

# Informatics Institute of Technology

## Business School

### Assignment Cover Sheet

#### DOC334 – Computer Programming

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Course	:	Foundation Certificate Programme
Unit Code and Description	:	DOC334 – Computer Programming
Module Leader	:	Mr. Nishanan Saliya Harankahawa
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## **I. Acknowledgement**

I would like to thank and acknowledge the exceptional efforts and support of our module leader as well as tutorial lecturer, Mr. Nishan Saliya, who played a vital role in our module topics. He teaches us very well and gives us a great knowledge. I would like to offer my thanks to my family members and friends as well for their support.

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## 1. Problem Statement

### Game Scenario

“DON (Destroyer of Numbers)” is known to “letter-kind” as a hero who saved them from evil numbers. DON kills numbers by selecting values which are lower than his “Life Score”. This allows him to climb up the levels. He is given 20 chances per session. If he survives all the 20 chances he wins. If not, he dies!

## 2. Game Development Instructions...

- 1) Program must ask for the player’s name as DON will be playing by using your name.
- 2) DON will initially get a one-time random “Life Score” at the start of the game. This is a value between 1 and 50. This “Life Score” is displayed in front of the game prompt.
- 3) His attempts are numbered as 1 to 20 throughout the game.
- 4) He will be presented with 5 random numbers to fight with.
  - a) If the number he selects is lower or equal than his “Life Score”, he can kill it and proceed to next attempt.
    - i. By fighting that number, he gets to consume it and the new number is added to his “Life Score”
  - b) If the number he selects is higher than his “Life Score”, he is dead as the number wins!
  - c) He does not have an option of quitting the game until,
    - i. He is dead due to a higher number selection or for selecting a number which is not presented.
    - ii. He can also quit if he has completed all the 20 attempts successfully.
  - d) His 20 attempts will have below number ranges as they keep changing when DON levels up.

Attempt No	Value Range Per Number (Including given numbers)	Sample Five Correct Numbers to fight with DON
1 to 5	15 to 100	100 76 94 56 44
6 to 10	250 to 2000	774 872 975 907 374
11 to 15	3000 to 10000	2636 4847 1114 4294 4167
16 to 20	20000 to 100000	17489 22105 13418 17322 11543

- 5) If the user inserts any number which is not presented; or any other character, you have to end the game and display game status. DO NOT allow the player to attempt a new number.
  - a) Game should not crash for invalid numbers!
  
- 6) Once the game session is over, it must be written to a text file with the below file name format.
  - a) 2023\_12\_05\_09\_56\_35\_4587.txt
    - i. The first part 2023\_12\_05 the current date
    - ii. The second part 09\_56\_35 is the time
    - iii. The third part 4587 is just a random number within the range of 0000 to 9999
  - b) There should be one text file for each game session.
    1. It should record attempt number, presented enemies, user input number, WON/LOST status for each attempt, life score and finally the end game statistics.

### 3. Statement

In this interactive game, players engage in determining the fate of "The DON" by selecting values from a set of given numbers. Random numbers are crucial, generated within specific ranges based on the game's difficulty level and attempt number. Vital game data, such as player name, attempt count, displayed adversaries, user input, win/loss outcome, DON's life score, and detailed end-game stats, are meticulously recorded in a text file using a function named write to file. The file's name format comprises the date, time, and a random number.

The core gameplay is managed by the play game function, allowing players to input their name, initiate DON's "Life Score" setup, and go through 20 attempts. Each attempt showcases numbers for players to choose from to battle DON. The code covers various scenarios, handling incorrect inputs, unrepresented foes, and dynamically adjusting DON's life score based on battle outcomes.

If the player successfully completes all 20 attempts, the game declares DON as the winner. Otherwise, upon DON's defeat, players are prompted to decide whether to play again. The game loop continues until the player opts to stop. Overall, this code offers an interactive and engaging experience with its dynamic gameplay, error handling, and comprehensive session logging for an immersive user interaction in the "Destroyer of Numbers" game.

#### 4. Code

```
import sys

import random

import datetime


# Initialize game variables and user inputs

User_Name = input("Player name: ")

Life_score = random.randint(1, 50)

attempts = 1

Enemies = []

text_data = []

Status = ""

Choose_No = 0


Max_Chances = 20 # Maximum chances to play the game


# Function to append game data to a list

def list_append():

    # Append various game-related information to the text_data list

    # for later use in file generation

    text_data.append(f"Attempt Number: {attempts}")

    text_data.append(f"Presented Enemies: {Enemies}")

    text_data.append(f"Inputed Number: {Choose_No}")

    text_data.append(f"Status of the game: {Status}")

    text_data.append(f"Life Score: {Life_score}\n")


# Function to display the current game status
```

```

def game_status():

    print("\n\n\n*** Game Status ***")

    print(f"Player name: {User_Name}")

    print(f"Total attempts: {attempts}")

    print(f"Final life score: {Life_score}")


# Function to generate a file with game session details

def generate_file(text_data):

    # Generate a unique file name using date, time, and a random number

    current_dt = datetime.datetime.now()

    date_format = current_dt.strftime("%Y_%m_%d")

    time_format = current_dt.strftime("%H_%M_%S_%f")[:-6]

    Rand_No = random.randint(0, 9999)

    file_name = f"{date_format}_{time_format}{Rand_No}.txt"


# Write game session details to a file

with open(file_name, 'w') as file:

    file.write("-----\n")

    file.write(" *** Game Session Details ***\n")

    file.write("-----\n\n")

    file.write(f"Player name : {User_Name}\n\n")

    file.write(f"Life Score : {Life_score}\n\n\n")

    for data in text_data:

        file.write(data + "\n\n")

    file.write("\n\nEnd Game Statistics\n")

    if attempts == 21:

        file.write(f"Congratulations!! {User_Name} defeated the enemies and You Won the battle")

    else:

```



```
file.write(f"Game Over!! {User_Name} could not defeat the enemies and You lost the battle")
```

```
# Main game loop
```

```
while attempts <= Max_Chances:
```

```
    # Logic to determine the strength of enemies based on the number of attempts
```

```
    if attempts <= 5:
```

```
        for _ in range(1, 6):
```

```
            Rand_No = random.randint(15, 100)
```

```
            Enemies.append(Rand_No)
```

```
    elif attempts <= 10:
```

```
        for _ in range(1, 6):
```

```
            Rand_No = random.randint(250, 2000)
```

```
            Enemies.append(Rand_No)
```

```
    elif attempts <= 15:
```

```
        for _ in range(1, 6):
```

```
            Rand_No = random.randint(3000, 10000)
```

```
            Enemies.append(Rand_No)
```

```
    else:
```

```
        for _ in range(1, 6):
```

```
            Rand_No = random.randint(20000, 100000)
```

```
            Enemies.append(Rand_No)
```

```
# Display current game information
```

```
print(f"Attempts : {attempts}")
```

```
print(f"{User_Name}'s life score is : {Life_score}")
```

```
print("Presented Enemies:", Enemies)
```

```
try:
```

```

# Get user input to select an enemy to fight

Choose_No = int(input("Select a number to fight: "))

if Choose_No in Enemies:

    if Life_score >= Choose_No:

        # If the chosen enemy is defeated, update life score and status

        print(f"{User_Name} killed {Choose_No}\n")

        Life_score += Choose_No

        Status = "You Won the game"

    else:

        # If the user loses, display the final status and end the game

        print(f"{Choose_No} killed {User_Name}\n")

        game_status()

        print(f"{User_Name} was defeated!!!")

        Status = "You Lost the game DON has fallen"

        list_append()

        generate_file(text_data)

        break

else:

    # If the chosen enemy does not exist, end the game

    print("No such enemy")

    Status = "You Lost the game No such enemy and DON has fallen"

    game_status()

    print(f"{User_Name} was defeated!!!")

    list_append()

    generate_file(text_data)

    sys.exit()

except ValueError:

    # If an invalid input is entered, end the game

```

```
print("Invalid input, Game Over!!")
```

```
Status = "Invalid Input and You Lost the game DON has fallen"
```

```
list_append()
```

```
generate_file(text_data)
```

```
sys.exit()
```

```
# Append game data for this attempt and increment attempts counter
```

```
list_append()
```

```
attempts += 1
```

```
Enemies.clear() # Clear the list of enemies for the next round
```

```
else:
```

```
# Display final game status if maximum attempts are reached
```

```
game_status()
```

```
print(f"{User_Name} saved the day!")
```

```
generate_file(text_data)
```

## 5. Algorithm

- 0) Start
- 1) Initialization of Game Variables:
  - 1.1) Prompt the user to enter their name and store it in 'User\_Name'
  - 1.2) Generate a random starting 'Life\_score' between 1 and 50
  - 1.3) Set attempts to 1
  - 1.4) Initialize empty lists for Enemies and 'text\_data'
  - 1.5) Set Status and 'Choose\_No' to empty values
  - 1.6) Define 'Max\_Chances' as 20, indicating the maximum number of attempts.
- 2) Define Functions:
  - 2.1) list\_append(): Append game-related information to the 'text\_data' list
  - 2.2) game\_status(): Display the current game status
  - 2.3) generate\_file(text\_data): Generate a file with game session details.
- 3) Game Loop:
  - 3.1) Determine the strength of enemies based on the number of attempts
  - 3.2) Display current game information: attempts, player's life score, and presented enemies.
- 4) User Input and Enemy Battle:
  - 4.1) Prompt the user to select a number to fight (Choose\_No).
  - 4.2) Check if the chosen number is among the presented enemies (Enemies).
  - 4.3) If the number is in Enemies:
    - 4.3.1) Check if the player's life score is enough to defeat the chosen enemy.
    - 4.3.2) Update the game status accordingly (win or lose).
    - 4.3.3) If the player loses, display the final status, update 'text\_data', generate a file, and exit the loop.
  - 4.4) If the chosen enemy does not exist, end the game.
- 5) Handle Invalid Input: If the user enters an invalid input (not a number), end the game and generate a file.
- 6) Append Game Data and Update Counters:
  - 6.1) Append game data for the current attempt using 'list\_append()'.
  - 6.2) Increment the 'attempts' counter.
  - 6.3) Clear the list of enemies ('Enemies') for the next round.
- 7) End Game Conditions:
  - 7.1) If the maximum number of attempts is reached, display the final game status.
  - 7.2) If the player successfully completes all attempts, display a victory message and generate a file with the session details.
- 8) End

## 6. Test Cases

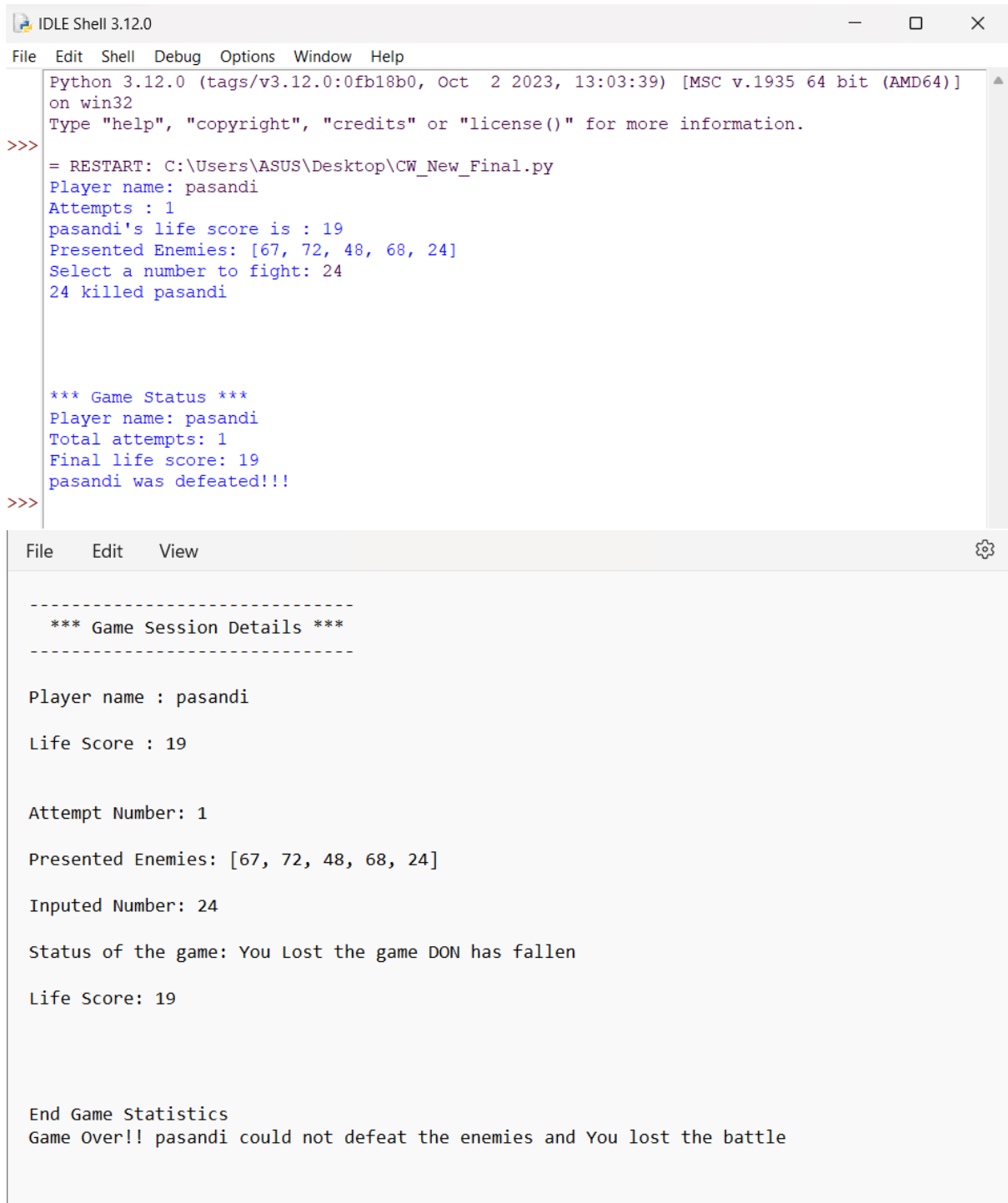
### 6.1. Pass test cases

```
*final final 334.py - C:\Users\ASUS\Desktop\final final 334.py (3.12.0)*
File Edit Format Run Options Window Help
1 import sys
2 import random
3 import datetime
4
5 # Initialize game variables and user inputs
6 User_Name = input("Player name: ")
7 Life_score = random.randint(1, 50)
8 attempts = 1
9 Enemies = []
10 text_data = []
11 Status = ""
12 Choose_No = 0
13
14 Max_Chances = 20 # Maximum chances to play the game
15
16 # Function to append game data to a list
17 def list_append():
18     # Append various game-related information to the text_data list
19     # for later use in file generation
20     text_data.append(f"Attempt Number: {attempts}")
21     text_data.append(f"Presented Enemies: {Enemies}")
22     text_data.append(f"Inputed Number: {Choose_No}")
23     text_data.append(f"Status of the game: {Status}")
24     text_data.append(f"Life Score: {Life_score}\n")
25
26 # Function to display the current game status
27 def game_status():
28     print("\n\n\n*** Game Status ***")
29     print(f"Player name: {User_Name}")
30     print(f"Total attempts: {attempts}")
31     print(f"Final life score: {Life_score}")
32
33 # Function to generate a file with game session details
34 def generate_file(text_data):
35     # Generate a unique file name using date, time, and a random number
36     current_dt = datetime.datetime.now()
37     date_format = current_dt.strftime("%Y_%m_%d")
38     time_format = current_dt.strftime("%H_%M_%S_%f")[:-6]
39     Rand_No = random.randint(0, 9999)
40     file_name = f"{date_format}_{time_format}{Rand_No}.txt"
41
```

```
*final final 334.py - C:\Users\ASUS\Desktop\final final 334.py (3.12.0)*
File Edit Format Run Options Window Help
42 # Write game session details to a file
43 with open(file_name, 'w') as file:
44     file.write("-----\n")
45     file.write(" *** Game Session Details ***\n")
46     file.write("-----\n")
47     file.write(f"Player name : {User_Name}\n\n")
48     file.write(f"Life Score : {Life_score}\n\n")
49     for data in text_data:
50         file.write(data + "\n\n")
51     file.write("\n\nEnd Game Statistics\n")
52     if attempts == 21:
53         file.write(f"Congratulations!! {User_Name} defeated the enemies and You Won the battle")
54     else:
55         file.write(f"Game Over!! {User_Name} could not defeat the enemies and You lost the battle")
56
57 # Main game loop
58 while attempts <= Max_Chances:
59     # Logic to determine the strength of enemies based on the number of attempts
60     if attempts <= 5:
61         for _ in range(1, 6):
62             Rand_No = random.randint(15, 100)
63             Enemies.append(Rand_No)
64     elif attempts <= 10:
65         for _ in range(1, 6):
66             Rand_No = random.randint(250, 2000)
67             Enemies.append(Rand_No)
68     elif attempts <= 15:
69         for _ in range(1, 6):
70             Rand_No = random.randint(3000, 10000)
71             Enemies.append(Rand_No)
72     else:
73         for _ in range(1, 6):
74             Rand_No = random.randint(20000, 100000)
75             Enemies.append(Rand_No)
76
77     # Display current game information
78     print(f"Attempts : {attempts}")
79     print(f"{User_Name}'s life score is : {Life_score}")
80     print("Presented Enemies:", Enemies)
```

```
*final final 334.py - C:\Users\ASUS\Desktop\final final 334.py (3.12.0)*
File Edit Format Run Options Window Help
82 try:
83     # Get user input to select an enemy to fight
84     Choose_No = int(input("Select a number to fight: "))
85     if Choose_No in Enemies:
86         if Life_score >= Choose_No:
87             # If the chosen enemy is defeated, update life score and status
88             print(f"{User_Name} killed {Choose_No}\n")
89             Life_score -= Choose_No
90             Status = "You Won the game"
91         else:
92             # If the user loses, display the final status and end the game
93             print(f"{Choose_No} killed {User_Name}\n")
94             game_status()
95             print(f"{User_Name} was defeated!!!")
96             Status = "You Lost the game DON has fallen"
97             list_append()
98             generate_file(text_data)
99             break
100     else:
101         # If the chosen enemy does not exist, end the game
102         print("No such enemy")
103         Status = "You Lost the game No such enemy and DON has fallen"
104         game_status()
105         print(f"{User_Name} was defeated!!!")
106         list_append()
107         generate_file(text_data)
108         sys.exit()
109 except ValueError:
110     # If an invalid input is entered, end the game
111     print("Invalid input, Game Over!!")
112     Status = "Invalid Input and You Lost the game DON has fallen"
113     list_append()
114     generate_file(text_data)
115     sys.exit()
116
117 # Append game data for this attempt and increment attempts counter
118 list_append()
119 attempts += 1
120 Enemies.clear() # Clear the list of enemies for the next round
121
122 else:
123     # Display final game status if maximum attempts are reached
124     game_status()
125     print(f"{User_Name} saved the day!")
126     generate_file(text_data)
127
```

## 1. Test Case 1



```
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct  2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\ASUS\Desktop\CW_New_Final.py
Player name: pasandi
Attempts : 1
pasandi's life score is : 19
Presented Enemies: [67, 72, 48, 68, 24]
Select a number to fight: 24
24 killed pasandi

*** Game Status ***
Player name: pasandi
Total attempts: 1
Final life score: 19
pasandi was defeated!!!
>>>
```

```
-----
*** Game Session Details ***
-----

Player name : pasandi

Life Score : 19

Attempt Number: 1

Presented Enemies: [67, 72, 48, 68, 24]

Inputed Number: 24

Status of the game: You Lost the game DON has fallen

Life Score: 19

End Game Statistics
Game Over!! pasandi could not defeat the enemies and You lost the battle
```

## 2. Test case 2

```
IDLE Shell 3.12.0
File Edit Shell Debug Options Window Help
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct  2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\ASUS\Desktop\CW_New_Final.py
Player name: pasandi
Attempts : 1
pasandi's life score is : 50
Presented Enemies: [17, 93, 87, 26, 69]
Select a number to fight: 26
pasandi killed 26

Attempts : 2
pasandi's life score is : 76
Presented Enemies: [82, 18, 75, 43, 100]
Select a number to fight: 75
pasandi killed 75

Attempts : 3
pasandi's life score is : 151
Presented Enemies: [85, 29, 77, 75, 36]
Select a number to fight: 85
pasandi killed 85

Attempts : 4
pasandi's life score is : 236
Presented Enemies: [48, 17, 98, 28, 18]
Select a number to fight: 98
pasandi killed 98

Attempts : 5
pasandi's life score is : 334
Presented Enemies: [50, 83, 17, 74, 40]
Select a number to fight: 83
pasandi killed 83

Attempts : 6
pasandi's life score is : 417
Presented Enemies: [1019, 1483, 1086, 1279, 1349]
Select a number to fight: 1019
1019 killed pasandi

*** Game Status ***
Player name: pasandi
Total attempts: 6
Final life score: 417
pasandi was defeated!!!
>>>
```





-----  
\*\*\* Game Session Details \*\*\*  
-----

Player name : pasandi

Life Score : 417

Attempt Number: 1

Presented Enemies: [17, 93, 87, 26, 69]

Inputed Number: 26

Status of the game: You Won the game

Life Score: 76

Attempt Number: 2

Presented Enemies: [82, 18, 75, 43, 100]

Inputed Number: 75

Status of the game: You Won the game

Life Score: 151



Attempt Number: 3

Presented Enemies: [85, 29, 77, 75, 36]

Inputed Number: 85

Status of the game: You Won the game

Life Score: 236

Attempt Number: 4

Presented Enemies: [48, 17, 98, 28, 18]

Inputed Number: 98

Status of the game: You Won the game

Life Score: 334

Attempt Number: 5

Presented Enemies: [50, 83, 17, 74, 40]

Inputed Number: 83

Status of the game: You Won the game

Life Score: 417

Attempt Number: 6

Presented Enemies: [1019, 1483, 1086, 1279, 1349]

Inputed Number: 1019

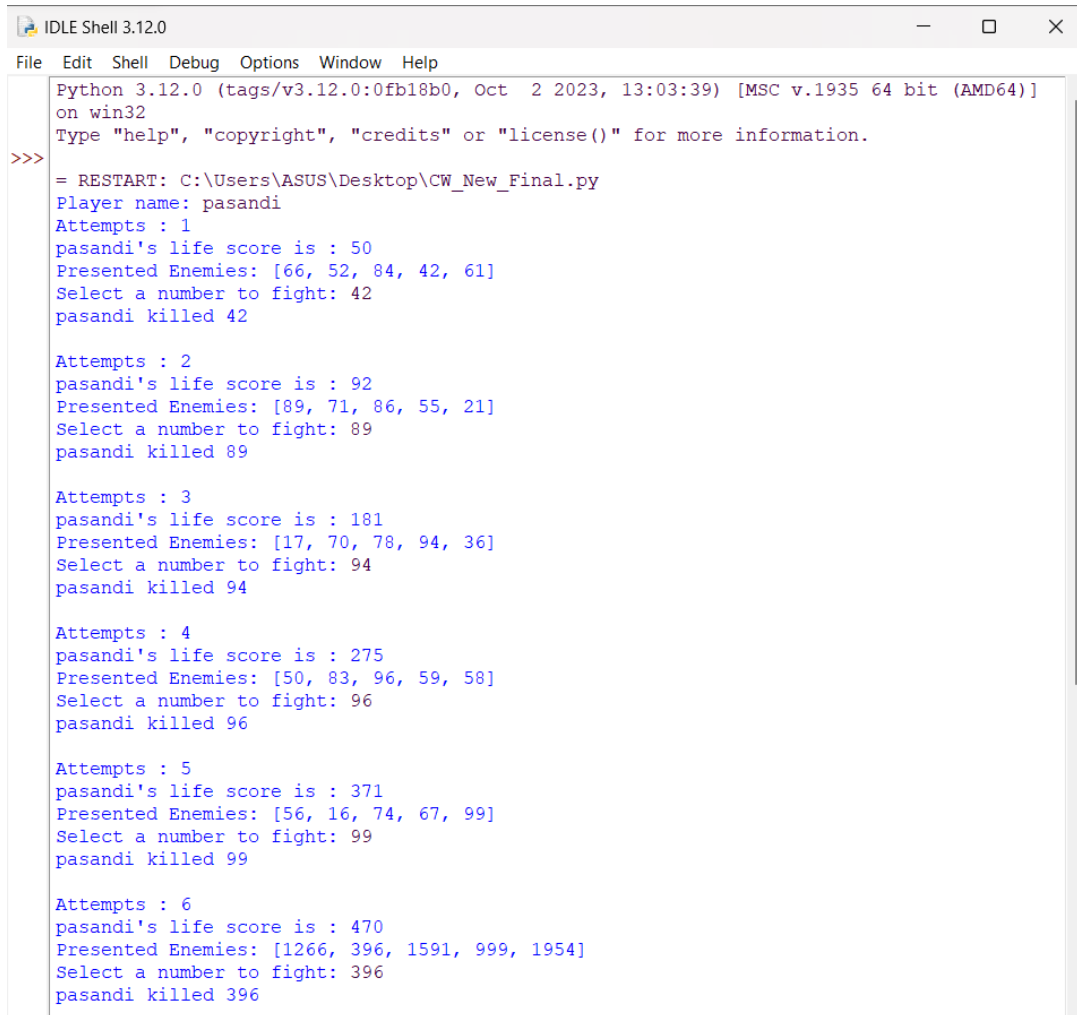
Status of the game: You Lost the game DON has fallen

Life Score: 417

End Game Statistics

Game Over!! pasandi could not defeat the enemies and You lost the battle

### 3. Test Case 3



```
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct  2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\ASUS\Desktop\CW_New_Final.py
Player name: pasandi
Attempts : 1
pasandi's life score is : 50
Presented Enemies: [66, 52, 84, 42, 61]
Select a number to fight: 42
pasandi killed 42

Attempts : 2
pasandi's life score is : 92
Presented Enemies: [89, 71, 86, 55, 21]
Select a number to fight: 89
pasandi killed 89

Attempts : 3
pasandi's life score is : 181
Presented Enemies: [17, 70, 78, 94, 36]
Select a number to fight: 94
pasandi killed 94

Attempts : 4
pasandi's life score is : 275
Presented Enemies: [50, 83, 96, 59, 58]
Select a number to fight: 96
pasandi killed 96

Attempts : 5
pasandi's life score is : 371
Presented Enemies: [56, 16, 74, 67, 99]
Select a number to fight: 99
pasandi killed 99

Attempts : 6
pasandi's life score is : 470
Presented Enemies: [1266, 396, 1591, 999, 1954]
Select a number to fight: 396
pasandi killed 396
```

```
Attempts : 7
pasandi's life score is : 866
Presented Enemies: [1701, 956, 1330, 251, 1719]
Select a number to fight: 251
pasandi killed 251

Attempts : 8
pasandi's life score is : 1117
Presented Enemies: [1071, 1166, 1516, 450, 977]
Select a number to fight: 1071
pasandi killed 1071

Attempts : 9
pasandi's life score is : 2188
Presented Enemies: [1609, 279, 1504, 1932, 1389]
Select a number to fight: 1932
pasandi killed 1932

Attempts : 10
pasandi's life score is : 4120
Presented Enemies: [563, 559, 873, 970, 1673]
Select a number to fight: 1673
pasandi killed 1673

Attempts : 11
pasandi's life score is : 5793
Presented Enemies: [8307, 5952, 6608, 5900, 9678]
Select a number to fight: 9678
9678 killed pasandi

*** Game Status ***
Player name: pasandi
Total attempts: 11
Final life score: 5793
pasandi was defeated!!!
>>>
```


```
File Edit View
*** Game Session Details ***
-----

Player name : pasandi
Life Score : 5793

Attempt Number: 1
Presented Enemies: [66, 52, 84, 42, 61]
Inputed Number: 42
Status of the game: You Won the game
Life Score: 92

Attempt Number: 2
Presented Enemies: [89, 71, 86, 55, 21]
Inputed Number: 89
Status of the game: You Won the game
Life Score: 181

Attempt Number: 3
Presented Enemies: [17, 70, 78, 94, 36]
Inputed Number: 94
Status of the game: You Won the game
Life Score: 275
```

```
File Edit View 

Attempt Number: 4

Presented Enemies: [50, 83, 96, 59, 58]

Inputed Number: 96

Status of the game: You Won the game

Life Score: 371

Attempt Number: 5

Presented Enemies: [56, 16, 74, 67, 99]

Inputed Number: 99

Status of the game: You Won the game

Life Score: 470


Attempt Number: 6

Presented Enemies: [1266, 396, 1591, 999, 1954]

Inputed Number: 396

Status of the game: You Won the game

Life Score: 866
```

```
File Edit View 

Attempt Number: 7

Presented Enemies: [1701, 956, 1330, 251, 1719]

Inputed Number: 251

Status of the game: You Won the game

Life Score: 1117

Attempt Number: 8

Presented Enemies: [1071, 1166, 1516, 450, 977]

Inputed Number: 1071

Status of the game: You Won the game

Life Score: 2188

Attempt Number: 9

Presented Enemies: [1609, 279, 1504, 1932, 1389]

Inputed Number: 1932

Status of the game: You Won the game

Life Score: 4120
```

Attempt Number: 10

Presented Enemies: [563, 559, 873, 970, 1673]

Inputed Number: 1673

Status of the game: You Won the game

Life Score: 5793

Attempt Number: 11

Presented Enemies: [8307, 5952, 6608, 5900, 9678]

Inputed Number: 9678

Status of the game: You Lost the game DON has fallen

Life Score: 5793

End Game Statistics

Game Over!! pasandi could not defeat the enemies and You lost the battle

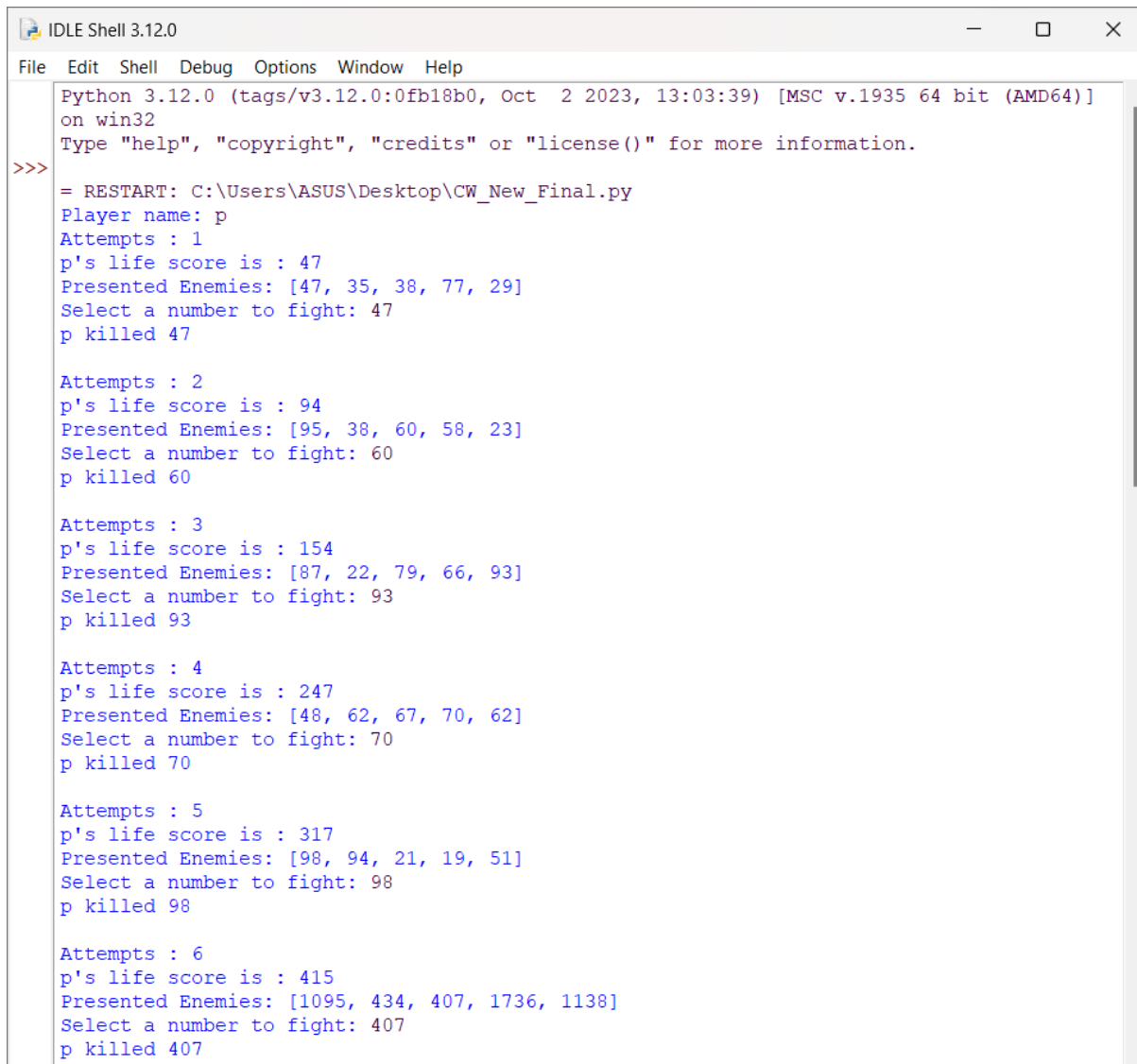
Ln 13, Col 1

100%

Windows (CRLF)

UTF-8

## 4. Test Case 4



```
IDLE Shell 3.12.0
File Edit Shell Debug Options Window Help
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct 2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\ASUS\Desktop\CW_New_Final.py
Player name: p
Attempts : 1
p's life score is : 47
Presented Enemies: [47, 35, 38, 77, 29]
Select a number to fight: 47
p killed 47

Attempts : 2
p's life score is : 94
Presented Enemies: [95, 38, 60, 58, 23]
Select a number to fight: 60
p killed 60

Attempts : 3
p's life score is : 154
Presented Enemies: [87, 22, 79, 66, 93]
Select a number to fight: 93
p killed 93

Attempts : 4
p's life score is : 247
Presented Enemies: [48, 62, 67, 70, 62]
Select a number to fight: 70
p killed 70

Attempts : 5
p's life score is : 317
Presented Enemies: [98, 94, 21, 19, 51]
Select a number to fight: 98
p killed 98

Attempts : 6
p's life score is : 415
Presented Enemies: [1095, 434, 407, 1736, 1138]
Select a number to fight: 407
p killed 407
```

```
IDLE Shell 3.12.0
File Edit Shell Debug Options Window Help

Attempts : 7
p's life score is : 822
Presented Enemies: [1523, 479, 1249, 1147, 643]
Select a number to fight: 643
p killed 643

Attempts : 8
p's life score is : 1465
Presented Enemies: [327, 970, 1133, 881, 1747]
Select a number to fight: 1133
p killed 1133

Attempts : 9
p's life score is : 2598
Presented Enemies: [959, 1019, 1559, 1582, 361]
Select a number to fight: 1582
p killed 1582

Attempts : 10
p's life score is : 4180
Presented Enemies: [1933, 1709, 648, 1779, 1830]
Select a number to fight: 1933
p killed 1933

Attempts : 11
p's life score is : 6113
Presented Enemies: [4474, 9303, 8240, 3693, 6211]
Select a number to fight: 4474
p killed 4474

Attempts : 12
p's life score is : 10587
Presented Enemies: [7479, 6275, 3188, 5948, 6548]
Select a number to fight: 7479
p killed 7479

Attempts : 13
p's life score is : 18066
Presented Enemies: [4679, 6106, 9624, 7035, 6109]
Select a number to fight: 9624
p killed 9624
```



```
IDLE Shell 3.12.0
File Edit Shell Debug Options Window Help

Attempts : 14
p's life score is : 27690
Presented Enemies: [4308, 8608, 3910, 6640, 9937]
Select a number to fight: 9937
p killed 9937

Attempts : 15
p's life score is : 37627
Presented Enemies: [7741, 8888, 5448, 7651, 7777]
Select a number to fight: 8888
p killed 8888

Attempts : 16
p's life score is : 46515
Presented Enemies: [93468, 78627, 74235, 33316, 98802]
Select a number to fight: 33316
p killed 33316

Attempts : 17
p's life score is : 79831
Presented Enemies: [71165, 97132, 92301, 82892, 38877]
Select a number to fight: 71165
p killed 71165

Attempts : 18
p's life score is : 150996
Presented Enemies: [99835, 22358, 90509, 48375, 77785]
Select a number to fight: 99835
p killed 99835

Attempts : 19
p's life score is : 250831
Presented Enemies: [43962, 20055, 85181, 39585, 99688]
Select a number to fight: 20055
p killed 20055

Attempts : 20
p's life score is : 270886
Presented Enemies: [61182, 38362, 99790, 61317, 96821]
Select a number to fight: 96821
p killed 96821

*** Game Status ***
Player name: p
Total attempts: 21
Final life score: 367707
p saved the day!
>>>
```



```
|-----  
| *** Game Session Details ***  
|-----
```

Player name : p

Life Score : 367707

Attempt Number: 1

Presented Enemies: [47, 35, 38, 77, 29]

Inputed Number: 47

Status of the game: You Won the game

Life Score: 94

Attempt Number: 2

Presented Enemies: [95, 38, 60, 58, 23]

Inputed Number: 60

Status of the game: You Won the game

Life Score: 154

Attempt Number: 3

Presented Enemies: [87, 22, 79, 66, 93]

Inputed Number: 93

Status of the game: You Won the game

Life Score: 247

Attempt Number: 4

Presented Enemies: [48, 62, 67, 70, 62]

Inputed Number: 70

Status of the game: You Won the game

Life Score: 317

Attempt Number: 5

Presented Enemies: [98, 94, 21, 19, 51]

Inputed Number: 98

Status of the game: You Won the game

Life Score: 415

Attempt Number: 6

Presented Enemies: [1095, 434, 407, 1736, 1138]

Inputed Number: 407

Status of the game: You Won the game

Life Score: 822

Attempt Number: 7

Presented Enemies: [1523, 479, 1249, 1147, 643]

Inputed Number: 643

Status of the game: You Won the game

Life Score: 1465

Attempt Number: 8

Presented Enemies: [327, 970, 1133, 881, 1747]

Inputed Number: 1133

Status of the game: You Won the game

Life Score: 2598

Attempt Number: 9

Presented Enemies: [959, 1019, 1559, 1582, 361]

Inputed Number: 1582

Status of the game: You Won the game

Life Score: 4180

Attempt Number: 10

Presented Enemies: [1933, 1709, 648, 1779, 1830]

Inputed Number: 1933

Status of the game: You Won the game

Life Score: 6113

Attempt Number: 11

Presented Enemies: [4474, 9303, 8240, 3693, 6211]

Inputed Number: 4474

Status of the game: You Won the game

Life Score: 10587

Attempt Number: 12

Presented Enemies: [7479, 6275, 3188, 5948, 6548]

Inputed Number: 7479

Status of the game: You Won the game

Life Score: 18066

Attempt Number: 13

Presented Enemies: [4679, 6106, 9624, 7035, 6109]

Inputed Number: 9624

Status of the game: You Won the game

Life Score: 27690

Attempt Number: 14

Presented Enemies: [4308, 8608, 3910, 6640, 9937]

Inputed Number: 9937

Status of the game: You Won the game

Life Score: 37627

Attempt Number: 15

Presented Enemies: [7741, 8888, 5448, 7651, 7777]

Inputed Number: 8888

Status of the game: You Won the game

Life Score: 46515

Attempt Number: 16

Presented Enemies: [93468, 78627, 74235, 33316, 98802]

Inputed Number: 33316

Status of the game: You Won the game

Life Score: 79831

Attempt Number: 17

Presented Enemies: [71165, 97132, 92301, 82892, 38877]

Inputed Number: 71165

Status of the game: You Won the game

Life Score: 150996

Attempt Number: 18

Presented Enemies: [99835, 22358, 90509, 48375, 77785]

Inputed Number: 99835

Status of the game: You Won the game

Life Score: 250831

Attempt Number: 19

Presented Enemies: [43962, 20055, 85181, 39585, 99688]

Inputed Number: 20055

Status of the game: You Won the game

Life Score: 270886

Attempt Number: 20

Presented Enemies: [61182, 38362, 99790, 61317, 96821]

Inputed Number: 96821

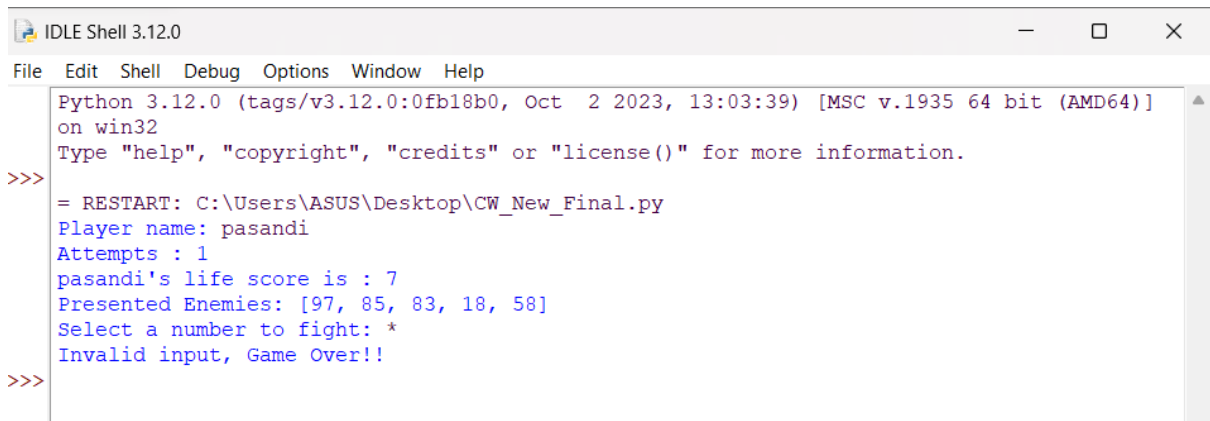
Status of the game: You Won the game

Life Score: 367707

End Game Statistics

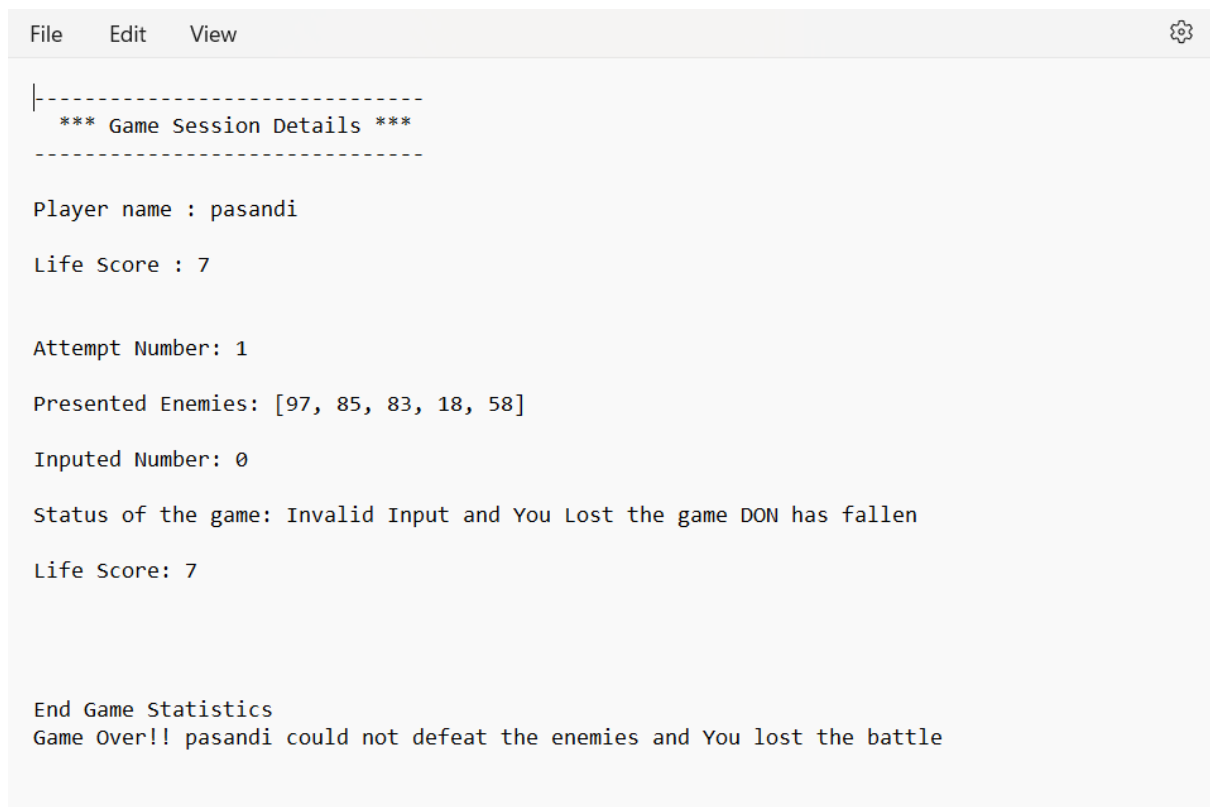
Congratulations!! p defeated the enemies and You Won the battle

## 5. Test Case 5



The screenshot shows the IDLE Shell 3.12.0 window. The title bar reads 'IDLE Shell 3.12.0'. The menu bar includes 'File', 'Edit', 'Shell', 'Debug', 'Options', 'Window', and 'Help'. The shell area displays the following text:

```
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct 2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\ASUS\Desktop\CW_New_Final.py
Player name: pasandi
Attempts : 1
pasandi's life score is : 7
Presented Enemies: [97, 85, 83, 18, 58]
Select a number to fight: *
Invalid input, Game Over!!
>>>
```



The screenshot shows a text editor window with a menu bar containing 'File', 'Edit', 'View', and a settings icon. The text content is as follows:

```
|-----
*** Game Session Details ***
-----

Player name : pasandi

Life Score : 7


Attempt Number: 1

Presented Enemies: [97, 85, 83, 18, 58]

Inputed Number: 0

Status of the game: Invalid Input and You Lost the game DON has fallen

Life Score: 7


End Game Statistics
Game Over!! pasandi could not defeat the enemies and You lost the battle
```

## 6.2. Fail test cases

```
final final 334 copy.py - C:\Users\ASUS\Desktop\final final 334 copy.py (3.12.0)
File Edit Format Run Options Window Help
1 import sys
2 import random
3 import datetime
4
5 # Initialize game variables and user inputs
6 User_Name = input("Player name: ")
7 Life_score = random.randint(1, 50)
8 Enemies = []
9 text_data = []
10 Status = ""
11
12 Max_Chances = 20 # Maximum chances to play the game
13
14 # Function to append game data to a list
15 def list_append():
16     # Append various game-related information to the text_data list
17     # for later use in file generation
18     text_data.append(f"Attempt Number: {attempts}")
19     text_data.append(f"Presented Enemies: {Enemies}")
20     text_data.append(f"Inputted Number: {Choose_No}")
21     text_data.append(f"Status of the game: {Status}")
22     text_data.append(f"Life Score: {Life_score}\n")
23
24 # Function to display the current game status
25 def game_status():
26     print("\n\n\n*** Game Status ***")
27     print(f"Player name: {User_Name}")
28     print(f"Total attempts: {attempts}")
29     print(f"Final life score: {Life_score}")
30
31 # Function to generate a file with game session details
32 def generate_file(text_data):
33     # Generate a unique file name using date, time, and a random number
34     current_dt = datetime.datetime.now()
35     date_format = current_dt.strftime("%Y_%m_%d")
36     time_format = current_dt.strftime("%H_%M_%S%f")[:-6]
37     Rand_No = random.randint(0, 9999)
38     file_name = f"{date_format}_{time_format}{Rand_No}.txt"
39
```

```
final final 334 copy.py - C:\Users\ASUS\Desktop\final final 334 copy.py (3.12.0)
File Edit Format Run Options Window Help
40 # Write game session details to a file
41 with open(file_name, 'w') as file:
42     file.write("-----\n")
43     file.write(" *** Game Session Details ***\n")
44     file.write("-----\n\n")
45     file.write(f"Player name : {User_Name}\n\n")
46     file.write(f"Life Score : {Life_score}\n\n")
47     for data in text_data:
48         file.write(data + "\n\n")
49     file.write("\n\nEnd Game Statistics\n")
50     if attempts == 21:
51         file.write(f"Congratulations!! {User_Name} defeated the enemies and You Won the battle")
52     else:
53         file.write(f"Game Over!! {User_Name} could not defeat the enemies and You lost the battle")
54
55 # Main game loop
56 while attempts <= Max_Chances:
57     # Logic to determine the strength of enemies based on the number of attempts
58     if attempts <= 5:
59         for _ in range(1, 6):
60             Rand_No = random.randint(15, 100)
61             Enemies.append(Rand_No)
62     elif attempts <= 10:
63         for _ in range(1, 6):
64             Rand_No = random.randint(250, 2000)
65             Enemies.append(Rand_No)
66     elif attempts <= 15:
67         for _ in range(1, 6):
68             Rand_No = random.randint(3000, 10000)
69             Enemies.append(Rand_No)
70     else:
71         for _ in range(1, 6):
72             Rand_No = random.randint(20000, 100000)
73             Enemies.append(Rand_No)
74
75     # Display current game information
76     print(f"Attempts : {attempts}")
77     print(f"{User_Name}'s life score is : {Life_score}")
78     print("Presented Enemies:", Enemies)
79
```

```
final final 334 copy.py - C:\Users\ASUS\Desktop\final final 334 copy.py (3.12.0)
File Edit Format Run Options Window Help
80     try:
81         # Get user input to select an enemy to fight
82         Choose_No = int(input("Select a number to fight: "))
83         if Choose_No in Enemies:
84             if Life_score >= Choose_No:
85                 # If the chosen enemy is defeated, update life score and status
86                 print(f"{User_Name} killed {Choose_No}\n")
87                 Life_score -= Choose_No
88                 Status = "You Won the game"
89             else:
90                 # If the user loses, display the final status and end the game
91                 print(f"{Choose_No} killed {User_Name}\n")
92                 game_status()
93                 print(f"{User_Name} was defeated!!!")
94                 Status = "You Lost the game DON has fallen"
95                 list_append()
96                 generate_file(text_data)
97                 break
98         else:
99             # If the chosen enemy does not exist, end the game
100             print("No such enemy")
101             Status = "You Lost the game No such enemy and DON has fallen"
102             game_status()
103             print(f"{User_Name} was defeated!!!")
104             list_append()
105             generate_file(text_data)
106             sys.exit()
107     except ValueError:
108         # If an invalid input is entered, end the game
109         print("Invalid input, Game Over!!!")
110         Status = "Invalid Input and You Lost the game DON has fallen"
111         list_append()
112         generate_file(text_data)
113         sys.exit()
114
115     # Append game data for this attempt and increment attempts counter
116     list_append()
117     attempts += 1
118     Enemies.clear() # Clear the list of enemies for the next round
119
120 else:
121     # Display final game status if maximum attempts are reached
122     game_status()
123     print(f"{User_Name} saved the day!")
124     generate_file(text_data)
125
Ln: 46 Col: 54
```

## Output

### 6. Test case

```
IDLE Shell 3.12.0
File Edit Shell Debug Options Window Help
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct 2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\ASUS\Desktop\final final 334 copy.py
Player name: pasi
Traceback (most recent call last):
  File "C:\Users\ASUS\Desktop\final final 334 copy.py", line 56, in <module>
    while attempts <= Max_Chances:
NameError: name 'attempts' is not defined
>>>
```



## 7. Table of Test Cases

Test cases no.	input	Expected output	Actual output	Result
1	Pasandi,24	Defeat	Defeat	Pass
2	Pasandi,26,75,85, 98,83,1019	Defeat	Defeat	Pass
3	Pasandi,42,89, 94,96,99,396, 251,1071,1932, 1673,9678	Defeat	Defeat	Pass
4	P,47,60,93,70, 98,407,643,1133, 1582,1933,4474, 7479,9624,9937, 8888,33316,71165, 99835,20055,96821	Won	Won	Pass
5	Pasandi, *	Defeat	Defeat	Pass
6	Pasi	Error:-Name 'attempt' is not defined	–	Fail