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Assignment Type : Individual

Acknowledgement

First and foremost, I would like to extend our heartfelt appreciation to my beloved lecturer Mr.

Nishan Saliya, for his invaluable guidance, unwavering support, and insightful feedback throughout the process. I would also like to appreciate the comments and feedback given to me by my batchmates.

Abstract

The entire goal of this programming project is to create a console Python application called "DON's Numeric Quest." This interactive adventure game, which was created as a component of the Informatics Institute of Technology's DOC334 - Computer Programming course, follows DON, the renowned "Destroyer of Numbers," as he sets out to protect the Letter-kind from malevolent numerical creatures. Selecting numbers below DON's "Life Score" decides victory or defeat as players, assuming the role of DON, maneuver through a series of strategic engagements. Over the course of 20 attempts, the game pits DON against randomly generated numbers, each posing a different set of obstacles. The assignment includes integrating Python 3.x language constructs, creating reports in an efficient manner, and applying best practices for programming.

Table of Contents

Acknowledgement	2
Abstract	3
Introduction of the Game:	7
Python codes for the above game scenario:	9
Python codes in module "Battle" from the package "Game":	9
Python codes in module "text_file_writing" from the package "Game":	15
Python codes in the main program "Main":	16
Screenshots of the codes:	17
Main program:	17
Module "Battle":	18
Python code running screenshots:	23
Screenshots of textfiles: Frror! Bookmark not o	defined.

List of Figures

Figure 1 https://drive.google.com/file/d/1xJMHfRjHpgwqP1shzFG3-xbMQj_An-k7/view	
Figure 2 https://www.freepik.com/free-vector/goliath-cartoon-character-from-religious	-bible-
$story_69784466.htm \# query= ancient \% 20 hero \& position=24 \& from_view= search \& track= 30 hero \& position=24 \& from_view= search \& track= 30 hero \& position=24 \& from_view= search \& track= 30 hero \& position= 24 \& from_view= search \& track= 30 hero \& position= 3$	ais&uuid=578
49a35-0e84-4b1d-9037-3b829de82a70	7
Figure 3 Screenshots of python codes of module Battle	20

List of Tables

Introduction of the Game:

Within the mystical realm of "Letter-kind," an iconic champion named DON, celebrated as the "Destroyer of Numbers," emerges as the savior of this digital landscape. Adored by the Letter-kind as their guardian, DON embarks on a noble adventure to liberate them from the clutches of malevolent numbers. In this Python-driven quest, players step into the shoes of DON, navigating through a tactical battleground where the selection of values beneath DON's "Life Score" dictates the destiny of hero and numbers alike. Armed with a finite set of twenty chances per session, players guide DON through a series of gripping numeric



Figure 2 https://www.freepik.com/free-

encounters, each triumph propelling him further up the echelons of heroism. Success entails navigating through all twenty attempts, etching DON's victorious legacy. However, should



Figure 1 https://drive.google.com/file/d/1xJMHfRjHpgwqP1shzFG

DON fall short, the hero meets a valiant end, leaving the Letter-kind vulnerable to the relentless numbers. Embark on this enthralling voyage as we unravel the mechanics, hurdles, and conquests within the core of "Numerical Odyssey: DON's Quest in Python Realms."

Attempts	Evil number range for each attempt
1-5	15-100
6-10	250-2000
11-15	3000-10000
16-20	20000-100000

Table 1 Attempts and Evil numbers range

Python codes for the above game scenario:

att="

text_ls="

text_def="

text_enemy="

text_total="

Python codes in module "Battle" from the package "Game": #import module random import random #declare variables text=" text_pn=" #get user input DON = input("Enter player name : ") DON= DON.capitalize() print("\nWELCOME",DON,":)"+" "+"Letter-Kind IS WAITING FOR YOU TO SAVE THEM FROM EVIL NUMBERS.\n") print("\nPlayer name : ",DON) text+="\nPlayer name: " text+=DON #use a function for the program def Battle_fun_don(): " this block will run the game" global text#for the text file #declare local variables ch_ev=" text_killed="

```
Is="
ev="
text="
text_total="
text_fs="
text gs="
text_pn="
attem=0
attempt=1
score=0
evil_numbers=[]
enemy=0
life_score=random.randrange(1,51)#get a life score between 1-50
for y in range(1,22):
  evil_numbers=[]
  for i in range(1,6):#get 5 evil numbers
    if attempt<=5:
      enemy=random.randrange(15,101)#get a rendom number between 15-100
    elif 5<attempt<=10:
      enemy=random.randrange(250,2001)#get a rendom number between 250-2000
    elif 10<attempt<=15:
      enemy=random.randrange(3000,10001)#get a rendom number between 3000-10000
    else:
      15<attempt<=20
      enemy=random.randrange(20000,100001)#get a rendom number between 20000-100000
    evil_numbers.append(enemy)
  print('Attempt is : ',attempt)#print attempt
  txt_att='\n\nAttempt is:'
  att=str(attempt)
  text+=txt_att
```

```
attempt+=1
print(DON+"'s"+' life score is: ',life_score)
ls=str(life_score)
text+='\n'+DON
text+="'s life score is: "
text+=ls
#take out the rendom evil numbers from the list
text+="\nPresented enemies:"
#take out the rendom evil numbers from the list
for x in evil_numbers:
  print(x,end=' ')
  ev=str(x)
  text+='\n'+ev
#use error handling
try:
  choose = int(input(" \setminus nChoose \ your \ Evil \ number \ to \ fight \ with : "))
  ch_ev=str(choose)
  text+='\nThe evil number that was selected is:'
  text+=ch_ev
  if choose not in evil_numbers:
    print(choose,'is not there to fight')
    ch_ev=str(choose)
    text+='\n'+ch_ev
    text+=' '+'is not there to fight'
    print("\n\n*** Game status ***")
    text_gs="\n\n\n*** Game status ***"
    text+=text_gs
    print("\nPlayer name : ",DON)
```

text+=att

```
text_pn="\n\nPlayer name : "
  text+=text_pn
  text+=DON
  print("Total attempts : ",attempt-1)
  att=str(attempt-1)
  text+="\nTotal attempts:"
  text+=att
  print("Final score is : ",life_score)
  text_fls=str(life_score)
  text+="\nFinal score is: "
  text+=ls
  print(DON,"was defeated\n")
  text+='\n'+DON
  text+=' '+"was defeated\n"
  break
elif choose<=life_score:</pre>
  print(DON,"killed",choose,'\n')
  ch_ev=str(choose)
  text+='\n'+DON
  text+=' '+"killed"
  text+=' '+ch_ev
  life_score=life_score+choose
  if attempt==21:
    print("\n\n*** Game status ***")
    text+="\n\n\n*** Game status ***"
    print("\nPlayer name : ",DON)
    text+="\n\nPlayer name : "
    text+=DON
    print("Total attempts : ",attempt-1)
    text+="\nTotal attempts:"
```

```
attem=attempt-1
    att_1=str(attem)
    text+=att_1
    print("Final score is : ",life_score)
    text+="\nFinal score is:"
    text+=ls
    print("Letter-kind was saved by",DON,'~-'+'\n Congratulations',DON,'you won the game.')
    text+="\nLetter-kind was saved by"
    text+=' '+DON
    break
else:
  print(choose,"killed",DON)
  ch_ev=str(choose)
  text+='\n'+ch_ev
  text+=' '+"killed"
  text+=' '+DON
  print("\n\n*** Game status ***")
  text+="\n\n\n*** Game status ***"
  print("\nPlayer name : ",DON)
  text+="\n\nPlayer name : "
  text+=DON
  print("Total attempts : ",attempt-1)
  attemp=str(attempt-1)
  text+="\nTotal attempts:"
  text+=attemp
  print("Final score is : ",life_score)
  text+="\nFinal score is: "
  text+=ls
  print(DON,"was defeated\n")
  text+='\n'+DON
```

```
text+=' '+"was defeated\n"
    break
except ValueError:
  print('No such enemy')
  text+='\nNo such enemy'
 print("\n\n*** Game status ***")
 text+="\n\n\n*** Game status ***"
  print("\nPlayer name : ",DON)
  text+="\n\nPlayer name:"
  text+=' '+DON
  print("Total attempts : ",attempt-1)
  r_attempt=str(attempt-1)
  text+="\nTotal attempts : "
  text+=r_attempt
  print("Final score is : ",life_score)
  text+="\nFinal score is:"
  text+=ls
  print(DON,"was defeated\n")
  text+='\n'+DON
  text+=' '+"was defeated\n"
  break
```

return text#return the value of text to do the file writing

```
Python codes in module "text_file_writing" from the package "Game":
#import datetime and random
import datetime
import random
#use a function to create file name
def statistics(text):
# Get the current date
  current_date = datetime.datetime.now().strftime("%Y_%m_%d")
# Get the current time
  current_time = datetime.datetime.now().strftime("%H_%M_%S")
# Generate a random number between 0000 and 9999
  random_number = str(random.randrange(0,10000)).zfill(4)
# Combine the parts
  text_file_name = f"{current_date}_{current_time}_{random_number}.txt"
  #write in text file
  with open(text_file_name,"w") as fo:
    fo.write(text)
```

Python codes in the main program "Main":

#import battle and text_file_write modules from Game module import Game.Battle import Game.text_file_write

#assign the function to text and call the function
text=Game.Battle_Battle_fun_don()
Game.text_file_write.statistics(text)

Screenshots of the codes:

Main program:

```
Main.py - C:\Users\Hp\OneDrive\Desktop\20230009\Main.py (3.11.6)

File Edit Format Run Options Window Help

import Game.Battle
import Game.text_file_write

text=Game.Battle.Battle_fun_don()

Game.text_file_write.statistics(text)
```

Module "Battle":

```
Battle.py - C:\Users\Hp\OneDrive\Desktop\20230009\Game\Battle.py (3.11.6)
                                                                                                                                                                                                                 - o ×
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#import module random

import random
   4 #declare variables
5 text=''
6 text_pn=''
    #get user input

DON = input ("Enter player name : ")

DON = DON. capitalize()

print("\nnElocome",Don,":)"+" "+"Letter-Kind IS WAITING FOR YOU TO SAVE THEM FROM EVIL NUMBERS.\n")

print("\nPlayer name : ",DON)

text+="\nPlayer name : ",DON)

text+="\nPlayer name : "

text+=DON
16 #use a function for the program
                                                                                                                                                                                                           Ln: 167 Col: 0
```

```
Battle.py - C:\Users\Hp\OneDrive\Desktop\20230009\Game\Battle.py (3.11.6)
                                                                                             if attempt<=5:
enemy=random.randrange(15,101) #get a rendom number between 15-100
elif Scattempt<=10:
enemy=random.randrange(250,2001) #get a rendom number between 250-2000
elif 10<a href="https://doi.org/10.1001/pythology/files/">https://doi.org/files/</a>
enemy=random.randrange(3000,10001) #get a rendom number between 3000-10000
else:
                                                                                             enemywrandom.ranu.anyc.....
15cattemptc=20
enemywrandom.randrange(20000,100001)#get a rendom number between 20000-100000
evil_numbers.append(enemy)
                                                                               evil_numbers.appenu(enemy)
print('Attempt is : ',attempt)
txt_att='\n\nAttempt is : '
att=str(attempt)
txxt+=xt_att
txxt+=xt_att
txxt+=att
print(DON+"'s"+' life score is: ',life_score)
lestr=|\frac{1}{1} + DON
txxt+=\frac{1}{1} + DON
txxt+=\frac{1}{1} + Sore
txxt+=\frac{
                                                                                   #take out the rendom evil numbers from the list
text+="\nPresented enemies:"
                                                                               $take out the rendom evil numbers from the list
for x in evil numbers:
   print(x, end=' ')
   texstr(x)
text+='\n'etv
$use error handling
                                                                                                          choose=int(input("\nchoose your Evil number to fight with : "))
dh_ev=str(choose)
teXt==\n'\The evil number that was selected is : '
teXt==\n'\The evil numbers:
print(choose, 'is not there to fight')
ch_ev=str(choose)
teXt=*\n'\n'+ch_ev
teXt=*\n'\n'+ch_ev
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teXt=*\n'\n'\n'+s
game status ***")
teXt_qs=*\n\n\n'** Game status ***"
```

```
Rattle.py - CAUsers\Hp\OneOrive\Desktop\2023009\Game\Battle.py (3.11.6)

File Edit Format Run Options Window Help

for x in evil_numbers:
    print(x.ende*')
    evestr(x)
    evestr(x)
    evestr(x)
    fuse error handling

try:
    choose=int(input("\nchoose your Evil number to fight with : "))
    che evestr(choose)
    che evestr(choose)
    text=-'\thereory the evil number that was selected is : 'text=-'\thereory the evil number:
    print(choose, 'is not there to fight')
    che evestr(choose)
    text=-'\thereory thereory thereory thereory
    if choose not in evil_numbers:
    print(choose, 'is not there to fight')
    che evestr(choose)
    text=-'\thereory thereory thereory
    text=-'\thereory thereory
    text=-'\thereory thereory
    text=-'\thereory thereory
    text=-'\thereory thereory
    text=-'\thereory thereory
    text=-'\thereory thereory
    text=-text_gs
    print("\nnlayer name : ", DON)
    text=-bON
    print("\nnlayer name : ", attempt-1)
    att=str(attempt-1)
    text=-att
    print("Stal attempts : ", attempt-1)
    text=-att
    print("Final score is : ", life_score)
    text=-is
    text+-is
    print("Final score is : ", life_score)
    text=-is
    print(DON, 'was defeated\n')
 Battle.py - C:\Users\Hp\OneDrive\Desktop\20230009\Game\Battle.py (3.11.6)
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                                                                                                                                text+="\nFinal score is:"
text+=ls
print(DON,"was defeated\n")
text+='\n'+DON
text+=' '+"was defeated\n"
break
                                                                                           elif choose<=life score:
    print(DON, "killed", choose, '\n')
    ch_ev=str(choose)
    text=*'\n'+DON
    text=*'\n'+DON
    text=*' '*-rkilled"
    text=*' '*-rkilled"
    ife score=life score+choose
    if attempt==21:
        print("\n\n'** Game status ***")
        text=*'\n\n'h** Game status ***")
        print("\n'Player name: ",DON)
        text=*'\n\n'nPlayer name: "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Activate Windows
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            In: 38 Col: 0
```

Battle.py - C:\Users\Hp\OneDrive\Desktop\20230009\Game\Battle.py (3.11.6) print("Letter-kind was saved by",DON,'~-'+'\n Congratulations',DON,'you won the game.')
text+="\nLetter-kind was saved by"
text+=' '+DON
break Activate Windows

```
Battle.py - C:\Users\Hp\OneDrive\Desktop\20230009\Game\Battle.py (3.11.6)
      return text#return the value of text to do the file writing
                                                                                                                           Activate Windows
                                                                                                                                              1--- 20 C-1-0
```

Figure 3 Screenshots of python codes of module Battle

```
🔒 text_file_write.py - C:/Users/Hp/OneDrive/Desktop/20230009/Game/text_file_write.py (3.11.6)
File Edit Format Run Options Window Help
1 #import datetime and random
 2 import datetime
3 import random
5 #use a function to create file name
6 def statistics(text):
7 # Get the current date
      current_date = datetime.datetime.now().strftime("%Y_%m_%d")
10 # Get the current time
      current time = datetime.datetime.now().strftime("%H %M %S")
11
12
13 # Generate a random number between 0000 and 9999
      random_number = str(random.randrange(0,10000)).zfill(4)
14
15
16 # Combine the parts
      text_file_name = f"{current_date}_{current_time}_{random_number}.txt"
17
18
19
20
21
      #write in text file
      with open(text file name, "w") as fo:
22
23
          fo.write(text)
24
```

Module "text_file_write":

text_file_write.py - C:/Users/Hp/OneDrive/Desktop/20230009/Game/text_file_write.py (3.11.6)

```
File Edit Format Run Options Window Help
1 import datetime
2 import random
 4 def statistics(text):
 5 # Get the current date
      current date = datetime.datetime.now().strftime("%Y %m %d")
7
8 # Get the current time
9
     current time = datetime.datetime.now().strftime("%H %M %S")
10
11 # Generate a random number between 0000 and 9999
12
     random_number = str(random.randrange(0,10000)).zfill(4)
13
14 # Combine the parts
15
      text_file_name = f"{current_date}_{current_time}_{random_number}.txt"
16
17
18
19
20
      with open(text_file_name, "w") as fo:
21
           fo.write(text)
22
```

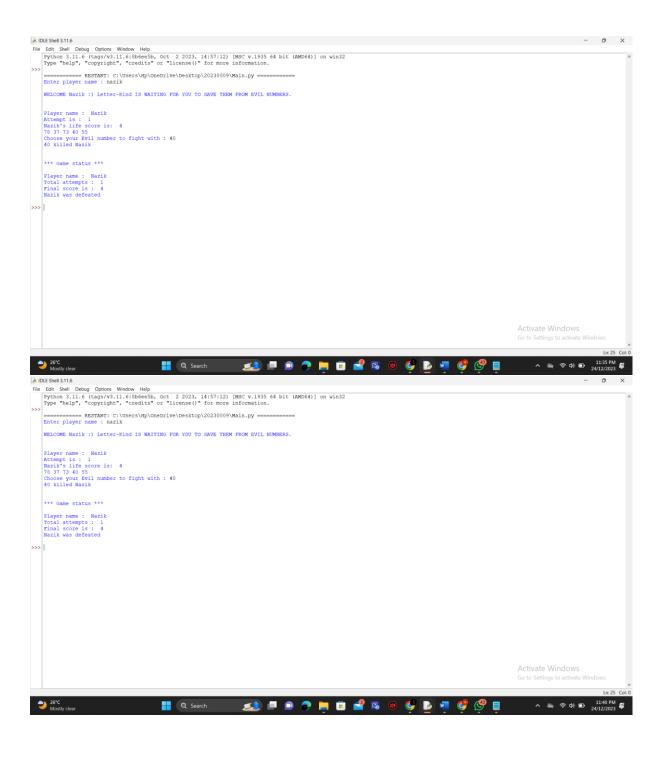
No	Tests	output	Result
1	Player name: nazik	Display the name, life score, range of enemies and request for a number to challenge.	PASS
2	Input a non-numerical value.	"Please enter a valid number." And a request to select a number again.	PASS
3	Input a value which is not in evil numbers	Display "No such enemies", display game status, defeated message and end the game.	PASS
4	Play the game till the end	Display game status, winning message and end the game.	PASS
5	Run it in command console.		PASS
6	Save the winning game details in text.		PASS
7	Save the losing game details in text file.		PASS
8	Text file saving format	The first part yyyy_mm_dd the current date .The second part hh_mm_ss is the time .The third part random number within the range of 0000 to 9999	PASS

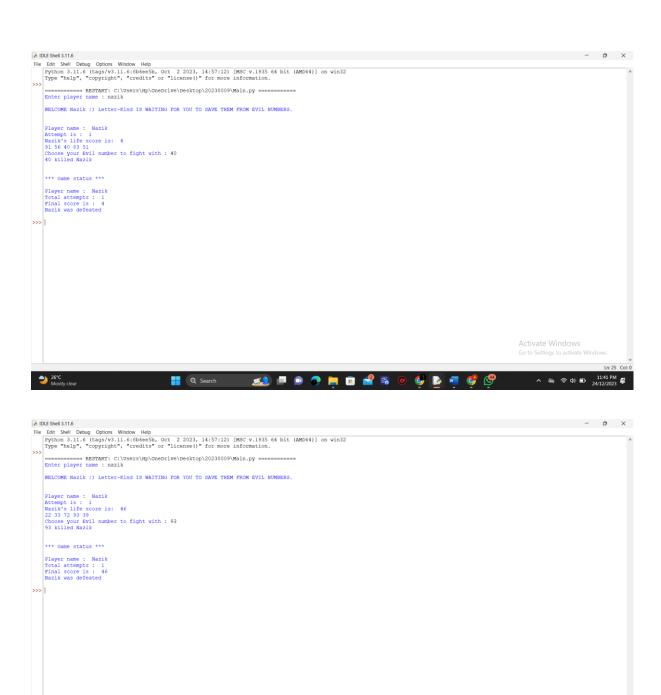
Python code running screenshots:

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Activate Windows

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