

Course JavaScript Programming Language and jQuery

Module 2

TOPIC: OBJECT. ARRAYS. ARRAY OBJECT. STRINGS.
STRING OBJECT. DATE OBJECT. MATH OBJECT.
INTRODUCTION TO OOP

Task 1

Implement a class that describes a circle. The class should have the following components:

- field storing radius of the circle;
- `get` property that returns radius of the circle;
- `set` property that sets radius of the circle;
- `get` property that returns diameter of the circle;
- method that calculates area of the circle;
- method that calculates perimeter of the circle.

Demonstrate the work of properties and methods.

Task 2

Implement a class that describes an html element.
The `HtmlElement` class must contain:

- tag name;
- self-closing tag or not;
- text content;
- array of attributes;
- array of styles;
- array of same nested tags;

- method for setting attribute;
- method for setting style;
- method for adding a nested element to the end of the current element;
- method for adding a nested element to the beginning of the current element;
- method `getHtml()`, which returns html code as a string, including html code of nested elements.

Using the written class, implement the following block and add it to the page using `document.write()`.

```
▼<div id="wrapper" style="display: flex;">
  ▼<div style="width: 300px; margin: 10px;">
    <h3>What is Lorem Ipsum?</h3>
    
  ▼<p style="text-align: justify;">
    "Lorem Ipsum is simply dummy text of the printing and typesetting
    industry. Lorem Ipsum has been the industry's standard dummy text ever
    since the 1500s, when an unknown printer took a galley of type and
    scrambled it to make a type specimen book."
    <a href="https://www.lipsum.com/" target="_blank">More...</a>
  </p>
</div>
▼<div style="width: 300px; margin: 10px;">
  <h3>What is Lorem Ipsum?</h3>
  
  ▼<p style="text-align: justify;">
    "Lorem Ipsum is simply dummy text of the printing and typesetting
    industry. Lorem Ipsum has been the industry's standard dummy text ever
    since the 1500s, when an unknown printer took a galley of type and
    scrambled it to make a type specimen book."
    <a href="https://www.lipsum.com/" target="_blank">More...</a>
  </p>
</div>
</div>
```

Figure 1

Note. To get all this html as a string, it should be enough to call the `getHtml` method only for the tag with the wrapper identifier.

Task 3

Implement a class that describes the `Css` class.

`CssClass` must contain:

- `Css` class name;
- array of styles;
- method for setting style;
- method for removing style;
- `getCss()` method which returns `Css` code as a string.

Task 4

Implement a class describing the `html` document block.

The `HtmlBlock` class must contain:

- collection of styles described with the `CssClass` class;
- root element described with the `HtmlElement` class;
- `getCode()` method, which returns a string with an `html` code (first the style tags with a description of all classes, and then the whole `html` content from the root tag and its nested elements).

Use the written classes to implement the following block (*see fig. 2*) and add it to the page using `document.write()`.

```

▼<style>
  .wrap {
    display: flex;
  }
  .block {
    width: 300px;
    margin: 10px;
  }
  .img {
    width: 100%;
  }
  .text {
    text-align: justify;
  }
</style>
▼<div id="wrapper" class="wrap">
  ▼<div class="block">
    <h3>What is Lorem Ipsum?</h3>
    
    ▼<p class="text">
      "Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum
      has been the industry's standard dummy text ever since the 1500s, when an unknown
      printer took a galley of type and scrambled it to make a type specimen book. "
      <a href="https://www.lipsum.com/" target="_blank">More...</a>
    </p>
  </div>
  ▼<div class="block">
    <h3>What is Lorem Ipsum?</h3>
    
    ▼<p class="text">
      "Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum
      has been the industry's standard dummy text ever since the 1500s, when an unknown
      printer took a galley of type and scrambled it to make a type specimen book. "
      <a href="https://www.lipsum.com/" target="_blank">More...</a>
    </p>
  </div>
</div>

```

Figure 2