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**Software Requirements Specification**

**for**

**<The Pyramid’s Lost Treasure >**

**Version 1.0 approved**

**Prepared by <Michelle, Ravjot, Kiet, Ebube, Greg>**

**<organization //Software Development Group 3>**

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| --- |
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**<02/17/2023>**

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**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Kiet | 02/25 | Changes in 5.x-non-functional requirements and 4.4-Communications Interfaces for more clarity | 1.1 |
| Ravjot | 02/25 | Changes in 1.4 scope, 2.1 perspective | 1.1 |
| Michelle | 02/26 | Changes in 1.1 purpose, 1.4 scope, 1.5 references, 2.1 perspective, 2.2, product perspective, 2.5 constraints, 2.4 operating environment, 6. glossary | 1.1 |

# 1. Introduction

## 1.1 Purpose

*<Identify the product whose software requirements are specified in this document, including the revision or release number. Describe the scope of the product that is covered by this SRS, particularly if this SRS describes only part of the system or a single subsystem.>*

*This srs is written for The Pyramid’s Lost Treasure, a text-based adventure game consisting of at least 30 rooms, 5 monsters, puzzles, and items to solve the puzzles or to help the user on their journey.*

*Version 1.0*

*3 revisions as of 02/25/2023*

## 1.2 Document Conventions

*<Describe any standards or typographical conventions that were followed when writing this SRS, such as fonts or highlighting that have special significance. For example, state whether priorities for higher-level requirements are assumed to be inherited by detailed requirements, or whether every requirement statement is to have its own priority.>*

*Highlighted portions of the srs indicated important information such as room names, exit names, items, commands, etc.*

## 1.3 Intended Audience and Reading Suggestions

*The intended audience of this srs is for the team developing the game developers and users. The rest of the SRS contains descriptions, features, and different requirements needed for the game organized in that order. A suggested sequence for reading is top-down or to find a specific section the reader is interested in.*

1.4 Project Scope

*The project scope is that there will be a text-based game called, “The Pyramid’s Lost Treasure”. In this text-based game, the user will input commands and a prompt will appear with new information, this will repeat with different locations and scenarios until the user beats the game or loses.*

*The main theme of the game is that the user is stuck in a pyramid and must find the treasure hidden within and escape while surviving obstacles in their path. The player got here while taking a trip to Egypt where he wandered upon a hidden entrance to a pyramid in the desert that shut behind him. Using their knowledge and will to survive, the player pushes forward defeating enemies and solving puzzles. The user interacts with the game by typing commands.*

*There will be different monsters that the player will encounter. The monsters will include spiders, giant bats, scarabs, mummies, and snakes. The user can choose how to interact with the monsters such as avoid, fight, run, attack.*

*There will be riddle like puzzles in the game, blocking the user’s path until reaching a solution. A single puzzle will be a riddle that the user must solve to continue progressing.*

*It establishes the functionality and development requirements for version 1 of The Pyramid’s Lost Treasure as well as the expected performance.*

## 1.5 References

*<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.>*

*References for the game include Mini Games 1 and 2 code.*

# 2. Description

## 2.1 Product Perspective

*In Pyramid’s Lost Treasure the user will move from room to room seeking the treasure in the pyramid. The player will navigate the rooms using commands “north”, “south”, “east”, and “west”. When the player enters a room, dialogue will appear describing the room, monsters if there are any, puzzles if there are any, and items in the room if there are any. Commands such as “look” or “investigate” allow the user to look at various items. The user will use commands such as “pick up”, “drop”, or “use” to interact with the items and apply them to their surroundings. The puzzles will be simple riddles that they answer with a simple phrase or one word response. For example, “what is the capital of Georgia”, the user would input “Atlanta”. Another example is that the user encounters a room with a locked door, but a key is in the room with them. The user can choose to pick up the key with “use” or “pick up” to unlock the door. When a monster is encountered, the user should have the option to attack or run away from the monster using “fight”, “attack”, “flee”, “run”, or other such types of action commands.*

*Any input that is invalid, such as invalid commands, directions, or phrases entered should be handled via exceptions, should provide the user with an appropriate message such as “Invalid direction”, “you cannot go north here”, and loop back to allow the user to enter a valid input.*

*The Pyramid’s Lost Treasure is a new, self-contained product.*

## 2.2 Product Features

*The game will contain multiple rooms with exits, puzzles, items that help the user solve the puzzles or assist them with defeating enemies, and puzzles for the user to solve. The user will be able to navigate through the pyramid and its rooms by using commands such as north, south, east, and west. The users will encounter monsters in some rooms, and some will contain items.*

*Rooms,*

*Exits*

*\*\*If at any time the player enters an invalid direction, it should be handled via exceptions and prompt the player to enter a valid direction. The program should display the following message or another similar message.:*

*“You can’t go that way! Enter a valid direction to move on!”*

*The player should be able to enter directions until a valid one is entered; therefore, the direction prompt should be looped.*

*1. Hidden Entrance*

*After exploring much of Egypt on your vacation, the last thing on your list was to explore a great pyramid! Trekking around, you’ve stumbled across a hidden entrance that no one else has seemed to find. You decide to go in as there is a rumor to be lost treasure at the bottom.*

*Valid response: “east” or “e”*

*EAST 2.*

*2. Antechamber*

*The chamber is intricately decorated with many vases, hieroglyphs, and images. There seems to be images depicting people fighting spiders, snakes, and bats. Otherwise, there is nothing interesting here, so it’s best to keep going.*

*Valid responses: “east” or “e”, “south” or “s”*

*EAST 3 SOUTH 4.*

*3. Guardian Chamber*

The room is dimly lit, with torches flickering on the walls, casting eerie shadows across the room. In the center of the chamber stands a colossal statue of an ancient pharaoh, its eyes seemingly watching the intruders. The room is filled with an ominous atmosphere, as if warning you of the danger ahead. The air is thick with the scent of ancient dust and the faint sound of whispers can be heard in the background.

Valid responses: “west” or “w”, “south” or “s”

*You can go WEST 2 SOUTH 6*

*4. Corridor of Shadows*

The walls of the corridor are adorned with intricate hieroglyphics, telling the story of ancient pharaohs and their conquests. The corridor is poorly lit, with only a few flickering torches spaced out along the walls, casting strange shadows that seem to move and shift. The air is cool and damp, with a faint musty smell. As you walk down the corridor, they may feel a sense of unease, as if you are being watched or followed. Strange whispers and creaking sounds can be heard in the distance.

One of the torches seems loose, like it detaches from the wall. Maybe you should pick it up in case there are more dark spaces in the pyramid.

>user can enter pick up to pick up the torch

>user can enter use torch to use the torch

Valid responses: “north” or “n”, “east” or “e”, “south” or “s”

*NORTH 3 EAST 5 SOUTH 7*

*5. Room of Urns \*\*contains scarabs?*

*Upon entering the room, you are greeted by visions of dusty urns and pillars. There’s a noise coming from the urns that sounds like skittering. You inch closer to one of the urns and reach out to tip it over. Scarabs scatter about, chasing after you. They seem to fear your torch when you turn it toward them, but the next door is close as well*

*>player can input use torch*

*>player can input run then direction*

*Valid responses: “north” or “n”, “east” or “e”, “west” or “w”*

*NORTH 2 EAST 6 WEST 4*

*6. Hall of Statues*

The hall features rows upon rows of towering statues of ancient pharaohs, gods, and other mythical creatures. The air is still and heavy, giving the player a sense of awe and reverence as you explore the chamber. The Hall of Statues is a place of mystery and wonder, immersing the player in the rich culture and mythology of the pyramid's creators. You see a reflection of something shiny in the corner and go to investigate. It seems to be some kind of health potion. This could come in handy later if all those sounds and images indicated what may lie ahead.

>player can input pick up health potion

Valid responses: “north” or “n”, “west” or “w”, “south” or “s”

*NORTH 2 WEST 5 SOUTH 10*

*7. Chamber of Secrets*

The room is small and cramped, with walls made of rough stone and no windows or sources of light. The air is stale and musty, as if the chamber has been sealed for centuries. In the center of the room stands a pedestal, upon which rests a mysterious stone slab. The slab says, “The rooms behind will remain sealed until the riddle is solved.” Below the slab is a dirty piece of old parchment encased in an ornate frame. It reads, “What can’t talk but will reply when spoken to?”

>player can only exit other rooms once the user enters a correct response if an invalid response is entered, text should display

“That was not the right answer. Try again.”

>player can input “Echo” to solve the riddle

>once user enters the correct, game should display the following:

“All rooms are now unlocked”

>player enters which direction they want to go

Valid responses: “north” or “n”, “west” or “w”, “east” or “e”

*NORTH 4 WEST 8 EAST 9*

*8. Grand Staircase*

*The door opens to a giant spiral staircase covered in cobwebs but is still undeniably beautiful.* Each step is made of polished stone, giving off a faint sheen that glimmers in the torchlight. The staircase is also flanked by intricate murals and frescoes, depicting scenes from ancient mythology and history, and providing insight into the culture and beliefs of the pyramid's creators. There is a full canteen of water lying on one of the stairs. It doesn’t look to old, but there’s no telling how deep the pyramid goes so you may want to pick it up.

>player can enter pick up water

Valid responses: “east” or “e”, “west” or “w”

*EAST 7 WEST 1*

*9. Room of Reflection*

As the door creaks open, you look around and see a room consisting of countless mirrors arranged in a complex pattern. The mirrors are polished to a high sheen, creating an endless array of reflections that stretch out in all directions. The room is dimly lit, with a few flickering torches or lamps casting shadows and distortions on the reflections. There seems to be an old sword in the corner of the room. You should probably take it just in case.

>player can input pick up sword

Valid responses: “west” or “w”, “east” or “e”, “south” or “s”

*WEST 7 EAST 10 SOUTH 11*

*10. Spider Cavern \*\*spiders*

*The room is completely dark, but you can hear some scurrying across the floor. You lift your torch to see better to see hundreds of shiny spider eyes staring back at you. There is a strange totem in the corner beside you. It looks like a miniature totem that is shaped into a phoenix. It may help you if you fall victim to any creatures. The spiders start to close in around you. They are covering the other ways out so you must fight them off!*

*>player can enter pick up totem*

*>player can insert use torch or use sword*

*>if the player does not enter use torch or use sword, spiders can attack the player*

*“You aren’t using anything to fight off the spiders and now they’re attacking you!”*

*>if player takes 3 hits from spiders the player dies but can be resurrected via the death totem. If the player dies, text to be displayed should be:*

*“YOU DIED. Maybe use the phoenix totem”*

*>player can enter use totem to be resurrected*

*>if player does not use totem, they start at the beginning*

*Valid responses: “south” or “s”, “west” or “w”*

*SOUTH 12 WEST 9*

*11. Secret Passage*

The passage is narrow and cramped, with walls made of rough-hewn stone or packed dirt, and no sources of light or air. You must crawl through a tight space quickly to find another door. Along the way, you come across another health potion.

>player can enter pick up potion

Valid responses: “west” or “w”, “east” or “e”

*WEST 9 EAST 12*

*12. Tomb of Pharaohs*

You emerge in a spacious and well-lit room, with flickering torches or lamps casting shadows on the walls and floor. It seems to have been reserved for the burial of the most powerful and revered rulers of ancient Egypt. The air is thick with the scent of incense and ancient spices, adding to the room's mystique and aura of reverence. There is a very decorated sarcophagus in the center of the room. At the head of the sarcophagus, there is pedestal with an empty bowl. The pedestal has text etched into it that reads “What is empty must be filled. Without this the Nile would run dry”.

>if player tries to enter a direction before the riddle is solved, they get a message that says

“You must solve the puzzle first.”

>player can enter use water

Valid responses: “east” or “e”, “west” or “w”, “south” or “s”

*EAST 13 WEST 11 SOUTH 14*

*13. Hieroglyphics Hall*

You enter a vast and impressive room covered from floor to ceiling with intricate carvings and inscriptions in the ancient Egyptian script known as hieroglyphics. The room is dimly lit, with flickering torches casting shadows on the walls and illuminating the countless symbols and pictographs that cover every surface. While the room is beautiful, there is no way out. You must turn back.

Valid response: “west” or “w”

*WEST 12*

*14. Hall of Echoes*

The air is heavy with the dampness of the underground environment, and the echoes of every sound reverberate through the space, creating a haunting and ethereal effect. Your footsteps echo loudly throughout the chamber. Your resounding footsteps are a bit unsettling, so you decide to keep moving.

Valid responses: “north” or “n”, “west” or “w”

*NORTH 12 WEST 15*

*15. Burial Chamber*

*This room resembles the Tomb of Pharaohs, but not as grandiose. It is filled with many sarcophagi and seems to be a place where those that were closest to the pharaohs were buried. There are many gold vases and beautiful paintings included in the room.*

*Valid responses: “south” or “s”, “west” or “w”*

*SOUTH 19 WEST 16*

*16. Chamber of Sacrifices*

*The room is very dimly lit and seems almost empty. You can hear light sounds that seem to be coming from the ceiling. You raise your torch to see giant bats hanging. The light of the torch awakens them, and their ferocious screeching makes you clasp your ears in pain. You see another phoenix totem on the ground. They begin to circle around you. Fight them off to move on!*

*>player can enter pick up totem*

*>player can enter use sword*

*>if player dies player can enter use totem*

*>if player does not use totem, player must start at the beginning.*

*Valid responses: “east” or “e”, “west” or “w”, “south” or “s”*

*EAST 15 WEST 17 SOUTH 18*

*17. The Pit*

*The room is covered in cobwebs and dust. There is a set of hieroglyphs and images depicting violence and death on the wall. You raise your torch, but it does not help much. There air is thick and menacing. There is no way out, but the way you came. It is a dead end. Turn back!*

*Valid responses: “east” or “e”*

*EAST 16*

*18. Chamber of the Sun*

*Torches immediately light upon entering the room. There is a giant statue of the sun god Ra at the center of the room. You can see evidence of many offerings to the sun god as there are ornate vases, paintings, and jewels strewn about. At the base of the statue, there is another riddle to get into the other rooms. It reads “What goes up but never comes down?”.*

*>if the player does not enter the correct answer, display the message:*

*“That is not the correct answer. Please try again”*

*>if the player enters the correct answer (“Age”), display the following message*

*“The statue of Ra begins to turn, and it unlocks the other doors. You may continue your journey”.*

*Valid responses: “west” or “w”, “east” or “e”*

*WEST 16 EAST 19*

*19. Room of Enigmas*

The room is dimly lit, with torches or candles casting flickering shadows on the walls and floor. The air is thick with the scent of incense and mystery, and a sense of intrigue and curiosity permeates the space. You see a phoenix totem laying on the ground, what luck! The light from your torch reflects off something in the corner of the room and you find that it is another health potion! However, all the doors seemed to be locked with a mechanism making it impossible for you to pass through. There is an inscription at the base of a long-dry fountain.

It reads: “The more of this there is, the less you see.”

>if the player enters the correct answer (“Darkness”), the following message is displayed:

“The mechanisms sealing all the doors shut are lifting! You may proceed on your journey”.

*>if the player does not enter the correct answer, display the message:*

*“That is not the correct answer. Please try again”*

*>player can pick up totem*

*Valid responses: “west” or “w”, “east” or “e”, or ”south” or “s”*

*WEST 15 EAST 20 SOUTH 21*

*20. Snake Pit \*\*snakes*

*Hissing greets you as soon as you open the door. It is full of snakes! The air is thick with the scent of venom and danger, and a sense of fear and unease permeates the space. You tremble with fear. You see no door on the other side of the room, so it looks like a dead end. You should turn back before you get bitten by a snake! Run!*

*>player can enter run*

*Valid response: “west” or “w”*

*WEST 19*

*21. Chamber of Flames*

The room is well lit and bright. There are beautiful murals on the walls and large stone pillars hold up the ceiling. The walls are adorned with ancient torches, casting flickering shadows across the room. The floor is made of blackened stones, and there are narrow walkways that wind their way through the chamber. There doesn’t seem to be anything menacing in here and it seems like it was a room for relaxation and spending time with friends. You move on to the next room relieved to have a break from the madness of the pyramid.

*Valid response: “south” or “s” or “west” or “w”*

*WEST 19 SOUTH 22*

*22. Throne Room*

The Throne Room is an expansive chamber with high ceilings and grand pillars that stretch towards the ceiling. The walls are adorned with ornate tapestries and glistening jewels, casting shimmering reflections across the room. At the far end of the chamber sits a magnificent throne, made of pure gold and encrusted with precious gems. The throne is set atop a raised dais, and behind it, there is an intricate mural depicting the rise of the ancient pharaohs.

You enter the Throne Room; they are struck by the majesty and opulence of the surroundings. The room is illuminated by flickering torches that cast an amber glow, creating an almost ethereal atmosphere. The air is thick with the scent of exotic incense, and the sound of rustling silk can be heard in the distance.

*Valid response: “east” or “e” or “north” or “n”*

*NORTH 21 EAST 23*

*23. Hidden Corridor*

*You enter a dim, dusty corridor with old hieroglyphs on the walls, which describe the pharaohs who once roamed these corridors. As you advance a few feet, you become aware of torches flickering on either side of the tunnel, illuminating the way in front of you. Far off in the distance, you can hear the faint sound of water trickling. As you move through the constrained space, the walls feel as though they are closing in on you.*

*Valid response: “west” or “w” or “south” or “s”*

*SOUTH 24 WEST 22*

*24. Flooded Chamber*

*The sound of flowing water hits you as soon as you step into the room. The bottom half of the walls are partially submerged in murky water, which has reached your ankles. The smell of damp earth and humidity are pervasive in the air.*

*Valid response: “east” or “e” or “south” or “s”*

*EAST 25 SOUTH 26*

*25. Chamber of the Moon*

*As you enter the room, you are immediately struck by the serene and peaceful atmosphere of the room. Deep blue and silver paint in elaborate designs that show the moon’s phases cover the walls. There is a light wind blowing through the room, and the air feels pleasant and comforting.*

*Valid response: “west” or “w” or “south” or “s”*

*WEST 24 SOUTH 27*

*26. Tomb of the Sphynx*

*You are immediately impressed by the atmosphere of ages-old mystery as soon as you step into the room. Walls are composed of aged stone and are adorned in carvings and hieroglyphs that represent scenes from a long-ago era. Long shadows that dance over the walls are created by the flickering torches that dimly light the space. In the middle of the room is a large stone tomb elaborately carved with sphinx symbols and other enigmatic creatures.*

*Valid response: “south” or “s” or “east” or “e”*

*SOUTH 28 EAST 27*

*27. Crystal Chamber*

*You are amazed as soon as you go inside the Crystal Room because of what you see. The room’s walls and ceiling are built entirely of gleaming, translucent crystal, which reflects the torches’ light and causes a rainbow of hues to fill the space. A light hum permeates the space, as though the crystals were vibrating with energy.*

*Valid response: “north” or “n” or “west” or “w” or “east” or “e”*

*NORTH 25 WEST 26 EAST 29*

*28. Chamber of the Dead \*\* has mummies*

*The Chamber of the Dead is a solemn and eerie room that exudes an aura of quiet reverence. The walls are adorned with elaborate carvings depicting ancient funerary rituals, and the floor is covered in a thick layer of dust and debris. The air is heavy with the scent of decay, and the room is illuminated by flickering torches that cast long shadows across the walls.*

*You feel uneasy as you step into the room. The ground starts shaking and mummies bust out of the floor! They begin to move towards you! In order to get out you must make your way out the way you came. Try to avoid the mummies but use your tools if you need to!*

*>player can enter use sword*

*>player can enter run away*

*“Whoa, that was close! You almost ended up a mummy yourself. Move on before they decide to come out.”*

*>if the player hits the mummies 3 times, then they defeat the mummies*

*“You have defeated the mummies! Now get outta here before more decide to come”.*

*>if the player gets hit by the mummies 3 times, they die but can be resurrected by a totem or return the beginning if they do not.*

*Valid response: “west” or “w”*

*WEST 26*

*29. Secret Vault \*\*contains a key to unlock the next door*

*There is an air of mystery and hidden power as soon as you walk into the room. The chamber is small and has stone walls. Flickering torches in the room create gyrating shadows on the walls. The next area of the dungeon can be reached through a large, metal door that appears to be locked.*

*A little pedestal in the middle of the space holds a key that shines in the low lighting. The meticulously sculpted, gold key is embellished with priceless diamonds. Ancient runes and symbols have been carved onto the stone floor all around the pedestal. You can feel the strength coming from the symbols, which proves how crucial this key is.*

*>player can enter use key*

*>player should not be allowed to proceed without using the game. If the player attempts to move on without using the key, display the message:*

*“The door is locked; it seems you need a key to get through!”.*

*Valid response: “east” or “e” or “west” or “w”*

*EAST 30 WEST 28*

*30. Bottom of the Pyramid*

*As soon as you enter this room, you are completely enveloped in darkness. High ceilings and substantial stone pillars sustain the weight of the pyramid above in the room's large layout. The ground is uneven, there are broken stones and other debris all over it, and you can hear water dripping far away.*

*WEST 29*

*Out*

*Commands:*

*North, South, East and West for direction commands.*

*>Player can enter “go \_\_\_\_\_\_\_\_” to go to another room*

*Fight, Attack, Run:*

*>Player can enter “attack \_\_\_\_\_\_\_” to attack an enemy*

*>Player can enter run to run away from enemies.*

*Use:*

*>Players can enter the use keyword to use an item, for example, the player simply enters “use sword” or “use water” or “use torch”*

*Quit:*

*>The player can enter Q or Quit at any time to quit the game*

*Help:*

*>Player can enter “H” or “Help” at any time to display a list of commands and item descriptions to the player*

*Items:*

*Phoenix totems: Resurrects the player upon death. If totems are not found or used, then the player must start at the beginning.*

*Water canteen: Player can use the water at any time, but there is a puzzle that uses the water to solve it.*

*Sword: Players can use the sword to fight off enemies!*

*Torch: Can be used to fight off enemies or light up dark rooms*

*Health potions: Increases the players health pool*

*Key: Used to solve a puzzle in the pyramid*

*Enemies/Monsters:*

*Giant Bats*

*Spiders*

*Mummies*

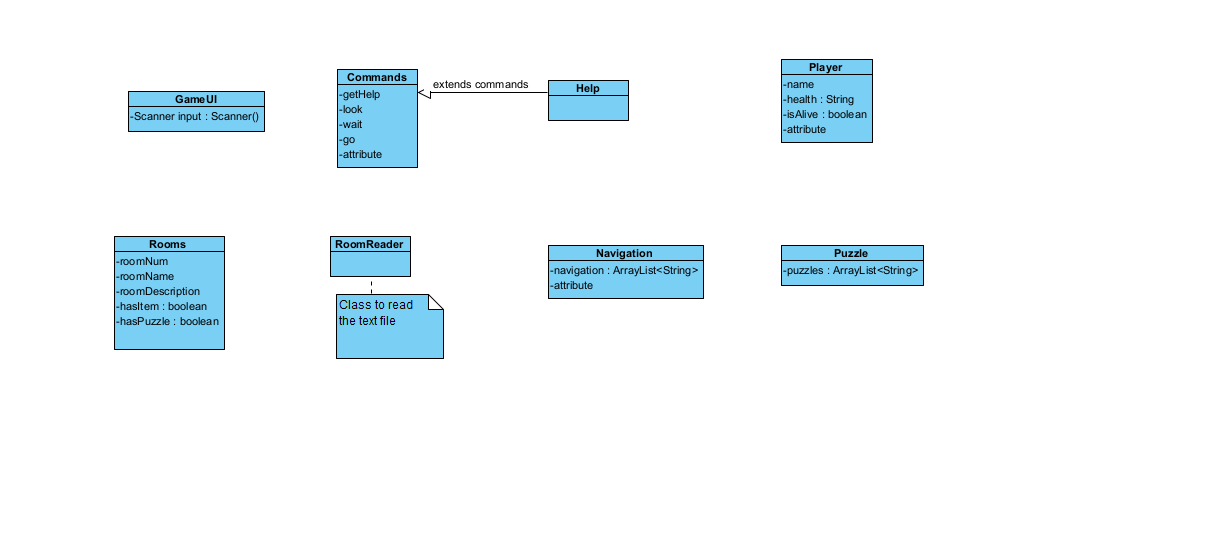
*Snakes*

*Scarabs*

*Puzzles:*

*3 riddles that require a single phrase answer*

*Using a key to unlock a door*

*\*\*Loosely made class diagram included*

## 2.3 User Classes and Characteristics

## 

*There is no specific user class, any user should be able to interact with the game via the console/command line. It is a simple text-based adventure game. The gameUI will provide all the prompts and directions for the user and the help class is available if needed to provide information like hints or details about commands. The commands are simple “look”, “go”, “wait”, etc. and information about the commands should be provided upon start of game.*

## 2.4 Operating Environment

*The game will operate on the command line and the operating environment will be any computer that has JVM installed. Developers will provide a bat/shell file and ensure that the class path is correct.*

## 2.5 Design and Implementation Constraints

*Performance requirements include that the system must give the user a response within 5 seconds following user input. All exceptions must allow the user to re-enter input using loops and display an appropriate message such as “invalid input”.*

## 2.6 User Documentation

*<List the user documentation components (such as user manuals, on-line help, and tutorials) that will be delivered along with the software. Identify any known user documentation delivery formats or standards.>*

*A “ReadMe” file will be provided to the user explaining how to begin and play the game. There will be a list of commands that the user can use in the game. The valid commands are “pick up”, "look”, “go”, “wait”, “fight”, etc.*

*The user will enter one of the following commands to interact with their environment and to travel between rooms.*

*Commands:*

*North, South, East, West*

*Fight – Attacks the monster*

*Run – Run away from monster*

*Hide – Hide from monster*

*Pick up – Picks up an Item*

*Use – Uses the equipped item*

*Q or Quit – Exit the game*

*H or Help – Retrieves a help menu for the user that displays the commands and item descriptions*

*The ReadMe file should also include a list of items and their descriptions for the players:*

*ITEMS:*

*Phoenix totems: Resurrects the player upon death. If totems are not found or used, then the player must start at the beginning.*

*Water canteen: Player can use the water at any time, but there is a puzzle that uses the water to solve it.*

*Sword: Players can use the sword to fight off enemies!*

*Torch: Can be used to fight off enemies or light up dark rooms*

*Health potions: Increases the players health pool*

*Key: Used to solve a puzzle in the pyramid*

## 2.7 Assumptions and Dependencies

*No assumptions or dependencies known as of 02/17/2023.*

# 3. System Features

*<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>*

## 3.1 System Feature 1

3.1.1 GameUI and Dialogue

*<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>*

*The GameUI will directly interact with users by providing users with initial start-up information upon starting the game and then will take commands from user input. It will utilize information from other classes (e.g., commands class, rooms class, “go north”) to output information about the next room utilizing roomDescription array list or other token of stored information. If the user has entered invalid input, the UI will display an “invalid” message.*

*The GameUI is a high priority as it will be used to directly interact with the user.*

3.1.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

· *Movement commands (go, look): These are used to look around rooms or to move between rooms.*

· *Attack commands (attack, fight): Verbs are used to fight monsters using the weapon the user may have picked up along the way.*

· *Information commands (help): Accesses the help menu through the commands class (if chosen to use inheritance for this class) and displays helpful hints or the initial commands menu that should be displayed to the user upon start-up.*

· *Inventory commands (use, wield, pick up, drop): Verbs used to allow the user to interact with items and weapons within the game. These should be added to an arrayList or Map of some sort for storage and access.*

3.1.3 Functional Requirements

*<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate when necessary information is not yet available.>*

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1: When invalid input is entered, use exception handling and loops to allow user to re-enter a valid input.

REQ-2: Monsters should be able to fight back, a health pool should be kept for the player.

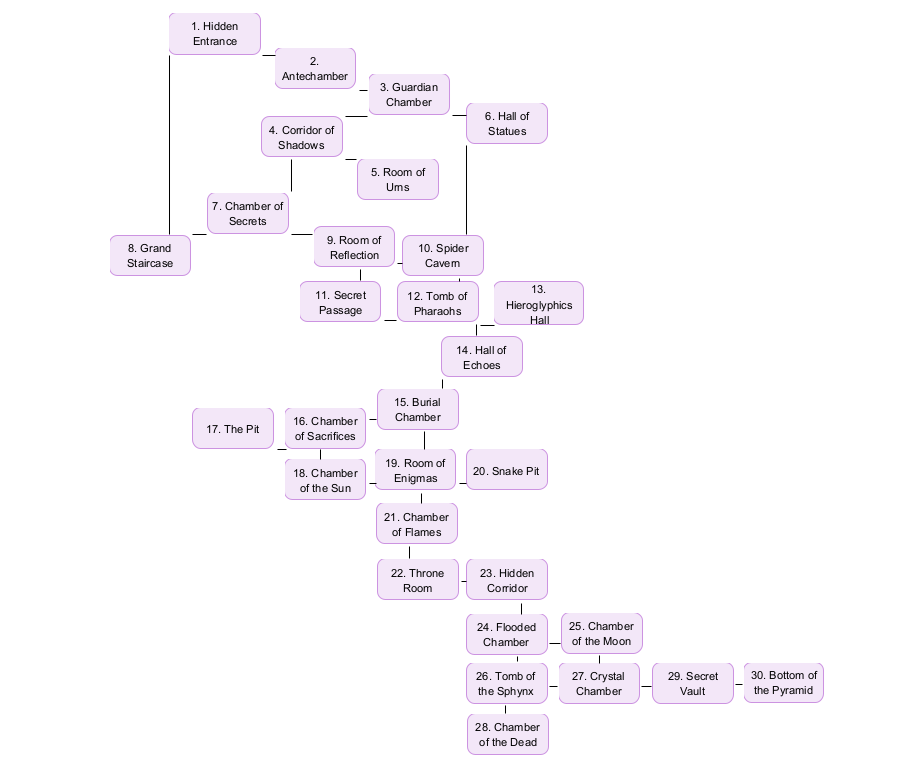
## 3.2 System Feature 2

3.2.1 Rooms/Map

*\*\*rooms are described in more detail in 2.2 Product Features*

*The Rooms will consist of a room number, name, and description. Each room should have a correlating exit, this can be stored in an arrayList for example, or a Map if chosen and should be able to keep up with whether or not the rooms contain items or monsters.*

*Rooms is high priority as it will store the information about the rooms and will be the main source of information for the GameUI.*



3.2.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

· *A room number or ID: each room must have a different number. The user always starts at room 0.*

· *Room Description: This is a text description of the room that is displayed once the user enters a room. This can also be accessed through the look command.*

· *Should display a list of items that are in the room, if any.*

· *Should display a list of monsters in the room, if any.*

*\*\*If at any time an invalid direction is entered, it should be handled with an exception and display the following message*   
*“You can’t go that way! Enter a different direction”.*

*The player should be allowed to re-enter a direction until a valid one is entered via loops.*

*A valid response would be from the user input, if they enter a correct direction, they move onto the next correlating room.*

3.2.3 Functional Requirements

*<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate, when necessary, information is not yet available.>*

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1: Must provide a description of the room to the user.

REQ-2: Must provide a unique room number identifying the room. This information may or may not be displayed to the user.

REQ-3: Must display a list of items and/or monsters in the room, if there are none, display to the user that there is nothing of interest or use in the room and that they may proceed to the next one.

REQ-4: Each room within the game must have at least one exit to another room in the game and can have more if necessary.

REQ-5: Within the game there must be a way for users to be able to call for help. (E.g., there should be a command for users to be able to see what options are available to them.) This option does not have to be visible through the game but does have to be accessible throughout the game.

## 3.3 System Feature 3

3.3.1 Exits

*<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>*

*The Exit class will be used to identify the connections between the rooms using direction and destination.*

*Medium Priority, if you choose to do it in a different way.*

3.3.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

· *Will be used to get and store the direction and destination of each room exit*

3.3.3 Functional Requirements

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1: When given input, the exit class should connect to the correct room (destination – roomID) after the user enters a direction.

## 3.4 System Feature 4

3.4.1 Puzzles

*<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>*

*Puzzles will be used to identify and get puzzles for a specific room. These should fit with correct roomNumbers and roomDescriptions. A Boolean value should be used to determine whether or not a room contains a puzzle or not (can be put in the Rooms class).*

*This is a high priority feature as it is required for the project and needed for the user to interact with and move forward in the game.*

3.4.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

* *PuzzleID: number used to uniquely identify the puzzle*
* *PuzzleName: name for the puzzle*
* *PuzzleDescription: textual description to describe the puzzles and actions needed to be executed needed to be done by the user to solve the puzzle.*

3.4.3 Functional Requirements

*<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate, when necessary, information is not yet available.>*

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1: A unique number to identify the puzzle.

REQ-2: A name and a textual description for the puzzle

## 3.5 System Feature 5

3.5.1 Items

*<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>*

*Items will be obtained by the user and used to defend against monsters, solve puzzles, or further interact with the rooms. Examples of these may be swords, keys, hint items (a book with instructions, maps, etc.).*

*High priority.*

3.5.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

· *Items should have an item number that identifies it within the game (not displayed to the user)*

· *Item name: Item name should be displayed to the user and be used so the user can refer back to it later. Make sure not to make the item name too long so it is easily referred to (Call a sword ‘sword’ and not something like Dark Moon Greatsword).*

· *Item Description: This is displayed to the user when the user enters a room and there is an item in there. (**e.g. this room contains a small gold key or a sword).*

3.5.3 Functional Requirements

*<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate, when necessary, information is not yet available.>*

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1: Items must have unique id to be easily accessed by other classes

REQ-2: Must have a text description for the user to see

REQ-3: Must be able to be referred to easily by the user (e.g., “use sword”, “attack monster with sword”) so make the name short and sweet.

## 3.6 System Feature 6

3.6.1 Monsters

*<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>*

*Monsters will be placed in various rooms around the game for the user to interact with (attack, run away or something) by using items that are gathered as the user goes through the game.*

*High priority.*

3.6.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

· *Monsters should also have a unique ID to be easily referred to by other classes.*

· *A monster name (“Giant Spider”, “Bat”, “Mummy”). The name should be provided upon entering a room with a monster in it.*

· *Monster description: A textual description of the monster describing it, its powers, its potential weapons, its strength, or other characteristics (e.g., “OMG that is a GIANT SPIDER and it’s going to EAT YOU”). This should also be displayed to the user upon entering the room.*

3.6.3 Functional Requirements

*<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate, when necessary, information is not yet available.>*

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1: A unique id to be referred to by other classes.

REQ-2: Must have a text description that is displayed to the user.

# 4. External Interface Requirements

## 4.1 User Interfaces

*<Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.>*

* Command such as help should be able to be accessed from the user typing “help” or “h” then display the help menu.
* Direction commands such as north, south, east, and west and/or up, down, left, right for the user to navigate through the rooms.
* If invalid input is entered, an error message such as “invalid input” or “that is not a valid response” should be displayed to the user and the user must be able to then re-enter a valid response (via loops).

## 4.2 Hardware Interfaces

*<Describe the logical and physical characteristics of each interface between the software product and the hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used.>*

*Hardware interfaces for The Pyramid's Lost Treasure game are limited to a computer with a keyboard as the primary input device. The player can use the keyboard to navigate through the game's rooms and solve puzzles by issuing directional commands such as north, south, east, and west, or up, down, left, and right. The keyboard can also be used to interact with items and enemies in the game. The game utilizes sound and visual effects to provide feedback on user actions and game progress, enhancing the overall gaming experience. The game is designed to be compatible with a variety of operating systems and hardware configurations, ensuring that players can enjoy the game on their preferred computer setup.*

## 4.3 Software Interfaces

*<Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.>*

*The Pyramid's Lost Treasure game is a standalone product and does not rely on other specific software components or integrated commercial components. It is designed to run on various operating systems, including Windows, MacOS, and Linux, and requires no additional tools or libraries to function. The game employs its own internal data structures to manage user progress, puzzle and enemy states, and inventory items. Data items and messages coming into the system include user inputs such as directional commands, as well as graphical and audio output for feedback on user actions and game progress.*

*The only consideration for software interfaces that could be utilized is a database from SQL Lite.*

## 4.4 Communications Interfaces

*<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>*

*It is not necessary to communicate via email or a web browser to play The Pyramid's Lost Treasure game. To obtain game updates and synchronize user data across several devices, it will converse with a network server. TCP/IP and HTTPS will be the protocols utilized for communication. Communication encryption will be implemented using SSL/TLS protocols to guarantee data security. The user's internet connection will determine the data transmission rates, and an automatic synchronization mechanism will keep the user's data current on all of their devices.*

# 5. Other Nonfunctional Requirements

## 5.1 Performance Requirements

*<If there are performance requirements for the product under various circumstances, state them here and explain their rationale, to help the developers understand the intent and make suitable design choices. Specify the timing relationships for real time systems. Make such requirements as specific as possible. You may need to state performance requirements for individual functional requirements or features.>*

*Performance requirements for The Pyramid's Lost Treasure game are aimed at ensuring smooth and responsive gameplay for the player. To achieve this, the game must load quickly and without significant lag, allowing the player to progress through the game with minimal delays. To further ensure optimal user experience, the game must load within 5 seconds on a stable internet connection.*

## 5.2 Safety Requirement

*<Specify those requirements that are concerned with possible loss, damage, or harm that could result from the use of the product. Define any safeguards or actions that must be taken, as well as actions that must be prevented. Refer to any external policies or regulations that state safety issues that affect the product’s design or use. Define any safety certifications that must be satisfied.>*

*The game should not cause any harm to the user or their computer system. The game must be age-appropriate and should not contain any violent or explicit content. To ensure data safety, the game will be tested thoroughly for bugs and glitches. Measures such as secure authentication protocols and data encryption will be implemented to safeguard user data. The game must be developed with the latest security protocols to ensure cybersecurity. There are no external policies or regulations applicable to the design or use of the game. No safety certifications are required for the game.*

## 5.3 Security Requirements

*<Specify any requirements regarding security or privacy issues surrounding use of the product or protection of the data used or created by the product. Define any user identity authentication requirements. Refer to any external policies or regulations containing security issues that affect the product. Define any security or privacy certifications that must be satisfied.>*

*The game must be secure and protect user data in accordance with privacy laws. It will use authentication and encryption to safeguard data and will only collect necessary personal information. Users should have control over their privacy settings. No external regulations or certifications apply; however, the game must comply with relevant security and privacy standards.*

## 5.4 Software Quality Attributes

*<Specify any additional quality characteristics for the product that will be important to either the customers or the developers. Some things to consider are adaptability, availability, correctness, flexibility, interoperability, maintainability, portability, reliability, reusability, robustness, testability, and usability. Write these to be specific, quantitative, and verifiable when possible. At the least, clarify the relative preferences for various attributes, such as ease of use over ease of learning.>*

*The Pyramid's Hidden Treasure game's success will depend on a number of desirable qualities. First and foremost, the game must be straightforward, simple to operate, and able to give the player clear feedback. The game must be reliable and stable, performing consistently without freezing or crashing. For the developers, maintainability is crucial since it will help them efficiently maintain and update the game with new material or bug fixes. The game must be able to handle unexpected user inputs or events without crashing or failing, therefore robustness is also crucial. While all of these qualities are significant, usability and dependability are of the utmost importance because they have a direct bearing on the user's pleasure of the game.*

# 6. Other Requirements

*<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>*

*No other requirements for this game.*

**Appendix A: Glossary**

*<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>*

* *Class Diagram: Shows and defines the necessary systems and their attributes to create the game and make it a usable product*
* *Functional Requirements: Define what the product must do, what its features are, and what its functions are*
* *Hardware: The physical pieces of equipment and peripherals used to play the game including any computer, keyboard, mouse, etc.*
* *HTTPS: Hypertext Transfer Protocol Secure allows for secure communication. It combines the HTTP and SSL/TLS protocols.*
* *JVM or Java Virtual Machine: The JVM is a virtual machine that enables a computer to run Java programs as well as programs written in other languages that are compiled to Java bytecode.*
* *Non-Functional Requirements: Describe the general properties of the system and are not related to the functionality of the system.*
* *Software: The non-physical aspects that allow a user to interact with the game such as the console, the JVM, etc.*
* *SSL/TLS: Secure Sockets Layer/Transport Layer Security provides communication between the client and server encryption and authentication (such as a web browser)*
* *TCP/IP: Transmission Control Protocol/Internet Protocol is a set of rules or protocols which enables communication between devices on the internet.*

**Appendix B: Analysis Models**

*<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams*.>

**Appendix C: Issues List**

*< This is a dynamic list of the open requirements issues that remain to be resolved, including TBDs, pending decisions, information that is needed, conflicts awaiting resolution, and the like.>*

*Unsure of whether the room descriptions are adequate, if more responses are needed.*