

Q1 You are provided with declaration of two classes, Income and Expense which simulate the cash of a retail business. Your task is to ensure that cash levels are accurately tracked between both classes without making any global variable.

```
class Income {
public:
    void recordIncome(double amount);
};

class Expense {
public:
    void recordExpense(double amount);
};
```

Code for only following question:

- 1) Create a Singleton class named ‘CashFlowManager’ to keep track of business cash flow. This class should have a double attribute to maintain cash amount.
- 2) Complete the implementation of ‘Income’ and ‘Expense’ class functions, and show its usage in main.

```
class CashFlowManager {
private:
    static CashFlowManager* instance;
    double cashAmount;
    CashFlowManager() : cashAmount(0.0) {}

public:

    static CashFlowManager* getInstance() {
        if (instance == nullptr) {
            instance = new CashFlowManager();
        }
        return instance;
    }

    void addCash(double amount) {
        cashAmount += amount;
    }

    void subtractCash(double amount) {
        cashAmount -= amount;
    }
};

// Initialize static member of CashFlowManager
CashFlowManager* CashFlowManager::instance = nullptr;

class Income {
public:
    void recordIncome(double amount) {
        CashFlowManager::getInstance() ->addCash(amount);
    }
};
```

```
class Expense {  
public:  
    void recordExpense(double amount) {  
        CashFlowManager::getInstance()->subtractCash(amount);  
    }  
};  
  
int main() {  
    Income income;  
    Expense expense;  
    income.recordIncome(500.0);  
    expense.recordExpense(200.0);  
  
    return 0;  
}
```