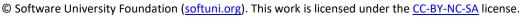
## JS Advanced: Retake Exam 5 September 2017

Problems for exam preparation for the <u>"JavaScript Advanced" course @ SoftUni</u>. Submit your solutions in the SoftUni judge system at https://judge.softuni.bg/Contests/756/.

# **Problem 2. String Builder (Unit Testing)**

You are given the following JavaScript class:

```
string-builder.js
class StringBuilder {
  constructor(string) {
    if (string !== undefined) {
      StringBuilder._vrfyParam(string);
      this. stringArray = Array.from(string);
    } else {
      this._stringArray = [];
    }
  }
  append(string) {
    StringBuilder._vrfyParam(string);
    for(let i = 0; i < string.length; i++) {</pre>
      this._stringArray.push(string[i]);
    }
  }
  prepend(string) {
    StringBuilder._vrfyParam(string);
    for(let i = string.length - 1; i >= 0; i--) {
      this._stringArray.unshift(string[i]);
    }
  }
  insertAt(string, startIndex) {
    StringBuilder._vrfyParam(string);
    this._stringArray.splice(startIndex, 0, ...string);
  remove(startIndex, length) {
    this._stringArray.splice(startIndex, length);
  static _vrfyParam(param) {
    if (typeof param !== 'string') throw new TypeError('Argument must be string');
  }
  toString() {
    return this._stringArray.join('');
  }
}
```

















## **Functionality**

The above code defines a class that holds characters (strings with length 1) in an array. An instance of the class should support the following operations:

- Can be **instantiated** with a passed in **string** argument or **without** anything
- Function append(string) converts the passed in string argument to an array and adds it to the end of the storage
- Function prepend(string) converts the passed in string argument to an array and adds it to the beginning of the storage
- Function insertAt(string, index) converts the passed in string argument to an array and adds it at the **given** index (there is **no** need to check if the index is in range)
- Function remove(startIndex, length) removes elements from the storage, starting at the given index (inclusive), length number of characters (there is no need to check if the index is in range)
- Function toString() returns a string with all elements joined by an empty string
- All passed in arguments should be strings. If any of them are not, throws a type error with the following message: "Argument must be a string"

## **Examples**

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

```
Sample code usage
let str = new StringBuilder('hello');
str.append(', there');
str.prepend('User, ');
str.insertAt('woop',5);
console.log(str.toString());
str.remove(6, 3);
console.log(str.toString());
```

# **Corresponding output** User, woop hello, there User, w hello, there

#### **Your Task**

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

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

#### Submission

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



















