

## game.py

```
1  from abc import ABC, abstractmethod
2  from dataclasses import dataclass
3
4  class Move:
5      def __init__(self, value: int, name: str):
6          self.value = value
7          self.name = name
8
9  @dataclass
10 class State:
11     other_previous_move: Move
12     own_blocks: int
13     other_blocks: int
14     own_has_attack: bool
15     other_has_attack: bool
16     rounds_left: int
17
18     MoveSelection = {
19         "a": Move(1, "Attack"),
20         "b": Move(2, "Block"),
21         "g": Move(4, "Grab"),
22         "dp": Move(8, "Dragon Punch")
23     }
24
25 class Player(ABC):
26     @property
27     @abstractmethod
28     def name(self):
29         pass
30
31     @abstractmethod
32     def act(self, game_state: State) -> Move:
33         pass
34
35 class Footsies:
36     def __init__(self, player1: Player, player2: Player, rounds: int = 1, blocks: int
37 = 3, attackstowin: int = 2, timeout: int = 0):
38         self.p1 = player1
39         self.p2 = player2
40         self.rounds = rounds
41         self.attacks = attackstowin
42
43         self.p1_blocks = blocks
44         self.p2_blocks = blocks
45         self.p1_has_attack = False
46         self.p2_has_attack = False
47         self.p1_lose = False
48         self.p2_lose = False
```

```

48     self.p1_previous: Move = None
49     self.p2_previous: Move = None
50
51     self.timeout = False
52     self.timeout_rounds = 0
53     self.current_round = 1
54     if timeout > 0:
55         self.timeout = True
56         self.timeout_rounds = timeout
57         self.current_round = 0
58
59     def start(self) -> int:
60         '''Starts the game loop until a player wins or there's a timeout. Returns the
61         number of the player that won. '''
62
63         def no_timeout():
64             return True
65
66         def timeout():
67             self.current_round += 1
68             print(f"Round {self.current_round}/{self.timeout_rounds}")
69             return self.current_round <= self.timeout_rounds
70
71         condition = None
72         if self.timeout:
73             condition = timeout
74         else:
75             condition = no_timeout
76
77         while condition():
78             rounds_left = self.timeout_rounds - self.current_round
79             p1_state = State(self.p2_previous, self.p1_blocks, self.p2_blocks,
80             self.p1_has_attack, self.p2_has_attack, rounds_left)
81             p2_state = State(self.p1_previous, self.p2_blocks, self.p1_blocks,
82             self.p2_has_attack, self.p1_has_attack, rounds_left)
83             move1 = self.p1.act(p1_state)
84             move2 = self.p2.act(p2_state)
85             self.p1_previous = move1
86             self.p2_previous = move2
87
88             print(f"{self.p1.name} chose {move1.name}. {self.p2.name} chose
89             {move2.name}.")
90
91             p1_hit_attack = False
92             p2_hit_attack = False
93
94             match (move1.value - move2.value):
95                 case 0:
96                     print("Same option chosen!")
97                 case 1:
98                     print("Player 1 blocks a hit!")

```

```
95         self.p1_blocks -= 1
96     case -1:
97         print("Player 2 blocks a hit!")
98         self.p2_blocks -= 1
99     case 2:
100         print("Player 2 gets thrown!")
101         self.p2_lose = True
102     case -2:
103         print("Player 1 gets thrown!")
104         self.p1_lose = True
105     case 3:
106         print("Player 2 lands a hit!")
107         if self.p2_has_attack:
108             self.p1_lose = True
109             p2_hit_attack = True
110     case -3:
111         print("Player 1 lands a hit!")
112         if self.p1_has_attack:
113             self.p2_lose = True
114             p1_hit_attack = True
115     case 6:
116         print("Player 2 blocks the Dragon Punch and counters!")
117         self.p1_lose = True
118     case -6:
119         print("Player 1 blocks the Dragon Punch and counters!")
120         self.p2_lose = True
121     case _:
122         if move1.value > move2.value:
123             print("Player 1 lands a Dragon Punch!")
124             self.p2_lose = True
125         else:
126             print("Player 2 lands a Dragon Punch!")
127             self.p1_lose = True
128
129     self.p1_has_attack = p1_hit_attack
130     self.p2_has_attack = p2_hit_attack
131
132     if self.p1_lose:
133         print("Player 2 wins")
134         return 2
135
136     if self.p2_lose:
137         print("Player 1 wins")
138         return 1
139
140     return 0
```