

Python Independent Project: Dungeon Masters

Matthew Lewis

Lewis745

LC4 – 26

Introduction:

My project stems from my love of videogames, with one certain genre in particular, roguelikes. The basic idea of a roguelike is the randomness and repeatability of its structure. Roguelikes are intended to be replayed countless times, with small boosts or unlocks following each attempt, this is where the randomness comes in. To avoid the game from getting stale, a randomness factor is put in place, whether it be items, damage dealt/taken, or enemies faced. My program is not exactly in line with these design elements but comes quite close.

The way my program works is by creating functions for each room and splicing them together within the main function to make it feel like you have a character that is moving in a real space. Your character will run into several monsters (that I have professionally drawn in Microsoft Paint) that you will have to face, and you do this by rolling a die. The D10 gives you a range from 1 to 10 to defeat your opponents, if your roll lands within the specified enemy's range you will slay them. Your character also only has 3 health points, so if you fail 3 rolls of the dice, you will die. Before the boss at the end, you can choose between 3 different items, a battle axe, a mirror, or a bowl of spaghetti, and depending on what you pick will decide your fate against the boss. In the next room you fight the boss, Gorloch the All-Seeing Eye, and you can either use your item or not, if not, you surely die. The mirror is the only item that truly finishes the game, with the other options causing your death. The game is then repeatable from the beginning.

I picked this topic because I thought it would be fun to code and design. I have been playing games like this since I was a small child, even getting so good at some that I have been able to compete in tournament type settings. It is a genre that is very special to me for this reason, and I thought I had great ideas for a project on the subject.

Inputs and Outputs:

My program works from several different inputs and outputs. First the user must enter their character's name for the intro to run. Then I have made several inputs to make the user experience easier to follow and more involved, with a press to begin and several different inputs for the user rolling the dice (this input does not actually influence the random nature of the `random.randint(1,10)` function). Then the user can select the item they wish to take, with "ba" for battle axe, "bs" for bowl of spaghetti, and "m" for mirror. This input will determine the ending they receive in the boss room. In the boss room, the user can either use the item they chose or not, and if they don't use their item, they will always die. If they use their item, the character dies if the user picked either the battle axe or bowl of spaghetti, with the mirror being the only option to kill Gorloch the All-Seeing Eye. After receiving their ending, the user can then decide whether they want to play the game again or not, if not then the user will be thanked for playing and the code will conclude. If so, the program will repeat from the introduction.

Inputs:

1. Character's name
2. Press to begin
3. Press to roll the dice
4. Which item will be taken?
5. Will the item be used?
6. Will the program repeat?

Outputs:

1. The intro will have the character's name displayed.
2. Press to begin will allow the program to keep moving at a digestible pace.
3. Press to roll the dice will make the user feel like they are rolling a physical dice with their input.
4. The item taken will determine whether the character lives or dies.
5. If the item is used will determine whether the character lives or dies.
6. If the program will repeat will determine whether the code restarts from the beginning and allows the user to play again.

Description of UDFs:**intro():**

The intro function displays the introduction to the player and displays the character's name. The intro explains what the game is and how it's played, it is essential to understanding what is going on. This function is also defined within a different file and imported.

room_1():

The room_1 function presents the user with their first enemy and displays a picture of the enemy to the player. The picture is first displayed then the user is prompted to roll the dice, with a random value from 1 to 10 given from the randint(1, 10) command. Then, an if statement is put into effect that causes the player to kill the monster if in range from 2 to 10 and take a hit of damage if the value is below 2. The player then moves to the next room (AKA function).

room_2():

The room_2 function presents the user with their next enemy and displays a picture of the enemy to the player. The picture is first displayed then the user is prompted to roll the dice, with a random value from 1 to 10 given from the randint(1, 10) command. Then, an if statement is put into effect that causes the player to kill the monster if in range from 4 to 10 and take a hit of damage if the value is below 4. The player then moves to the next room (AKA function).

room_3():

The room_3 function presents the user with a pair of enemies and displays a picture of the enemies to the player. The picture is first displayed then the user is prompted to roll the dice, with a random value from 1 to 10 given from the randint(1, 10) command. Then, an if statement is put into effect that causes the player to kill the first monster if in range from 5 to 10 and take a hit of damage if the value is below 5. This code is then repeated, with a range from 5 to 10 killing the next monster or causing damage to the player. The player then moves to the next room (AKA function).

item_room():

The item_room function presents the user with 3 items to choose from, a battle axe, a bowl of spaghetti, and mirror, showing a picture of all 3. The user must take one of these items, using “ba”, “bs”, or “m” inputs respectively. If the user inputs an incorrect input, then the user will be prompted to choose again.

boss_room():

The boss_room function presents the user with the boss, Gorloch the All-Seeing Eye, with a picture. The user is then asked for input on whether to use their item using “Y” or “N” inputs. If the user inputs “N” the code will display an ending depicting the character’s death. If the user inputs “Y” the code will display an ending depending on which item the user chose in the function prior. The mirror item is the only item that allows the character to defeat the boss.

repeat():

The repeat function asks the user if they want to play again, accepting “Y” or “N” inputs. If an input other than “Y” or “N” is inserted, an error will show and the user will be prompted again, this will repeat until an acceptable input is inserted via a while loop. The “Y” input will cause the code to run back from the intro function. The “N” input will cause the code to thank the user for playing and stop running.

User Manual:

- 1) The user must first input their name of choice for their character. Any name will suffice.

```
PS C:\Users\matth> c:
● PS C:\Users\matth> cd "c:/Users/matth/OneDrive/Documents/ENGR 133 (code)/Individual Project"
● PS C:\Users\matth\OneDrive\Documents\ENGR 133 (code)\Individual Project> & C:/Users/matth/AppData/Local/Micr
  osoft/WindowsApps/python3.11.exe "c:/Users/matth/OneDrive/Documents/ENGR 133 (code)/Individual Project/Ind_P
  roject_lewis745.py"
○ What is your character's name going to be?: Matthew
```

- 2) The user must read the introduction and then input anything to begin.

```
PS C:\Users\matth> c:
● PS C:\Users\matth> cd "c:/Users/matth/OneDrive/Documents/ENGR 133 (code)/Individual Project"
● PS C:\Users\matth\OneDrive\Documents\ENGR 133 (code)\Individual Project> & C:/Users/matth/AppData/Local/Micr
  osoft/WindowsApps/python3.11.exe "c:/Users/matth/OneDrive/Documents/ENGR 133 (code)/Individual Project/Ind_P
  roject_lewis745.py"
○ What is your character's name going to be?: Matthew

Hello Matthew, welcome to Dungeon Masters!
In this game, you will defeat monsters and collect items. A certain item is needed to defeat the boss at the
end.
Using a D10, you will start with 3 hearts, with each failed roll against a monster resulting in a heart of d
amage.
Alright, get out there and clear the dungeon!
Press anything to begin!: 
```

- 3) Whenever the user is prompted “What will you roll... (press anything to continue)”, any input will allow the program to function as normal. This input will happen 4 times while you receive your outcomes.

```
PS C:\Users\matth> c:
PS C:\Users\matth> cd "c:/Users/matth/OneDrive/Documents/ENGR 133 (code)/Individual Project"
PS C:\Users\matth\OneDrive\Documents\ENGR 133 (code)\Individual Project> & C:/Users/matth/AppData/Local/Microsoft/WindowsApps/python3.11.exe "c:/Users/matth/OneDrive/Documents/ENGR 133 (code)/Individual Project/Ind_P
roject_lewis745.py"
What is your character's name going to be?: Matthew

Hello Matthew, welcome to Dungeon Masters!
In this game, you will defeat monsters and collect items. A certain item is needed to defeat the boss at the
end.
Using a D10, you will start with 3 hearts, with each failed roll against a monster resulting in a heart of d
amage.
Alright, get out there and clear the dungeon!
Press anything to begin!:

In the first room, a skeleton attacks!
You must roll a 2 or above out of 10 to defeat him.
What will you roll... (press anything to continue):
```

- 4) The user will be asked which item they want to choose, the mirror, the battle axe, or the bowl of spaghetti. The input for each is “m”, “ba”, or “bs” respectively.

```
In the first room, a skeleton attacks!
You must roll a 2 or above out of 10 to defeat him.
What will you roll... (press anything to continue):

You rolled a 5!
You killed the skeleton! Well done!
You move to the next room...

In the second room, a large caustic rat attacks!
You must roll a 4 or above out of 10 to defeat him.
What will you roll... (press anything to continue):

You rolled a 8!
You killed the caustic rat! Well done!
You move to the next room...

In the third room, you see a pair of floating eyeballs, yuck!
You must roll a 5 or above for each eyeball to defeat them.
What will you roll... (press anything to continue):

You rolled a 3!
You take 1 heart of damage! You have 2 hearts remaining!
What will you roll... (press anything to continue):

You rolled a 9!
You killed the second eyeball! Well done!
You move to the next room...

In the fifth room, you find 3 item pedestals, each with a different item to choose between.

Which item will you choose, the mirror, the battle axe, or the bowl of spaghetti? (answer m, ba, or bs): 
```

- 5) The user will be asked if they want to use their item against the boss. The user can input either “Y” or “N”, and will be repeatably prompted until one is inputted.

```
Which item will you choose, the mirror, the battle axe, or the bowl of spaghetti? (answer m, ba, or bs): m
Alright, you have chosen the mirror!

You have made it to the boss room! Gorloch the All-Seeing Eye is your mighty foe!
Quickly, use the item you collected and put this loser in a glau-coma!
Use your item on this freak? (Y/N): f
Error: Please enter either 'Y' or 'N'.
Use your item on this freak? (Y/N): f

Error: Please enter either 'Y' or 'N'.
Use your item on this freak? (Y/N): f

Error: Please enter either 'Y' or 'N'.
Use your item on this freak? (Y/N): f

Error: Please enter either 'Y' or 'N'.
Use your item on this freak? (Y/N): 
```

- 6) The user will be asked if they want to play the game again. The user can input either “Y” or “N”, and will be repeatably prompted until one is inputted. If “Y” is chosen the user will repeat the game.

```
Using the mirror, you reflect a beam of sunlight peering from a crack in the floor above directly into his eye!
He shrivels up, and you are victorious!

THANK YOU FOR PLAYING!
Do you want to play or play again? (Y/N): 
```

Appendix:

(Code will be kept in the original font for easy reading and consistency)

The file containing most of the code and main function (Ind_Project_lewis745.py):

```
"""
=====
=====
ENGR 13300 Fall 2023

Program Description
    My program is similar to an 80s style command prompt
    game. My project takes in input and uses dice rolls and random
    inputs
    to kill monsters. You can collect an item, with three
    different choices, each choice resulting in a different
    outcome. The player has a health value that, when 3 rolls
    are failed, causes the player to die. The game is infinitely
    repeatable,
    so anyone testing can see all possible outcomes. The
    program also displays pictures, that I drew, that show the
    monsters you are fighting.

Assignment Information
    Assignment:      Ind Project
    Author:          Matthew Lewis, lewis745@purdue.edu
```


Team ID: LC4 - 26 (e.g. LC1 - 01; for section LC1, team 01)

Contributor: Matthew Lewis, lewis745@purdue.edu [repeat for each]

My contributor(s) helped me:

[x] understand the assignment expectations without telling me how they will approach it.

[x] understand different ways to think about a solution without helping me plan my solution.

[x] think through the meaning of a specific error or bug present in my code without looking at my code.

Note that if you helped somebody else with their code, you have to list that person as a contributor here as well.

ACADEMIC INTEGRITY STATEMENT

I have not used source code obtained from any other unauthorized

source, either modified or unmodified. Neither have I provided access to my code to another. The project I am submitting is my own original work.

=====

=====

"""

Imports the necessary libraries

import random

import cv2

from Ind_Project_Introduction_lewis745 import intro

Declares the health variable before all else

health = 3

Main function that structures and runs all of most of the code

```

def Main():
    intro()
    for room in rooms:
        room()
    repeat()

# room_1 function that displays a picture and attacks a monster
using a random roll
def room_1():
    global health
    # Displays an image of the skeleton from a separate file
    skele_image = cv2.imread('skeleton.png',
cv2.IMREAD_ANYCOLOR)
    cv2.imshow('A horrifying skeleton!', skele_image)
    cv2.waitKey(4000)
    cv2.destroyAllWindows()

    print("In the first room, a skeleton attacks!\nYou must
roll a 2 or above out of 10 to defeat him.")

    # Creates a random value from 1 to 10
    rand_roll_r1 = random.randint(1,10)
    # Asks for input on a roll
    print(input("What will you roll... (press anything to
continue): "))
    print(f"You rolled a {rand_roll_r1}!")
    # An if statement that says whether your roll falls in
range or you take damage
    if rand_roll_r1 in range(2,11):
        print("You killed the skeleton! Well done!")
    else:
        # Health is decreased when you lose a roll
        health -= 1
        print(f"You take 1 heart of damage! You have {health}
hearts remaining!")
        # When your health is below or equal to 0 you die

```

```

        if health <= 0:
            print("You have died a gruesome death!\nTHANKS FOR
PLAYING!\n")
            repeat()
            exit()

    print("You move to the next room...\n")
    cv2.waitKey(4000)

# room_2 function that displays a picture and attacks a monster
using a random roll
def room_2():
    global health
    # Displays an image of the rat from a separate file
    rat_image = cv2.imread('rat.png', cv2.IMREAD_ANYCOLOR)
    cv2.imshow('A horrifying caustic rat!', rat_image)
    cv2.waitKey(4000)
    cv2.destroyAllWindows()

    print("In the second room, a large caustic rat
attacks!\nYou must roll a 4 or above out of 10 to defeat him.")

    # Creates a random value from 1 to 10
    rand_roll_r2 = random.randint(1,10)
    # Asks for input on a roll
    print(input("What will you roll... (press anything to
continue): "))
    print(f"You rolled a {rand_roll_r2}!")
    # An if statement that says whether your roll falls in
range or you take damage
    if rand_roll_r2 in range(4,11):
        print("You killed the caustic rat! Well done!")
    else:
        # Health is decreased when you lose a roll
        health -= 1

```

```

        print(f"You take 1 heart of damage! You have {health}
hearts remaining!")
        # When your health is below or equal to 0 you die
        if health <= 0:
            print("You have died a gruesome death!\nTHANKS FOR
PLAYING!\n")
            repeat()
            exit()

        print("You move to the next room...\n")
        cv2.waitKey(4000)

# room_3 function that displays a picture and attacks a monster
using a random roll
def room_3():
    global health
    # Displays an image of the eyeballs from a separate file
    eyeballs_image = cv2.imread('eyeballs.png',
cv2.IMREAD_ANYCOLOR)
    cv2.imshow('A horrifying pair of eyeballs!',
eyeballs_image)
    cv2.waitKey(4000)
    cv2.destroyAllWindows()

    print("In the third room, you see a pair of floating
eyeballs, yuck!\nYou must roll a 5 or above for each eyeball to
defeat them.")

    # Creates a random value from 1 to 10
    rand_roll_r3_eye_1 = random.randint(1,10)
    # Asks for input on a roll
    print(input("What will you roll... (press anything to
continue): "))
    print(f"You rolled a {rand_roll_r3_eye_1}!")
    # An if statement that says whether your roll falls in
range or you take damage

```

```

    if rand_roll_r3_eye_1 in range(5,11):
        print("You killed the first eyeball! Well done! Now
kill the other one!")
    else:
        # Health is decreased when you lose a roll
        health -= 1
        print(f"You take 1 heart of damage! You have {health}
hearts remaining!")
        # When your health is below or equal to 0 you die
        if health <= 0:
            print("You have died a gruesome death!\nTHANKS FOR
PLAYING!\n")
            repeat()
            exit()

# Creates a random value from 1 to 10
rand_roll_r3_eye_2 = random.randint(1,10)
# Asks for input on a roll
print(input("What will you roll... (press anything to
continue): "))
print(f"You rolled a {rand_roll_r3_eye_2}!")
# An if statement that says whether your roll falls in
range or you take damage
if rand_roll_r3_eye_2 in range(5,11):
    print("You killed the second eyeball! Well done!")
else:
    # Health is decreased when you lose a roll
    health -= 1
    print(f"You take 1 heart of damage! You have {health}
hearts remaining!")
    # When your health is below or equal to 0 you die
    if health <= 0:
        print("You have died a gruesome death!\nTHANKS FOR
PLAYING!\n")
        repeat()
        exit()

```

```

    print("You move to the next room...\n")
    cv2.waitKey(4000)

# item_room function that displays a picture and allows the
# user to choose a certain item
def item_room():
    # Displays an image of the items from a separate file
    items_image = cv2.imread('items.png', cv2.IMREAD_ANYCOLOR)
    cv2.imshow('Some items to choose from!', items_image)
    cv2.waitKey(4000)
    cv2.destroyAllWindows()

    print("In the fifth room, you find 3 item pedestals, each
    with a different item to choose between.\n")
    global chosen_item
    # Asks the user to choose an item the mirror, the battle
    # axe, or the bowl of spaghetti
    chosen_item = input("Which item will you choose, the
    mirror, the battle axe, or the bowl of spaghetti? (answer m,
    ba, or bs): ")
    # This code will loop when chosen_item does not equal bs,
    # ba, or m
    while chosen_item != "bs" or chosen_item != "ba" or
    chosen_item != "m":
        # User chose the bowl of spaghetti
        if chosen_item == "bs":
            print("Alright, you have chosen the bowl of
            spaghetti!\n")
            break
        # User chose the battle axe
        elif chosen_item == "ba":
            print("Alright, you have chosen the battle axe!\n")
            break
        # User chose the mirror
        elif chosen_item == "m":
            print("Alright, you have chosen the mirror!\n")

```

```

        break
    else:
        # If the user input an incorrect value, the while loop
will ask and run again
        print("Please choose an item.\n")
        chosen_item = input("Which item will you choose,
the mirror, the battle axe, or the bowl of spaghetti? (answer
m, ba, or bs): ")
        cv2.waitKey(4000)

# The final room where you can choose to either use your
selected item or not with outcomes that differ based on choice
def boss_room():
    # Displays an image of the boss from a separate file
    boss_image = cv2.imread('boss.png', cv2.IMREAD_ANYCOLOR)
    cv2.imshow('The horrifying Gorloch the All-Seeing Eye!',
boss_image)
    cv2.waitKey(4000)
    cv2.destroyAllWindows()

    print("You have made it to the boss room! Gorloch the All-
Seeing Eye is your mighty foe!\nQuickly, use the item you
collected and put this loser in a glau-coma!")
    # Asks the user if they want to use their item
    using_item = input("Use your item on this freak? (Y/N): ")
    # This code will loop when using_item does not equal Y or N
    while using_item != "Y" or using_item != "N":
        if using_item == "Y":
            # If the mirror is chosen and used you win!
            if chosen_item == "m":
                print("\nUsing the mirror, you reflect a beam
of sunlight peering from a crack in the floor above directly
into his eye!\nHe shrivels up, and you are victorious!\n"
                "\nTHANK YOU FOR PLAYING!")
                break
            # If the battle axe is chosen and used you lose

```

```

        elif chosen_item == "ba":
            print("\nUsing the battle axe, you run at the
beast and get one good slice in before he smashes you 6 feet
under. You die in a pool of blood, sweat, and defeat.\n"
                "\nTHANK YOU FOR PLAYING!")
            break
        # If the bowl of spaghtti is chosen and used you
lose
        elif chosen_item == "bs":
            print('\nYou fling the bowl of spaghetti at the
monster, and then realize your mistake in item choice as he
makes the room look like a Party City with your
intestines.\nThe locals will remember you as the "idiot
spaghetti guy".\n'
                "\nTHANK YOU FOR PLAYING!")
            break
        # If the user chooses to not use their item, they will
die
        elif using_item == "N":
            print("\nYou decide that your pitiful item isn't
fit for the likes of a manly man such as yourself, so you go in
swinging your fists wildly.\n"
                "Gorloch lets out a hardy laugh before kneeding
your body like dough (you die horribly).\n"
                "\nTHANK YOU FOR PLAYING!")
            break
        else:
            # While loop will repeat when Y or N is not the input
value
            print("Error: Please enter either 'Y' or 'N'.")
            using_item = input("Use your item on this freak?
(Y/N): ")
            print(" ")

# Repeats the game to allow you to see all outcomes or find the
correct item choice

```



```

def repeat():
    # Asks the user if they want to play again
    x = input("Do you want to play or play again? (Y/N): ")
    print(" ")
    # This code will repeat as long as x is not equal to Y or N
    while x != "Y" or x != "N":
        if x == "Y":
            cv2.destroyAllWindows()
            # The code will repeat itself from the beginning
            Main()
        elif x == "N":
            cv2.destroyAllWindows()
            # The code is finished
            print("THANK YOU FOR PLAYING!")
            break
        else:
            # Shows an error when Y or N is not the input value
            print("Error: Please enter either 'Y' or 'N'.")
            x = input("Do you want to play or play again?
(Y/N): ")
            # fixes spacing accordingly
            if x == "Y" or (str and x != "N"):
                print(" ")

# This is a list that runs the functions in order in the main
function
rooms = [room_1, room_2, room_3, item_room, boss_room]

# This runs the main function and causes the code to run
if __name__ == '__main__':
    Main()

```

The file containing the intro() function that is imported into the main program (Ind_Project_Introduction_lewis745.py):

```

"""
=====
=====
ENGR 13300 Fall 2023

Program Description
    My program is similar to an 80s style command prompt
    game. My project takes in input and uses dice rolls and random
    inputs
    to kill monsters. You can collect an item, with three
    different choices, each choice resulting in a different
    outcome. The player has a health value that, when 3 rolls
    are failed, causes the player to die. The game is infinitely
    repeatable,
    so anyone testing can see all possible outcomes. The
    program also displays pictures, that I drew, that show the
    monsters you are fighting.

Assignment Information
    Assignment:      Ind Project
    Author:          Matthew Lewis, lewis745@purdue.edu
    Team ID:         LC4 - 26 (e.g. LC1 - 01; for section LC1,
    team 01)

Contributor:       Matthew Lewis, lewis745@purdue.edu [repeat for
each]
    My contributor(s) helped me:
    [x] understand the assignment expectations without
        telling me how they will approach it.
    [x] understand different ways to think about a solution
        without helping me plan my solution.
    [x] think through the meaning of a specific error or

```

bug present in my code without looking at my code.
 Note that if you helped somebody else with their code, you
 have to list that person as a contributor here as well.

ACADEMIC INTEGRITY STATEMENT

I have not used source code obtained from any other
 unauthorized
 source, either modified or unmodified. Neither have I provided
 access to my code to another. The project I am submitting
 is my own original work.

```
=====
=====
"""

# intro function that tells the user about the game and how to
play
p_name = input("What is your character's name going to be?: ")
print(" ")
def intro():
    # Displays the introduction to the player
    print(f"Hello {p_name}, welcome to Dungeon Masters!\n"
          "In this game, you will defeat monsters and collect
items. A certain item is needed to defeat the boss at the
end.")
    print("Using a D10, you will start with 3 hearts, with each
failed roll against a monster resulting in a heart of damage.")
    input("Alright, get out there and clear the dungeon!\nPress
anything to begin!: ")
    print(" ")
```