# IT 140 Design Document

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## Storyboard (Description and Map)

It started off as a mundane day at the kingdom’s castle, but that all changed when the giant evil python infiltrated the castle, took down all the knights and guards, and captured the king and queen as hostages in the Throne Room. You are the bravest and strongest villager from the nearby town, and you were chosen by the townsfolks to go to the castle to free the king and queen. You know that taking down the giant evil python won’t be an easy task. You arrive at the castle’s gate, and you decide to search for items that will help you take down the serpent. You soon realize you must explore every nook and cranny of the castle (Study Hall, Foyer, Armory, Cellar, Dining Hall, Garden, Alchemy Room, and Great Hall), and collect various items that are needed to access other parts of the castle before reaching the giant evil python in the Throne Room. You will need the lockpick from the study hall to access the cellar, torch from the cellar to combat the pitch dark castle, shield from the armory, step ladder from the garden to grab the silver key from the top of the chandelier in the dining hall, silver key from the dining hall to access the sword in the display case in the great hall, sword from the great hall to access the alchemy room, and a health potion from the alchemy room. Finally, you will need the sword, shield, and health potion to successfully take down the giant evil python.

**Throne Room**

**(END)**

**Alchemy Room**

Item: Health Potion

North South North[[1]](#footnote-1) South

East East

**Dining Hall** **Great Hall** **Garden**

Item: Silver Key[[2]](#footnote-2) Item: Sword[[3]](#footnote-3) Item: Step Ladder

West West

North[[4]](#footnote-4) South North[[5]](#footnote-5) South

East East

**Armory Foyer Study Hall**

Item: Shield **(START)** Item: Lockpick

West West

North South[[6]](#footnote-6)

**Cellar**

Item: Torch

## Pseudocode or Flowchart for Code to “Move Between Rooms”

*# Move from the Foyer (START):*

WHILE location is “Foyer”:

GET player move

IF player inputs “East” (convert to lower):

New location is “Study Hall”

ELIF player inputs “West” (convert to lower):

New location is “Armory”

ELIF player inputs “North” or “South” (convert to lower):

PRINT Invalid command

*# Move from the Study Hall:*

WHILE location is “Study Hall”:

GET player move

IF player inputs “North” (convert to lower):

IF “Torch” is in inventory:

New location is “Garden”

ELSE:

New location is “Foyer”

ELIF player inputs “West” (convert to lower):

New location is “Foyer”

ELIF player inputs “East” or “South” (convert to lower):

PRINT Invalid command

*# Move from the Armory:*

WHILE location is “Armory”:

GET player move

IF player inputs “North” (convert to lower):

IF “Torch” is in inventory:

New location is “Dining Hall”

ELSE:

New location is “Foyer”

ELIF player inputs “South” (convert to lower):

IF “Lockpick” is in inventory:

New location is “Cellar”

ELSE:

PRINT Cellar is locked

ELIF player inputs “East” (convert to lower):

New location is “Foyer”:

ELIF player inputs “West” (convert to lower):

PRINT Invalid command

*# Move from the Cellar:*

WHILE location is “Cellar”:

GET player move

IF player inputs “North” (convert to lower):

New location is “Armory”

ELIF player inputs “East” or “West” or “South” (convert to lower):

PRINT Invalid command

*# Move from the Dining Hall:*

WHILE location is “Dining Hall”:

GET player move

IF player inputs “East” (convert to lower):

New location is “Great Hall”

ELIF player inputs “South” (convert to lower):

New location is “Armory”

ELIF player inputs “North” or “West” (convert to lower):

PRINT Invalid command

*# Move from the Great Hall:*

WHILE location is “Great Hall”:

GET player move

IF player inputs “East” (convert to lower):

New location is “Garden”

ELIF player inputs “West” (convert to lower):

New location is “Dining Hall”

ELIF player inputs “North” (convert to lower):

New location is “Throne Room”

ELIF player inputs “South” (convert to lower):

PRINT Invalid command

*# Move from the Garden:*

WHILE location is “Garden”:

GET player move

IF player inputs “North” (convert to lower):

IF “Sword” is in inventory:

New location is “Alchemy Room”

ELSE:

PRINT Staircase is blocked by vines

ELIF player inputs “West” (convert to lower):

New location is “Great Hall”

ELIF player inputs “South” (convert to lower):

New location is “Study Hall”

ELIF player inputs “East” (convert to lower):

PRINT Invalid command

*# Move from the Alchemy Room:*

WHILE location is “Alchemy Room”:

GET player move

IF player inputs “South” (convert to lower):

New location is “Garden”

ELIF player inputs “East” or “West” or “North” (convert to lower):

PRINT Invalid command

*#Cannot move from the Throne Room as it is the final room.*

## Pseudocode or Flowchart for Code to “Get an Item”

*# Get Lockpick from the Study Hall:*

WHILE location is “Study Hall”:

GET player move

IF player inputs “Get Lockpick” (convert to lower):

IF lockpick not in inventory:

ADD lockpick to inventory

ELSE:

PRINT Invalid command

ELSE:

PRINT Invalid command

*# Get Shield from the Armory:*

WHILE location is “Armory”:

GET player move

IF player inputs “Get Shield” (convert to lower):

IF shield not in inventory:

ADD shield to inventory

ELSE:

PRINT Invalid command

ELSE:

PRINT Invalid command

*# Get Torch from the Cellar:*

WHILE location is “Cellar”:

GET player move

IF player inputs “Get Torch” (convert to lower):

IF torch not in inventory:

ADD torch to inventory

ELSE:

PRINT Invalid command

ELSE:

PRINT Invalid command

*# Get Silver Key from the Dining Hall:*

WHILE location is “Dining Hall”:

GET player move

IF player inputs “Get Silver Key” (convert to lower):

IF (silver key not in inventory) and (step ladder in inventory):

ADD silver key to inventory

ELIF (silver key not in inventory) and (step ladder not in inventory):

PRINT Cannot obtain Silver Key

ELSE:

PRINT Invalid command

ELSE:

PRINT Invalid command

*# Get Sword from the Great Hall:*

WHILE location is “Great Hall”:

GET player move

IF player inputs “Get Sword” (convert to lower):

IF sword in inventory:

PRINT Invalid command

ELIF silver key not in inventory:

PRINT Cannot obtain Sword. Chest is locked

ELSE:

ADD sword to inventory

ELSE:

PRINT Invalid command

*# Get Step Ladder from the Garden:*

WHILE location is “Garden”:

GET player move

IF player inputs “Get Step Ladder” (convert to lower):

IF step ladder not in inventory:

ADD step ladder to inventory

ELSE:

PRINT Invalid command

ELSE:

PRINT Invalid command

*# Get Health Potion from the Alchemy Room:*

WHILE location is “Alchemy Room”:

GET player move

IF player inputs “Get Health Potion” (convert to lower):

IF health potion not in inventory:

ADD health potion to inventory

ELSE:

PRINT Invalid command

ELSE:

PRINT Invalid command

1. The player cannot go north here until the “Sword” is in the inventory. [↑](#footnote-ref-1)
2. The “Silver Key” cannot be obtained until the “Step Ladder” is in the inventory. [↑](#footnote-ref-2)
3. The “Sword” cannot be obtained until the “Silver Key” is in the inventory. [↑](#footnote-ref-3)
4. The player can go north from the Armory only when the “Torch” is in the inventory. If the player inputs “North” while the “Torch” is not in the inventory, player is sent back to the Foyer. [↑](#footnote-ref-4)
5. The player can go north from the Study Hall only when the “Torch” is in the inventory. If the player inputs “North” while the “Torch” is not in the inventory, player is sent back to the Foyer. [↑](#footnote-ref-5)
6. The player cannot go south here until the “Lockpick” is in the inventory. [↑](#footnote-ref-6)