

Name(s) _____ Period _____ Date _____

[KEY] Activity Guide - Investigate: Selection Statements



Instructions

Go to **Level 2** on Code Studio and answer the following prompts. Change one line at a time, then run the program after each change to observe the results.

1) Look at the documentation for the Painter class and find the `isOnPaint()` method. What does this method do? What does this method return?

`isOnPaint()` checks if the Painter object is currently standing on paint. It returns true if the Painter object is standing on paint and returns false if not.

2) Find the `isFacingNorth()`, `isFacingSouth()`, `isFacingEast()`, and `isFacingWest()` methods in the documentation for the Painter class. What do these methods do? What do these methods return?

These methods check if the Painter object is currently facing either north, south, east, or west. It returns true if the Painter object is facing the specific direction and returns false if not.

3) Find the `canMove(String direction)` method in the documentation for the Painter class. What does this method do? What is the purpose of the parameter `direction`?

The `canMove(String direction)` method checks if the Painter object can move in the specified direction. The parameter `direction` is the direction to check, such as "east" or "north".

4) Take a look at the last if statement on **Line 29**. Does this code execute when the program is run? Why or why not?

The code in this if statement does not execute because the condition is false. The Painter object cannot move north.

5) Add the following code to the program, then run the program to observe the results.

```
while (akira.canMove("south")) {  
    if (akira.isFacingEast()) {  
        akira.turnRight();  
    }  
  
    akira.move();  
}
```

What happens when you run the program?

The Painter object turns right because the condition for the while loop is true, and the condition for the if statement is true. The Painter then moves forward until it reaches the end of the grid until the condition for the while loop is false. The Painter object does not turn right again after the first time because the condition for the if statement is false each time the loop repeats.