**JS Advanced Exam**

**Problem 3. Unit Testing**

**Your Task**

Using **Mocha** and **Chai** write **JS Unit Tests** to test a variable named **MotorcycleRider**, 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 that should have the following functionality:

* **licenseRestriction (category) -** A function that accepts **one** parameter: **string**.
* If the **category** is **"AM"** **return** the string:

**"Mopeds with a maximum design speed of 45 km. per hour, engine volume is no more than 50 cubic centimeters, and the minimum age is 16."**

* If the **category** is **"A1"** **return** the string:

**"Motorcycles with engine volume is no more than 125 cubic centimeters, maximum power of 11KW. and the minimum age is 16."**

* If the **category** is **"A2"** **return** the string:

**"Motorcycles with maximum power of 35KW. and the minimum age is 18."**

* If the **category** is **"A"** **return** the string:

**"No motorcycle restrictions, and the minimum age is 24."**

* If the value of the string **type** is different from "**AM,A1,A2,A**", **throw** an error:

**"** **Invalid Information!"**

* **motorcycleShowroom** **(engineVolume, maximumEngineVolume) -** A function that accepts an **array** and **number**. The **engineVolume** array will store the engine volume of a motorcycles in cubic centimeters (["**125**", "**250**", "**600**"…]), you need to check every element in the array and if its **less** or **equal** to **maximumEngineVolume**.
  + You must **add** an **element** (engineVolume)if **maximumEngineVolume** is **less** or **equal** to **engineVolume** from the **array** in to new **availableBikes array**.
  + Finally, **return** the array length in following string:

**"There are ${availableBikes.length} available motorcycles matching your criteria!"**

* + There is a **need for validation** for the input, an **array** and **number** may not always be valid. In case of submitted **invalid** parameters, **throw** an error **"Invalid Information!"**:
    - If passed **engineVolume** or **maximumEngineVolume** parameterare not an **array** and **number**.
    - If the **engineVolume** is an empty array, and if **maximumEngineVolume** is **less** than **50.**
* **otherSpendings (equipment, consumables, discount) -** A function that accepts three parameters: **array, array** and **boolean**.
* Calculate the **total price** you are going to pay depending on the purchased **equipment** and **consumables:**
  + - **The result must be formatted to the second digit after the decimal point.**
* The bike shop offers **two** options for **equipment** and **consumables**:
  + - The two options for **equipment** are:
      * **helmet,** which costs **$200**
      * **jacked,** which costs **$300**
    - The two options for **consumables** are:
      * **engine oil**, which costs **$70**
      * **oil filter**, which costs **$30**
* If the **discount** is **true,** **10%** discountshouldbeapplied**.** Then **return** the following message:

**"You spend $${totalPrice} for equipment and consumables with 10% discount!"**

* Else, **return** the following message:

**"You spend $${totalPrice} for equipment and consumables!"**

* You need to validate the input, if the **equipment, consumables** and **discount** are not a **array, array** **and** **boolean** an error: "**Invalid information!**"

**JS Code**

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

|  |
| --- |
| chooseYourCar.js |
| const motorcycleRider = {    licenseRestriction(category) {      if (category === "AM") {        return 'Mopeds with a maximum design speed of 45 km. per hour, engine volume is no more than 50 cubic centimeters, and the minimum age is 16.'      } else if (category === "A1") {        return 'Motorcycles with engine volume is no more than 125 cubic centimeters, maximum power of 11KW. and the minimum age is 16.'      } else if (category === "A2") {        return 'Motorcycles with maximum power of 35KW. and the minimum age is 18.'      } else if (category === "A") {        return 'No motorcycle restrictions, and the minimum age is 24.'      } else {        throw new Error("Invalid Information!");      }    },    motorcycleShowroom(engineVolume, maximumEngineVolume) {      if (!Array.isArray(engineVolume) || typeof maximumEngineVolume !== "number" || engineVolume.length < 1 || maximumEngineVolume < 50) {        throw new Error("Invalid Information!");      }      let availableBikes = [];      engineVolume.forEach((engine) => {        if (engine <= maximumEngineVolume && engine >= 50) {          availableBikes.push(engine);        }      });      return `There are ${availableBikes.length} available motorcycles matching your criteria!`;    },    otherSpendings(equipment, consumables, discount) {      if (        !Array.isArray(equipment) ||        !Array.isArray(consumables) ||        typeof discount !== "boolean"      ) {        throw new Error("Invalid Information!");      }      let totalPrice = 0;      equipment.forEach((element) => {        if (element === "helmet") {          totalPrice += 200        } else if (element === "jacked") {          totalPrice += 300        }      });      consumables.forEach((element) => {        if (element === "engine oil") {          totalPrice += 70        } else if (element === "oil filter") {          totalPrice += 30        }      });      if (discount) {        totalPrice = totalPrice \* 0.9;        return `You spend $${totalPrice.toFixed(2)} for equipment and consumables with 10% discount!`      } else {        return `You spend $${totalPrice.toFixed(2)} for equipment and consumables!`      }    }  };      }  } |

**Submission**

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