CPSC 2720 [Fall 2020]

[A Team]

[Team A]

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INTRODUCTION

This project's purpose is to create a text adventure game. Our game Treasure Map is a dungeon crawler based in an old fantasy world. The player will have to solve puzzles, talk to NPC’s and fight off the dangers of our fantasy world to finish their quest. This project has four members and will be coded in C++. In this project our team will learn about software development and its challenges. Some of these challenges include dealing with project management, risk management, and the development process.

Storyboard

Prologue

You find yourself living an impoverished life. Young and weak, you huddle against a wall outside warmed by a travers oven under the starless sky. Thinking about how you ended up here, you hear an armed man strolling down the streets, bragging to his comrades about a magic map that will lead him to fame and riches. Perhaps this is a chance given by the gods that you thought had abandoned you.

Chapter 1 the tavern

Slipping into the tavern unnoticed, you can overhear more about what is going on with this map. You can steal the map if you wait for him to celebrate into a drunken mess, or persuade him. Once you have acquired the map, you may leave for the forest following the directions upon the map.

Chapter 2 the forest

Night still holds the sky as you leave the town. Wandering in the forest, a fog starts to grow until you can no longer tell which way you are going. You may stumble upon monsters or the hermit. The hermit, living in a lonely hut, seeks nothing but a quiet life. You may talk to him to acquire equipment to help you in your journey, or if you are rude he may kill you. Once out of the fog you will find an unassuming cave entrance leading down.

Chapter 3 the cave

In the cave lies a stone door with a plack of black metal embedded into the center. Upon the plack is engraved a riddle. Once answered the door will open, leading you further into the depths. A branching path is found. You find yourself at the start of a maze. Once through you'll find yourself before a massive room of marble and gold. The gold piles shake and a rumbling echoes throughout the cavern. Gold tumbles down the piles and a figure rises from its gold tomb. A dragon shrouded in darkness with blazing eyes. If spotted a dialogue is started and you must persuade the dragon. Be it a battle of riddles or sleight of hand, you must escape with your life, with or without the loot.

Epilogue

If you steal you would get a pouch of gold to live your new life with.

If you persuade the dragon for its help he would give you a magic book teaching you something so few people know, Magic.

PROJECT MANAGEMENT

This section of the project will cover the means by which we deal with and prevent issues during all phases of the project and the roles of each member. Risk management is an important part of this project and all foreseeable problems will be dealt with before our team runs into them.

TEAM ROLES

QA lead: Will assure that the work done is of quality. This includes work done in both code and in writing (project documents).

Phase Lead: Will keep the rest of the team members on track and ontime. Will also oversee important submissions and that the overall phase is complete.

Librarian: The Librarian will be in charge of recording important data, as well as working on the reports during that phase of the project.

Lead Game Developer: Will be the primary force behind the code design and writing of code during that phase of the project.

Team Members	Design	Implementation	Testing/Maintenance
Joshua Carruthers	QA Lead	Phase Lead	Lead Game Developer
Zach Kraus	Phase Lead	Lead Game Developer	Librarian
Brett Wells	Librarian	QA Lead	Phase Lead
Zane Wigley	Lead Game Developer	Librarian	QA Lead

RISK MANAGEMENT

Our team will mitigate the issue of creating too big of a project to finish by making sure at each step of the design phase, we make sure that our ideas will not be too complicated to code. It is important to keep the project simple. In order to be prepared to deal with parts of the project taking longer than expected we will make sure we have the option of extending our meetings, allowing us to take more time if we need it. To mitigate the risk of running into major design issues during the implementation phase, our team will talk about what our UML diagram will

work in terms of both ideas and code. The problems that come from people are all being solved by starting the project phases early. This way no matter what happens our team will have enough time to work around these problems. In order to prepare for setbacks and problems with using new tools we will make sure we work with the tools together. This way the members of our team can help each other understand the new tools and software.

DEVELOPMENT PROCESS

For our development process communication will be key. We will all be on the same branch so communicating what changes have been made will be vital in process. Letting other members know of changes will be done through Microsoft teams and Discord. Each team member will be expected to pull before they push and write a helpful commit message on their update. Bug reports are to be done by each member as bugs are found to avoid forgetting to report a bug.

Software Design

View figure 1 in APPENDIX A
View figure 2 in APPENDIX A
View figure 3 in APPENDIX A

CODE REVIEW PROCESS

Due to changes in the project requirements there will not be a code review process in which other students outside of our team will provide suggestions. What our team wrote during the implementation phase is the final product of this project. All code review has been done by the team and its members prior to project submission. Our team reviewed our code during each one of our meetings to make sure the implementation performs as expected.

COMMUNICATION TOOLS

Our team used two platforms to communicate over the course of this project. We used discord for our meetings as it has easy functionality that all project members are comfortable and proficient with. Microsoft Teams was used primarily to schedule our meeting times and share the occasional document.

CHANGE MANAGEMENT

Our team handled all changes in “person” during our meetings. This was done to eliminate as much confusion over the changes as possible. No major changes came about during our implementation due to a well planned out design. The only change that occurred was with the Room class. Josh and Brett dealt with the change in implementation during one of our scheduled meetings.

SOFTWARE DESIGN

For our software design we decided to make a majority of the classes subclasses of the Game class. We are also using ENUMs for our MOVE and ACTIONS class.

DESIGN RATIONALE

It is logical to have the majority of the classes be subclasses of the game class as they all share some commonality. In the case of this project it is that Environment, Item, Room, Character, Player, and Npc all have a description and or a name. The decision to make the ACTIONS and MOVE classes ENUMs is logical because of the simplicity to implement and use those classes with the other classes.

APPENDICES

APPENDIX A: FIGURES AND TABLES

Figure 1.

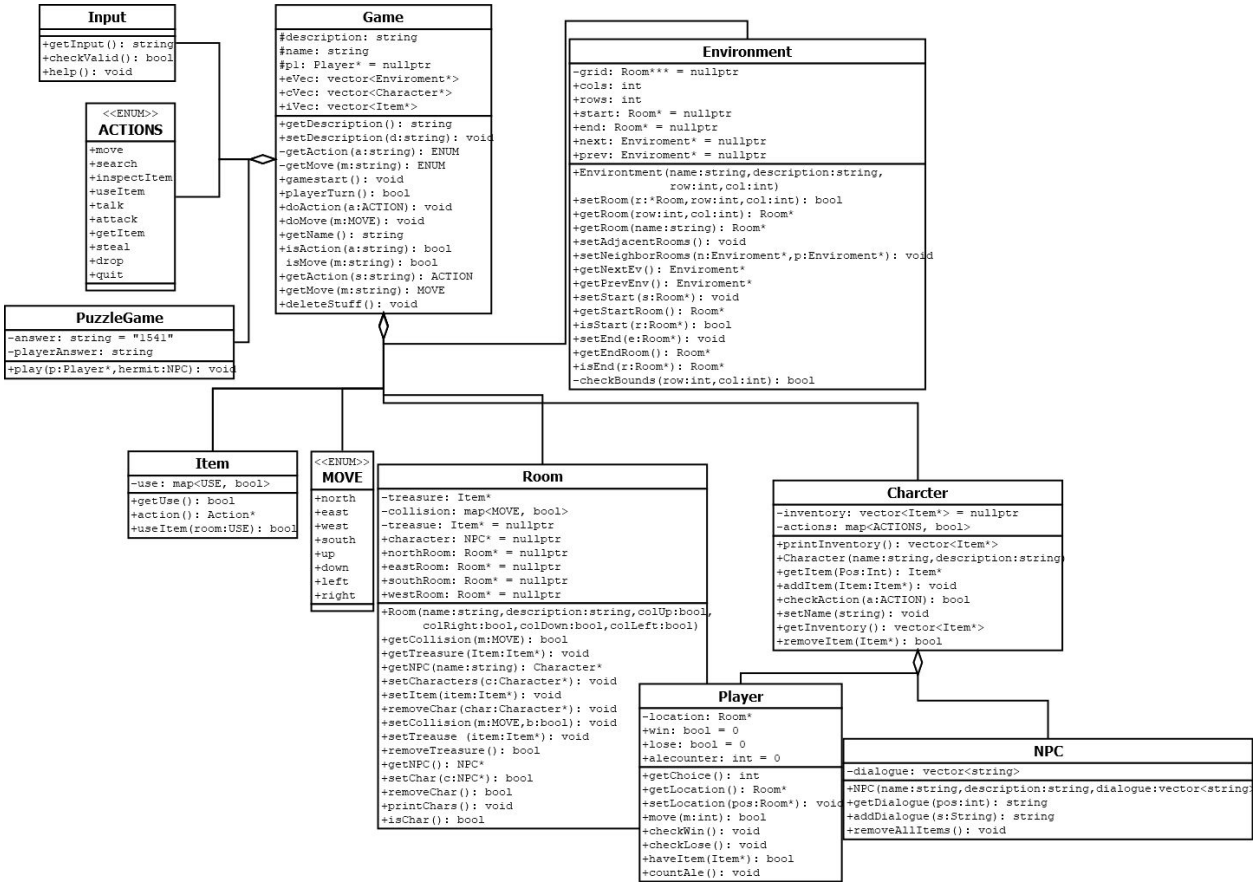


Figure 2.

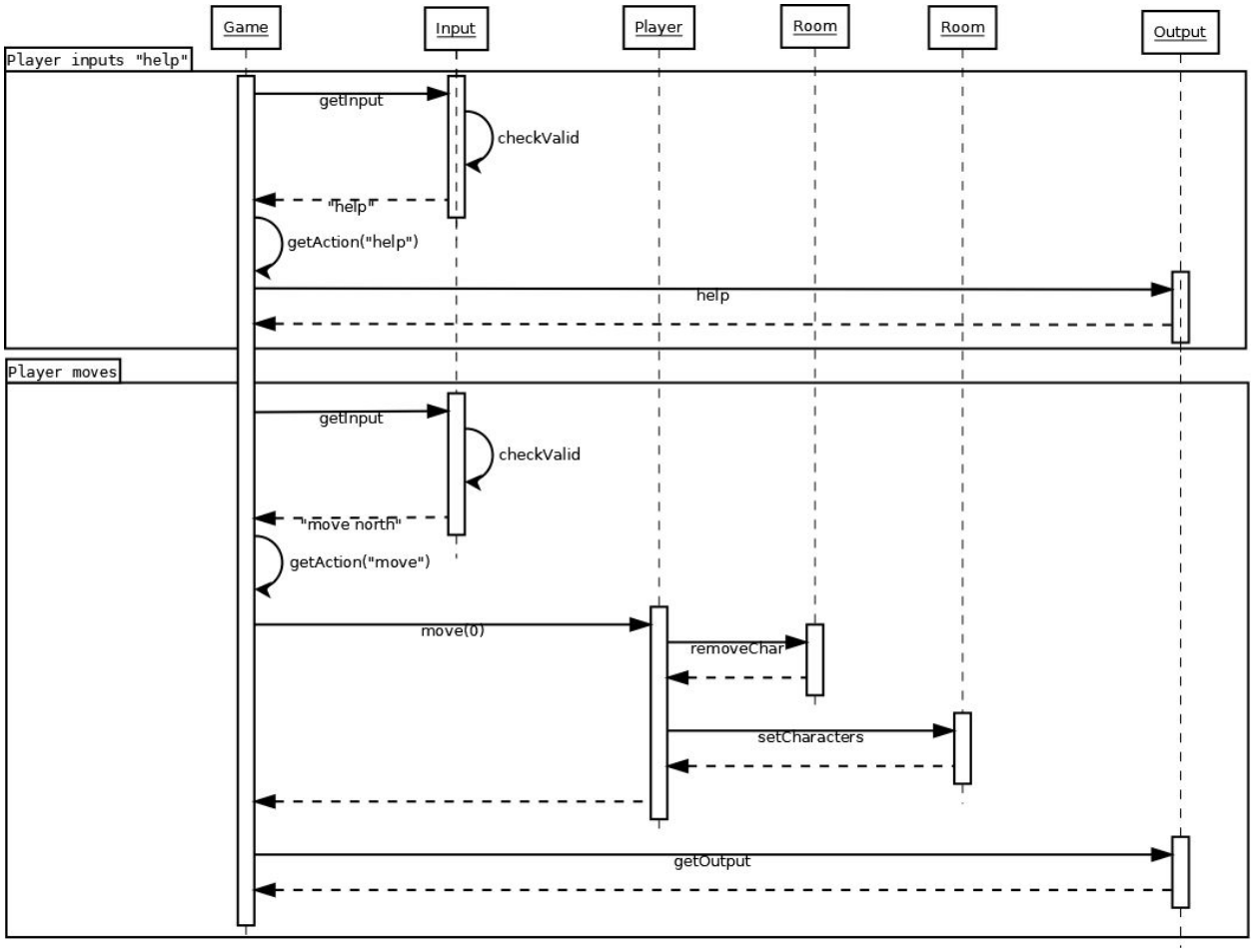
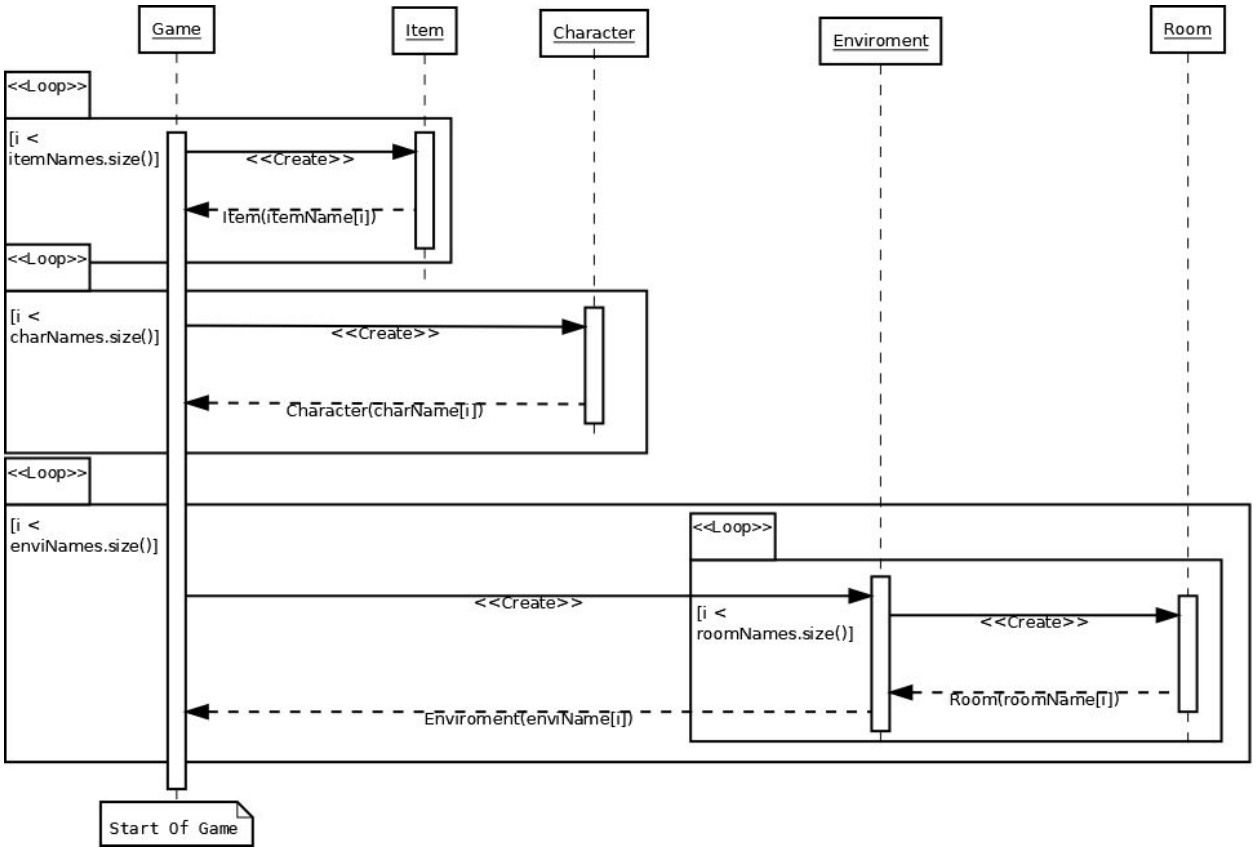

Game
Input
Player
Room
Room
Output
Player inputs "help"
getInput
checkValid
"help"
getAction("help")
help
Player moves
getInput
checkValid
"move north"
getAction("move")
move(0)
removeChar
setCharacters
getOutput

Figure 3.


Game
Item
Character
Enviroment
Room
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[i < itemNames.size()]
<<Create>>
Item(itemName[i])
<<Loop>>
[i < charNames.size()]
<<Create>>
Character(charName[i])
<<Loop>>
[i < enviNames.size()]
<<Loop>>
<<Create>>
[i < roomNames.size()]
<<Create>>
Room(roomName[i])
Enviroment(enviName[i])
Start Of Game