

JS Advanced: Exam 26 April 2018

Problems for exam preparation for the ["JavaScript Advanced" course @ SoftUni](#). Submit your solutions in the SoftUni judge system at <https://judge.softuni.bg/Contests/1004/>.

Problem 4. Public Transport (Object Interacting with DOM)

Write a JS **class** with the name **"PublicTransportTable"** that generates and controls a **public transport** table. It contains **two main columns** for transport data (**Type, Name**) and **one column** for **Actions** - **[Search]**, **[Clear]** and **[More/Less Info]** buttons. The **second row** of the table consists of **two input fields**, **[Search]** and **[Clear]** button. The **main table's** body consists of rows with **types of vehicles** with additional **inner tables** for more information. Every **vehicle** has a **main info row** and an **additional info row**. *See the examples and templates for more details.*

The **constructor** of your class needs to take **one** argument – **town** (string). The **town** should replace in the table's title (<caption>) the part in the curly brackets. *See the main table's HTML for more details below.*

Additionally, the **class** should contain the following **functionality**:

- Function **addVehicle(obj)** – takes **one** (object) argument, **creates** the **vehicle's main info row** (see the template) and **appends** it to the **main table's body** with ID of **"vehicles-info"**. The **argument** is in the following format:

```
{ type: String, name: String, route: String, price: Number, driver: String }
```

With this object's data you should create a **table's row** following this **HTML structure**:

| Template Vehicle's Main Info Row |
|--|
| <pre><tr> <td><!-- Vehicle's type --></td> <td><!-- Vehicle's name --></td> <td><button>[More/Less] Info</button></td> </tr></pre> |

When a vehicle's **row** is created its **initial button's text** should be **"More Info"**. Also, when **clicked** a **[More Info]** **button** should have the following **functionality**:

- Changes its text** to **"Less Info"**
- Creates below** the table's **row** where it is placed on a new **row** with the **vehicle's additional info data**. You should use the following **HTML structure** for generating the **new row** with **inner table**:

| Template Vehicle's Additional Info Row |
|--|
| <pre><tr class="more-info"> <td colspan="3"> <table> <tr><td>Route: {vehicle's route}</td></tr> <tr><td>Price: {vehicle's price}</td></tr> <tr><td>Driver: {vehicle's driver}</td></tr> </table> </td> </tr></pre> |

An **additional vehicle's row** consists of a **row** with a **single column** that have an **inner table** with **four rows** each having a **single column** with a vehicle data.

Furthermore, when a **[Less Info] button is clicked**, it should have the following **functionality**:

- **Changes its text to "More Info"**
- **Removes the row** (below the table's row where it is placed on) with the **extra vehicle's data**

Also, when **clicked** the **[Search]** and **[Clear]** buttons should have the following **functionality**:

[Search] button:

- **Filters the vehicles** by the **text** received from the **input boxes (case-sensitive)**. Every **input box** corresponds to the **vehicle's column** it is **placed on**. You should **show a row** (remove **"display: none;"**) if its **columns include the text** from the their **corresponding text box** or **hide** it if they do not include (set **"display: none;"**)
- **Removes any additional vehicle rows**, that are **displaying the extra data** (route, price, driver), if the **main row** should be **removed** and **sets its button text** from **[Less Info]** to **[More Info]**
- **Do nothing** if **both input boxes** are **empty**

[Clear] button:

- **Removes all filters** and **displays all main vehicle rows**
- **Does nothing** to **additional vehicle rows**
- **Clears the input boxes**

Submission

Submit only your **PublicTransportTable** class.

Examples

You should use the following HTML skeleton to test your functionality:

```
index.html

<!DOCTYPE html>
<html Lang="en">
<head>
  <meta charset="UTF-8">
  <title>Payment Manager</title>
  <style>
    body{padding:30px}caption,table{border:1px solid #b1cbbb}table{border-
collapse:collapse;margin:auto}caption{font-size:20px;font-
weight:700;color:#DEEAEE;background:#485788;border-
bottom:none;padding:5px}td,th{padding:5px 20px;text-align:center}tfoot
td,th{background:#b1cbbb}tr:nth-child(odd){background:#EAF7FB}tr:nth-
child(even){background:#C6D1D4}button{margin:auto;cursor:pointer}input[type=text]{width:
100px}tbody>.more-info{background:#E6F1B4!important}tbody tr table{margin:5px auto 5px
20px;width:330px;}tbody tr table td{background:#eea29a99!important;text-
align:left;width:170px}
  </style>
  <script src="https://code.jquery.com/jquery-3.3.1.min.js"></script>
</head>
<body>

  <table>
    <caption>{Town name}'s Public Transport</caption>
    <thead>
```

```

        <tr>
            <th class="type">Type</th>
            <th class="name">Name</th>
            <th>Actions</th>
        </tr>
        <tr>
            <td><input name="type" type="text"></td>
            <td><input name="name" type="text"></td>
            <td>
                <button class="search-btn">Search</button>
                <button class="clear-btn">Clear</button>
            </td>
        </tr>
    </thead>
    <tbody class="vehicles-info"></tbody>
</table>

<script src="./solution.js"></script>
<script>
    $(function() {
        let publicTransportTable = new PublicTransportTable('Sofia')

        let vehiclesDataArr = [
            { type: 'bus', name: '84', route: 'Sofia airport - Gen. Gurko str.', price:
1.60, driver: 'Pesho' },
            { type: 'tram', name: '7', route: 'Borovo - metro station Han Kubrat', price:
13.37, driver: 'Misho' },
            { type: 'bus', name: '280', route: 'Student city - SU Kliment Ohridsky', price:
4.20, driver: 'Gosho' },
            { type: 'trolleybus', name: '11', route: 'Drujba 1 - Stochna station sq.',
price: 2.60, driver: 'Tosho' },
            { type: 'metro', name: 'M1', route: 'Slivnica - Business Park', price: 3.50,
driver: 'Petq' },
            { type: 'bus', name: '404', route: 'AP Drujba - Central station', price: 1.60,
driver: 'Silviq' },
            { type: 'metro', name: 'M2', route: 'Sofia airport - James Bouchier', price:
5.99, driver: 'Krum' },
            // You can add/remove any vehicles data objects here
        ]

        for (let vehicleObj of vehiclesDataArr) {
            publicTransportTable.addVehicle(vehicleObj)
        }
    })
</script>
</body>
</html>

```

The sample page contains the main table element with head, body and a script. The script will populate the table's body with seven main vehicles info rows that should look like the examples, if your code is correct. You need to put

the files – index.html and solutions.js (where is your PaymentManager class) – in the same directory for them to work with the default code.

In the example we will use only the seven objects with vehicle's data in the script to generate and manipulate the table's functionality.

Initial table rendering with vehicles:

| Sofia's Public Transport | | |
|--------------------------|----------------------|--------------|
| Type | Name | Actions |
| <input type="text"/> | <input type="text"/> | Search Clear |
| bus | 84 | More Info |
| tram | 7 | More Info |
| bus | 280 | More Info |
| trolleybus | 11 | More Info |
| metro | M1 | More Info |
| bus | 404 | More Info |
| metro | M2 | More Info |

```

<table>
  <caption>Sofia's Public Transport</caption>
  <thead>...</thead>
  <tbody class="vehicles-info">
    <tr class="hide-info">
      <td>bus</td>
      <td>84</td>
      <td>
        <button>More Info</button>
      </td>
    </tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
  </tbody>
</table>
<script src="./solution.js"></script>

```

Use the "Template Main Info Rows" skeleton to build your main vehicles rows.

Click the [More Info] button on bus 280's row:

| | | |
|------------|-----|-----------|
| tram | 7 | More Info |
| bus | 280 | More Info |
| trolleybus | 11 | More Info |

After the click we **change** the **button's text** to **"Less Info"** and **add** the **additional vehicle's info row** below the main one. Thus becoming **7 main** and **1 additional vehicle info rows** (8 total) in the main table (vehicles-info). As shown by the red lines below.

| Sofia's Public Transport | | |
|---|----------------------|--------------|
| Type | Name | Actions |
| <input type="text"/> | <input type="text"/> | Search Clear |
| bus | 84 | More Info |
| tram | 7 | More Info |
| bus | 280 | Less Info |
| <div>Route: Student city - SU Kliment Ohridsky</div> <div>Price: 4.2</div> <div>Driver: Gosho</div> | | |
| trolleybus | 11 | More Info |
| metro | M1 | More Info |
| bus | 404 | More Info |
| metro | M2 | More Info |

```

<tbody class="vehicles-info">
  <tr class="hide-info">...</tr>
  <tr class="hide-info">...</tr>
  <tr class="show-info">
    <td>bus</td>
    <td>280</td>
    <td>
      <button>Less Info</button>
    </td>
  </tr>
  <tr class="more-info">
    <td colspan="3">
      <table>
        <tbody>
          <tr>
            <td>Route: Student city - SU Kliment Ohridsky</td>
          </tr>
          <tr>
            <td>Price: 4.2</td>
          </tr>
          <tr>
            <td>Driver: Gosho</td>
          </tr>
        </tbody>
      </table>
    </td>
  </tr>
  <tr class="hide-info">...</tr>
  <tr class="hide-info">...</tr>
  <tr class="hide-info">...</tr>
  <tr class="hide-info">...</tr>
</tbody>

```

Click the **[Less Info]** button on bus 280's row:

| | | |
|---|-----|-----------|
| bus | 280 | Less Info |
| <div> Route: Student city - SU Kliment Ohridsky Price: 4.2 Driver: Gosho </div> | | |

After the click we **change** the **button's** text to **"More Info"** and **remove** the **additional vehicle's info row** below the **main one**. Thus becoming **7 main** and **no additional vehicle info rows** in the main table (vehicles-info) again. As shown by the red lines below.

| Sofia's Public Transport | | |
|--------------------------|----------------------|--------------|
| Type | Name | Actions |
| <input type="text"/> | <input type="text"/> | Search Clear |
| bus | 84 | More Info |
| tram | 7 | More Info |
| bus | 280 | More Info |
| trolleybus | 11 | More Info |
| metro | M1 | More Info |
| bus | 404 | More Info |
| metro | M2 | More Info |

```

<table>
  <caption>Sofia's Public Transport</caption>
  <thead>...</thead>
  <tbody class="vehicles-info">
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">
      <td>bus</td>
      <td>280</td>
      <td>
        <button>More Info</button>
      </td>
    </tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
  </tbody>
</table>
<script src="./solution.js"></script>
</script>...</script>

```

Then we **enter "bu"** in the **input box** on column **"Type"** and click the **[Search]** button:

| Sofia's Public Transport | | |
|--------------------------|----------------------|--------------|
| Type | Name | Actions |
| bu <input type="text"/> | <input type="text"/> | Search Clear |
| bus | 84 | More Info |
| bus | 280 | More Info |
| trolleybus | 11 | More Info |
| bus | 404 | More Info |

```

<table>
  <caption>Sofia's Public Transport</caption>
  <thead>...</thead>
  <tbody class="vehicles-info">
    <tr class="hide-info">
      <td>bus</td>
      <td>84</td>
      <td>...</td>
    </tr>
    <tr class="hide-info" style="display: none;">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info" style="display: none;">...</tr>
    <tr class="hide-info">...</tr>
    <tr class="hide-info" style="display: none;">...</tr>
  </tbody>
</table>

```

After that, we **click** the **[More Info]** button on trolleybus 11's row:

| Sofia's Public Transport | | |
|--|----------------------|--------------|
| Type | Name | Actions |
| bu <input type="text"/> | <input type="text"/> | Search Clear |
| bus | 84 | More Info |
| bus | 280 | More Info |
| trolleybus | 11 | Less Info |
| <div> Route: Drujba 1 - Stochna station sq. Price: 2.6 Driver: Toshio </div> | | |
| bus | 404 | More Info |

```

<tr class="hide-info">...</tr>
<tr class="hide-info" style="display: none;">...</tr>
<tr class="hide-info">...</tr>
<tr class="show-info">
  <td>trolleybus</td>
  <td>11</td>
  <td>
    <button>Less Info</button>
  </td>
</tr>
<tr class="more-info">
  <td colspan="3">
    <table>
      <tbody>
        <tr>...</tr>
        <tr>...</tr>
        <tr>...</tr>
      </tbody>
    </table>
  </td>
</tr>
<tr class="hide-info" style="display: none;">...</tr>
<tr class="hide-info">...</tr>
<tr class="hide-info" style="display: none;">...</tr>

```

8 rows –
4 visible;
3 hidden;
1 extra
(additional)

Then we **click** the **[Clear]** button:

Sofia's Public Transport

| Type | Name | Actions |
|---|----------------------|--|
| <input type="text"/> | <input type="text"/> | <input type="button" value="Search"/> <input type="button" value="Clear"/> |
| bus | 84 | <input type="button" value="More Info"/> |
| tram | 7 | <input type="button" value="More Info"/> |
| bus | 280 | <input type="button" value="More Info"/> |
| trolleybus | 11 | <input type="button" value="Less Info"/> |
| <div>Route: Drujba 1 - Stochna station sq. Price: 2.6 Driver: Tosho</div> | | |
| metro | M1 | <input type="button" value="More Info"/> |
| bus | 404 | <input type="button" value="More Info"/> |
| metro | M2 | <input type="button" value="More Info"/> |

```
<tbody class="vehicles-info">
  <tr class="hide-info">...</tr>
  <tr class="hide-info" style=...</tr>
  <tr class="hide-info">...</tr>
  <tr class="show-info">
    <td>trolleybus </td>
    <td>11</td>
    <td>
      <button>Less Info</button>
    </td>
  </tr>
  <tr class="more-info">
    <td colspan="3">
      <table>
        <tbody>
          <tr>...</tr>
          <tr>...</tr>
          <tr>...</tr>
        </tbody>
      </table>
    </td>
  </tr>
  <tr class="hide-info" style=...</tr>
  <tr class="hide-info" style="display: none;">...</tr>
  <tr class="hide-info" style="display: none;">...</tr>
</tbody>
</table>
```

Chain of **commands** to the table:

- Click **[More Info]** button on **bus 404**, **metro M2**, **tram 7**, **bus 84**
- Enter **"ro"** in the **input box** on column **"Type"**, **"1"** in the **input box** on column **"Name"** and then **click** the **[Search]** button

Chain result:

Sofia's Public Transport

| Type | Name | Actions |
|---|------|--|
| ro | 1 | <input type="button" value="Search"/> <input type="button" value="Clear"/> |
| trolleybus | 11 | <input type="button" value="Less Info"/> |
| <div>Route: Drujba 1 - Stochna station sq. Price: 2.6 Driver: Tosho</div> | | |
| metro | M1 | <input type="button" value="More Info"/> |

```
<tr class="hide-info" style="display: none;">...</tr>
<tr class="hide-info" style="display: none;">...</tr>
<tr class="hide-info" style="display: none;">...</tr>
<tr class="show-info">
  <td>trolleybus </td>
  <td>11</td>
  <td>
    <button>Less Info</button>
  </td>
</tr>
<tr class="more-info">
  <td colspan="3">
    <table>...</table>
  </td>
</tr>
<tr class="hide-info" style=...</tr>
<tr class="hide-info" style="display: none;">...</tr>
<tr class="hide-info" style="display: none;">...</tr>
```

Chain of **commands** to the table:

- Click **[Less Info]** button on **trolleybus 11**
- Click **[More Info]** button on **metro M1**
- Click **[Clear]** button
- Click **[More Info]** button on **bus 404**, **bus 84**, **metro M2**

Scroll down to see result:

| Sofia's Public Transport | | |
|--|----------------------|--|
| Type | Name | Actions |
| <input type="text"/> | <input type="text"/> | <input type="button" value="Search"/> <input type="button" value="Clear"/> |
| bus | 84 | <input type="button" value="Less Info"/> |
| <div>Route: Sofia airport - Gen. Gurko str.</div> <div>Price: 1.6</div> <div>Driver: Pesho</div> | | |
| tram | 7 | <input type="button" value="More Info"/> |
| bus | 280 | <input type="button" value="More Info"/> |
| trolleybus | 11 | <input type="button" value="More Info"/> |
| metro | M1 | <input type="button" value="Less Info"/> |
| <div>Route: Slivnica - Business Park</div> <div>Price: 3.5</div> <div>Driver: Petq</div> | | |
| bus | 404 | <input type="button" value="Less Info"/> |
| <div>Route: AP Drujba - Central station</div> <div>Price: 1.6</div> <div>Driver: Silviq</div> | | |
| metro | M2 | <input type="button" value="Less Info"/> |
| <div>Route: Sofia airport - James Bourchier</div> <div>Price: 5.99</div> <div>Driver: Krum</div> | | |

```

<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body style="margin-top: 180px;margin-bottom: 100px;">
    <table style="margin-right: 0px;">
      <caption>Sofia's Public Transport</caption>
      <thead>...</thead>
      <tbody class="vehicles-info"> == $0
        <tr class="show-info" style>...</tr>
        <tr class="more-info">...</tr>
        <tr class="hide-info" style>...</tr>
        <tr class="hide-info" style>...</tr>
        <tr class="hide-info">...</tr>
        <tr class="show-info" style>...</tr>
        <tr class="more-info">...</tr>
        <tr class="show-info" style>...</tr>
        <tr class="more-info">...</tr>
        <tr class="show-info" style>...</tr>
        <tr class="more-info">...</tr>
      </tbody>
    </table>
    <script src="./solution.js"></script>
    <script>...</script>
  </body>
</html>

```