**JS Advanced Exam**

**Problem 3. Unit Testing**

**Your Task**

Using **Mocha** and **Chai** write **JS Unit Tests** to test a variable named **library**, which represents an object. You may use the following code as a template:

|  |
| --- |
| describe(**"*Tests* …"**, **function**() {  describe(**"*TODO* …"**, **function**() {  ***it***(**"*TODO …*"**, **function**() {  *//* ***TODO:*** …  });  });  *//* ***TODO:*** …  }); |

The object should have the following functionality:

* **calcPriceOfBook (nameOfBook, year) -** A function that accepts a string and a number:
* The function calculates the price of the book depending on the **year** of publication
* The standard price of the book is 20 BGN
* If the **year** of publication is **less** than or **equal** to **1980**, there is a **50%** percent discount from the standard price
* The function calculated price of the book and **returns**: **`Price of {nameOfBook} is {price}`**
* You need to validate the input, if **nameOfBook** is not a string, or the **year** is not an **integer** number, **throw** an error: "**Invalid input**"
* **findBook (booksArr,** **desiredBook)**- A function that accepts an array and string:
  + The array includes all available **books** in the library ([**"Troy", "Life Style", "Torronto", etc.**])
* If the length of the **booksArr** array is zero, **throw** an error in the following format: "**No books currently available**"
  + The function checks whether the submitted string **desiredBook** is present in the array **booksArr**.
* If present in the array, the function **returns**: "**We found the book you want.**"
* Otherwise the function **returns**: "**The book you are looking for is not here!**"
* There is no need for validation for the input, you will always be given an array and string
* **arrangeTheBooks (countBooks)** - A function accept a number:
  + You need to validate the input, if the **countBooks** is not an **integer** number, or is a negative number, **throw** an error: "**Invalid input**"
  + The library has 5 **shelves**, each shelf can hold 8 books. Distribute the books on the shelves
  + If all the books are arranged on the shelves, **return**: "**Great job, the books are arranged.**"
  + Otherwise, if no space has been reached, **return**: "**Insufficient space, more shelves need to be purchased.**"

**JS Code**

To ease you in the process, you are provided with an implementation that meets all of the specification requirements for the **library** object:

|  |
| --- |
| library.js |
| const library = {      calcPriceOfBook(nameOfBook, year) {          let price = 20;          if (typeof nameOfBook != "string" || !Number.isInteger(year)) {              throw new Error("Invalid input");          } else if (year <= 1980) {              let total = price - (price \* 0.5);              return `Price of ${nameOfBook} is ${total.toFixed(2)}`;          }          return `Price of ${nameOfBook} is ${price.toFixed(2)}`;      },      findBook: function(booksArr, desiredBook) {          if (booksArr.length == 0) {              throw new Error("No books currently available");          } else if (booksArr.find(e => e == desiredBook)) {              return "We found the book you want.";          } else {              return "The book you are looking for is not here!";          }      },      arrangeTheBooks(countBooks) {          const countShelves = 5;          const availableSpace = countShelves \* 8;          if (!Number.isInteger(countBooks) || countBooks < 0) {              throw new Error("Invalid input");          } else if (availableSpace >= countBooks) {              return "Great job, the books are arranged.";          } else {              return "Insufficient space, more shelves need to be purchased.";          }      }  }; |

**Submission**

Submit your tests inside a **describe()** statement, as shown above.