

Assignment 1

Smart Home Automation Problem:

replit.com/@nhnomani123/question1.dart#main.dart

“Reminder: If the link doesn't work, try using a different browser”

The solution :

```
question1.dart
main.dart x +
main.dart
1 import 'dart:io';
2
3 void main() {
4   bool lightsOn = false;
5   int thermostat = 20;
6   bool securityArmed = false;
7
8   print("\nWelcome to the Smart Home System!");
9   print("\nPlease choose an action:");
10  print("""
11  1. Toggle lights
12  2. Set thermostat temperature
13  3. Arm/disarm security system
14  4. View system status
15  5. Exit
16  """);
17
18  while (true) {
19    stdout.write("\nEnter your choice: ");
20    String? choice = stdin.readLineSync();
21
22    if (choice == '1') {
23      lightsOn = !lightsOn;
24      print("Lights are now ${lightsOn ? 'ON' : 'OFF'}.");
25    } else if (choice == '2') {
26      stdout.write("Set thermostat temperature (15°C - 30°C): ");
27      int? temp = int.tryParse(stdin.readLineSync() ?? '');
28      if (temp != null && temp >= 15 && temp <= 30) {
29        thermostat = temp;
30        print("Thermostat set to ${thermostat}°C.");
31      } else {
32        print("Invalid temperature! Please enter a value between 15°C and 30°C.");
33      }
34    } else if (choice == '3') {
35      securityArmed = !securityArmed;
36      print("Security system is now ${securityArmed ? 'ARMED' : 'DISARMED'}.");
37    } else if (choice == '4') {
38      String tempStatus = thermostat >= 25 ? "Warm Day" : "Cool Day";
39      print("\nSystem Status:");
40      print("- Lights: ${lightsOn ? 'ON' : 'OFF'}");
41      print("- Thermostat: ${thermostat}°C - $tempStatus");
42      print("- Security System: ${securityArmed ? 'ARMED' : 'DISARMED'}");
43    } else if (choice == '5') {
44      print("Exiting the system. Goodbye!");
45      break;
46    } else {
47      print("Invalid choice! Please select a valid option (1-5).");
48    }
49  }
50 }
```

The Output :

```
Console x +
Run
Welcome to the Smart Home System!
Please choose an action:
1. Toggle lights
2. Set thermostat temperature
3. Arm/disarm security system
4. View system status
5. Exit

Enter your choice: 1
Lights are now ON.

Enter your choice: 2
Set thermostat temperature (15°C - 30°C): 25
Thermostat set to 25°C.

Enter your choice: 4

System Status:
- Lights: ON
- Thermostat: 25°C - Warm Day
- Security System: DISARMED

Enter your choice: 5
Exiting the system. Goodbye!
```