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Problem 1

# MyMoney ▾

All Geektrust challenges are meant to be solved offline. Your score will be based on the readability, and scalability.

You should read [what we look for](#) in your solution before you start coding.

Please go through the build instructions [here](#)

## The challenge

You work at 'MyMoney', a platform that lets investors track their consolidated

Portfolio rebalancing is an activity done to reduce the gains from one asset class that the desired weight for each asset class doesn't deviate because of market

If we consider an investor who has invested in an equity fund, a debt/gilt fund, and a gold fund with desired weight of 60%, 30% and 10%, without rebalancing, the portfolio value

	Equity	Debt	Gold	Total

Dec-07	13,35,324	3,35,124	1,38,730	18,09,178
Allocation	74%	18%	8%	100%
Dec-08	6,50,684	3,97,317	1,76,097	12,24,098
Allocation	53%	32%	14%	100%
Dec-09	11,55,555	3,43,246	2,18,795	17,17,595

It's clear that due to changing markets, the desired allocation has deviated

You need to design a system that will suggest actions to ensure that the desired allocation percentage should be 2000, 3000 is initial allocation, then desired percentage is 50%, 20% and this:

	Equity	Debt	Gold	Total
Dec-05	6,00,000	3,00,000	1,00,000	10,00,000
Allocation	60%	30%	10%	100%
Dec-06	8,51,584	3,13,305	1,19,384	12,84,836
Allocation	66%	25%	9%	100%
Dec-06 (Post Rebalancing)	7,70,901	3,85,451	1,28,484	12,84,836
Allocation	60%	30%	10%	100%

Allocation	33%	33%	16%	100%
Dec-08	5,17,412	6,29,439	2,24,639	13,71,490
Allocation	38%	46%	16%	100%
Dec-08 (Post Rebalancing)	8,22,894	4,11,447	1,37,149	13,71,490
Allocation	60%	30%	10%	100%
Dec-09	14,51,396	3,56,116	1,70,011	19,77,523

Your program should take as input:

1. The money allocated in equity, debt and gold funds.
2. Monthly SIP payments.
3. Monthly change rate (loss or growth) for each type of fund..

The output should be

1. Balanced amount of each fund for a certain month.
2. Rebalanced amount of each month if applicable.

## Input Commands

There are 5 input commands defined to separate out the actions. Your input commands i.e ALLOCATE, SIP, CHANGE, BALANCE, REBALANCE

## ALLOCATE

The ALLOCATE command receives the initial investment amounts for each

## SIP

The SIP command receives the investment amount on a monthly basis for

Format - SIP AMOUNT\_EQUITY AMOUNT\_DEBT AMOUNT\_GOLD

Example - SIP 2000 1000 500 means a monthly payment of 2000, 1000 a gold funds respectively.

## CHANGE

The CHANGE command receives the monthly rate of change (growth or loss) represents a loss.

Format - CHANGE AMOUNT\_EQUITY AMOUNT\_DEBT AMOUNT\_GOLD

Example - CHANGE 8.00% -3.00% 7.00% APRIL means in the month of APRIL taken a loss by 3% and gold received a growth of 7%.

## BALANCE

The BALANCE command receives a month name.

Format - BALANCE MONTH

Example - BALANCE APRIL means - print the balance for each fund as on

## REBALANCE

The REBALANCE command receives no additional inputs.

Output format - EQUITY DEBT GOLD

Example - 10593 7898 2273

### Assumptions

1. Balances are always floored to the nearest integers.
2. The rebalancing happens on 6th (June) and 12th (December) month.
3. The allocation always happens from January, and SIP from February.

### SAMPLE INPUT-OUTPUT 1

#### INPUT:

```
ALLOCATE 6000 3000 1000
SIP 2000 1000 500
CHANGE 4.00% 10.00% 2.00% JANUARY
CHANGE -10.00% 40.00% 0.00% FEBRUARY
CHANGE 12.50% 12.50% 12.50% MARCH
CHANGE 8.00% -3.00% 7.00% APRIL
CHANGE 13.00% 21.00% 10.50% MAY
CHANGE 10.00% 8.00% -5.00% JUNE
BALANCE MARCH
REBALANCE
```

#### OUTPUT:

## PORTFOLIO.

Operation	Equity	Debt	Gold	Total
JANUARY - Allocation	6000	3000	1000	10000
JANUARY - After Market Change	6240	3300	1020	10560
FEBRUARY - Existing	6240	3300	1020	10560
FEBRUARY - After SIP	8240	4300	1520	14060
FEBRUARY - After Market Change	7416	6020	1520	14956
MARCH - Existing	7416	6020	1520	14956
MARCH - After SIP	9416	7020	2020	18456
MARCH - After Market Change	10593	7897	2272	20762
APRIL - Existing	10593	7897	2272	20762
APRIL - After SIP	12593	8897	2772	24262
APRIL - After Market Change	13600	8630	2966	25196
MAY - Existing	13600	8630	2966	25196
MAY - After SIP	15600	9630	3466	28696
MAY - After Market Change	17628	11652	3829	33109
JUNE - Existing	17628	11652	3829	33109
JUNE - After SIP	19628	12652	4329	36609
JUNE - After Market Change	21590	13664	4112	39366
JUNE - Rebalance	23619	11809	3936	39366

SIP 3000 2000 1000  
CHANGE 11.00% 9.00% 4.00% JANUARY  
CHANGE -6.00% 21.00% -3.00% FEBRUARY  
CHANGE 12.50% 18.00% 12.50% MARCH  
CHANGE 23.00% -3.00% 7.00% APRIL  
BALANCE MARCH  
BALANCE APRIL  
REBALANCE

**OUTPUT:**

15937 14552 6187  
23292 16055 7690  
CANNOT\_REBALANCE

**PORTFOLIO:**

Operation	Equity	Debt	Gold	Total
JANUARY - Allocation	8000	6000	3500	17500
JANUARY - After Market Change	8880	6540	3640	19060
FEBRUARY - Existing	8880	6540	3640	19060
FEBRUARY - After SIP	11880	8540	4640	25060
FEBRUARY - After Market Change	11167	10333	4500	26000
MARCH - Existing	11167	10333	4500	26000
MARCH - After SIP	14167	12333	5500	32000
MARCH - After Market Change	15937	14552	6187	36676

Take a look at [Geektrust help docs](#) for guidance on how to write code that

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**Attribution** - This coding problem was created by [Varun Vembar](#). Three cl  
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