# JS Advanced: Exam Preparation

Problems for exam preparation for the [“JavaScript Advanced” course @ SoftUni](https://softuni.bg/courses/javascript-advanced). Submit your solutions in the SoftUni judge system at <https://judge.softuni.bg/Contests/353/>.

## Add / Delete in List (Unit Testing)

You are given the following **JavaScript code**:

|  |
| --- |
| add-delete-in-list.js |
| **let *list*** = (**function**(){  **let** data = [];  **return** {  add: **function**(item) {  data.push(item);  },  delete: **function**(index) {  **if** (Number.isInteger(index) && index >= 0 && index < data.**length**) {  **return** data.splice(index, 1)[0];  } **else** {  **return undefined**;  }  },  toString: **function**() {  **return** data.join(**", "**);  }  }; })(); |

### Functionality

The above code implements a **list** data structure that holds items (of any type). It supports the following operations:

* add(item) – **appends** given item to the end of the list.
* delete(index) – **deletes** the item at given index. **Returns** the deleted item. If the index is **invalid**, do not delete anything and returns undefined.
* toString() – returns the string representations of the **list items**, separated by “, “.

### Examples

This is an example how this code is **intended to be used**:

|  |  |  |
| --- | --- | --- |
| Sample code usage |  | Corresponding output |
| **console**.log(**`list = [**${***list***}**]`**); ***list***.add(1); **console**.log(**`list = [**${***list***}**]`**); ***list***.add(**"two"**); ***list***.add(3); **console**.log(**`list = [**${***list***}**]`**); **console**.log(**"deleted: "** + ***list***.delete(1)); **console**.log(**`list = [**${***list***}**]`**); **console**.log(**"cannot delete: "** + ***list***.delete(-1)); **console**.log(**`list = [**${***list***}**]`**); | list = []  list = [1]  list = [1, two, 3]  deleted: two  list = [1, 3]  cannot delete: undefined  list = [1, 3] |

### Your Task

Using **Mocha** and **Chai** write **JS unit tests** to test the entire functionality of the list object. You should have at least **7 test cases**. You may use the following code as a template:

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

### Submission

Submit **only your tests** as “**JavaScript code (Unit Tests with Sinon and Mocha)**”.