Joel Atkinson

September 2, 2025

Assignment 6.2

CSD402 Java for Programmers

Fan class code:

//Joel Atkinson, September 2, 2025, CSD402 Assignment 6.2  
/\* The purpose of this assignment is to create a fan class with constants, mutable fields, setters and getters, as well  
as No-Argument and Argument constructors. Then build a test class to test the variables are output correctly \*/  
  
  
public class Fan {  
 // Constants for fan speed  
 public static final int STOPPED = 0;  
 public static final int LOW = 1;  
 public static final int MEDIUM = 2;  
 public static final int FAST = 3;  
  
 // Private mutable fields with defaults  
 private int speed = STOPPED;  
 private boolean fanOn = false;  
 private int radius = 6;  
 private String color = "white";  
  
 // Getter for speed  
 public int getSpeed() {  
 return speed;  
 }  
  
 // Setter for speed  
 public void setSpeed(int newSpeed) {  
 if (newSpeed == STOPPED || newSpeed == LOW || newSpeed == MEDIUM || newSpeed == FAST) {  
 this.speed = newSpeed;  
 } else {  
 System.out.println("Invalid Speed! Please enter STOPPED, LOW, MEDIUM, or FAST");  
 }  
 }  
  
 // Getter for fanOn  
 public boolean isFanOn() {  
 return fanOn;  
 }  
  
 // Setter for fanOn  
 public void setFanOn(boolean newFanOn) {  
 this.fanOn = newFanOn;  
 }  
  
 // Getter for radius  
 public int getRadius() {  
 return radius;  
 }  
  
 // Setter for radius  
 public void setRadius(int newRadius) {  
 if (newRadius > 0) {  
 this.radius = newRadius;  
 } else {  
 System.out.println("Radius must be a positive int");  
 }  
 }  
  
 // Setter for color  
 public String getColor() {  
 return color;  
 }  
  
 // Getter for color  
 public void setColor(String newColor) {  
 this.color = newColor;  
 }  
  
 // No-argument constructor  
 public Fan() {  
 this.speed = STOPPED;  
 this.fanOn = false;  
 this.radius = 6;  
 this.color = "white";  
  
 }  
  
 // Argument constructor  
 public Fan(int speed, boolean fanOn, int radius, String color) {  
 this.speed = speed;  
 this.fanOn = fanOn;  
 if (radius> 0) {  
 this.radius = radius;  
 } else {  
 this.radius = 6;  
 System.out.println("Radius must be a positive, set to default of 6");  
 }  
 this.color = color;  
 }  
  
 // toString Method  
 public String toString() {  
 return "Fan: Speed " + speed + ", fanOn " + fanOn + ", radius " + radius + ", color " + color;  
 }  
  
}

TestFan class code:

//Joel Atkinson, September 2, 2025, CSD402 Assignment 6.2 Test Class  
//The purpose of this code is to test the output of the variables set up in the "Fan" class  
  
public class TestFan {  
 public static void main(String[] args) {  
 // Create first fan with default constructor  
 Fan defaultFan = new Fan();  
 System.out.println("Default Fan (initial): " + defaultFan.toString());  
  
 // Create second fan with argument constructor  
 Fan customFan = new Fan(2, true, 8, "black"); // MEDIUM, on, radius 8, black  
 System.out.println("Custom Fan (initial): " + customFan.toString());  
  
 // Test setters to change defaultFan  
 defaultFan.setSpeed(3); // Change speed to FAST  
 defaultFan.setFanOn(true); // Turn it on  
 defaultFan.setRadius(7); // Change radius to 7  
 defaultFan.setColor("green"); // Change color to green  
 System.out.println("Default Fan (after changes): " + defaultFan.toString());  
  
 // Test getters to check customFan  
 System.out.println("Custom Fan speed: " + customFan.getSpeed()); // Should be 2  
 System.out.println("Custom Fan isOn: " + customFan.isFanOn()); // Should be true  
 System.out.println("Custom Fan radius: " + customFan.getRadius()); // Should be 8  
 System.out.println("Custom Fan color: " + customFan.getColor()); // Should be "black"  
 }  
}

Screenshot of TestFan running without errors:

A screenshot of a computer program

AI-generated content may be incorrect.