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1 package club.westcs.GridWorldBeckerbauer;
2
3 import java.awt.Color;
4 import java.util.ArrayList;
5 import java.util.Random;
6
7 import info.gridworld.actor.Actor;
8 import info.gridworld.actor.ActorWorld;
9 import info.gridworld.actor.Bug;
10 import info.gridworld.actor.Critter;
11 import info.gridworld.actor.Flower;
12 import info.gridworld.actor.Rock;
13 import info.gridworld.grid.*;
14
15 public class WeatherCritterLevel3 extends Critter{
16     private Random rand;
17     private boolean rain, ice, highWinds, first;
18     private int step1, ourStep, count;
19     private Actor temp;
20     ActorWorld world = new ActorWorld();
21
22     public WeatherCritterLevel3() {
23         rand = new Random();
24         rain = false;
25         ice = false;
26         highWinds = false;
27         ourStep = 0;
28         first = true;
29         count = 0;
30     }
31
32     public void run() {
33         move1();
34         ArrayList<Actor> neighbors = this.getGrid().getNeighbors(getLocation());
35         for(Actor a: neighbors) {
36             if(a instanceof Bug) {
37                 first = false;
38                 Weather();

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39         }
40         else {
41             move1();
42         }}
43     }
44
45     private void move1() {
46         count += 1;
47         first = false;
48         Grid<Actor> gr = getGrid();
49         if (gr == null)
50             return;
51         Location loc = getLocation();
52         Location next = loc.getAdjacentLocation(getDirection());
53         if (gr.isValid(next)) {
54             moveTo(next);
55             step1 += 1;
56         }
57         ArrayList<Actor> neighbors = this.getGrid().getNeighbors(getLocation());
58         for(Actor a: neighbors) {
59             if(a instanceof Bug) {
60                 Weather();
61             } }
62
63
64
65     public void Weather() {
66         while(rain == false || ice == false || highWinds == false) {
67             rain = rand.nextBoolean();
68             if(rain) {
69                 for(int i = 0; i < 20; i++) {
70                     Flower rain1 = new Flower();
71                     rain1.setColor(Color.BLUE);
72                     rain1.putSelfInGrid(getGrid(), randomLocation());
73                     if(count == 3) {
74                         rain1.removeSelfFromGrid();
75                     }
76                 }

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77     }
78     else if(rain != true) {
79         ice = rand.nextBoolean();
80         if(ice) {
81             for(int i = 0; i < 20; i++) {
82                 Rock ice1 = new Rock();
83                 ice1.setColor(Color.BLUE);
84                 ice1.putSelfInGrid(getGrid(), randomLocation());
85                 if(count == 3) {
86                     ice1.removeSelfFromGrid();
87                 }
88             }
89             else if(ice != true) {
90                 highWinds = rand.nextBoolean();
91                 if(highWinds) {
92                     act();
93                 }
94             }
95         }
96     }
97     @Override
98
99     public void act() {
100         ArrayList<Location> locs = getGrid().getOccupiedLocations();
101         for(Location l: locs) {
102             temp = getGrid().get(l);
103             if(temp != null ) {
104                 this.determineOppositeDirection(temp);
105                 move();
106             }
107         }
108
109     public Location randomLocation() {
110         Location loc = new Location(0,0);
111         do {
112             loc = new Location(rand.nextInt(this.getGrid().getNumRows()), rand.nextInt(this.getGrid().getNumCols()));
113         }
114         while(getGrid().get(loc) != null);

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115         //System.out.println(loc);
116         return loc;
117     }
118
119     public int determineOppositeDirection(Actor temp) {
120         if(this.getGrid() == null || temp.getGrid() == null) {
121             return 0;
122         }
123         if(this.getDirection() == Location.EAST) {
124             temp.setDirection(Location.WEST);
125         }
126         else if(this.getDirection() == Location.WEST) {
127             temp.setDirection(Location.EAST);
128         }
129         else if(this.getDirection() == Location.NORTH) {
130             temp.setDirection(Location.SOUTH);
131         }
132         else if(this.getDirection() == Location.SOUTH) {
133             temp.setDirection(Location.NORTH);
134         }
135         else if(this.getDirection() == Location.NORTHWEST) {
136             temp.setDirection(Location.SOUTHEAST);
137         }
138         else if(this.getDirection() == Location.NORTHEAST) {
139             temp.setDirection(Location.SOUTHWEST);
140         }
141         else if(this.getDirection() == Location.SOUTHWEST) {
142             temp.setDirection(Location.NORTHEAST);
143         }
144         else if(this.getDirection() == Location.SOUTHEAST) {
145             temp.setDirection(Location.NORTHWEST);
146         }
147         return 0;
148     }
149
150     public void move() {
151         super.act();
152     }
153
154 }
155

```