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Assignment: Final Project – The Devil's Office

Design Problem

My final project is a simple text-based adventure. The premise is that the protagonist needs to get into his boss's office in order to convince him to void his contract. The game draws inspiration from games and media such as the Dark Souls series, Monty Python and the Holy Grail and Arabian Nights.

Several things were required in this project:

- Space base classes with several derived classes
 - Implemented own map container
 - 4 pointers
 - Player can interact with environment
- Time/step limit
 - Implemented here as HP (health points)
- Items container
 - Implemented as a vector container
- Player has to fulfill requirements
 - Get access key and defeat the final boss

Classes

- Space
 - Store
 - Puzzle
 - Monster
 - Boss
- Character
 - Protagonist

High Level Pseudo-code Design

- Ask user to start the game or quit
- Display intro to story and instructions
- Create maps, protagonist and containers
- Ask player to select class of character
 - Soldier
 - Sorcerer
 - Or customize character attributes
- Ask player to buy equipment
 - Has choice to level up a random attribute
- Move character
 - Store:
 - Can buy weapons or level up attribute
 - Puzzle:
 - Plays scenario
 - If won, gains two points
 - If lose, loses one point
 - Could gain an item (magical lamp)
 - Monster:
 - Fights a monster
 - If won, continue game
 - If lost, game over
 - Could gain an item (access key)
 - Boss:
 - Subset of Monster class
 - Plays special scenario
 - If won, game is won
 - If lost, game is lost
 - Game over

Testing Plan

Test Case	Input Values	Functions	Expected	Observed	Action
Normal menu choice	1 or 2	menu, validInt, validChoice	program to execute code corresponding to choice	program runs as expected	None
invalid integer	any letter, word or string of characters, or negative numbers	validInt	program will ask for user input again	programs runs as expected	None
quitting after starting	2	validInt, validChoice, menu, main	menu returns that the user chose to quit	program quits as expected	none
Edge cases		Game, Map	Character does not move	program runs as expected	none
Use potion	1	Game(), Character(), recover(), useItem()	recover some health points, then consumes one potion	as expected	none
Use magical lamp	2	Game(), Character(), Protagonist(), setIntel(), useItem()	increase Intelligence attribute and consume one item	as expected	none
lose to monster		all, Monster(), monster.interact(), protagonist	program should not crash	program runs as expected	none
valgrind		all	program should not have leaks	program has no leaks	none
go to boss without key		Game(), Monster(), Map()	player goes back to starting position	as expected	none
defeat boss	try until it occurs	all	game is won	as expected	none
lose to boss	try until it occurs	all	game over	as expected	none
lose puzzle		Game(), Puzzle()	player loses points	as expected	none
win puzzle		Game(), Puzzle()	player gains an item and some points	as expected	none

Table 1: Testing Plan

Reflection

This was probably the most fun I've ever had working on a homework assignment. I really enjoyed how much freedom we had to design this program, as long as we meet the loose requirements. Coding went very smoothly, the design probably took longer. Designing and balancing a game is certainly not an easy job, but definitely rewarding.