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1 message

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```
class Cylinder {
    // Attributes
    private double radius;
    double height;
    double volume;

    // Constructor Overloading

    // Constructor with no parameters
    Cylinder() {
        this.radius = 1.0; // Default radius
        this.height = 1.0; // Default height
        calculateVolume();
    }

    // Constructor with one parameter (radius)
    Cylinder(double radius) {
        this.radius = radius;
        this.height = 1.0; // Default height
        calculateVolume();
    }

    // Constructor with two parameters (radius and height)
    Cylinder(double radius, double height) {
        this.radius = radius;
        this.height = height;
        calculateVolume();
    }

    // Method to calculate the volume of the cylinder
    void calculateVolume() {
        this.volume = Math.PI * Math.pow(this.radius, 2) * this.height;
    }

    // Method to return the volume
    double getVolume() {
        return this.volume;
    }

    // Method to display the cylinder's attributes
    void displayCylinderInfo() {
        System.out.println("Radius: " + this.radius);
        System.out.println("Height: " + this.height);
        System.out.println("Volume: " + this.volume);
    }

    public static void main(String[] args) {
        // Creating Cylinder objects using different constructors
        Cylinder c1 = new Cylinder();
        Cylinder c2 = new Cylinder(5.0);
        Cylinder c3 = new Cylinder(5.0, 10.0);

        // Displaying the cylinder information
        System.out.println("Cylinder 1:");
        c1.displayCylinderInfo();

        System.out.println("\nCylinder 2:");
        c2.displayCylinderInfo();
    }
}
```

```
        System.out.println("\nCylinder 3:");  
        c3.displayCylinderInfo();  
    }  
}
```