

Gretel Rajamoney

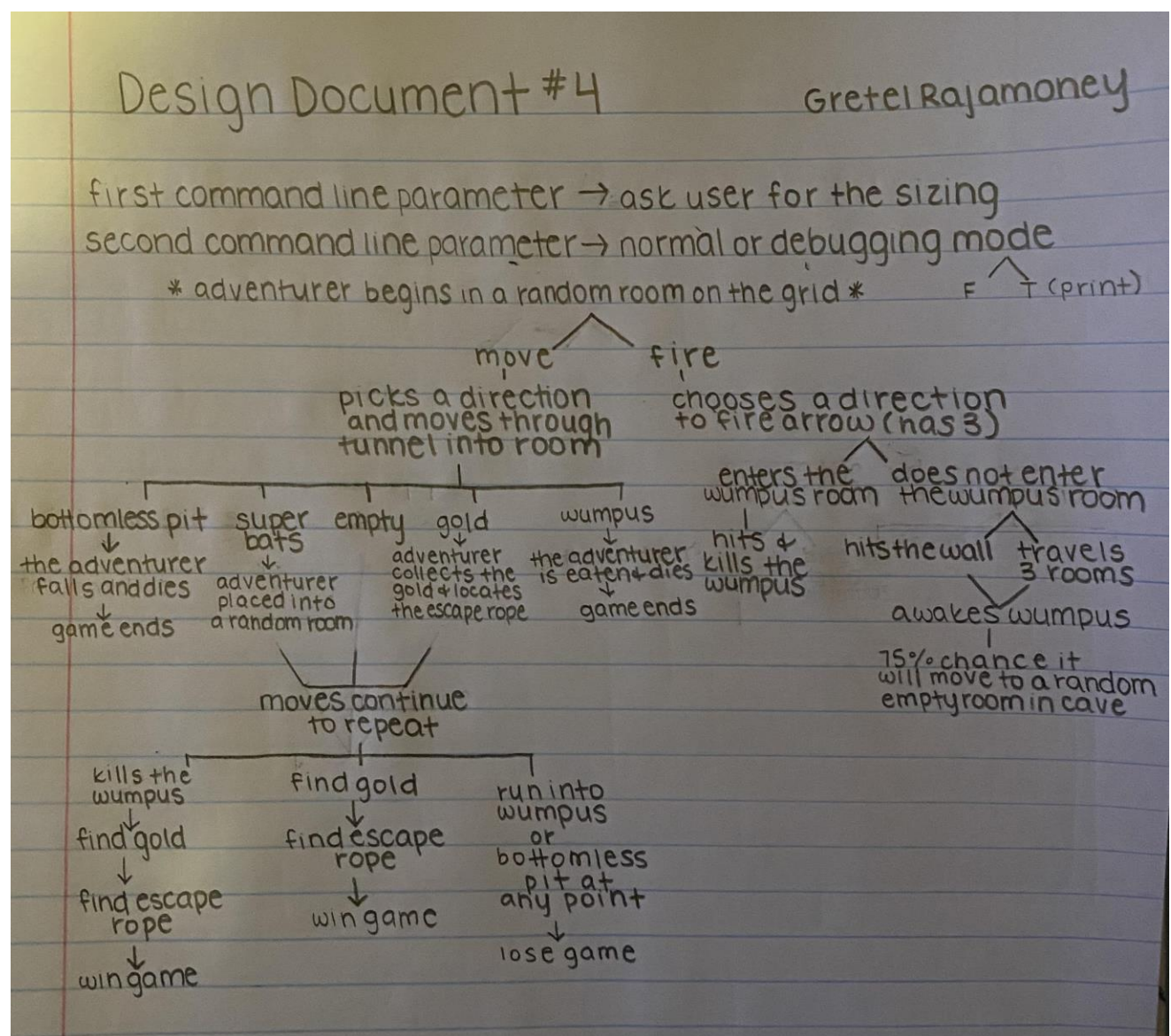
Design Document #4

2/23/2020

Understanding the Problem: I will be coding the game of Hunt the Wumpus. This game is set inside of a cave and involves a scary monster who hoards gold and eats people its sleep. The user's goal is to guide the adventure character to kill the scary monster named Wumpus, collect all the hidden gold, and then escape the cave alive. The Wumpus lives in a large cave filled with rooms arranged in a grid format, each of these rooms contains four tunnels leading to the directions north, east, south, and west. The game begins with the adventurer starting in a random empty room within the cave. The location which the adventurer begins in is also the location where the escape rope is placed. This escape rope is crucial to the adventurer because in order to escape the adventurer must complete the task and then locate the escape rope. All of the rooms located within the cave may either be empty, or they can contain one of four events. The possible events are: two different dangerous hazards, an encounter with the Wumpus, and lastly the gold treasure. The two dangerous hazards which the adventurer can potentially encounter are a bottomless pit, or super bats. If the adventurer enters a room with a bottomless pit, the adventurer falls and dies which unfortunately ends the game resulting in the user losing. If the user enters a room with super bats, the bats will take the adventurer and randomly place the adventurer in a random room. Whenever the adventurer is inside of a room that is adjacent to a room that contains an event, the player will receive a message informing them that they are nearing an event. If the adventurer dies while they are searching for the Wumpus, the user will be presented with the options to either start the game with the same cave configuration, start the game with a new cave configuration, or lastly to quit the game entirely. If the user safely navigates the adventurer through the cave, kills the Wumpus, located the gold, and returns to the escape rope unharmed, then the user wins. The user can also win the game is they complete all of the tasks without killing the Wumpus as well. During each turn, the adventurer has two options to choose from, either moving through a chosen tunnel into an adjacent room or firing an arrow in any selected decision. When the game begins the adventurer has three arrows, when fired the arrow continues flying in the same direction until it either hits a wall, or travels through three rooms. If the arrow enters the room in which the Wumpus is in, the arrow will pierce and kill the monster. Generally, the Wumpus sleeps peacefully, in order to wake the monster up you can either enter the same room as the Wumpus, or fire an arrow and miss striking the monster. If the Wumpus wakes up while in the same room as the adventurer, he will kill the adventurer out of anger, and then the game will end resulting in the user losing. If the Wumpus were to wake up from hearing an arrow being fired, there is a 75% chance that the monster will move into a random empty room within the cave in order to avoid being found. If the adventurer enters the room with the gold inside of it, the adventurer automatically picks it all up and carries it. When the adventurer is in a room

directly adjacent to the Wumpus, a message saying "you smell a terrible stench" will be printed to the user. When the adventurer is in a room directly adjacent to the super bats, a message saying "you hear wings flapping" will be printed to the user. When the adventurer is in a room directly adjacent to the bottomless pit, a message saying "you feel a breeze" will be printed to the user. When the adventurer is in a room directly adjacent to the gold, a message saying "you see a glimmer nearby" will be printed to the user. No messages will be pretended out regarding the escape rope, which means that the user either has to remember or guess until they are able to find it.

Devising a Plan/Design:



Testing:

<u>Actual</u>	<u>Expected</u>	<u>Actual Meets Expected</u>
Adventurer locates the gold	Gold is automatically picked up and carried throughout the game	
Adventurer enters room with bottomless pit	Adventurer dies and the game ends	
Adventurer enters room with super bats	Adventurer is placed into a random room	
Adventurer enters room with the Wumpus	The adventurer dies and the game ends	
Adventurer fires arrow and it hits the Wumpus	The Wumpus dies	
Adventurer fires arrow and it misses the Wumpus	Wumpus wakes up and the arrow continues flying until it either hits a wall or passes through three rooms	
Wumpus wakes up from sleep	The Wumpus will 75% move into a random empty room	
Adventurer fires arrow	Amount of arrows lowers by one, starts with three arrows	
Adventurer locates the gold, and find the escape rope	The user wins the game	
During every move	Hints are printed on the screen to the user as well as the game board	