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1  # import the required modules
2  import random
3  import statistics
4
5  # spider object
6  class spider:
7      # init function
8      def __init__(self, x, y):
9          self.x = x
10         self.y = y
11     # move function
12     def move(self):
13         # choose either 1, 2 or 3
14         choice = random.randrange(1, 4)
15         # x clockwise
16         if choice == 1:
17             self.x += 1
18             if self.x == 5:
19                 self.x = 1
20         # x anti-clockwise
21         elif choice == 2:
22             self.x -= 1
23             if self.x == 0:
24                 self.x = 4
25         # y up/down
26         elif choice == 3:
27             self.y += 1
28             if self.y == 2:
29                 self.y = 0
30
31 # fly object
32 class fly:
33     # init function
34     def __init__(self, x, y):
35         self.x = x
36         self.y = y
37
38 # run function
39 def run(s, f):
40     # set up variables
41     found = False
42     moves = 0
43     # program loop
44     while found == False:
45         # move spider
46         s.move()
47         # increment variable
48         moves += 1
49         # check if spider found fly
50         if s.x == f.x and s.y == f.y:
51             found = True
52     # return amount of moves required
53     return moves
54
55 # main function
56 def main():
57     # set up variables
58     moves = []
59     limit = int(input("Enter the number of simulations: "))
60     # program loop
61     for i in range(limit):
62         # set up objects
63         s = spider(2, 1)
64         f = fly(4, 0)
65         # process a simulation
66         num = run(s, f)
67         # change variables
68         moves.append(num)
69     # calculate required values

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70     mode = statistics.mode(moves)
71     # return data to user
72     print("Expected number of moves: {}".format(mode))
73
74     # check if this is first instance
75     if __name__ == "__main__":
76         main()
77     else:
78         print("Simulation is being ran indirectly")
```