

Jigsaw – Preliminary technical round

General Instructions

- Use Node.js to solve the following problems.
- Make sure that your program does not print anything except the content in the 'Output' section.
- Example input files are attached.
- Please send a single Node.js file with a properly formatted solution and comments wherever possible. You can create a zip archive if there are multiple files.
- Please do NOT upload your solution to any public code-sharing websites like Github, Gitlab, Bitbucket etc.

Challenge

There is a Venture Capital firm called Cueball Capital. Having lost a lot of money in the last few years, they have decided to regulate their investment by following a strict budget. Their budget consists of several rules which are applicable on time period or type of investment or both.

An example rule: Limit investment to 25 million USD per quarter on BigData startups.

You will be given two CSV files, one consisting of rules for Cueball Capital's budget and another consisting of investment opportunities. Investment opportunities will be sorted by date, so that you can process them in chronological order. Any investment that does not violate the budget should be assumed to be made, so that the relevant budget is then reduced by that amount.

Finally, your program should output a list of investment opportunities (their IDs, each one on a separate line) which violate the budget.

Example

[budget.csv](#)

ID	Amount	Time Period	Sector
1	75	Month	
2	30		FinTech
3	25	Quarter	BigData

1

4	70	Year	E-Commerce
5	350	Year	

[investments.csv](#) (with date in the format dd/mm/yyyy)

ID	Date	Amount	Sector
1	06/01/2020	10	BigData
2	23/01/2020	20	E-Commerce
3	02/02/2020	35	FinTech
4	10/02/2020	65	SaaS
5	14/02/2020	15	BigData
6	17/02/2020	5	SaaS
7	29/02/2020	5	FinTech
8	18/03/2020	15	BigData
9	03/05/2020	30	E-Commerce
10	18/05/2020	50	E-Commerce

In the above example, the following investments will not go through because of budget violations:

- Investment 3, because it violates Rule 2
- Investment 5, because it violates Rule 1 (having already made an investment of 65 in Feb 2020)
- Investment 10, because it violates both Rules 1 and 4 (having already made an investment of 30 in May 2020 in E-Commerce)

Note:

- Time Period can only be one of: 'Month', 'Quarter' or 'Year'
 - Sector can be arbitrary
 - Time period starts on the 1st of the relevant month. For example: 1st Quarter of the year starts on 1st January and ends on 31st March.
 - At least one of Time Period and Sector will be present in a budget rule. •
- All amounts are in millions of USD.

Input

`/path/to/budget.csv` `/path/to/investments.csv`

Output

`3`
`5`
`10`