Final Project (Star Wars Text based Adventure)

Design

Problem: Implement program that simulates a Text Based Adventure game.





Pseudocode

Create a welcome message
Create menu()
    Play Game
    Exit
Setup Spaces
    Create each of the unique spaces within the game
Setup Map
    Connect unique spaces together to create a map
    Setup destructors to clear out the dynamically allocated spaces
Setup Item class
    This class will hold items and the items will have names and descriptions
Create Game Object to house menu and control flow of game
    Start the story
    Get name from User
    Create an inventory vector to store item objects
    Create a door scenario where user needs to pickup item with access code on it to open the door to the final boss.
    Require the user to pickup an item in order to defeat the final boss
    Require the user to interact with one of the spaces in some way
    Create different story outcomes based on how the user interacts with the spaces
    Create a win scenario
    Create a lose scenario
    Implement a health system that simulates a timer
Once the game has ended, loop the game menu to see if user wants to play again
If not, the game will exit and an exit message will appear.

Test Table

Test Plan	Expected Output	Actual Output
Input 1 to start game	Starts the game	Starts the game
Prompt user for name:	User enters name and name is used by program	Name was used by program
Input integer direction	Player is able to move in that specific direction	Player is able to move in that specific diretion
Input integer to access inventory	Inventory is printed	Inventory is printed out to screen
Input integer to pickup lightsaber	Lightsaber is picked up and added to player's inventory	Lightsaber was picked up and added to inventory
Player encounters Snoke	Game Ends	Game Ends
Player encounters Kylo Ren without lightsaber	Game Ends	Game Ends
Player reaches the Launch	Player Wins	Player Wins

Bay space		
Player encounter Kylo Ren with lightsaber	Game Continues	Game Continues

Reflection

This project happened to be the most challenging in the course for me since it was so open ended. I had trouble just actually getting started with this project since I had to come up with the concept from scratch. Rather than creating an entirely new storyline, I decided to "piggyback" off the Star Wars universe since it is a story that I'm familiar with and coincides well with the upcoming movie release. It was critical on this project to take the time before hand to come up with a design. I spent the majority of my time in the design phase envisioning how I wanted the game to play out. My original concept revolved around using a grid like map with the battle system from project 4, but I ended up abandoning the idea when I realized it would take more time than I actually had available. Eventually, my idea morphed into a more snake-like structure which had a clearly defined path with branches coming off the main pathway. I decided to go with this design because it was more modular and easier to lay out the game world without having to spend too much wiring up the Space object pointers. Once I had the game map laid out, I did encounter some issues getting the rest of the game mesh.

One of the first issues I encountered was which functions would I incorporate into the Space class to make it an abstract class. After spending some time programming the game, I realized I could incorporate unique menus and user input functions into each of the spaces. Because the map is a modular design, each module was completely unique which meant each one needed its own menu as well a validation system for the user input to the menu. This ended up working very because it gave me the flexibility to have specific actions occur on whichever space I wanted. An example would be with the Core Reactor room. This room was located right after the start area and contained the lightsaber object. The player is required to pick up this object this object in order to defeat Kylo Ren. Because the lightsaber was located here, I had to design a unique menu to display which reflected the option to pick up this item. The menu also had to update to reflect when the lightsaber was already gone. This was easy to accomplish since the menu was an abstract function.

Another issue that came up was implementing a game that had a simulated timer. Originally, I wanted to make the game similar to a choose your own adventure type, but realized that the game would be too short if the user did not have the option to go back and forth between each of the rooms/spaces. I ended up partially incorporating the idea by creating different outcomes to the game based on how the player interacted with the environment. If the player decides not to pick up the lightsaber, as referenced before, the player will eventually encounter Kylo Ren and this will trigger an automatic loss with a unique loss message. I found it appealing for the user to be able to encounter different outcomes since this could increase the re-playability of the game.

Overall, it is nice to actually have the final project completed and it was a great chance to implement all the concepts from the semester. Pointers, polymorphism, inheritance seem so much easier having spent so much time utilizing them throughout each of the assignments and I find myself increasingly using dynamic allocation to create temporary objects. I look forward to the oncoming semesters and being able to utilize the concepts that were taught in this class!