JS Advanced: Exam 23 July 2017

Problems for exam preparation for the "JavaScript Advanced" course @ SoftUni. Submit your solutions in the SoftUni judge system at https://judge.softuni.bg/Contests/699/.

Problem 2. Sumator Class (Unit Testing)

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

<table>
<tr><td align="center">sumator.js</td></tr>
</table>

```
class Sumator {
  constructor() {
    this.data = [];
  }
  add(item) {
    this.data.push(item);
  }
  sumNums() {
    let sum = 0;
    for (let item of this.data)
      if (typeof (item) === 'number')
        sum += item;
    return sum;
  }
  removeByFilter(filterFunc) {
    this.data = this.data.filter(x => !filterFunc(x));
  }
  toString() {
    if (this.data.length > 0)
      return this.data.join(", ");
    else
      return '(empty)';
  }
}
```

Functionality

The above code defines a **class** that holds items (of **any** type). An **instance** of the class should support the following operations:

- Contains a property **data** that is initialized to an **empty** array.
- Function **add(item)** – **adds** the passed in **item** (of **any** type) to the **data**.
- Function **sumNums()** – **sums** only the **numbers** from the data and **returns** the sum. If there are **no** numbers stored, the function should return **zero**.
- Function **removeByFilter(filterFunc)** – **filters** the data by a given **function**. All of the items that **match** the criteria should be **removed**.
- Function **toString()** – **returns** a string, containing a list of all items from the data, joined with a **comma** and a **space**. If there are **no** items stored, it should **return** the string **"(empty)".**

Follow us:

Examples

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

Sample code usage
| ```js
let list = new Sumator();
console.log(`list = [${list}]`);
list.add(1);
list.add(2);
list.add("three");
list.add(4);
console.log(`list = [${list}]`);
console.log("sum = " + list.sumNums());
list.add("5.5"); // not a number!
list.add(7.7);
console.log(`list = [${list}]`);
console.log("sum = " + list.sumNums());
list.removeByFilter(x => x % 2 === 0);
console.log(`list = [${list}]`);
console.log("sum = " + list.sumNums());
``` |

Corresponding output
| ```
list = [(empty)]
list = [1, 2, three, 4]
sum = 7
list = [1, 2, three, 4, 5.5,
7.7]
sum = 14.7
list = [1, three, 5.5, 7.7]
sum = 8.7
``` |

Your Task

Using **Mocha** and **Chai** write **JS unit tests** to test the entire functionality of the **Sumator** class. Make sure it is correctly defined as a class and instances of it have all the required functionality. You should have at least **7 test cases**. You may use the following code as a template:

```js
describe("TODO …", function() {
    it("TODO …", function() {
        // TODO: …
    });
    // TODO: …
});
```

Submission

Submit your tests inside a **describe()** statement.