

```
import 'dart:io';

void main() {
  print("Welcome to the Budget Management Application!");

  List<Map<String, double>> incomeList = [];
  List<Map<String, double>> expenseList = [];

  while (true) {
    print("\nPlease choose an option:");
    print("1. Add Income");
    print("2. Add Expense");
    print("3. View Summary");
    print("4. Exit");

    String? choice = stdin.readLineSync();

    if (choice == '1') {
      addIncome(incomeList);
    } else if (choice == '2') {
      addExpense(expenseList);
    } else if (choice == '3') {
      viewSummary(incomeList, expenseList);
    } else if (choice == '4') {
      print("Exiting the application. Goodbye!");
      break;
    } else {
      print("Invalid option. Please try again.");
    }
  }
}
```

```
}  
}
```

```
void addIncome(List<Map<String, double>> incomeList) {  
    print("Enter income description:");  
    String? description = stdin.readLineSync();  
  
    double amount = getValidAmount("Enter income amount:");  
  
    if (description != null) {  
        incomeList.add({description: amount});  
        print("Income added successfully!");  
    }  
}
```

```
void addExpense(List<Map<String, double>> expenseList) {  
    print("Enter expense description:");  
    String? description = stdin.readLineSync();  
  
    double amount = getValidAmount("Enter expense amount:");  
  
    if (description != null) {  
        expenseList.add({description: amount});  
        print("Expense added successfully!");  
    }  
}
```

```
double getValidAmount(String prompt) {  
    while (true) {
```

```

print(prompt);

String? input = stdin.readLineSync();

if (input != null) {
  double? amount = double.tryParse(input);
  if (amount != null && amount >= 0) {
    return amount;
  }
}

print("Please enter a valid non-negative number.");
}

}

void viewSummary(List<Map<String, double>> incomeList,
  List<Map<String, double>> expenseList) {
  double totalIncome =
    incomeList.fold(0, (sum, entry) => sum + entry.values.first);
  double totalExpenses =
    expenseList.fold(0, (sum, entry) => sum + entry.values.first);
  double netProfit = totalIncome - totalExpenses;

  String summary = "Total Income: \${totalIncome}\n"
    "Total Expenses: \${totalExpenses}\n"
    "Your net \${netProfit >= 0 ? "profit" : "loss"} is \${netProfit.abs()}";

  print(summary);

  if (netProfit > 0) {
    double tax = netProfit * 0.15;

```

```
    print("Tax to be paid on profit: \${tax}");  
  }  
}
```