Software Engineer Test

Status : Take home test

Datetime : 30 hours max

> ℹ️ **General instruction**
> Please showcase your solution by utilizing a screen recording service like Loom or any other similar tool. Please ensure that you attach the recorded video to the email.

Problem set 1

At Trustmedis, our customer often wants to create their own numbering systems such that the format could be used universally across the app.

Example:

Template: `{REG_TYPE}/{DDMMYYYY}/{SEQ}`
Registration number: RJ/20122023/0001
Explanation:

- `RJ` = registration type
- `20122023` = date format DDMMYYYY
- `0001` sequence number

Your task is to design a template engine where users can define their own sequence numbers template and generate the expected numbers accordingly.

Input

```
1  const data = {
2    regType: "RI",
3    currentDate: new Date(),
4    seq: 1,
5  }
```

Example test case 1

Template: `{SEQ}-{YYYY}/{MM}/{DD}-{REG_TYPE}`

Output: `0001-2023/01/01-RI`

Example test case 2

Template: `{REG_TYPE}/{YYMMDD}/{SEQ}`

Output: `RI/230101/0001`

Plus points:
- Using typescript

- Provide unit tests
- Without using any datetime-related library

Problem set 2

There are `N` nurse teams to take blood test. One blood test takes up to two hours. Given an array of what time blood tests is requested, write a function to find available teams that able to take the job. The rotation should be in round-robin fashion.

Specification:

1. Request comes in a batch, you should sort it before arranging to teams.
2. If no team is available, write `0`.

Example

Teams : 2

Requests : `[7, 8, 10, 9, 9]`

Output: `[1, 2, 1, 0, 2]`

Explanation:

	7 AM	8 AM	9 AM	9 AM	10 AM
Team 1	x		x	UNAVAILABLE	
Team 2		x		UNAVAILABLE	x

No team is available to pick up test at second 9 AM because team 1 and team 2 are occupied.

Example test case 1

Input

```
1  const requests = [9, 10, 13, 10, 11]
2  const teams = 3
```

Output

```
1  const assignments = [1,2,2,3,1]
```

Example test case 2

Input

```
1  const requests = [9, 10, 10, 10, 11]
2  const teams = 3
```

Output

```
1  const assignments = [1,2,3,0,1]
```

🗍 **Outline**