

بجاولا لولج - Assignment 1

(Dart غلب يجمر بو لج) Smart Home Automation: لي ولأال ةمهمل

فصولا

ماطنو، ةراجل ماظنم، ءاوضأال: لي ع يوتحي يكد لز نم ماظن ي ف مكحتلل CLI قيبطت
نامأال

لاخلأال نم ققحتلل، مدختسملل رايتخا مئوق، ةيضارتفال ميقلل ةئي هت: تابلطتل
ةلأال ةعابطو

```
// Smart Home Automation - Dart
import 'dart:io';
```

```
void main() {
  const int MIN_TEMP = 15;
  const int MAX_TEMP = 30;

  bool lightsOn = false;
  int thermostat = 20;
  bool securityArmed = false;

  while (true) {
    print('\n===== Smart Home Menu =====');
    print('1. Toggle Lights');
    print('2. Set Thermostat');
    print('3. Arm/Disarm Security System');
    print('4. View System Status');
    print('5. Exit');
    stdout.write('Enter your choice: ');
    String? choice = stdin.readLineSync();

    if (choice == null) continue;

    // handle main choices using if/else and switch for devices
    if (choice == '1') {
      // switch-like handling for lights
      lightsOn = !lightsOn;
      print('Lights are ${lightsOn ? "ON" : "OFF"}');
    } else if (choice == '2') {
      stdout.write('Enter thermostat temperature ($MIN_TEMP-$MAX_TEMP): ');
      String? tempStr = stdin.readLineSync();
      if (tempStr == null) continue;
      int? temp = int.tryParse(tempStr);
      if (temp == null) {
        print('Invalid input. Please enter a number.');
```

```
bool mult3 = (thermostat % 3 == 0);
bool mult5 = (thermostat % 5 == 0);
if (mult3 && mult5) {
    extra = 'Perfect Day';
} else if (mult3) {
    extra = 'Cool Day';
} else if (mult5) {
    extra = 'Warm Day';
}
print("\n--- System Status ---");
print('Lights: $lightsStatus');
print('Thermostat: $thermostat°C ${extra.isNotEmpty ? "- $extra" : ""}');
print('Security: ${securityStatus.toUpperCase()}');
} else if (choice == '5') {
    print('Exiting... Goodbye!');
    break;
} else {
    print('Invalid choice. Please select a valid option.');
```

Dart (عزل بي ج م ربو ل ح) : Budget Management Application :ة ن ا ث ل ة م ه م ل ا

فصولا

ي ل ا م ج ا ب ا س ح ، ف و ر ص م و ل خ د د و ن ب ة ف ا ض ا ب ح م س ي . ت ا ف و ر ص م ل ا و ل خ د ل ا ة ر ا د ا ل C L I ق ي ب ط ت
ة ر ا س خ ل ا و ا ح ب ر ل ا ي ف ا ص و ت ا ف و ر ص م ل ا و ل خ د ل ا
ص خ ل م ل ا ة ع ا ب ط و ، ت ا ل خ د م ل ا ن م ق ق ح ت ل ا ، د و ن ب ل ا ن ي ز خ ت ل م ئ ا و ق م ا د خ ت س ا : ت ا ب ل ط ت م ل ا

```
// Budget Management - Dart
import 'dart:io';

void main() {
  List<Map<String, double>> incomeList = [];
  List<Map<String, double>> expenseList = [];

  while (true) {
    print('\n===== Budget Management Menu =====');
    print('1. Add Income');
    print('2. Add Expense');
    print('3. View Summary');
    print('4. Exit');
    stdout.write('Enter your choice: ');
    String? choice = stdin.readLineSync();

    if (choice == null) continue;

    if (choice == '1') {
      stdout.write('Enter income description: ');
      String? desc = stdin.readLineSync();
      stdout.write('Enter income amount: ');
      String? amtStr = stdin.readLineSync();
      double? amt = double.tryParse(amtStr ?? '');
      if (desc == null || desc.isEmpty || amt == null || amt < 0) {
        print('Invalid input. Description required and amount must be non-negative.');
```

```

print('\n--- Summary ---');
print('Total Income: \${totalIncome.toStringAsFixed(2)}');
print('Total Expenses: \${totalExpense.toStringAsFixed(2)}');
if (net >= 0) {
  print('Net Profit: \${net.toStringAsFixed(2)}');
  // Optional tax calculation
  double tax = (net > 0) ? net * 0.15 : 0.0;
  if (tax > 0) {
    print('Tax to pay (15%): \${tax.toStringAsFixed(2)}');
  }
} else {
  print('Net Loss: \${(-net).toStringAsFixed(2)}');
}
} else if (choice == '4') {
  print('Exiting... Goodbye!');
  break;
} else {
  print('Invalid choice. Please choose a valid option.');
}
}
}

```