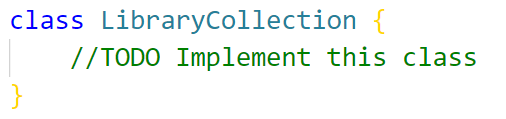
## JS Advanced Regular Exam – 19 Feb 2022

## Problem 2. Library Collection



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 been 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 been 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

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| **Input 1** |
| **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'));** |

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| **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. |

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| **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'));** |

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| **Output 2** |
| In Search of Lost Time has been successfully paid.  Don Quixote is not in the collection. |

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| **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'));** |

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| **Output 3** |
| Don Quixote remove from the collection.  In Search of Lost Time need to be paid before removing from the collection. |

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| **Input 4** |
| **const *library* = new** LibraryCollection**(2)**  ***console*.log(*library*.addBook('Don Quixote', 'Miguel de Cervantes'));**  ***console*.log(*library*.getStatistics('Miguel de Cervantes'));** |

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| **Output 4** |
| The Don Quixote, with an author Miguel de Cervantes, collect.  Don Quixote == Miguel de Cervantes - Not Paid. |

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| **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());** |

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| **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. |