JS Advanced: Exam 15 July 2018

Problem 3. Book Collection

Write a **JavaScript class BookCollection** which holds a list containing shelf information **(shelfGenre, room, shelfCapacity).**

```
class BookCollection {
    // TODO: implement this class
}
```

Each **BookCollection** is located in specific room, on a shelf with defined capacity and shelf name. Implement the following features:

- **Constructor** – It should contain the following properties – **room**(String), **shelfGenre**(String), **shelf**(an array), **shelfCapacity**(Number). If the room is: "**livingRoom**" or "**bedRoom**" or "**closet**", create the shelf's genre, room and shelf capacity. If it **is not,** throw "Cannot have book shelf in {room's name}". Shelf capacity will always be a valid positive number.
- Method **addBook(bookName, bookAuthor, genre)** – adds book to the shelf only if there's enough space in the shelf. If the shelf is full, remove the **first** book to make space for the **new** one. **The genre is optional**. In the end, **sort** our shelf **alphabetically** by **book author's name**.
- Method **throwAwayBook(bookName) – removes** a book from the shelf by the given name.
- Method **showBooks(genre) –** returns all books by the given genre. You should return a string with the following information:

```
"Results for search "{history}":"
"\uD83D\uDCD6 {bookAuthor} - "{bookName}""
…
```

- Accessor property **shelfCondition** – returns the **count** of **free slots** left in the shelf.
- Method **toString()** – returns the **text representation** of the shelf in the following format:
  - Empty shelf:

```
"It's an empty shelf"
```

  - Non-empty shelf:

```
""{shelfGenre}" shelf in {room} contains:"
"\uD83D\uDCD6 "{bookName}" - {bookAuthor}"
…
```

Examples

This is an example of how the **BookCollection** class is **intended to be used**:

Sample code usage

```
let livingRoom = new BookCollection("Programming", "livingRoom", 5)
    .addBook("Introduction to Programming with C#", "Svetlin Nakov")
    .addBook("Introduction to Programming with Java", "Svetlin Nakov")
    .addBook("Programming for .NET Framework", "Svetlin Nakov");
console.log(livingRoom.toString());
```

Corresponding output

```
"Programming" shelf in livingRoom contains:
🕮 "Introduction to Programming with C#" - Svetlin Nakov
🕮 "Introduction to Programming with Java" - Svetlin Nakov
🕮 "Programming for .NET Framework" - Svetlin Nakov
```

Sample code usage

```
let garden = new BookCollection("Programming", "garden");
```

Corresponding output

```
"Cannot have book shelf in garden"
```

Sample code usage

```
let bedRoom = new BookCollection('Mixed', 'bedRoom', 5);
bedRoom.addBook("John Adams", "David McCullough", "history");
bedRoom.addBook("The Guns of August", "Cuentos para pensar", "history");
bedRoom.addBook("Atlas of Remote Islands", "Judith Schalansky");
bedRoom.addBook("Paddle-to-the-Sea", "Holling Clancy Holling");
console.log("Shelf's capacity: " + bedRoom.shelfCondition);
console.log(bedRoom.showBooks("history"));
```

Corresponding output

```
Shelf's capacity: 1
Results for search "history":
🕮 Cuentos para pensar - "The Guns of August"
🕮 David McCullough - "John Adams"
```

Submission

Submit your class **BookCollection** as "**JavaScript code**".

Notes

Use the following Unicode for visualizing the book icon: **"\uD83D\uDCD6".**

No invalid input will be given.