

```

1  import sys
2  import math
3  import numpy as np
4
5  class factory:
6      def __init__(self, id):
7          #nodes about
8          self.id = id
9          self.con = {}
10         self.dist = {}
11
12     def add_connection(self, id, node, dist):
13         #connections between nodes
14         self.con[id] = node
15         self.dist[id] = dist
16
17     def update_data(self, player, population, production):
18         #reset node info
19         self.player = player
20         self.pop = population
21         self.prod = production
22
23     #-----INIT-----
24     ----
25
26 def route_move(node):
27     #output variable
28     move = ''
29     #connections to out nodes
30     our_nodes = [n for n in node.con.keys() if (node.con[n].player == 1)]
31     if(our_nodes):
32         #order by distance
33         our_nodes.sort(key=lambda n: node.dist[n])
34         #are there are enough to conquer
35         if([n for n in our_nodes if nodes[n].pop > node.pop + 3]):
36             move = 'MOVE %s %s %s;' % (our_nodes[0], node.id, node.pop + 2)
37             #update population
38             nodes[our_nodes[0]].pop -= node.pop + 2
39         else:
40             #sort by strength
41             our_nodes.sort(key=lambda n: node.con[n].pop, reverse=True)
42             #send as many as possible
43             if(nodes[our_nodes[0]].pop > 2):
44                 move = 'MOVE %s %s %s;' % (our_nodes[0], node.id,
45                                         nodes[our_nodes[0]].pop - 2)
46             #update population
47             nodes[our_nodes[0]].pop = 2
48         return move
49
50     #-----INIT-----
51     ----
52
53 #make array of factory nodes
54 node_count = int(input()) # the number of nodes
55 nodes = []
56 for id in range(node_count):
57     nodes.append(factory(id))
58
59 #make a grid of bidirectional connections
60 for i in range(int(input())): # the number of links between nodes
61     node_1, node_2, dist = [int(j) for j in input().split()]
62     nodes[node_1].add_connection(node_2, nodes[node_2], dist)
63     nodes[node_2].add_connection(node_1, nodes[node_1], dist)
64
65 # game loop
66 while True:
67     entity_count = int(input()) # the number of entities (e.g. factories and troops)

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65     for i in range(entity_count):
66         entity_id, entity_type, arg_1, arg_2, arg_3, arg_4, arg_5 = input().split()
67         #update information for each turn
68         if(entity_type == 'FACTORY'): #factory
69             nodes[int(entity_id)].update_data(int(arg_1), int(arg_2), int(arg_3))
70     ...
71     moves = ''
72     #get all neutral nodes sorted by distance
73     neutral_nodes = sorted([n for n in nodes if n.player == 0], key = lambda n: n.prod,
74                             reverse=True)
75     #are there any nodes in this group?
76     if(neutral_nodes):
77         for node in neutral_nodes:
78             moves += route_move(node)
79     #get all enemy nodes sorted by population
80     enemy_nodes = sorted([n for n in nodes if n.player == -1], key = lambda n: n.pop)
81     #are there any nodes in this group
82     if(enemy_nodes):
83         for node in enemy_nodes:
84             moves += route_move(node)
85     ...
86     #if we can make a move, do so, otherwise wait
87     if(moves != ''):
88         print(moves[:-1])
89     else:
90         print("WAIT")
91

```