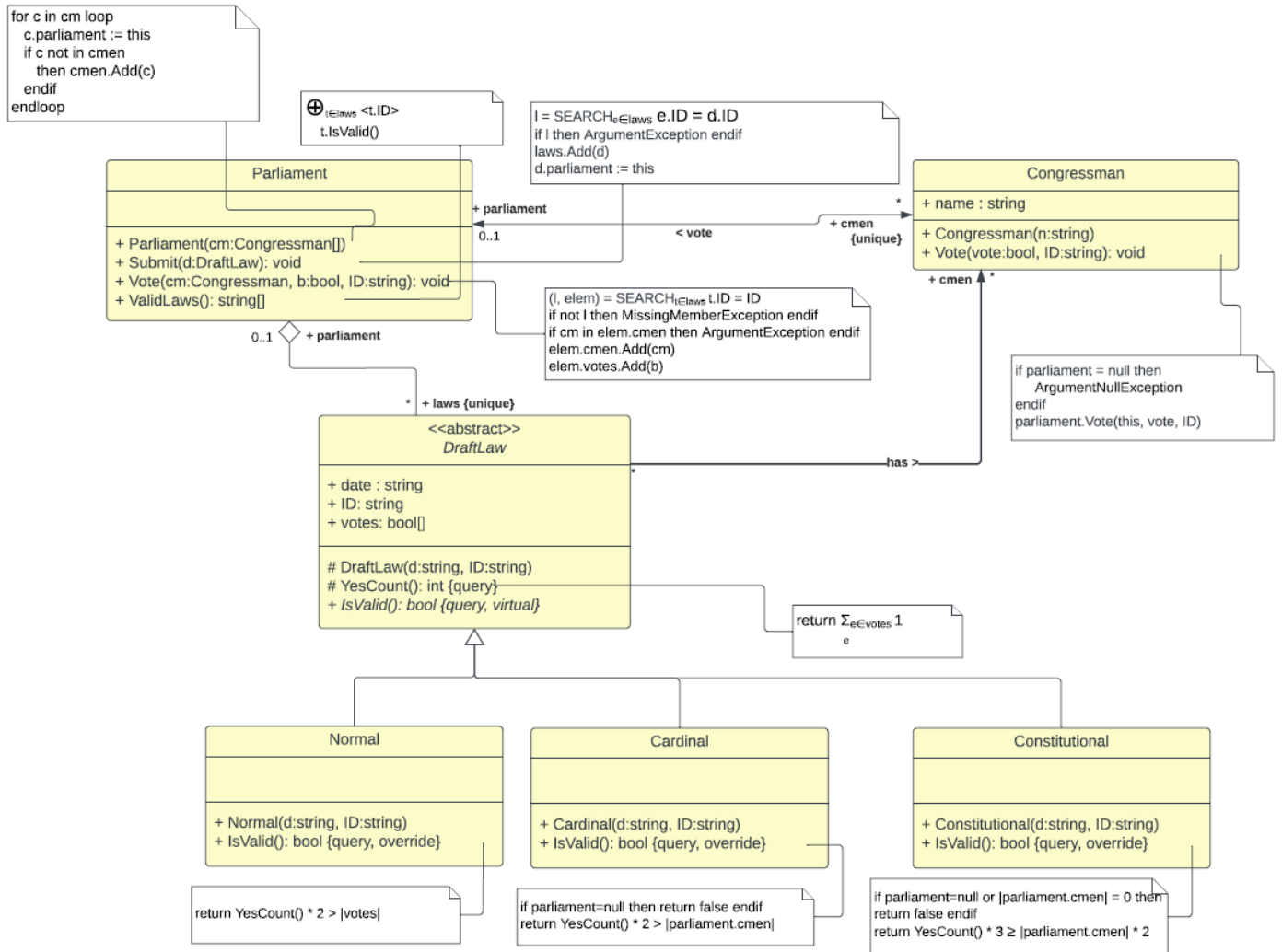


Satisfactory

A parliament has a lot of congressmen. The task of the congressmen is to vote for or against draft laws. A draft law can be of 3 types: normal, cardinal, or constitutional. There are different rules to accept these draft laws.

After voting, decide which laws are accepted and print their ID to the console!



Input:

The first line stores the names of the congressmen

firstName lastName firstName lastName ...

Below that come the draft laws (one law in each line) in the following form

type ID date votes

the votes means equal number of votes to the number of congressmen. The abstain means that the congressman has not voted and it does not count into the final result.

Sample input:

```
John Smith Jane Smith Damien Stayne Johannes Hartl
Normal NORM12 2022.01.34 abst abst yes abst
Constitutional ABC123 2022.02.01 yes yes no yes
Cardinal ABC124 2022.02.02 yes abst no yes
Constitutional ABC234 2022.02.05 yes abst yes no
```

Explanation:

The 3rd draft law is a cardinal law with ID ABC124 and date 2022.02.01, where Mr. Smith and Mr. Hartl have voted for it, Mr. Stayne has voted against, and Miss Smith has not voted.

Output:

The valid laws' ID has to be printed out with whitespace at the end.

If there is not any valid law, the *none* word has to be printed.

Sample output:

```
NORM12 ABC123
```

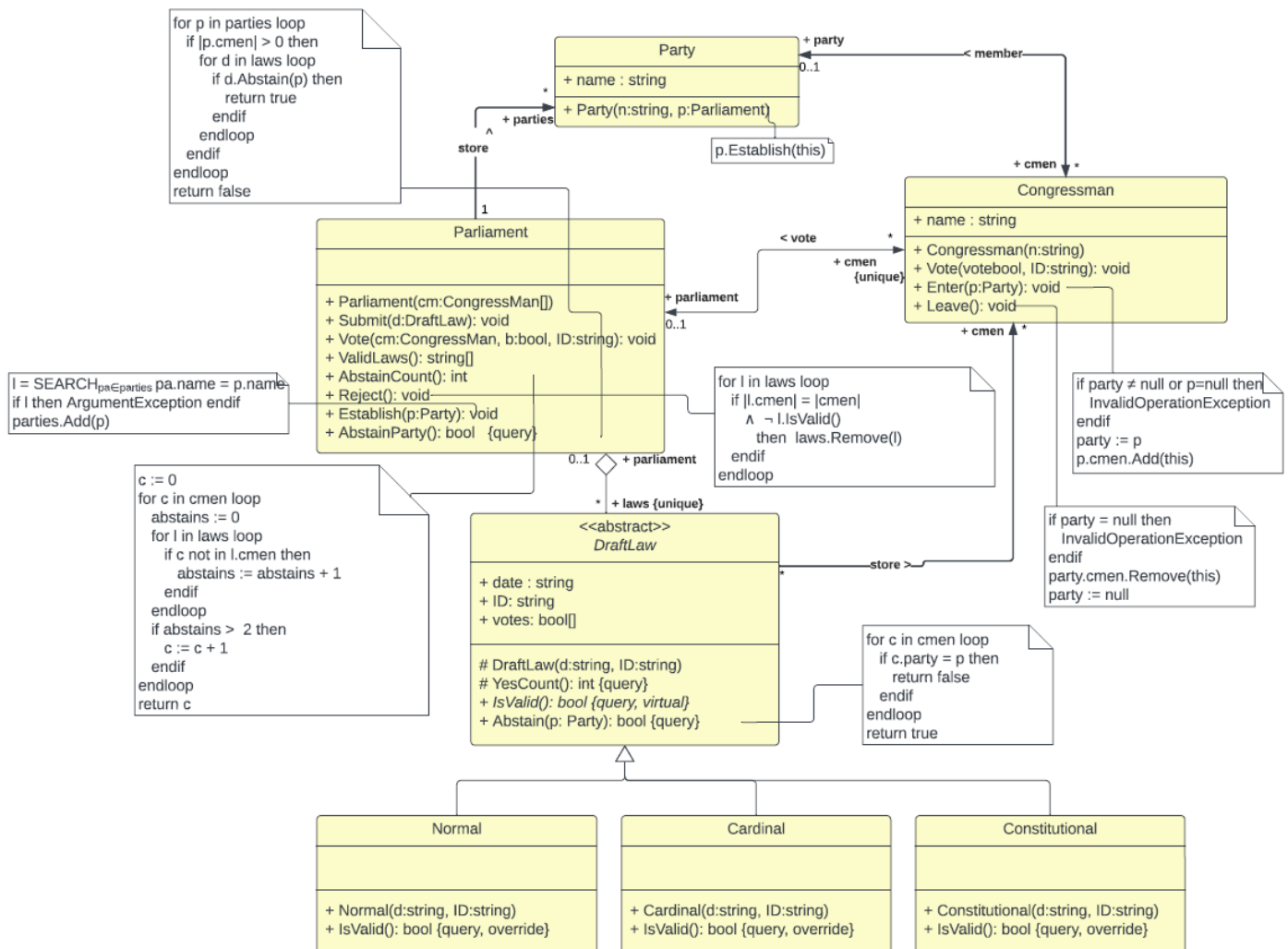
You do not have to solve the satisfactory task for grade 5, though it is worthy to do so. The excellent task is based on the satisfactory one. Only those solutions are graded that are checked by a teacher.

Excellent

Extend the solution with the following things:

- Create a method which calculates how many congressmen have abstained at least twice.
- The parliament rejects those draft laws that has all the votes but are invalid. Create a method which deletes the rejected draft laws.
- The congressmen can enter and leave any party. Create the necessary methods based on the plan. Decide if there was any draft law for which every member of a given party has abstained. Consider only those parties which have at least one member.

The plan:



Input:

The first line stores the name of the congressmen.

The second line stores the name of the parties.

The third line has the info which congressmen have entered which party.

The fourth line has the info which congressmen have left their party.

Finally, the draft laws come the same way as in the satisfactory task.

Sample input:

```
John Smith Jane Smith Damien Stayne Johannes Hartl
Reds Blues
Johannes Hartl Blues Damien Stayne Blues John Smith Reds
John Smith
Normal NORM12 2022.01.34 abst abst yes abst
Constitutional ABC123 2022.02.01 yes yes no yes
Cardinal ABC124 2022.02.02 yes abst no yes
Constitutional ABC234 2022.02.05 yes abst yes no
Normal NORM13 2022.03.01 no no no no
```

Output:

First line of the output should contain the IDs of the valid laws with whitespace at the end, or the none word.

The 2nd line should contain the answer of question a) after doing the voting.

The 3rd line should contain the answer of question b) with whitespace at the end after running the Reject() method. If there is no valid law left, the *none* word should be printed.

The 4th line should contain the answer for question d) (yes/no)

Sample output:

```
NORM12 ABC123
1
NORM12 ABC123 ABC124 ABC234
no
```

You do not have to solve the satisfactory task for grade 5, though it is worthy to do so. The excellent task is based on the satisfactory one. Only those solutions are graded that are checked by a teacher.