

Prototypal Inheritance

Task 1.

Create an object `domElement`, that has the following properties and methods:

1. Use prototypal inheritance, without function constructors
2. Method `init()` that gets the **`domElement`** type
 - i.e. `Object.create(domElement).init('div');`
3. Property `type` that is the type of the **`domElement`**
 - a valid type is any non-empty string that contains only Latin letters and digits
4. Property `innerHTML` of type string
 - gets the **`domElement`**, parsed as valid HTML:
5. `<type attr1="value1" attr2="value2" ... > ... content / children's.innerHTML</type>`
 - attributes must be sorted in ascending alphabetical order by their name, not in the order they were added
6. Property `content` of type string
 - sets the content of the element
 - works only if there are no children
7. Property `attributes`
 - each attribute has name and value
 - a valid attribute has a non-empty string for a name that contains only Latin letters and digits or dashes -
8. Property `children`
 - each child is a **`domElement`** or a string
9. Property `parent`
 - parent is a **`domElement`**
10. Method `appendChild(domElement / string)`
 - appends to the end of children list
11. Method `addAttribute(name, value)`
 - `throw Error` if type is not valid

12. Method `removeAttribute(attribute)`

- `throw Error` if attribute does not exist in the `domElement`

Example:

```
var meta = Object.create(domElement)
  .init('meta')
  .addAttribute('charset', 'utf-8');

var head = Object.create(domElement)
  .init('head')
  .appendChild(meta)

var div = Object.create(domElement)
  .init('div')
  .addAttribute('style', 'font-size: 42px');

div.content = 'Hello, world!';

var body = Object.create(domElement)
  .init('body')
  .appendChild(div)
  .addAttribute('id', 'myid')
  .addAttribute('bgcolor', '#012345');

var root = Object.create(domElement)
  .init('html')
  .appendChild(head)
  .appendChild(body);

console.log(root.innerHTML);
```

Outputs:

```
<html><head><meta charset="utf-8"></meta></head><body bgcolor="#012345"
id="myid"><div style="font-size: 42px">Hello, world!</div></body></html>
```