

The Answer Of Part1

Set 1

1. Does the bug always move to a new location? Explain.

Answer: No, because the bug can move out of the grid when it is at an edge of the grid.

2. In which direction does the bug move?

Answer: The initial direction is north.

3. What does the bug do if it does not move?

Answer: It turns itself to change its direction/

4. What does a bug leave behind when it moves?

Answer: It leaves a flower.

5. What happens when the bug is at an edge of the grid?

(Consider whether the bug

is facing the edge as well as whether the bug is facing some other direction when

answering this question.)

Answer: It turns itself to the right so that it can go on moving when it faces the edge. When it is facing some other direction, it will turn to the direction which uses less angle.

6. What happens when a bug has a rock in the location immediately in front of it?

Answer: The bug turns to the direction with less angle until it can go on moving.

7. Does a flower move?

Answer: No.

8. What behavior does a flower have?

Answer: Becoming darker.

9. Does a rock move or have any other behavior?

Answer: No.

10. Can more than one actor (bug, flower, rock) be in the same location in the grid at the same time?

Answer: Yes.

Exercises

By clicking on a cell containing a bug, flower, or rock, do the following.

1. Test the setDirection method with the following inputs and complete the table, giving the compass direction each input represents.

Degrees	Compass Direction
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0	North
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45	Northeast
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90	East
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135	Southeast
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180	South
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225	Southwest
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270	West
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315	Northwest
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360	North
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2. Move a bug to a different location using the moveTo method. In which directions can you move it? How far can you move it? What happens if you

try to move the bug outside the grid?

Answer: The bug can be moved in any direction if there exists position and it can be moved at most 10 steps. When I try to move the bug outside the grid, an error will happen and a window appears with the error information.

3. Change the color of a bug, a flower, and a rock. Which method did you use?

Answer: `setColor(java.awt.Color)`.

4. Move a rock on top of a bug and then move the rock again. What happened to the bug?

Answer: The bug disappeared.