

JUSTIN VAN VLIET IPASS PROJECT: REPEATED PRISONER’S DILEMMA GAME (SHADOWFALL ODYSSEY)

Een algoritme gebaseerd op het repeated prisoner’s dilemma dat vijanden in de game dat er omheen is gemaakt “slimmer” laat vechten. Volledig gemaakt in python



P = player
E = enemy

P\E	attack	<u>dodge</u>	block	<u>magic</u>
attack	draw	attack	block	draw
<u>dodge</u>	attack	draw	draw	<u>dodge</u>
block	block	draw	draw	<u>magic</u>
<u>magic</u>	draw	<u>dodge</u>	<u>magic</u>	draw

ATTACK

DODGE

BLOCK

MAGIC

```
enemy_HP = 200
actionlist = ['attack', 'block', 'magic', 'dodge']
with open('stats.txt', 'a') as tpa:
    try:
        while enemy_HP > 0 and player_stats.player_HP > 0:
            player_action = input('What will you do? attack,block, dodge or magic? ')
            if player_action == 'attack' or player_action == 'dodge' or player_action == 'block' or
            player_stats.PPA.append(player_action)
            tpa.write(player_action+"\n")
            else:
                print('that is not a valid action.')
                player_action = input('What will you do? attack,block, dodge or magic? ')
                player_stats.PPA.append(player_action)
                tpa.write(player_action + "\n")
            if len(player_stats.PPA) > 3:
                player_stats.PPA.remove(player_stats.PPA[0])
            print(player_stats.PPA)
            player_stats.PPA_attack = player_stats.PPA.count('attack')
            player_stats.PPA_block = player_stats.PPA.count('block')
            player_stats.PPA_dodge = player_stats.PPA.count('dodge')
            player_stats.PPA_magic = player_stats.PPA.count('magic')
            if player_stats.PPA_attack <= 1 and player_stats.PPA_magic <= 1 and player_stats.PPA_dodge <= 1:
                enemy_action = random.choice(actionlist)
                if enemy_action == 'block':
                    if player_action == 'attack':
                        damagelist_golem = range(40, 50)
                        damage = random.choice(damagelist_golem)
                        print(f'the golem block your attack and counterattacked.\n'
                            f'the golem did {damage} points of damage.\n'
                            f' you have {player_stats.player_HP - damage} left')
```



Bron:
Conitzer & Sandhol (2006, Springer Science + Business Media, LLC 2006)
<https://www.cs.cmu.edu/~conitzer/awesomeML06.pdf>