

JS Advanced Regular Exam – 19 Feb 2022

Problem 2. Library Collection

```
class LibraryCollection {  
    //TODO Implement this class  
}
```

Write a class **LibraryCollection**, which implements the following functionality:

Functionality

Constructor

Should have these 2 properties:

- **capacity** – Number
- **books** – Array (empty)

At the initialization of the **LibraryCollection** class, the **constructor** accepts the **capacity**.

Hint: You can add more properties to help you finish the task.

addBook (bookName, bookAuthor)

The **bookName** and **bookAuthor** are of type **string**.

- If there's **not enough space in the collection** for the book, **throw an Error**:
"Not enough space in the collection."
- Otherwise, this function should add the book, with the properties: **bookName**, **bookAuthor**, **payed: default false**, to the books array and **return**:
"The {bookName}, with an author {bookAuthor}, collect."

payBook(bookName)

- If the book is not found, **throw an Error**:
"{bookName} is not in the collection."
- If the book has already paid, **throw an Error**:
"{bookName} has already been paid."
- Otherwise, this function set paid to true on the found book and **return**:
"{bookName} has been successfully paid."

removeBook(bookName)

- If the book is **not found**, throw an **Error**:
`"The book, you're looking for, is not found."`
- If the book **hasn't paid**, throw an **Error**:
`"{bookName} need to be paid before removing from the collection."`
- Otherwise, this function should **remove** the book from the array and **return**:
`"{bookName} remove from the collection."`

getStatistics(bookAuthor)

This **method** can be called **with one parameter** or **without** any.

If **no** parameter is provided, the method should **return** the full information of the library

- At the first line:
`"The book collection has { emptySlots } empty spots left."`
- On the lines, display information about each book, **sorted alphabetically ascending**, by their **bookName**:
`"{bookName} == {bookAuthor} - {Has Paid / Not Paid}."`

If the method is called with a parameter for **bookAuthor**:

- **Return** only the information about the book from the given **bookAuthor**:
`"{bookName} == {bookAuthor} - {Has Paid / Not Paid}."`
- If there is **no such author's book** found, **throw an Error**:
`"{bookAuthor} is not in the collection."`

Example

Input 1
<pre>const library = new LibraryCollection(2) console.log(library.addBook('In Search of Lost Time', 'Marcel Proust')); console.log(library.addBook('Don Quixote', 'Miguel de Cervantes')); console.log(library.addBook('Ulysses', 'James Joyce'));</pre>

Output 1

The In Search of Lost Time, with an author Marcel Proust, collect.
The Don Quixote, with an author Miguel de Cervantes, collect.
Not enough space in the collection.

Input 2

```
const library = new LibraryCollection(2)

library.addBook('In Search of Lost Time', 'Marcel Proust');

console.log(library.payBook('In Search of Lost Time'));

console.log(library.payBook('Don Quixote'));
```

Output 2

In Search of Lost Time has been successfully paid.
Don Quixote is not in the collection.

Input 3

```
const library = new LibraryCollection(2)

library.addBook('In Search of Lost Time', 'Marcel Proust');

library.addBook('Don Quixote', 'Miguel de Cervantes');

library.payBook('Don Quixote');

console.log(library.removeBook('Don Quixote'));

console.log(library.removeBook('In Search of Lost Time'));
```

Output 3

Don Quixote remove from the collection.
In Search of Lost Time need to be paid before removing from the collection.

Input 4

```
const library = new LibraryCollection(2)

console.log(library.addBook('Don Quixote', 'Miguel de Cervantes'));

console.log(library.getStatistics('Miguel de Cervantes'));
```

Output 4

The Don Quixote, with an author Miguel de Cervantes, collect.

Don Quixote == Miguel de Cervantes - Not Paid.

Input 5

```
const library = new LibraryCollection(5)

library.addBook('Don Quixote', 'Miguel de Cervantes');

library.payBook('Don Quixote');

library.addBook('In Search of Lost Time', 'Marcel Proust');

library.addBook('Ulysses', 'James Joyce');

console.log(library.getStatistics());
```

Output 5

The book collection has 2 empty spots left.

Don Quixote == Miguel de Cervantes - Has Paid.

In Search of Lost Time == Marcel Proust - Not Paid.

Ulysses == James Joyce - Not Paid.