DOM and Events - Exercises

Problems for in-class lab for the "JS Front-End" course @ SoftUni. Submit your solutions in the SoftUni judge system at https://judge.softuni.org/Contests/3795/DOM-and-Events-Exercises

Environment Specifics

Please, be aware that every JS environment may **behave differently** when executing code. Certain things that work in the browser are not supported in **Node.js**, which is the environment used by **Judge**.

The following actions are **NOT** supported:

- `.forEach()` with **NodeList** (returned by `querySelector()` and `querySelectorAll()`)
- `.forEach()` with **HTMLCollection** (returned by `getElementsByClassName()` and `element.children`)
- Using the **spread-operator** (`...`) to convert a **NodeList** into an array
- `append()` in Judge (use only `appendChild()`)
- `prepend()`
- `replaceWith()`
- `replaceAll()`
- `closest()`
- `replaceChildren()`
- Always turn the collection into a **JS array** (forEach, forOf, et.)

If you want to perform these operations, you may use `Array.from()` to first convert the collection into an array.

1. Subtraction

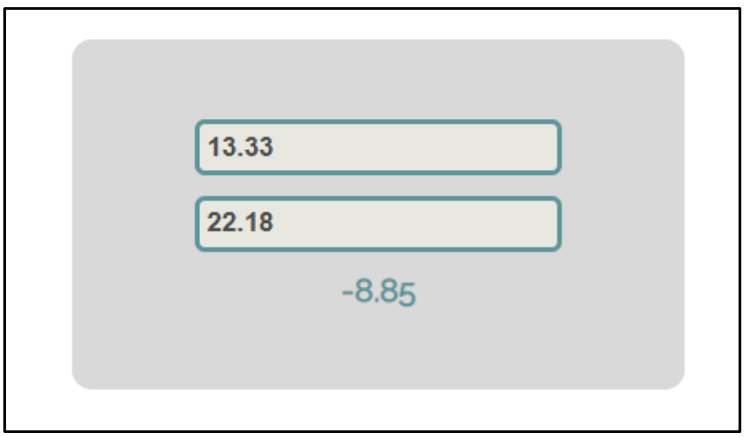
An HTML page holds **two text fields** with ids **"firstNumber"** and **"secondNumber"**. Write a function to **subtract** the values from these text fields and display the result in the **div** named **"result"**.

HTML and JavaScript Code

Implement the above to provide the following functionality:

- Your function should take the values of "**firstNumber**" and "**secondNumber**", **convert** them to numbers, **subtract** the first number from the second one and then append the result to the ** ** with **id="result"**.
- Your function should be able to work with **any 2 numbers** in the inputs, not only the ones given in the example.

Example



Hints

We see that the **textboxes** and the **div** have **id** attributes on them.

```
<div id="wrapper">
    <input type="text" id="firstNumber" value="13.33" disabled>
    <input type="text" id="secondNumber" value="22.18" disabled>
    <div id="result"></div>
</div>
```

We can take the numbers directly from the input field by using the **`getElementById()`** function. After we have taken the elements from the DOM, it's time to do the actual work. We get the values of the two **textboxes**, as one would expect, the type is **text**. To get a **number**, we need to use a function to **parse them**.

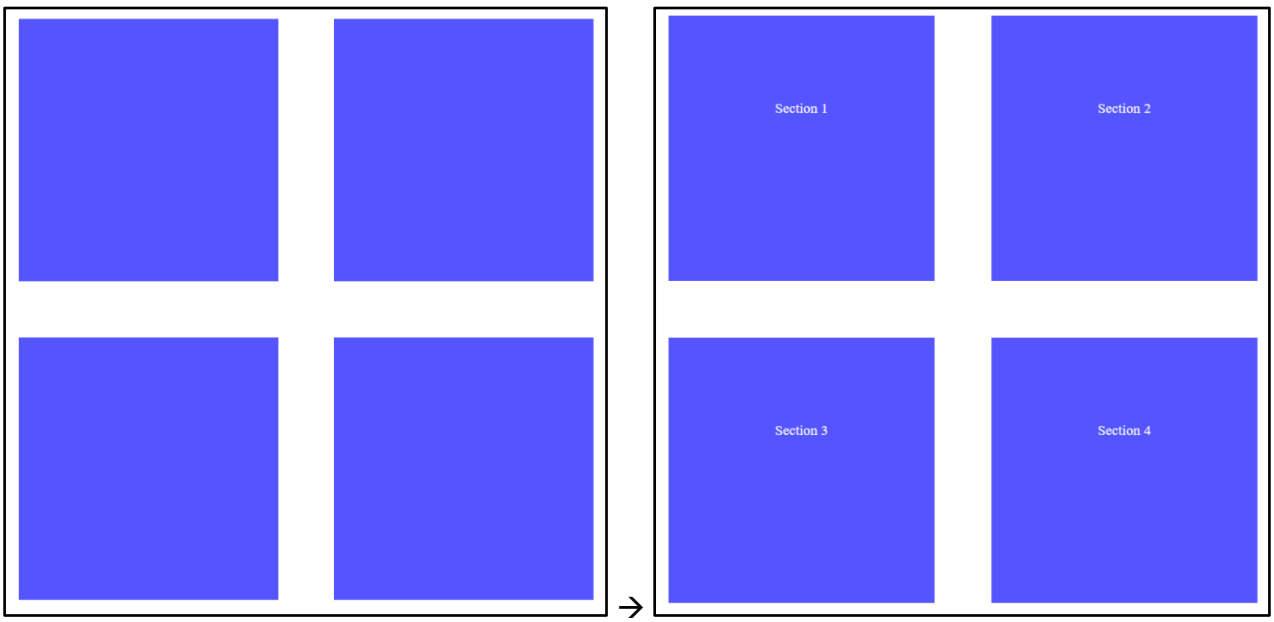
```
let num1 = document.getElementById('firstNumber').value;
let num2 = document.getElementById('secondNumber').value;
```

All that's left for you to do is append the result to the **div**.

2. Sections

You will receive an **array** of strings. For each string, create a **div** with a **paragraph** with the **string** in it. Each paragraph is initially **hidden (display:none)**. Add a **click event listener** to **each div** that **displays** the **hidden** paragraph. Finally, you should **append** all divs to the element with an **`id "content"`**.

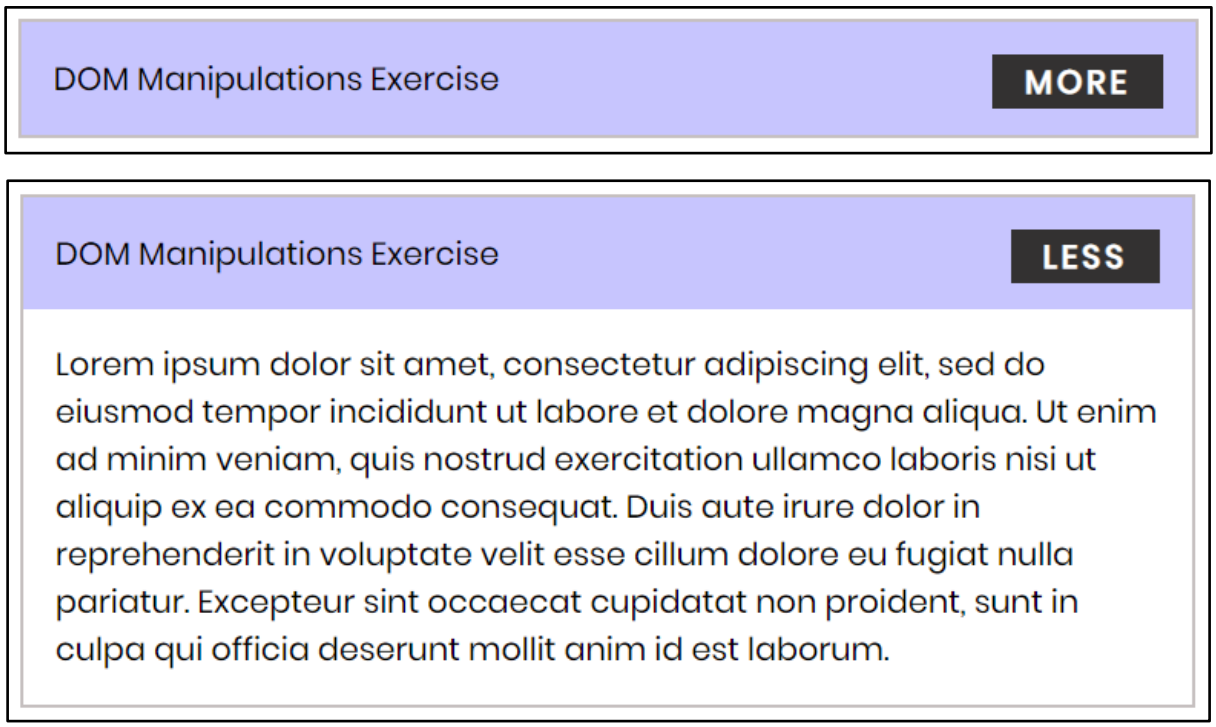
Example



3. Accordion

An **HTML** file is given and your task is to show **more/less** information. By clicking the **[More] button**, it should **reveal** the content of a **hidden** div and **changes** the text of the button to **[Less]**. When the same link is clicked **again** (now reading **Less**), **hide** the div and **change** the text of the link to **More**. Link action should be **toggleable** (you should be able to click the button an infinite amount of times).

Example

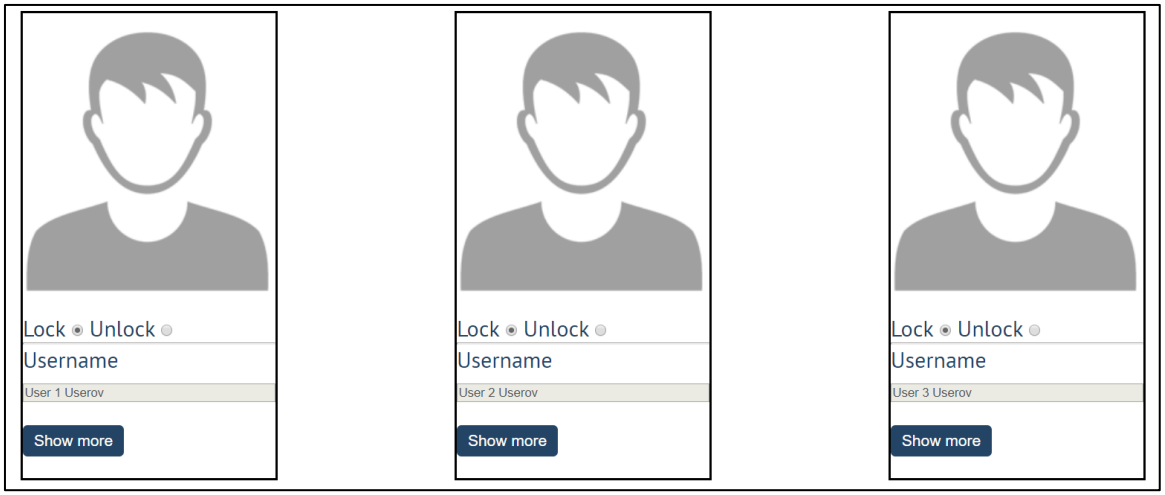


Hints

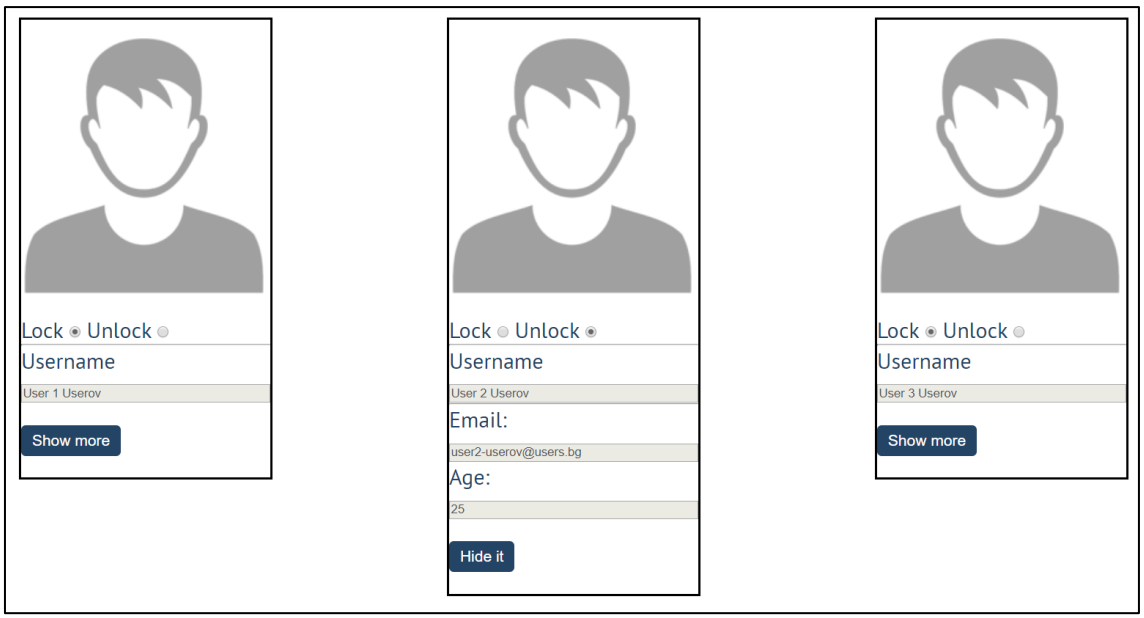
- To **change** the text content of a button, you could use **`getElementsByClassName`**. However, that returns a **collection** and we need only **one** element from it, so the correct way is to **use** **`getElementsByClassName("button")[0]`** as it will return the needed span element.
- After that, we should change the **display style** of the div with an **`id`** "**extra**". If the display style is "**none**", we should **change** it to "**block**" and the **opposite**.
- Along with all of this, we should **change** the text content of the **button** to **`[Less]`**/**`[More]`**.

4. Locked Profile

In this problem, you should **create a JS functionality** that **shows** and **hides** the additional information about users.



When one of the [**Show more**] **buttons** is clicked, the **hidden information** inside the div should be shown, only if **the profile is not locked**! If the current profile is **locked,** nothing should happen.



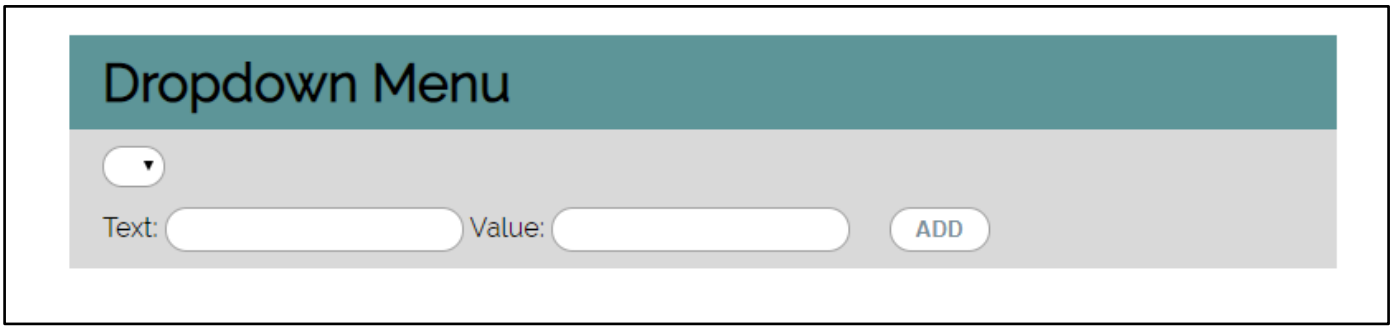
If the **hidden information is displayed** and we **lock the profile again**, the [**`Hide it`**] button should **not be working**!

Otherwise, when the profile is **unlocked** and we click on the [**`Hide it`**] button, the new fields must hide again.

5. Fill Dropdown

Your task is to take values from **input** fields with **ids "newItemText"** and **"newItemValue"**. Then you should create and append an **`<option>`** to the **`<select>`** with **id "menu".**

Example

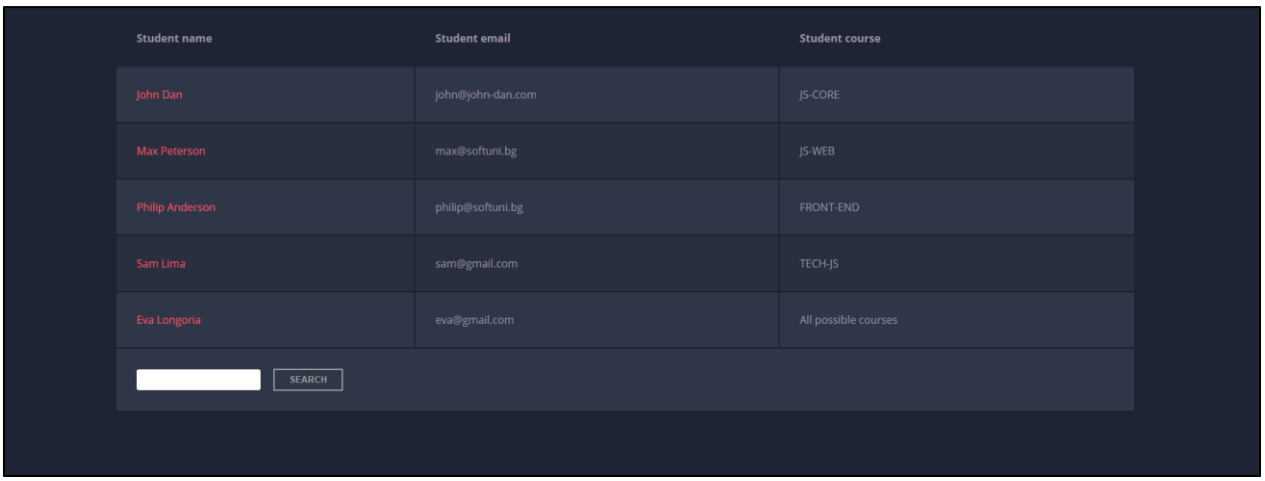


Hints

- Your function should take the values of **newItemText** and **newItemValue**. After that, you should create a new **option** element and set its **textContent** and its **value** to the newly taken ones.
- Once you have done all of that, you should **append** the newly created **option** as a **child** to the **select** item with id **"menu".**

6. Table - Search Engine

Write a function that **searches** in a **table** by given input.



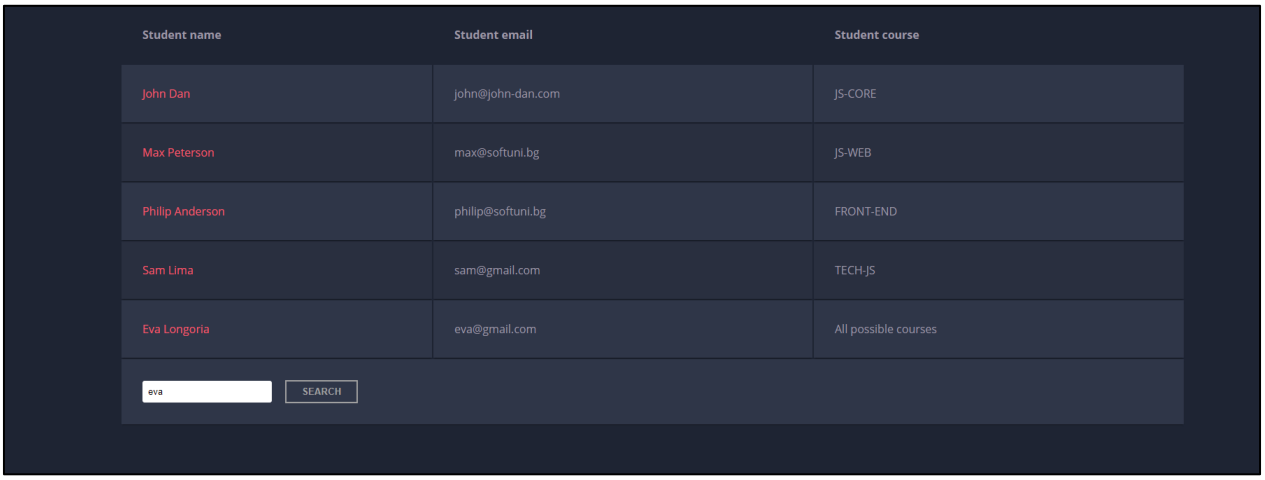
When the **"`Search`" button** is **clicked**, go through all cells in the table except for the first row (Student name, Student email, and Student course) and check if the given input has a match (check for both **full words** and **single letters**).

If any of the rows contain the submitted string, add a **`class select`** to that row. Note that more than one row may contain the given string.

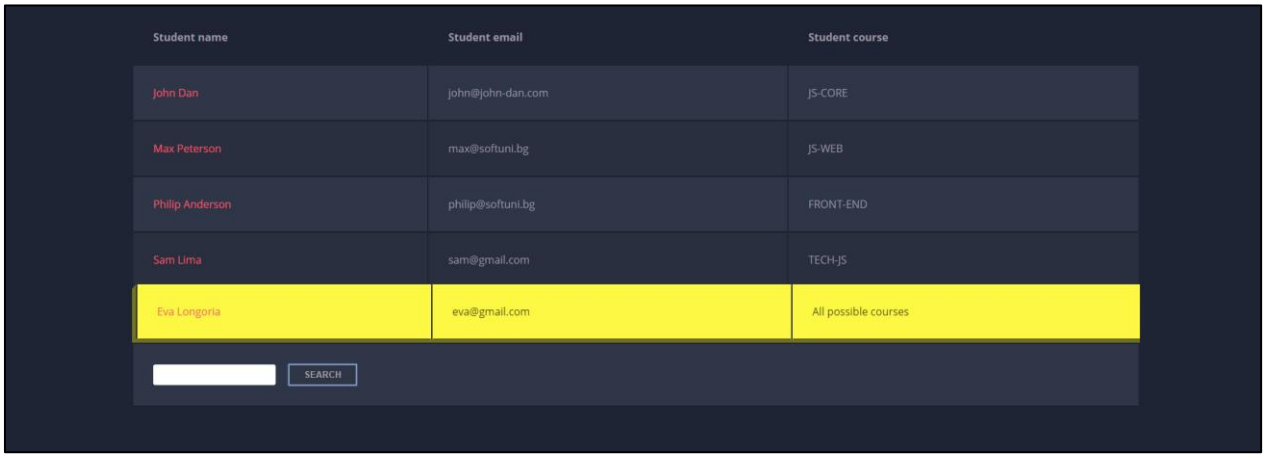
Otherwise, if there is no match, **<u>nothing should happen</u>**.

Note: After every search ("**`Search`**" button is clicked), **clear the input field** and **remove all already selected classes** (if any) from the previous search, for the **new search** to contain only the **new result**.

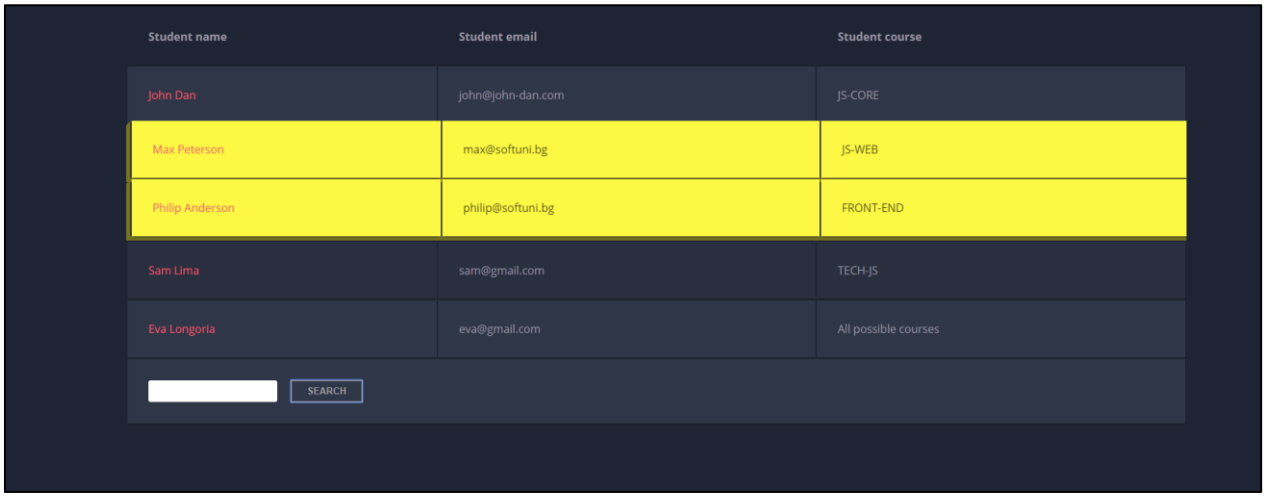
For instance, if we try to find **eva:**



The result should be:



If we try to find all students who have email addresses in **softuni** domain, the expected result should be:



7. Format the Text

Create a functionality that gets a text from **textarea**, formats the given **text** - you need to find out how many **sentences** there are in the text, simply **split** the whole text by **'.'**
Also, every sentence must have at **least 1 character**.

```
<body>
    <h4>Create a functionality which formats the given text into paragraphs</h4>
    <div id="exercise">
        <textarea id="input" cols="30" rows="12"></textarea>
        <button type="button" id="formatItBtn" onclick="solve()">Format</button>
        <div id="output"></div>
    </div>
</body>
```

Generate HTML paragraphs as a string (Use interpolation **string** to create paragraph element: **`<p> {text} </p>`**) and append it to the div with an **id = "output"**.

```
<div id="output">
    <p>JavaScript, often abbreviated as JS, is a high-level, interpreted programming language.It is a
        language which is also characterized as dynamic, weakly typed, prototype-based and
        multi-paradigm.Alongside
        HTML and CSS, JavaScript is one of the three core technologies of the World Wide Web.
    </p>
    <p>JavaScript enables interactive web pages and thus is an essential part of web applications.
        The vast majority of websites use it, and all major web browsers have a dedicated JavaScript
        engine to execute it.As a multi-paradigm language, JavaScript supports event-driven, functional,
         and imperative (including object-oriented and prototype-based)programming styles.
    </p>
    <p>It has an API for working with text, arrays, dates, regular expressions, and basic
        manipulation of the DOM, but the language itself does not include any I/O, such as networking,
        storage, or graphics facilities, relying for these upon the host environment in which it is
        embedded.
    </p>
</div>
```

When the [**`Format`**] button is **clicked**, get the text inside the **textarea** with an **`id="input"`** and **format it**. The formatting is **done** as **follows:**

- Create a **new paragraph element** that holds no more than **3 sentences** from the given input**.**
- **Hint: Use interpolation string to create paragraph element. (`<p> {text} </p>`)**
- If the given input contains **less** or **3 sentences**, you need to create only 1 paragraph, fill it with these sentences and append this paragraph to the div with an **`id="output"`**.

Otherwise, when you have more than 3 sentences**,** create enough paragraphs to get all sentences from the **textarea.**

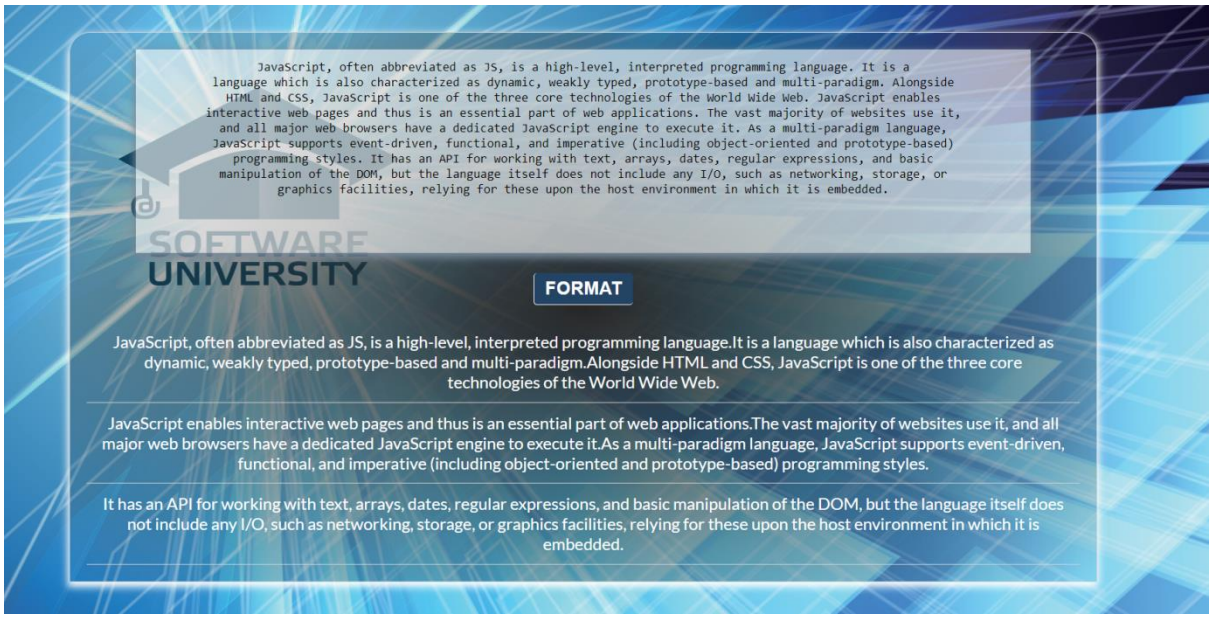
Just remember to **restrict** the **sentences** in **each paragraph to 3.**

Example:

- If the input textarea **contains 2 sentences**, create only **1 paragraph** with these 2 sentences

- If the input textarea **contains 7 sentences,** create **3 paragraphs**
  - The **first paragraph** must contain **the first 3 sentences**

- The **second paragraph** must contain **the other three sentences** of the whole text
- The **third paragraph** will contain **only the last sentence**



Output

Input	Output
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embedded.	arrays, dates, regular expressions, and basic manipulation of the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded.</p>

8. Furniture

You will be given some furniture as an **array of objects**. Each object will have a **name**, a **price,** and a **decoration factor**.

When the [**"Generate"**] **button is clicked**, add a **new row to the table** for each piece of furniture with **image, name, price,** and **decoration factor** (code example below).

When the [**"Buy"**] button is clicked, get all **checkboxes that are marked** and show in the **result textbox** the **names** of the piece of furniture that **were checked**, separated by a **comma** and **single space** (**", "**) in the following format: **"Bought furniture: {furniture1}, {furniture2}…"**.

On the next line, print the total price in the format: **"Total price: {totalPrice}"** (formatted to the second decimal point). Finally, print the average decoration factor in the format: **"Average decoration factor: {decFactor}"**

Input Example

```
[{"name": "Sofa", "img":
"https://res.cloudinary.com/maisonsdumonde/image/upload/q_auto,f_auto/w_200/img/
grey-3-seater-sofa-bed-200-13-0-175521_9.jpg", "price": 150, "decFactor": 1.2}]
```

Examples