**Problem 3. Language Academy**

**Your Task**

Using **Mocha** and **Chai** write **JS Unit Tests** to test a variable named **languageAcademy**, 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:

* **difficultyLevel (courseType) -** A function that determines the difficulty level of a language course based on the type of course selected.
  + **courseType (string)**: Specifies the course level. Valid values are:
    - "Beginner"
    - "Intermediate"
    - "Advanced"
* If the value of **courseType** is "**Beginner**", the function **returns**:

**"The course is beginner-friendly and focuses on basic concepts like greetings, numbers, and common phrases."**

* If the value of **courseType** is "**Intermediate**", the function **returns**:

**"The course is moderately challenging and includes grammar rules, sentence structure, and conversational practice."**

* If the value of **courseType** is "**Advanced**", the function **returns**:

**"The course is highly challenging and covers advanced vocabulary, idioms, and specialized topics like business or technical language."**

* For any invalid **courseType**, the function **returns**:

**"Invalid course type. Please choose 'Beginner', 'Intermediate', or 'Advanced'."**

* **discountbyNumber (numberOfCourses, totalPrice) -** A function that calculates and applies a discount based on the number of courses purchased.
  + **Parameters**:
    - **numberOfCourses** (**number**): The number of courses purchased.
    - **totalPrice** (**number**): The total price of the courses.
  + If **numberOfCourses** is **greater** than 1 and **less** than or **equal** to 3, a 10% discount is applied.
  + If **numberOfCourses** is **greater** than 3, a 25% discount is applied.
  + If **numberOfCourses** is **less** than or **equal** to 1, no discount is applied, and the function **returns**:

**"You cannot apply a discount."**

* + For valid discounts, the function **returns**:

**"Discount applied! You saved {discountAmount}$ on your courses."**

* + There is a **need for validation** for the input, if either **numberOfCourses** or **totalPrice** is not a valid number, an **error** is **thrown**:

**"Invalid input."**

* **additionalResources (resourceCatalog, neededResources) -** A function that calculates the total cost of additional resources required for the course.
  + **Parameters**:
    - **resourceCatalog (array)**: An array of objects where each object represents a resource with the following structure:
      * + **name** (**string**): Name of the resource.
        + **price** (**number**): Price of the resource.
    - **neededResources (array)**: An **array** of **strings** representing the names of the resources needed.
  + The function iterates through **neededResources** and calculates the total price by matching the names in **resourceCatalog**.
  + If no matching resources are found, the total cost remains **0$**.
* **Returns** the total cost of the resources necessary as a string:

**"Total Cost is {totalCost}$."**

* You **need to validate** the input, if either **resourceCatalog** or **neededResources** is not an array, an **error** is **thrown**:

**"Invalid input."**

**JS Code**

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

|  |
| --- |
| languageAcademy.js |
| const languageAcademy = {      difficultyLevel(courseType) {        if (courseType === "Beginner") {          return "The course is beginner-friendly and focuses on basic concepts like greetings, numbers, and common phrases.";        } else if (courseType === "Intermediate") {          return "The course is moderately challenging and includes grammar rules, sentence structure, and conversational practice.";        } else if (courseType === "Advanced") {          return "The course is highly challenging and covers advanced vocabulary, idioms, and specialized topics like business or technical language.";        } else {          return "Invalid course type. Please choose 'Beginner', 'Intermediate', or 'Advanced'.";        }      },      discountbyNumber(numberOfCourses, totalPrice) {        if (typeof numberOfCourses !== "number" || typeof totalPrice !== "number") {          throw new Error("Invalid input.");        }        let discountPercentage = 0;        if (numberOfCourses > 1 && numberOfCourses <= 3) {          discountPercentage = 10;        } else if (numberOfCourses > 3) {          discountPercentage = 25;        }        let discountAmount = (discountPercentage / 100) \* totalPrice;          if (numberOfCourses <= 1) {          return "You cannot apply a discount.";        } else {          return `Discount applied! You saved ${discountAmount}$ on your courses.`;        }      },      additionalResources(resourceCatalog, neededResources) {        let totalCost = 0;          if (!Array.isArray(resourceCatalog) || !Array.isArray(neededResources)) {          throw new Error("Invalid input.");        }        neededResources.forEach((resource) => {          resourceCatalog.map((item) => {            if (item.name === resource) {              totalCost += item.price;            }          });        });        return `Total Cost is ${totalCost}$.`;      },    }; |

**Submission**

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