johndong

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Hyena

Language/Type: Java classes constructors Critters fields inheritance instance methods
Related Links: Critter.java
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("Critter" classes come from the University of Washington's CSE 142 Critters homework assignment. See the assignment spec for more information.)

Write a class Hyena that extends the `Critter` class, along with its movement and eating behavior. All unspecified aspects of Hyena use the default behavior. Write the complete class with any fields, constructors, etc. necessary.

A Hyena object moves in a rectangular pattern looking for food, walking NORTH, then EAST, then SOUTH, then WEST. Each time the Hyena walks an entire rectangle or eats food, it starts the rectangle pattern over again but with a rectangle 1 step wider than before. The general pattern is as follows, if the Hyena doesn't find any food:

- N, E, S, W, N, E, E, S, W, W, N, E, E, E, S, W, W, W, N, E, E, E, E, S, W, W, W, W, ...

If the Hyena encounters food at any point during its movement pattern, it eats the food and starts the pattern over, lengthening the rectangular pattern by 1 in the process. For example:

- N, E, S, W, N, E, E (eats food), N, E, E, E, S, W, W (eats food), N, E, E, E, E, S, W, W, W, W, N, E, E, E, E, E, S (eats food), N, E, E, E, E, E, E, S, W, W, ...

Type your solution here:

```
public class Hyena extends Critter {
    private int move;
    private boolean ate;
    private int width;
    private int allowed;
```

```
 7     public Hyena(){
 8         move = 0;
 9         ate = false;
10         width = 1;
11         allowed = 4;
12     }
13
14     public boolean eat(){
15         ate = true;
16         return true;
17     }
18
19
20     public Direction getMove(){
21         if(ate == true){
22             ate = false; // Reset the ate flag
23             move = 1;
24             width++;
25             allowed += 2;
26             return Direction.NORTH; // Hyena eats food, no move
27         }
28
29         if(move == allowed){
30             allowed += 2;
31             move = 0;
32             width++;
33         }
34
35         // increment prior
36         move++;
37         if(move == 1) {
38             return Direction.NORTH;
39         } else if(move + 1 == width || move <= width + 1){
40             return Direction.EAST;
41         } else if(move == (width + 2)){
42             return Direction.SOUTH;
43         } else{
44             return Direction.WEST;
45         }
46     }
47 }
```

This is an **inheritance problem.** Write a Java class using inheritance. (You do not need to write any `import` statements.)

4 Indent

Sound F/X

Submit

Highlighting

You passed 2 of 2 tests.

Go to the next problem: absoluteDay

test #1:	`movement no eating`
console output:	`"NESWNEESWWNEEESWWWNEEEESWWWWNEEEEESWWWWWNEEEEEES`
result:	pass
test #2:	`movement with eating`
console output:	`"NESWNEENEEESWWNEEEESWWWWNEEEEESNEEEEEESWWWWWWNNE`
result:	pass

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