PROGRAMMING THROUGH PYTHON

Title: "Moving Through Horror" Adventure Game

Name: Aravindhan Selvam
Candidate Number: 277570
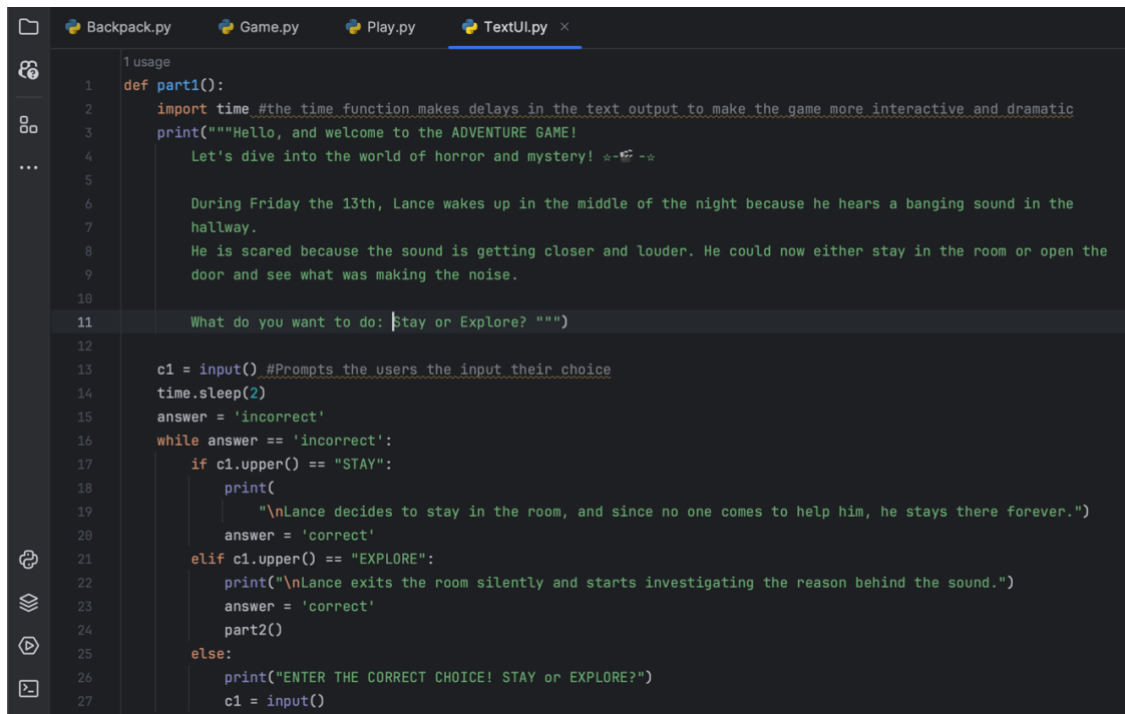
Table of Contents

INTRODUCTION

This project aims to create the fundamentals of the adventure game with the help of PyCharm IDE and with using the Python Programming Language. The text-based adventure game can be of any type, such as text-based horror game, text-based Island wandering game and many other types of adventure games that can be created for entertainment purposes. This game was developed mainly with the help of PyCharm IDE and the Python programming language because it provided lots of features to the game developers, allowing them to develop their own game in very efficient and timely manner. The IDE features include a smart code editor, which helps in the correction of code errors that the user makes and provides information on the section where the error occurs. It also provides a smart navigation system, a fast and safe type of refactoring system that assists the users in navigating, debugging and refactoring to any part of the project and code with the safe rename. The features of the Python programming language that helped in game development are it has a built-in library for the game, which is known as Pygame, and it is easy to implement the coding.

Problem Statement

The project's problem statement refers to the detailed analysis of the issues or problem that needs to be resolved. The major problems that are faced in the game's development is the writing and the execution of the code in the Python complier as the program is extensive and very much complex. The game's code is made up of multiple complex syntaxes and statements which majorly results in the users mistake in writing the codes or when the user's indentation is wrong for the program, the entire code will have errors that prevent the game from running properly. The other reasons will also include System failure, power outages and software breakdowns which are encountered during the project that results in some small issues which much be resolved and require additional time and effort for the project to be completed. But in the overall scale, if one is careful and cautious when writing the program for the game development that shouldn't face any type of issues keeping the fact that they know all the Python related concepts and implementing them properly to develop the game.

Description of Class

The text-based horror genre adventure game was created using PyCharm software and with Python as the programming language. In this game, the user or the player must select a condition, and the game text appears accordingly. The conditions are such that the players must need to make a decision for the virtual character in the game, and according to their choices, the players experience the game as if it were taking place in real life.

```
      Backpack.py      Game.py      Play.py      TextUI.py  ×

        1 usage
    1   def part1():
    2       import time #the time function makes delays in the text output to make the game more interactive and dramatic
    3       print("""Hello, and welcome to the ADVENTURE GAME!
    4           Let's dive into the world of horror and mystery! ☆-☁ -☆
    5
    6           During Friday the 13th, Lance wakes up in the middle of the night because he hears a banging sound in the
    7           hallway.
    8           He is scared because the sound is getting closer and louder. He could now either stay in the room or open the
    9           door and see what was making the noise.
   10
   11           What do you want to do: Stay or Explore? """)
   12
   13       c1 = input() #Prompts the users the input their choice
   14       time.sleep(2)
   15       answer = 'incorrect'
   16       while answer == 'incorrect':
   17           if c1.upper() == "STAY":
   18               print(
   19                   "\nLance decides to stay in the room, and since no one comes to help him, he stays there forever.")
   20               answer = 'correct'
   21           elif c1.upper() == "EXPLORE":
   22               print("\nLance exits the room silently and starts investigating the reason behind the sound.")
   23               answer = 'correct'
   24               part2()
   25           else:
   26               print("ENTER THE CORRECT CHOICE! STAY or EXPLORE?")
   27               c1 = input()
```

Figure 1. Definition of the game with code
(Source: TextUI code from PyCharm)

The description of the class that are being used for the development of the adventure game and are a part of the python programming language are such that the main class of python. The primary function in Python's main class is created because it acts as the starting point for the code, from which it will be executed. The class objects supporting the two sorts of operations, such as instantiation and attribute references, are the additional classes that assists for the game development. The code flexibility is greatly enhanced by the usage of function notation in class object instantiation. The function of the code and the various syntaxes used for coding purposes are described in the code documentation. The type of function that is indicated when the function is defined is meant as the formal parameters.
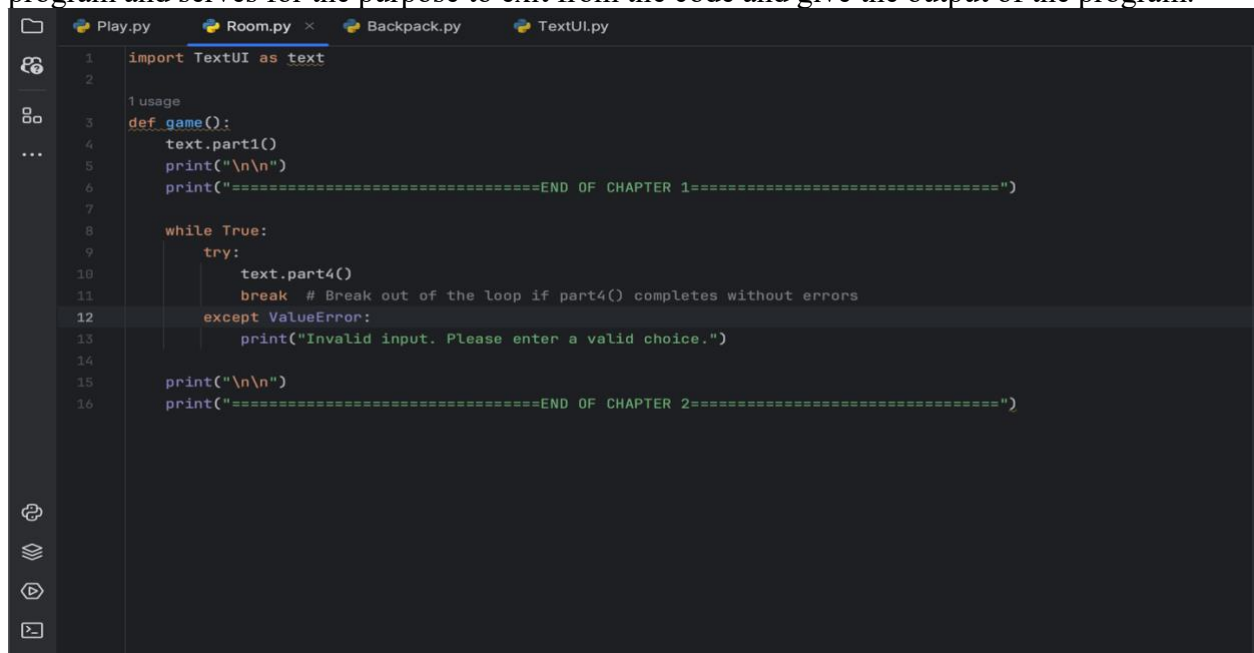
Formal Parameters

There are several kinds of formal parameters or arguments namely keyword arguments, variable length arguments, positional arguments, and default arguments in python functions. The list of formal parameters is used with the keyword parameter is not specified during the game's basic development, but it will be specified when the game's graphical user interface is developed and implemented, which will make the game more visually appealing, engaging and provide the user with a more realistic experience of playing the game.

Details of return values

The return values of a program this type of return value of keyword is an essential component that can be developed for various type of uses, including web development or any other
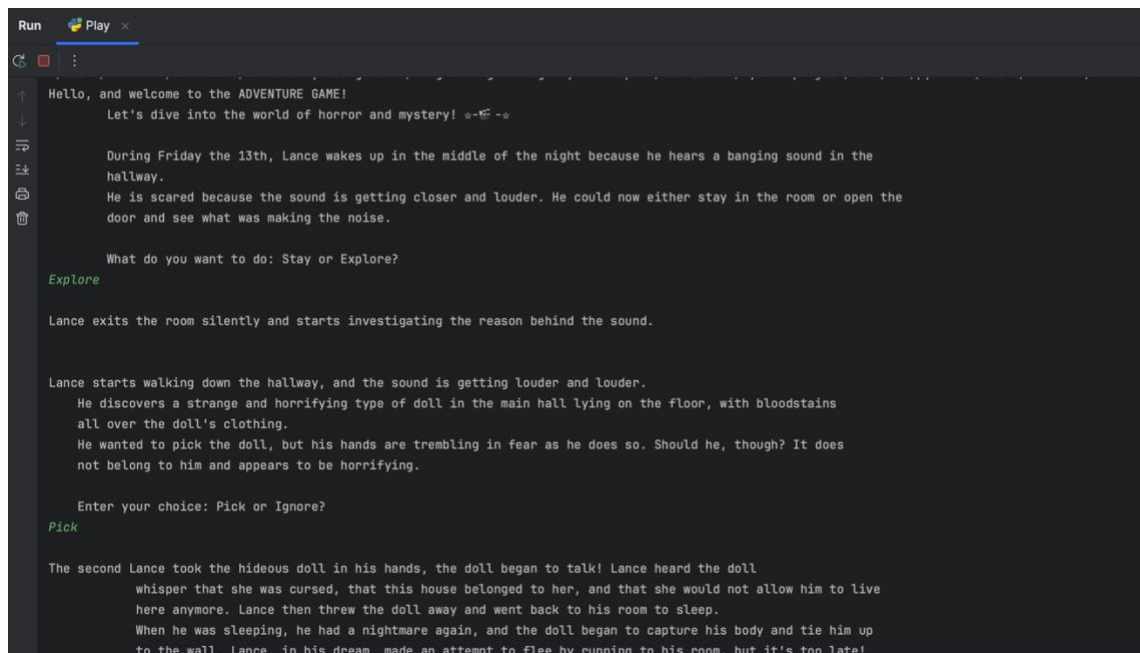
purpose in general. The return keyword helps the user to return the value or result of the program and serves for the purpose to exit from the code and give the output of the program.

Figure 2. Importing of TextUI file for running the game in chapters
(Source: Retrieved from PyCharm)

Adding to that, the return keyword is most used for returning any type of values which can be objects, tuples and many such values when coding a function. The return statement in this game development project is used to return the values of the text that must show after selecting a condition. This condition helps to make the game look more interesting by letting the users or players to guess what will happen next.

Figure 3. The output of the game
(Source: Retrieved from PyCharm)

Objective of the game

In this adventure game making choices that helps the virtual character in escaping the monster and escaping from his nightmare to save his life is the main objective of this game. The places that the person goes includes from his room to the house's hallway, where the monster waits for him inside the doll so that it can attack and capture his body eventually taking the person's soul. The monster has called the virtual character by doing different types of activities throughout the story. The provided file has been modified in the following ways: the developed game is pasted into the text file, the text file is imported into the room python file, and the room python file is imported into the play.py file.
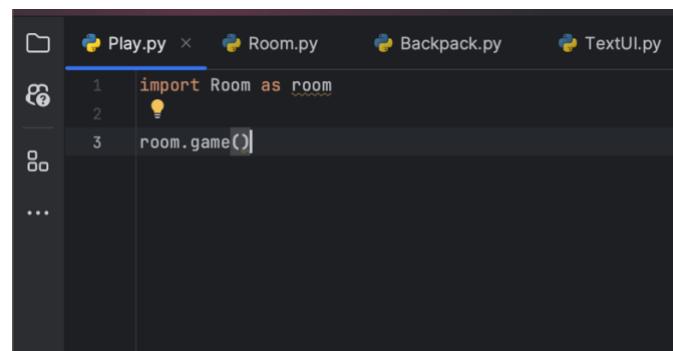

Figure 4. Importing of Room.py file
(Source: Retrieved from PyCharm)

Also, the game's theme has been modified such as before it was based on an island roaming theme, but now it has been modified based on a horror theme.

Conclusion

The game has been developed in such a way that the player or user can feel the adventure and thrill when playing the game for entertainment purpose. The project is a basic text type-based game in which the main job of the player is to choose the condition so that the horror story continues and selecting different conditions leads to the development of different stories. The development of the game is carried out in PyCharm IDE, and python programming language was used to develop the entire code and the coding is done using the condition features and navigation, which helps the user to complete the story. The conditions, if and else, importing of the library and the python file are done in such a way that it helps to decrease the complexity of the program and helps the user to understand the program.

References

Python Official Documentation: The comprehensive documentation for the Python programming language, offering detailed explanations and examples for various features.

S. Kelly, 2019. Game development in Python, PyGame, and Raspberry Pi. Apress, Niagara Falls, Ontario, Canada

Python Packages:

- **Time module:** Part of the Python standard library, the time module is useful for adding delays in your game to create a more interactive and dramatic experience.
- **Random module:** Another Python standard library module, random facilitates the introduction of randomness in your game events.

Pygame: Pygame is a set of Python modules designed for writing video games, making it a potential choice for extending your game into a graphical version.

Al Sweigart, Invent Your Own Computer Games with Python, 4th Edition.