**Experiment Report - 62 - test9\_SmartBoiler**

1. **Summary Table of Errors Found**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Error ID | Line Number | Error Type | Self-Detected? | Peer 1 Found? | Peer 2 Found? |
| E01 | line 20 | Logic | √ | × | √ |
| E02 | line 35 | Semantic | √ | × | × |
| E03 | line 44 | Semantic | √ | √ | × |

Additional Errors Found by Self: 0

Self-Review Detection Rate: 100%

Peer 1 Detection Rate: 33%

Peer 2 Detection Rate: 33%

1. **Source Code**
2. package a;
3. import java.util.\*;
4. class ColdStorage {
5. private double maxTemp;
6. private double minTemp;
7. private double currentTemp;
8. private List<String> tempLog;
9. public ColdStorage(double maxTemp, double minTemp, double initialTemp) {
10. this.maxTemp = maxTemp;
11. this.minTemp = minTemp;
12. this.currentTemp = initialTemp;
13. this.tempLog = new ArrayList<>();
14. }
15. // 更新存储温度
16. public void updateTemperature(double changeAmount) {
17. currentTemp -= changeAmount;
18. String message = String.format("Current Temperature: %.1f°C", currentTemp);
19. if (currentTemp > maxTemp) {
20. message += " | WARNING: Over-temperature Detected! Risk of Spoilage.";
21. } else if (currentTemp < minTemp) {
22. message += " | ALERT: Freezing Risk! Possible Product Damage.";
23. }
24. System.out.println(message);
25. tempLog.add(message);
26. }
27. // 显示温度日志
28. public void printTempLog() {
29. System.out.println("Cold Storage Temperature Log:");
30. for (String log : tempLog) {
31. System.out.println(log);
32. }
33. }
34. }
35. public class c109\_SmartBoiler {
36. public static void main(String[] args) {
37. ColdStorage storage = new ColdStorage(8.0, 2.0, 5); // 最大 8°C，最小 2°C，初始 5°C
38. // 测试用例
39. storage.updateTemperature(2.0); // ✅ 增加至 7°C（正常）
40. storage.updateTemperature(-4.0); // ❌ 降至 3°C（正常）
41. storage.updateTemperature(-2.0); // ❌ 降至 1°C（低温警报）
42. storage.updateTemperature(4.0); // ✅ 增至 5°C（正常）
43. storage.updateTemperature(5.0); // ❌ 增至 10°C（超温警报）
44. storage.printTempLog(); // ✅ 显示温度日志
45. }
46. }