



< Skunk

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## Butterfly

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Language/Type: 

Java <u>classes</u> <u>constructors</u> <u>Critters</u> <u>fields</u> <u>implementing</u> <u>inheritance</u>

instance methods

Related Links: <u>Critter.java</u>

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("Critter" classes come from the University of Washington's CSE 142 Critters homework assignment. See the <u>assignment spec</u> for more information.)

Define a Critter class named Butterfly with the following behavior:

| constructor       | <pre>public Butterfly()</pre>                  |
|-------------------|--|
| color             | yellow (Color.YELLOW)                          |
| eating behavior   | never eats (this is the default behavior)      |
| fighting behavior | always forfeits (this is the default behavior) |
| movement behavior | moves N, W, N, E, then repeats                 |
| toString          | alternates between "x" and "-" on each move    |

```
Type your solution here:
```

```
public class Butterfly extends Critter {
    private int move;

public Butterfly(){
        move = 1;
}

public Color getColor(){
        return Color.YELLOW;
}

public Direction getMove(){
        // N W N E repeat
        if (move > 4){
            move = 1;
        }
}
```

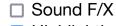
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```
17
18
            if (move == 1 || move == 3){
19
                move++;
                return Direction.NORTH;
20
            } else if (move == 2) {
21
22
                move++;
23
                return Direction.WEST;
            } else {
24
25
                move++;
26
                return Direction.EAST;
27
       }
28
29
30
       public String toString(){
            if (move % 2 != 0) {
31
                return "x":
32
            } else {
33
34
                return "-";
35
            }
36
       }
37
38
39
40 }
```

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

**Submit** 





## Highlighting

## 

```
test #1:
               constructor
console output:
        result:
               pass
       test #2:
               getColor
console output:
                "yellow"
               "yellow"
               "ýellow"
        result:
               pass
               toString
       test #3:
              toString after 20 moves: "x-x-x-x-x-x-x-x-x-"
console output:
```

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result: **⊘** pass

test #4: getMove

console output: Butterfly 1 getMove: "NWNENWNENWNENWNENWNENWNE"

Butterfly 2 getMove: "NWNENWNENWNENWNENWNE"

result: **⊘** pass

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