5903. Simple Bank System

My Submissions (/contest/weekly-contest-263/problems/simple-bank-system/submissions/) | Back to Contest (/contest/weekly-contest-263/)

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

You have been tasked with writing a program for a popular bank that will automate all its incoming transactions (transfer, deposit, and withdraw). The bank has `n` accounts numbered from `1` to `n`. The initial balance of each account is stored in a **0-indexed** integer array `balance`, with the `(i + 1)`th account having an initial balance of `balance[i]`.

Execute all the **valid** transactions. A transaction is **valid** if:

- The given account number(s) are between `1` and `n`, and
- The amount of money withdrawn or transferred from is **less than or equal** to the balance of the account.

Implement the `Bank` class:

- `Bank(long[] balance)` Initializes the object with the **0-indexed** integer array `balance`.
- `boolean transfer(int account1, int account2, long money)` Transfers `money` dollars from the account numbered `account1` to the account numbered `account2`. Return `true` if the transaction was successful, `false` otherwise.
- `boolean deposit(int account, long money)` Deposit `money` dollars into the account numbered `account`. Return `true` if the transaction was successful, `false` otherwise.
- `boolean withdraw(int account, long money)` Withdraw `money` dollars from the account numbered `account`. Return `true` if the transaction was successful, `false` otherwise.

Example 1:

```
Input
["Bank", "withdraw", "transfer", "deposit", "transfer", "withdraw"]
[[[10, 100, 20, 50, 30]], [3, 10], [5, 1, 20], [5, 20], [3, 4, 15], [10, 50]]
Output
[null, true, true, true, false, false]

Explanation
Bank bank = new Bank([10, 100, 20, 50, 30]);
bank.withdraw(3, 10);    // return true, account 3 has a balance of $20, so it is valid to withdraw $10.
                         // Account 3 has $20 - $10 = $10.
bank.transfer(5, 1, 20); // return true, account 5 has a balance of $30, so it is valid to transfer $20.
                         // Account 5 has $30 - $20 = $10, and account 1 has $10 + $20 = $30.
bank.deposit(5, 20);     // return true, it is valid to deposit $20 to account 5.
                         // Account 5 has $10 + $20 = $30.
bank.transfer(3, 4, 15); // return false, the current balance of account 3 is $10,
                         // so it is invalid to transfer $15 from it.
bank.withdraw(10, 50);   // return false, it is invalid because account 10 does not exist.
```

Constraints:

- `n == balance.length`
- `1 <= n, account, account1, account2 <=` 10^5
- `0 <= balance[i], money <=` 10^{12}
- At most 10^4 calls will be made to **each** function `transfer`, `deposit`, `withdraw`.

JavaScript

```
function Bank(a) {
    let n = a.length;
    return { transfer, deposit, withdraw }
    function transfer(account1, account2, money) {
        let i = account1 - 1, j = account2 - 1;
        if (i >= n || j >= n) return false;
        if (a[i] - money < 0) return false;
        a[i] -= money;
        a[j] += money;
        return true;
    }

    function deposit(account, money) {
        let idx = account - 1;
        if (idx >= n) return false;
        a[idx] += money;
        return true;
    }

    function withdraw(account, money) {
        let idx = account - 1;
        if (idx >= n) return false;
        if (a[idx] - money < 0) return false;
        a[idx] -= money;
        return true;
    }
}
```

Custom Testcase   Use Example Testcases

Run   Submit

Submission Result: Accepted (/submissions/detail/572419917/)   More Details (/submissions/detail/572419917/)

Share your acceptance!