FIT9133: Programming

foundations in python

Assignment1

User Documentation

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目录

Introduction

1. Version

This combat game is developing by Python 3.6.

2. Function

2.1. Personalized user name:

Player can input anything as the username.

2.2. Select amount:

User can select any integer between 0 and 10 as wish they want to cost.

2.3. Build an army:

User can create an army by themselves and specify their order.

5 units can be selected: Archer, Soldier, Knight, Siege Equipment and Wizard. Different unit have different price, advantages and disadvantages.

Type	Archer	Soldier	Knight	Siege Equipment	Wizard
Archer	T	A	K	E	A
Soldier	A	T	S	E	W
Knight	K	S	T	K	W
Siege Equipment	E	E	K	T	W
Wizard	A	W	W	W	T

2.4. Auto Battle:

After both users create them army, the battle will run automatically. Every round, the battle result shows to player until someone win or the game is tie. If user do not cost all of coin, every left coin can resurrect the dead unit and send it to the tail of army.

3. How to play

3.1. Input your name

```
/Users/zyh/PycharmProjects/A1.2_29400988/venv/bin/python /Users/zyh/PycharmProjects/A1.2_29400988/extended_game_29400988.py
plz input your name
qwe
```

3.2. Insert your coin

```
/Users/zyh/PycharmProjects/A1.2_29400988/venv/bin/python /Users/zyh/PycharmProjects/A1.2_29400988/extended_game_29400988.py
plz input your name
qwe

qwe plz enter your coin,(0-10)
10
```

3.3. Create your army

```
/Users/zyh/PycharmProjects/A1.2_29400988/venv/bin/python /Users/zyh/PycharmProjects/A1.2_29400988/extended_game_29400988.py
plz input your name
qwe

qwe plz enter your coin,(0-10)
9
qwe you have $ 9
select your unit 1 = Archer|$1, 2 = Soldier|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|$4
5
qwe This is your army ['Wizard']
you have $5 now
select your unit 1 = Archer|$1, 2 = Soldier|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|$4
4
qwe This is your army ['Wizard', 'Siege Equipment']
you have $2 now
select your unit 1 = Archer|$1, 2 = Soldier|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|$4
3
qwe This is your army ['Wizard', 'Siege Equipment', 'Knight']
you have $0 now
```

3.4. Second user do same thing again

```
plz input your name
asd

asd plz enter your coin,(0-10)
5
you have $ 5
select your unit 1 = Archer|$1, 2 = Soldier|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|$4
4
asd ,This is your army ['Siege Equipment']
you have $2 now
select your unit 1 = Archer|$1, 2 = Soldier|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|$4
1
asd ,This is your army ['Siege Equipment', 'Archer']
you have $1 now
select your unit 1 = Archer|$1, 2 = Soldier|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|$4
1
asd ,This is your army ['Siege Equipment', 'Archer', 'Archer']
you have $0 now
```

3.5. Two army will be shown and battle run automatically

```
qwe's army ['Wizard', 'Siege Equipment', 'Knight'] Medics = 1
asd's army ['Siege Equipment', 'Archer', 'Archer'] Medics = 5

Round 1 This round asd win

qwe's army ['Wizard', 'Siege Equipment', 'Knight']
asd's army ['Archer', 'Archer']
qwe have 1 Medics now
asd have 5 Medics now

Round 2 This round asd win

qwe's army ['Siege Equipment', 'Knight']
asd's army ['Archer', 'Archer', 'Siege Equipment']
qwe have 1 Medics now
asd have 4 Medics now

Round 3 This round asd win

qwe's army ['Siege Equipment', 'Knight', 'Wizard']
asd's army ['Archer', 'Siege Equipment']
qwe have 0 Medics now
asd have 4 Medics now

Round 4 This round asd win

qwe's army ['Siege Equipment', 'Knight', 'Wizard']
asd's army ['Siege Equipment', 'Archer']
qwe have 0 Medics now
asd have 3 Medics now

Round 5 This round is Tie

qwe's army ['Knight', 'Wizard']
asd's army ['Archer', 'Archer']
qwe have 0 Medics now
asd have 2 Medics now

Round 6 This round qwe win

qwe's army ['Knight', 'Wizard']
asd's army ['Archer', 'Siege Equipment']
qwe have 0 Medics now
asd have 1 Medics now

Round 7 This round qwe win

qwe's army ['Knight', 'Wizard']
asd's army ['Siege Equipment', 'Archer']
qwe have 0 Medics now
asd have 0 Medics now
```

```
Round 8 This round qwe win

qwe's army ['Knight', 'Wizard']
asd's army ['Archer']
qwe have 0 Medics now
asd have 0 Medics now

Round 9 This round qwe win

qwe's army ['Knight', 'Wizard']
asd's army []
qwe have 0 Medics now
asd have 0 Medics now

winner is qwe
 ['Knight', 'Wizard']

Process finished with exit code 0
```

Code

```python
1.  #YUHAN ZHANG(29400988) 14/08/2018 - 24/08/2018
2.
3.  #Uising time function to control the view of result output
4.  import time
5.
6.  #create a user and join the game and decide how much coin
     that want to cost
7.  #using while function to control the input number between
     0 and 10, any others input are invalid
8.  #leftCoinA: the coin that user buy the medics
9.
10. userA = str(input('plz input your name\n'))
11. coinA = input('\n'+ userA + ' plz enter your coin,(0-
    10)\n')
12. while not (coinA.isdigit() and 0 <= int(coinA) <= 10):
13.     print('wrong input')
14.     coinA = input('plz insert coin,(0-10)\n')
15. else:
16.     print(userA + ' you have $', coinA)
17.
18. leftCoinA = 10 - int(coinA)
19.
20. #create a list for first user for store army
21. #determine what is the user input then add unit to list,
    valid input only 1,2,3,4,5
22. #user can purchase units only when have coin and cannot
    buy unit over the price
23. #every time add a unit, the coinA will -1
24. #playerAlist: userA's list that store the army
25.
26. coinA = int(coinA)
27. playerAlist = []
28. while coinA > 0:
29.     x = input('select your unit 1 = Archer|$1, 2 = Soldi
    er|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|
    $4\n')
30.     if x.isdigit() and int(x) == 1:
31.         playerAlist.append('Archer')
32.         coinA = int(coinA - 1)
```

```python
33.          print(userA+' This is your army', playerAlist,'\
   nyou have $'+str(coinA)+' now')
34.      elif x.isdigit() and int(x) == 2:
35.          playerAlist.append('Soldier')
36.          coinA = int(coinA - 1)
37.          print(userA+' This is your army', playerAlist,'\
   nyou have $'+str(coinA)+' now')
38.      elif x.isdigit() and int(x) == 3 and coinA >=2:
39.          playerAlist.append('Knight')
40.          coinA = int(coinA - 2)
41.          print(userA+' This is your army', playerAlist,'\
   nyou have $'+str(coinA)+' now')
42.      elif x.isdigit() and int(x) == 4 and coinA >=3:
43.          playerAlist.append('Siege Equipment')
44.          coinA = int(coinA - 3)
45.          print(userA+' This is your army', playerAlist,'\
   nyou have $'+str(coinA)+' now')
46.      elif x.isdigit() and int(x) == 5 and coinA >=4:
47.          playerAlist.append('Wizard')
48.          coinA = int(coinA - 4)
49.          print(userA+' This is your army', playerAlist,'\
   nyou have $'+str(coinA)+' now')
50.      else:
51.          print('wrong,input again')
52.
53. #create a user and join the game and decide how much coi
   n that want to cost
54. #using while function to control the input number betwee
   n 0 and 10, any others input are invalid
55. #leftCoinB: the coin that user buy the medics
56.
57. userB = str(input('plz input your name\n'))
58. coinB = input('\n'+userB+' plz enter your coin,(0-
   10)\n')
59. while not (coinB.isdigit() and 0 <= int(coinB) <= 10):
60.      print('wrong input')
61.      coinB = input('plz insert coin,(0-10)\n')
62. else:
63.      print('you have $', coinB)
64.
65. leftCoinB = 10 - int(coinB)
66.
67. #create a list for first user for store army
```

```python
68. #determine what is the user input then add unit to list,
    valid input only 1,2,3,4,5
69. #user can purchase units only when have coin and cannot
    buy unit over the price
70. #every time add a unit, the coinA will -1
71. #playerBlist: userB's list that store the army
72.
73. coinB = int(coinB)
74. playerBlist = []
75. while coinB > 0:
76.     x = input('select your unit 1 = Archer|$1, 2 = Soldi
    er|$1, 3 = Knight|$2, 4 = Siege Equipment|$3, 5 = Wizard|
    $4\n')
77.     if x.isdigit() and int(x) == 1:
78.         playerBlist.append('Archer')
79.         coinB = int(coinB - 1)
80.         print(userB+' ,This is your army', playerBlist,'
    \nyou have $'+str(coinB)+' now')
81.     elif x.isdigit() and int(x) == 2:
82.         playerBlist.append('Soldier')
83.         coinB = int(coinB - 1)
84.         print(userB+' ,This is your army', playerBlist,'
    \nyou have $'+str(coinB)+' now')
85.     elif x.isdigit() and int(x) == 3 and coinB >=2:
86.         playerBlist.append('Knight')
87.         coinB = int(coinB - 2)
88.         print(userB+' ,This is your army', playerBlist,'
    \nyou have $'+str(coinB)+' now')
89.     elif x.isdigit() and int(x) == 4 and coinB >=3:
90.         playerBlist.append('Siege Equipment')
91.         coinB = int(coinB - 3)
92.         print(userB+' ,This is your army', playerBlist,'
    \nyou have $'+str(coinB)+' now')
93.     elif x.isdigit() and int(x) == 5 and coinB >=4:
94.         playerBlist.append('Wizard')
95.         coinB = int(coinB - 4)
96.         print(userB+ ' ,This is your army', playerBlist,
    '\nyou have $'+str(coinB)+' now')
97.     else:
98.         print('wrong,input again')
99.
100.    #show the playerAlist and playerBlist after two user
    finish the unit purchased
```

```python
101.    print("\n"+userA+"'s army", playerAlist,'Medics =', l
   eftCoinA, "\n"+ userB + "'s army", playerBlist,'Medics ='
   , leftCoinB, "\n")
102.
103.    #using while function to run battle part
104.    #if userA have units and userB have units, the while(
   ) keep going
105.    #compare the first unit of two list, then decide whic
   h one could win
106.    #i:using to show the round number
107.    #before every time battle, i +1 and print i as the cu
   rrent round number
108.    #every battle result will show to player
109.    #tempA: store the first unit of playerAlist before ba
   ttle
110.    #tempB: store the first unit of playerBlist before ba
   ttle
111.    #lenAlist: the length of playerAlist
112.    #lenBlist: the length of playerBlist
113.
114.    i = 0
115.    while len(playerAlist) != 0 and len(playerBlist) != 0
   :
116.        tempA = playerAlist[0]
117.        tempB = playerBlist[0]
118.        lenAlist = len(playerAlist)
119.        lenBlist = len(playerBlist)
120.        i += 1
121.
122.        if (playerAlist[0] == 'Archer' and playerBlist[0]
    == 'Archer') or (playerAlist[0] == 'Soldier' and playerB
   list[0] == 'Soldier') or (playerAlist[0] == 'Knight' and
   playerBlist[0] == 'Knight') or (playerAlist[0] == 'Wizard
   ' and playerBlist[0] == 'Wizard') or (playerAlist[0] == '
   Siege Equipment' and playerBlist[0] == 'Siege Equipment')
   :
123.            playerAlist.pop(0)
124.            playerBlist.pop(0)
125.            print("Round",i,"This round is Tie\n","\n"+us
   erA+"'s army", playerAlist, "\n"+ userB +"'s army", playe
   rBlist)
126.        elif (playerAlist[0] == 'Archer' and playerBlist[
   0] == 'Soldier') or (playerAlist[0] == 'Archer' and playe
   rBlist[0] == 'Wizard'):
```

```python
127.            playerBlist.pop(0)
128.            print("Round",i,"This round " + userA + " win
   \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
   rmy", playerBlist)
129.        elif (playerAlist[0] == 'Archer' and playerBlist[
   0] == 'Knight') or (playerAlist[0] == 'Siege Equipment' a
   nd playerBlist[0] == 'Knight'):
130.            playerAlist.pop(0)
131.            print("Round",i,"This round " + userB + " win
   \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
   rmy", playerBlist)
132.        elif (playerAlist[0] == 'Soldier' and playerBlist
   [0] == 'Archer') or (playerAlist[0] == 'Wizard' and playe
   rBlist[0] == 'Archer'):
133.            playerAlist.pop(0)
134.            print("Round",i,"This round " + userB + " win
   \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
   rmy", playerBlist)
135.        elif playerAlist[0] == 'Soldier' and playerBlist[
   0] == 'Knight':
136.            playerBlist.pop(0)
137.            print("Round",i,"This round " + userA + " win
   \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
   rmy", playerBlist)
138.        elif (playerAlist[0] == 'Soldier' and playerBlist
   [0] == 'Wizard') or (playerAlist[0] == 'Knight' and playe
   rBlist[0] == 'Wizard') or (playerAlist[0] == 'Siege Equip
   ment' and playerBlist[0] == 'Wizard'):
139.            playerAlist.pop(0)
140.            print("Round",i,"This round " + userA + " win
   \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
   rmy", playerBlist)
141.        elif (playerAlist[0] == 'Knight' and playerBlist[
   0] == 'Archer') or (playerAlist[0] == 'Knight' and player
   Blist[0] == 'Siege Equipment'):
142.            playerBlist.pop(0)
143.            print("Round",i,"This round " + userA + " win
   \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
   rmy", playerBlist)
144.        elif playerAlist[0] == 'Archer' and playerBlist[0
   ] == 'Soldier':
145.            playerAlist.pop(0)
```

```python
146.            print("Round",i,"This round " + userB + " win
    \n","\n"+ userA +"'s army", playerAlist, "\n"+ userB +"'s
     army", playerBlist)
147.        elif (playerAlist[0] == 'Archer' and playerBlist[
    0] == 'Siege Equipment') or (playerAlist[0] == 'Soldier'
    and playerBlist[0] == 'Siege Equipment'):
148.            playerAlist.pop(0)
149.            print("Round",i,"This round " + userB + " win
    \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
    rmy", playerBlist)
150.        elif (playerAlist[0] == 'Siege Equipment' and pla
    yerBlist[0] == 'Archer') or (playerAlist[0] == 'Siege Equ
    ipment' and playerBlist[0] == 'Soldier'):
151.            playerBlist.pop(0)
152.            print("Round",i,"This round " + userB + " win
    \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
    rmy", playerBlist)
153.        elif (playerAlist[0] == 'Wizard' and playerBlist[
    0] == 'Soldier') or (playerAlist[0] == 'Wizard' and playe
    rBlist[0] == 'Siege Equipment') or (playerAlist[0] == 'Wi
    zard' and playerBlist[0] == 'Knight'):
154.            playerBlist.pop(0)
155.            print("Round",i,"This round " + userB + " win
    \n","\n"+userA+"'s army", playerAlist, "\n"+ userB +"'s a
    rmy", playerBlist)
156.        else:
157.            pass
158.
159.    # the medics situation shows at every battle
160.    #if any list lose unit the length will -
    1, so len(playerAlist) == lenAlist - 1 means playerAlist
    lose a unit
161.    #The leftcoinA > 0 means userA still have medics.
162.    #only list lose unit and user have medics, unit store
     in tempA could add to tail of list
163.    #if add a unit the leftCoinA -1
164.
165.        print(userA + ' have', leftCoinA, 'Medics now')
166.        if len(playerAlist) == lenAlist - 1 and leftCoinA
     > 0:
167.            playerAlist.append(tempA)
168.            leftCoinA -= 1
169.        else:
170.            pass
```

```python
171.
172.    # the medics situation shows at every battle
173.    # if any list lose unit the length will -
   1, so len(playerBlist) == lenBlist - 1 means playerBlist
   lose a unit
174.    # The leftcoinB > 0 means userB still have medics.
175.    # only list lose unit and user have medics, unit stor
   e in tempB could add to tail of list
176.    # if add a unit the leftCoinB -1
177.
178.        print(userB + ' have', leftCoinB, 'Medics now\n')

179.        if len(playerBlist) == lenBlist - 1 and leftCoinB
   > 0:
180.            playerBlist.append(tempB)
181.            leftCoinB -= 1
182.        else:
183.            pass
184.
185.    #time.sleep(1): every one second output one of battle
   result
186.
187.        time.sleep(1)
188.
189.    #any list is null means battle finished
190.    #the situation of both lists are null must be the top
   of jujument if not, the result can not output correct
191.    #only 3 result will be released
192.
193.
194.    if len(playerAlist) == 0 and len(playerBlist) == 0:
195.        print('Tie!')
196.    elif len(playerBlist) == 0:
197.        print('winner is ' + userA + '\n',playerAlist)
198.    elif len(playerAlist) == 0:
199.        print('winner is ' + userB + '\n', playerBlist)
200.    else:
201.        pass
```