Jonathan Jazdzewski
Final reflection
CS162

Spaces were necessary for this project so I created a base class with 4 pointers that each pointed to a space or nullptr. I also needed an action function, an enter function and a examine function. In this game each room you enter is not displayed until you examine it. These functions are pure virtual as they are different for each type of room. The last virtual function is showDirections which shows each direction the player can go in at the current time. The theme of this game is that you have a certain amount of gold, but need to give up some of that gold in order to make it out of the dungeon by answering math questions to unlock doors. There are also keys that unlock doors that have keyholes. The different types of rooms are corridors, which have nothing in them, locked door rooms, which have locked doors that need keys, and problem rooms, which require the player to deposit a certain amount of gold in order to answer the problem. If the player runs out of gold they lose, otherwise they make it out of the dungeon. There is also two other types of spaces which are the entrance and exit, however they are only used once each and don't have many interactions as they are simply used to make things easier on the player.

Originally I was going to have the option to input either a number or a letter, but it turned out that is was very complicated to put either a character or an int into a variable and it was difficult to get cin to go to two different variables at once. To combat this I added a character that can be input in order to ask for a number in order to get the answers for the problems. Another issue I had was with the problem rooms having a bool for if they were the last room or not. When I create all the spaces at the beginning before the game starts I was setting the bool on the last room to true, but this was instead setting the bools on every room to true and so once the first room was solved the player won. To fix this I took out the endRoom bool and instead created a final room which ends the game.The final major problem was with the problem rooms not displaying the problems that I had written. I had written the generateProblem function as a void function which set the problem string, however the local strings of the function weren't overriding the class-wide string and so I instead set the function to return a string that it took from a string array that contained each problem. Other minor problems included forgetting to subtract a key when used and messing up east and west when outputting directions.

Input	Expected output	Output
251	You can’t carry that much	You can’t carry that much
0	You must pick up some gold	You must pick up some gold
250,x,e,x,a,250	You have run out of gold and are trapped forever.	You have run out of gold and are trapped forever.
250….n,x,a,56,n	You have made it out with 109 pounds of gold!	You have made it out with 109 pounds of gold!
250,x,i	You have 250 pounds of gold and 0 keys.	You have 250 pounds of gold and 0 keys.
250,x,e,x,a,8	Your gold turns to lead A door slides open	You have made it out with 242 pounds of gold!(removed endRoom bool, replaced with endingroom class)
250,x,e,x,a,8	Your gold turns to lead A door slides open	Your gold turns to lead A door slides open