Lab: Objects and DOM

Problems for in-class lab for the "JavaScript Essentials" course @ SoftUni. Submit your solutions in the SoftUni judge system at https://judge.softuni.bg/Contests/1425/Lab-Objects-and-DOM

1. Towns to JSON

You're tasked to create and print a JSON from a text table. You will receive input as an array of strings, where each string represents a row of a table, with values on the row encompassed by pipes **"|"** and optionally spaces. The table will consist of exactly 3 columns **"Town"**, **"Latitude"** and **"Longitude"**. The **latitude** and **longitude** columns will always contain **valid numbers**. Check the examples to get a better understanding of your task.

The **input** comes as an array of strings - the first string contains the table's headings, each next string is a row from the table.

The **output** should be printed on the console **stringified** - for each entry row in the input print the object representing it.

Examples

Input
['| Town | Latitude | Longitude |', '| Sofia | 42.696552 | 23.32601 |', '| Beijing | 39.913818 | 116.363625 |'];
Output
[{"Town":"Sofia","Latitude":42.69,"Longitude":23.32}, {"Town":"Beijing","Latitude":39.91,"Longitude":116.36}]
Input
['| Town | Latitude | Longitude |', '| Veliko Turnovo | 43.0757 | 25.6172 |', '| Monatevideo | 34.50 | 56.11 |']
Output
[{"Town":"Veliko Turnovo","Latitude":43.0757,"Longitude":25.6172}, {"Town":"Monatevideo","Latitude":34.5,"Longitude":56.11}]

2. Sum by Town

You're tasked with calculating the total sum of income for several Towns. You will receive an array of strings representing towns and their incomes, every **even** index will be a **town** and every **odd** index will be an **income** belonging to that town. Create an object that will hold all the **towns as keys** and their **total income** (the sum of their incomes) **as values** to those keys and print it as a JSON.

The **input** comes as an array of strings - each even index is the name of a town and each odd index is an income belonging to that town.

The **output** should be printed on the console - JSON representation of the object containing all towns and their total incomes.

Examples

Input	Output
Sofia 20 Varna 3 Sofia 5 Varna 4	{"Sofia":25,"Varna":7}
Sofia 20 Varna 3 sofia 5 varna 4	{"Sofia":20,"Varna":3,"sofia":5,"varna":4}

3. Count Words in a Text

You are tasked to count the number of words in a text using an object as an associative array, any combination of letters, digits and _ (underscore) should be counted as a word. The words should be stored in the object as properties - the **key** being the **word** and the **value** being the **amount of times the word is contained in the text**.

The **input** comes as an array of strings containing one entry - the text whose words should be counted. The text may consist of more than one sentence.

The **output** should be printed on the console - the JSON representation of the object containing the words.

Examples

Input
Far too slow, you're far too slow.
Output
{"Far":1,"too":2,"slow":2,"you":1,"re":1,"far":1}
Input
JS devs use Node.js for server-side JS.-- JS for devs
Output
{"JS":3,"devs":2,"use":1,"Node":1,"js":1,"for":2,"server":1,"side":1}

4. Populations in Towns

You have been tasked to create a register for different **towns** and their **population**.

The **input** comes as array of strings. Each element will contain data for a town and its population in the following format:

"**{townName} <-> {townPopulation}**"

If you receive the same town twice, **you should add** the **given population** to the **current one**.

As **output**, you must print all the towns, and their population.

Examples

Input	Output
Sofia <-> 1200000 Montana <-> 20000 New York <-> 10000000 Washington <-> 2345000 Las Vegas <-> 1000000	Sofia : 1200000 Montana : 20000 New York : 10000000 Washington : 2345000 Las Vegas : 1000000

Input	Output
Istanbul <-> 100000 Honk Kong <-> 2100004 Jerusalem <-> 2352344 Mexico City <-> 23401925 Istanbul <-> 1000	Istanbul : 101000 Honk Kong : 2100004 Jerusalem : 2352344 Mexico City : 23401925

5. Articles List

In this problem, you should create a JS functionality which creates articles and appends them into some article section.

The programs in this language are called **scripts**. They can be written right in the HTML and **executed automatically** as the page loads.

Scripts are provided and executed as a **plain text**. They don't need a special preparation or a compilation to run.

In this aspect, JavaScript is very **different** from another language called Java.

Constraints:

- **Title value** from the **title input** should be a **heading 3 element** `<h3>`
- **Content text** from the **textarea element** should be a **paragraph** `<p>`
- Both new created elements (**h3** and **p**) should be appended to a new **article element** `<article>`
- **The current article element** should be **appended** to the section which has an id articles (**#articles**)
- You should create new **article element** only if **title** and **content are not empty**
- After the button is pressed you must **clear** the **title value** and **text value**

```
<div id="createArticle">
  <label for="createTitle">Title</label>
  <input id="createTitle">
  <br>
  <label for="createContent">Content</label>
  <textarea id="createContent"></textarea>
  <button onclick="createArticle()">Create</button>
</div>
<section id="articles">
  <h1>Articles List</h1>
</section>
```

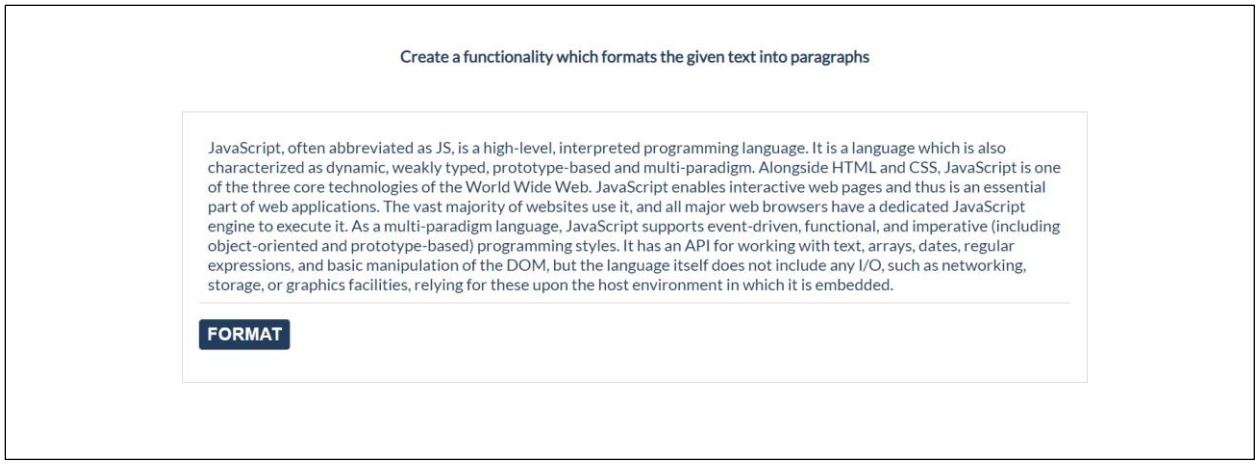
Input:

Output:


```
<section id="articles">
  <h1>Articles List</h1>
  <article>
    <h3>JavaScript</h3>
    <p>
      "JavaScript is a programming language that adds
      interactivity to your website (for example games, responses
      when buttons are pressed or data is entered in forms,
      dynamic styling, animation). This article helps you get
      started with this exciting language and gives you an idea
      of what is possible."
    </p>
  </article>
</section>
```

6. Format the Text

In this problem, you should **create a JS functionality** which **formats the given text into paragraphs.**




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

When the [**Format**] button is **clicked**, you need to **format the text inside** the **paragraph** with an **id** "**input**". The formatting is **done** as **follows:**

- You need to **create a new paragraph element which holds no more than 3 sentences from the given input.**
- 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**".

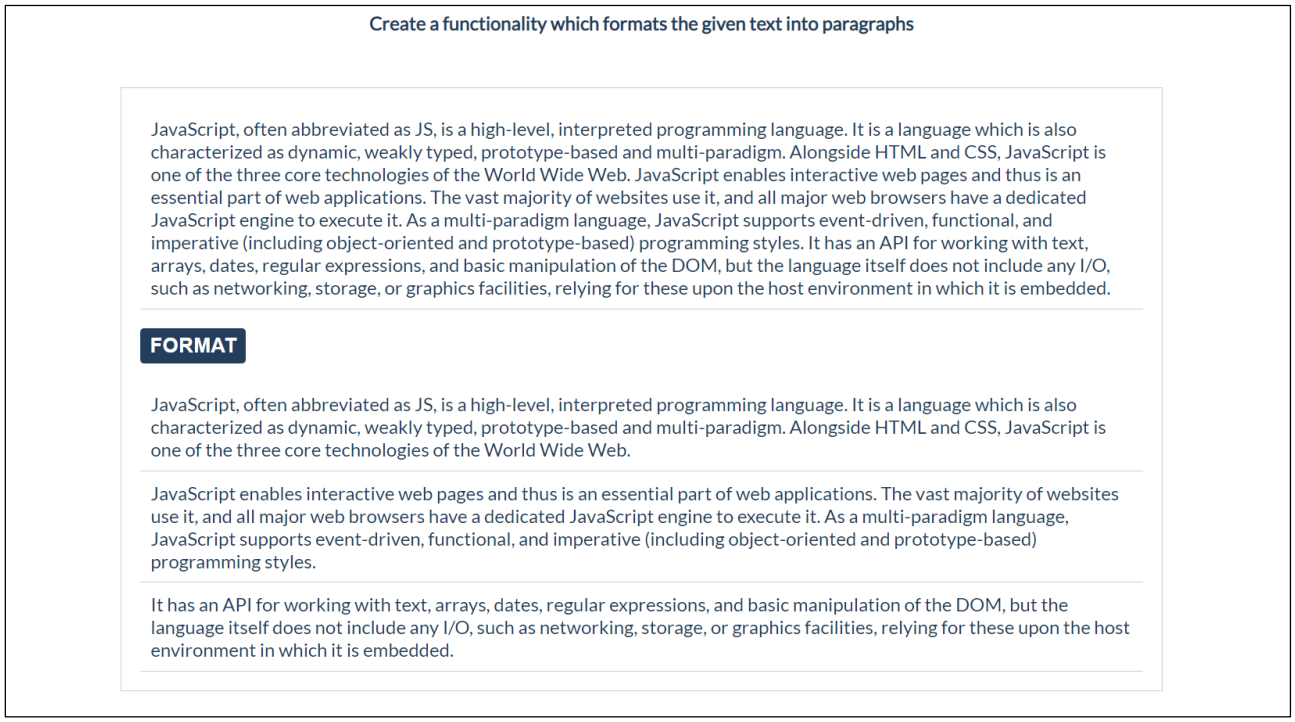
Otherwise, when you have more than 3 sentences in that **input paragraph,** you need to create enough paragraphs to get all sentences from the **input text.**

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

Example:

- If the input paragraph **contains 2 sentences**, you need to create only **1 paragraph** with these 2 sentences
- If the input paragraph **contains 7 sentences,** you need to 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**, because there are no more sentences in this paragraph

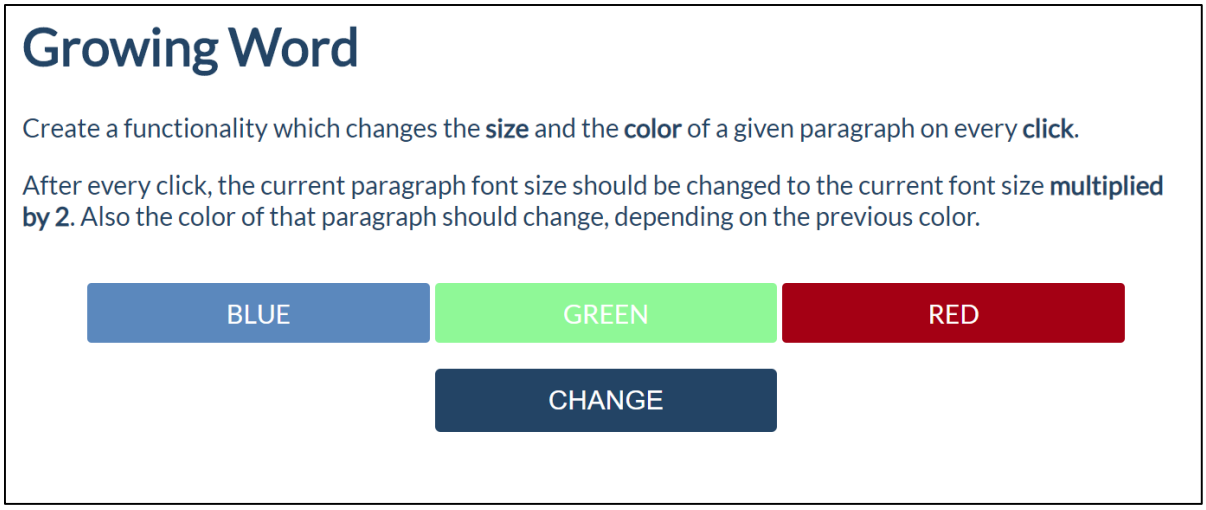
To find out how many sentences there are in the text, simply split the whole text by '.' Also, every sentence must have at least 1 character.




```
<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>
```

7. Growing Word

In this problem, you should **create a JS functionality** which **changes the size and the color** of a given **paragraph** on **every click**.




```
<div id="exercise">
  <div id="colors">
    <div id="blueDiv">Blue</div>
    <div id="greenDiv">Green</div>
    <div id="redDiv">Red</div>
  </div>
  <div>
    <button type="button" onclick="growingWord()">CHANGE</button>
  </div>
  <p>Growing Word</p>
</div>
```

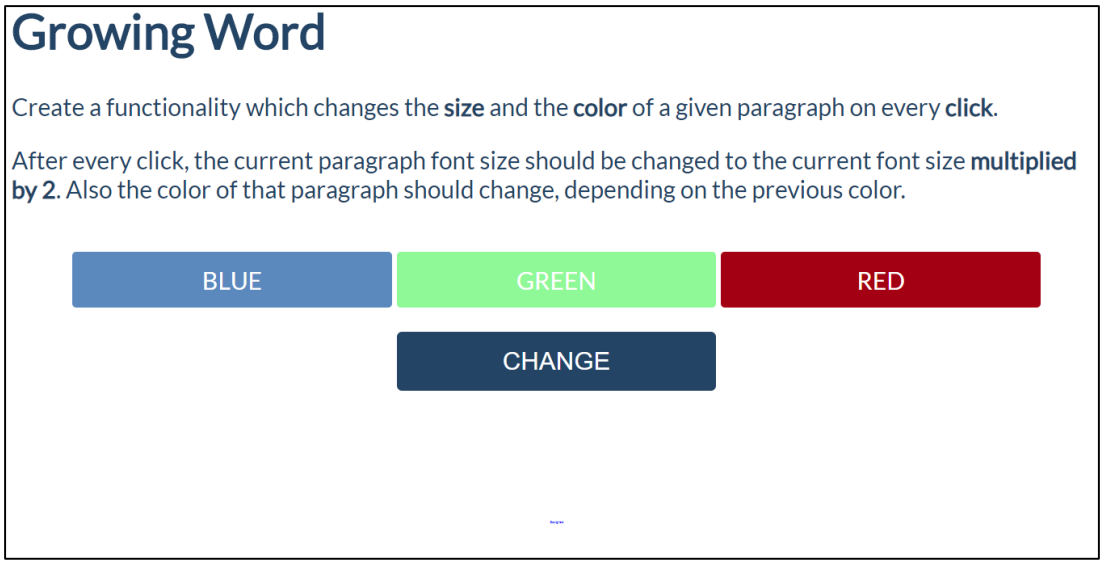
Every time when we **click** on the [**CHANGE**] button, **the color** and **the size** of **the paragraph** which contains "**`Growing Word`**" **should change!**

After every click, the current paragraph ***font size*** should be **changed** to the **current font size multiplied by 2.** Also, **the color** of that paragraph should change, depending on the **previous color**.

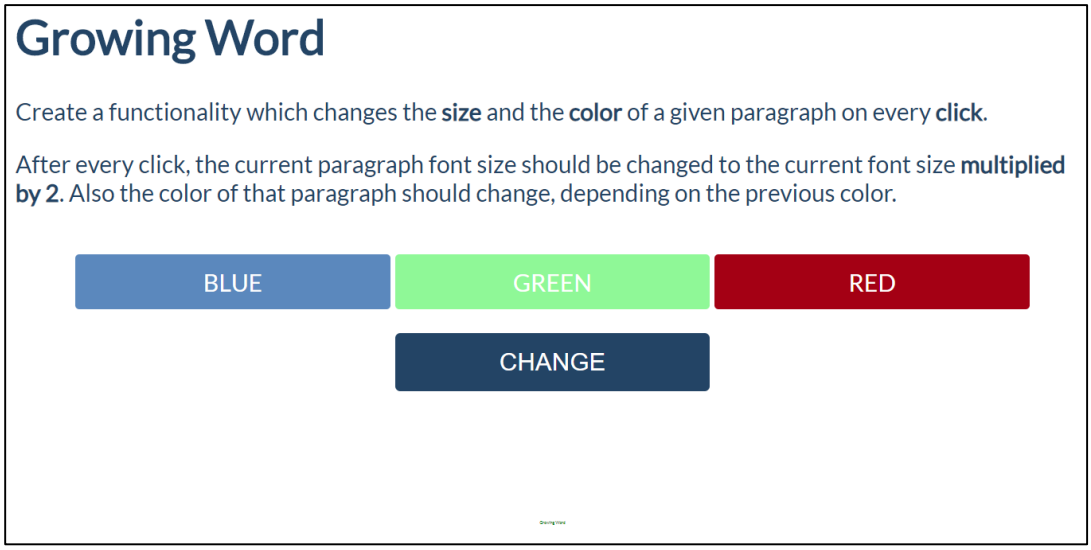
Example:

- If we click **once**, the color should be changed to **`blue`** and the font size should be **2** (First initial size)
- If we click **twice,** the color should be changed to **`green`** and the font size should be **4** (2 * 2)
- If we click **three times**, the current color of that paragraph should be changed to **`red`** and the font size should be **8** (4 * 2)

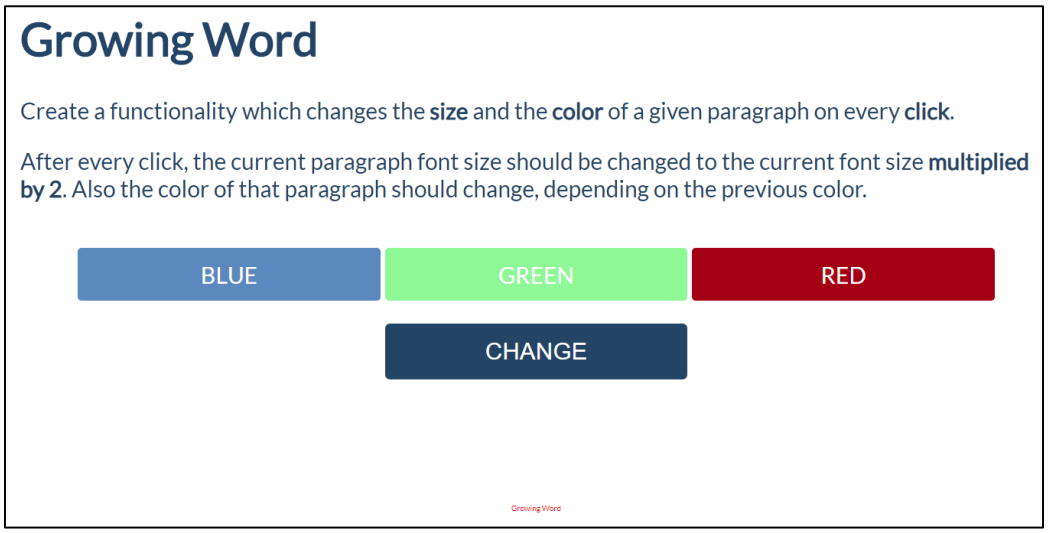
- If our paragraph already has a **red color, on** the **next** click, the color should turn to **blue**. Just loop throw these three colors (blue, green, red) again and again and again... while you are clicking on that button.




```
<div id="exercise">
  <div id="colors">…</div>
  <div>…</div>
    <p style="color: blue; font-size: 2px;">Growing Word</p>
  </div>
```



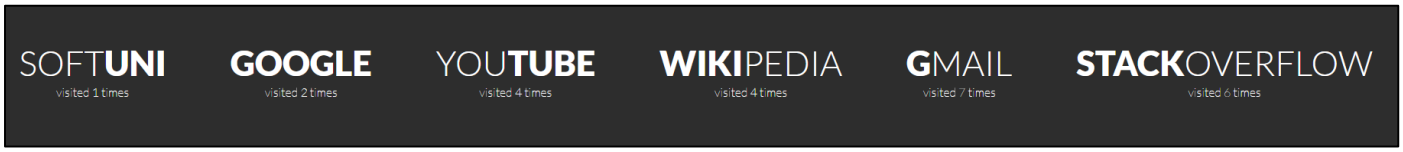
```
<div id="exercise">
  <div id="colors">…</div>
  <div>…</div>
    <p style="color: green; font-size: 4px;">Growing Word</p>
</div>
```




```
<div id="exercise">
  <div id="colors">…</div>
  <div>…</div>
    <p style="color: red; font-size: 8px;">Growing Word</p>
</div>
```

8. Visited Sites

In this problem, you should **create a JS functionality** that keeps track of how many times a specific site has been **visited**.



For instance, if we click **twice on the Gmail link and once on the YouTube link**, the expected result must be: