

0x02. ES6 classes



JavaScript (/platform/me)



Weight: 1

Projects(/projects/current)



Project over - took place from Jun 27, 2024 6:00 AM to Jun 28, 2024 6:00 AM



An auto-generated document for corrections(/to_review)



Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

ES6 CLASSES

Curriculums(/dashboards/my_curriculums)



Concepts(/concepts)

FOR ALL THE THINGS!

Conference rooms(/dashboards/video_rooms)

Resources



Servers(/servers)

Read or watch:

- Classes (/ltoken/IDo2mlwrlD8srxeBNEjftw)
- Metaprogramming (/ltoken/IDo2mlwrlD8srxeBNEjftw)



Learning Objectives

Tools(/dashboards/my_tools)

At the end of this project, you are expected to be able to explain to anyone



Video on demand(/dashboards/videos)

- How to define a Class
- How to add methods to a class
- Why and how to add a static method to a class
- How to extend a class from another
- Metaprogramming and symbols



Peers(/users/peers)



Requirements

Discord(/https://discord.com/app)

- All your files will be executed on Ubuntu 18.04 LTS using NodeJS 12.11.x
- Allowed editors: vi, vim, emacs, Visual Studio Code
- All your files should end with a new line
- A README.md file, at the root of the folder of the project, is mandatory
- Your code should use the js extension



- Your code will be tested using Jest and the command `npm run test`
- Your code will be verified against lint using ESLint
- Your code needs to pass all the tests and lint. You can verify the entire project running `npm run full-test`

Setup

Install NodeJS 12.11.x

(in your home directory):

Projects(/projects/current)

```
curl -sL https://deb.nodesource.com/setup_12.x -o nodesource_setup.sh
sudo bash nodesource_setup.sh
```

QA Reviews I can make(/corrections/to_review)

```
$ nodejs -v
v12.11.1
$ npm -v
6.11.3
```

Curriculums(/dashboards/my_curriculums)

Install Jest, Babel, and ESLint

In your project directory, install Jest, Babel and ESList by using the supplied `package.json` and run `npm install`.

Configuration files

Add the following files to your project directory.

`package.json`

Sandboxes(/user_containers/current)

`babel.config.js`

Click to show/hide file contents

Video on demand(/dashboards/videos)

`.eslintrc.js`

Click to show/hide file contents

Peers(/users/peers)

Don't forget to run `$ npm install` when you have the `package.json`

Discord(<https://discord.com/app>)



Tasks

My Profile(/users/my_profile)

0. You used to attend a place like this at some point

mandatory

Implement a class named `ClassRoom` :



- Prototype: `export default class ClassRoom`
- It should accept one attribute named `maxStudentsSize` (Number) and assigned to `_maxStudentsSize`



My Planning(/planning/me)

```
bob@dylan:~$ cat 0-main.js
import ClassRoom from "../0-classroom.js";
```



Projects(/projects/current)

```
const room = new ClassRoom(10);
console.log(room._maxStudentsSize)
```



QA Reviews I can make(/corrections/to_review)

```
bob@dylan:~$
bob@dylan:~$ npm run dev 0-main.js
```



Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

```
bob@dylan:~$
```



Curriculums(/dashboards/my_curriculums)

- GitHub repository: `alx-frontend-javascript`
- Directory: `0x02-ES6_classes`
- File: `0-classroom.js`



Concepts(/concepts)

File: `0-classroom.js`



Conference rooms(/dashboards/video_rooms)

Check submission

Get a sandbox



1. Let's make some classrooms

mandatory



Import the `ClassRoom` class from `0-classroom.js`.

Sandboxes(/user_containers/current)

Implement a function named `initializeRooms`. It should return an array of 3 `ClassRoom` objects with the sizes 19, 20, and 34 (in this order).



Tools(/dashboards/my_tools)

```
bob@dylan:~$ cat 1-main.js
import initializeRooms from './1-make_classrooms.js';
console.log(initializeRooms());
```



Video on demand(/dashboards/videos)



```
bob@dylan:~$
bob@dylan:~$ npm run dev 1-main.js
Peers(/users/peers)
```

```
[
  ClassRoom { _maxStudentsSize: 19 },
```



Discord(<https://discord.com/app>)

```
ClassRoom { _maxStudentsSize: 20 },
ClassRoom { _maxStudentsSize: 34 }
]
```

```
bob@dylan:~$
```



Repo: My Profile(/users/my_profile)

- GitHub repository: alx-frontend-javascript



- Directory: 0x02-ES6_classes

🔗 File: 1-make_classrooms.js



Home(/)

Check submission



Get a sandbox



A Course, Getters, and Setters

My Planning(/planning/me)

mandatory

Implement a class named HolbertonCourse :



Projects(/projects/current)

- Constructor attributes:

- name (String)



- QA Reviews I (Number) (/corrections/to_review)

- students (array of Strings)



- Make sure to verify the type of attributes during object creation

- Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

- Each attribute must be stored in an "underscore" attribute-version (ex: name is stored in _name)

- Implement a getter and setter for each attribute.



Curriculums(/dashboards/my_curriculums)



Concepts(/concepts)



Conference rooms(/dashboards/video_rooms)



Servers(/servers)



Sandboxes(/user_containers/current)



Tools(/dashboards/my_tools)



Video on demand(/dashboards/videos)



Peers(/users/peers)



Discord(<https://discord.com/app>)



My Profile(/users/my_profile)

```


bob@dylan:~$ cat 2-main.js
import HolbertonCourse from './2-hbtn_course.js';

(
  const c1 = new HolbertonCourse("ES6", 1, ["Bob", "Jane"]);
  console.log(c1.name);
  c1.name = "Python 101";
  console.log(c1);

  try { My Planning(/planning/me)
    c1.name = 12;
  }
  catch (err) { Projects(/projects/current)
    console.log(err);
  }
  QA Reviews I can make(/corrections/to_review)
  try {
    const c2 = new HolbertonCourse("ES6", "1", ["Bob", "Jane"]);
  }
  Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)
  catch(err) {
    console.log(err);
  }

  bob@dylan:~$
  bob@dylan:~$ npm run dev 2-main.js
  ES6
  HolbertonCourse {
    _name: 'Python 101',
    _length: 1,
    _students: ['Bob', 'Jane']
  }
  TypeError: Name must be a string
  .Servers(/servers)
  TypeError: Length must be a number
  ...
  bob@dylan:~$

```

 **Repo:** Tools(/dashboards/my_tools)

- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes
- File: 2-hbtn_course.js

 Check status of users in a sandbox

3 Methods, static methods, computed methods names..... MONEY

Discord(<https://discord.com/app>)

mandatory

Implement a class named Currency :

- - Constructor attributes:
 - code (String)

My Profile(/users/my_profile)

- Each attribute must be stored in an "underscore" attribute version (ex: name is stored in _name)

- Implement a getter and setter for each attribute.
- Implement a method named `displayFullCurrency` that will return the attributes in the following format `name (code)`.


```

bob@dylan:~$ cat 3-main.js
import Currency from './3-currency.js';


const dollar = new Currency('$', 'Dollars');
console.log(dollar.displayFullCurrency());


bob@dylan:~$
bob@dylan:~/projects/curves$ cat main.js
Dollars ($)
bob@dylan:~$
QA Reviews I can make(/corrections/to_review)

```

 **Repo:** Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)


- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes
- File: 3-currency.js


 Curriculums(/dashboards/my_curriculums)

 Concepts(/concepts)


4. Pricing

mandatory

 Conference rooms(/dashboards/video_rooms)
Import the class `Currency` from `3-currency.js`

 Implement a class named `Pricing` :
Servers(/servers)


- Constructor attributes:
 - `amount` (Number)
 - `currency` (Currency)


 Sandboxes(/user_containers/current)

- Each attribute must be stored in an "underscore" attribute version (ex: `name` is stored in `_name`)

 Implement a getter and setter for each attribute.

- Implement a method named `displayFullPrice` that returns the attributes in the following format `amount currency_name (currency_code)`.

 Implement a method named `convertPrice`. It should accept two arguments: `amount` (Number), `conversionRate` (Number). The function should return the amount multiplied by the conversion rate.

 Peers(/users/peers)

 Discord(<https://discord.com/app>)



My Profile(/users/my_profile)


```

bob@dylan:~$ cat 4-main.js
import Pricing from './4-pricing.js';
import Currency from './3-currency.js';

const p = new Pricing(100, new Currency("EUR", "Euro"))
console.log(p);
console.log(p.displayFullPrice());


bob@dylan:~$ npm run dev 4-main.js
Pricing {
  _amount: 100,
  _currency: Currency { _code: 'EUR', _name: 'Euro' }
}
100 EUR (EUR)
bob@dylan:~$

```


 Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

Repo:


- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6-classes
- File: 4-pricing.js

 Concepts(/concepts)

Check submission [Get a sandbox](#)

 **A Building** Conference rooms(/dashboards/video_rooms)

mandatory

 Implement a class named Building :

- Constructor attributes:
 - sqft (Number)
- Each attribute must be stored in an "underscore" attribute version (ex: name is stored in _name)
- Implement a getter for each attribute.
- Consider this class as an abstract class. And make sure that any class that extends from it should implement a method named evacuationWarningMessage .
 - If a class that extends from it does not have a evacuationWarningMessage method, throw an error with the message "Class extending Building must override evacuationWarningMessage"

 Peers(/users/peers)

 Discord(https://discord.com/app)



My Profile(/users/my_profile)

```
bob@dylan:~$ cat 5-main.js
import Building from './5-building.js';
(
const b = new Building(100);
console.log(b);
Home()
class TestBuilding extends Building {}

try { My Planning(/planning/me)
      new TestBuilding(200)
}
catch (err) { Projects(/projects/current)
              console.log(err);
}
}
QA Reviews I can make(/corrections/to_review)
bob@dylan:~$
bob@dylan:~$ npm run dev 5-main.js
Building Evaluation quizzes (/dashboards/my_current_evaluation_quizzes)
Error: Class extending Building must override evacuationWarningMessage
...
bob@dylan:~$
```

Curriculums(/dashboards/my_curriculums)

Repo:

- Concepts(/concepts)
- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes
- File: 5-building.js
- Conferences (/dashboards/video_rooms)

Check submission Servers / Servers Get a sandbox

6. Inheritance

mandatory

Sandboxes(/user_containers/current)

Import Building from 5-building.js .

Implement a class named SkyHighBuilding that extends from Building :

- Constructor attributes:

Video on demand dashboards assigned to the parent class Building)

- floors (Number)

- Each attribute must be stored in an "underscore" attribute version (ex: name is stored in _name)
- Implement a getter for each attribute.

Peers(/users/peers)

- Override the method named evacuationWarningMessage and return the following string
Evacuate slowly the NUMBER_OF_FLOORS floors .

Discord(<https://discord.com/app>)



My Profile(/users/my_profile)


```

bob@dylan:~$ cat 6-main.js
import SkyHighBuilding from './6-sky_high.js';

(
  () => {
    const building = new SkyHighBuilding(140, 60);
    console.log(building.sqft);
    console.log(building.floors);
    console.log(building.evacuationWarningMessage());
  }
)();

bob@dylan:~$ npm run dev 6-main.js
140
60
Projects(/projects/current)
Evacuate slowly the 60 floors
bob@dylan:~$
QA Reviews I can make(/corrections/to_review)

```

Repo: Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes
- File: 6-sky_high.js

Curriculums(/dashboards/my_curriculums)

Check submission > Get a sandbox

Concepts(/concepts)

7. Airport

mandatory

Conference rooms(/dashboards/video_rooms)
Implement a class named Airport :

- Constructor attributes:
 - Servers(/servers)
 - name (String)
 - code (String)
- Each attribute must be stored in an "underscore" attribute version (ex: name is stored in _name)
- The default string description of the class should return the airport code (example below).

```

bob@dylan:~$ cat 7-main.js
import Airport from './7-airport.js';

const VideoOnDemand = new Airport('San Francisco Airport', 'SF0');
console.log(airportSF);
console.log(airportSF.toString());

```

```

bob@dylan:~$
Peers(/users/peers)
bob@dylan:~$ npm run dev 7-main.js
Airport [SF0] { _name: 'San Francisco Airport', _code: 'SF0' }
[object SF0]
Discord(https://discord.com/app)
bob@dylan:~$

```



Repo:

- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes

- File: 7-airport.js



Check submission



Get a sandbox



Home(/)

8. Primitive - Holberton Class

mandatory



Implement a class named HolbertonClass :

- Constructor attributes:
 - size (Number)
 - Projects(/projects/current)
 - location (String)
- Each attribute must be stored in an "underscore" attribute version (ex: name is stored in _name)
- When the class is casted to a `Number`, it should return the size.
- When the class is cast into a `String`, it should return the location.



Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

```
bob@dylan:~$ cat 8-main.js
import HolbertonClass from './8-hbtn_class.js';
```

```
const hc = new HolbertonClass(12, "Mezzanine")
console.log(Number(hc));
console.log(String(hc));
```



Curriculums(/dashboards/my_curriculums)



```
bob@dylan:~$
bob@dylan:~$ npm run dev 8-main.js
12
```



Mezzanine
Conference rooms(/dashboards/video_rooms)

```
bob@dylan:~$
```



Servers(/servers)

Repo:



- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes
- File: 8-hbtn_class.js



Tools(/dashboards/my_tools)

Check submission



Get a sandbox



Video on demand(/dashboards/videos)



Hoisting

Peers(/users/peers)

mandatory

Fix this code and make it work.



Discord(<https://discord.com/app>)



My Profile(/users/my_profile)

```

const class2019 = new HolbertonClass(2019, 'San Francisco');
const class2020 = new HolbertonClass(2020, 'San Francisco');
()
export class HolbertonClass {
  constructor(year, location) {
    Home(/)
    this._year = year;
    this._location = location;
  }
  My Planning(/planning/me)
  get year() {
    return this._year;
  } Projects(/projects/current)

  get location() {
    QA Reviews (/chomake/corrections/to_review)
    return this._location;
  }
  ? Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)
  const student1 = new StudentHolberton('Guillaume', 'Salva', class2020);
  const student2 = new StudentHolberton('John', 'Doe', class2020);
  const student3 = new StudentHolberton('Albert', 'Clinton', class2019);
  const student4 = new StudentHolberton('Donald', 'Bush', class2019);
  Curriculum (/dashboards/my_curriculums)
  const student5 = new StudentHolberton('Jason', 'Sandler', class2019);

  export class StudentHolberton {
    Concepts(/concepts)
    constructor(firstName, lastName) {
      this._firstName = firstName;
      this._lastName = lastName;
    } Conference rooms (/dashboards/video_rooms)
    this._holbertonClass = holbertonClass;

    get Server (/servers)
    return `${this._firstName} ${this._lastName}`;
  } Sandboxes (/user_containers/current)
  get holbertonClass() {
    return this.holbertonClass;
  } Tools (/dashboards/my_tools)

  get fullStudentDescription() {
    Video on Demand (/dashboards/videos)
    return `${self._firstName} ${self._lastName} - ${self._holbertonClass.year} - ${self._holbertonClass.location}`;
  }
}

Peers (/users/peers)
export const listOfStudents = [student1, student2, student3, student4, student5];

Discord (https://discord.com/app)
Result:

```



```

bob@dylan:~$ cat 9-main.js
import listOfStudents from './9-hoisting.js';
(
  console.log(listOfStudents);
  Home()
const listPrinted = listOfStudents.map(
  student => student.fullStudentDescription
);
  My Planning(/planning/me)
  console.log(listPrinted)
  Projects(/projects/current)
bob@dylan:~$ npm run dev 9-main.js
[
  StudentHolberton { make(/corrections/to_review)
    _firstName: 'Guillaume',
    _lastName: 'Salva',
    _evaluationClasses: HolbertonClass { _year: 2020, _location: 'San Francisco' } },
  StudentHolberton {
    _firstName: 'John',
    _lastName: 'Doe',
    _curriculum: Curriculum { _year: 2020, _location: 'San Francisco' },
    _holbertonClass: HolbertonClass { _year: 2020, _location: 'San Francisco' } },
  StudentHolberton {
    _firstName: 'Albert',
    _lastName: 'Clinton',
    _holbertonClass: HolbertonClass { _year: 2019, _location: 'San Francisco' } },
  StudentHolberton {
    _firstName: 'Donald',
    _lastName: 'Bush',
    _holbertonClass: HolbertonClass { _year: 2019, _location: 'San Francisco' } },
  StudentHolberton {
    _firstName: 'Jason',
    _lastName: 'Sandler',
    _holbertonClass: HolbertonClass { _year: 2019, _location: 'San Francisco' } }
]
  Video on demand(/dashboards/videos)
  'Guillaume Salva - 2020 - San Francisco',
  'John Doe - 2020 - San Francisco',
  'Albert Clinton - 2019 - San Francisco',
  'Donald Bush - 2019 - San Francisco',
  'Jason Sandler - 2019 - San Francisco'
]
bob@dylan:~$
Discord(https://discord.com/app)

```



Repo:

- GitHub repository: alx-frontend-javascript
- Directory: 0x02-ES6_classes

- File: 9-hoisting.js



(/)

Check submission

> Get a sandbox



Home(/)

mandatory



Implement a class named `Car`
My Planning(/planning/me)

- Constructor attributes:



- `brand` (String)
- `motor` (String)
- `color` (String)



- Each attribute must be prefixed with `_` (ex: `name` is stored in `_name`)
- Add a method named `cloneCar`. This method should return a new object of the class.



Print Symbols in ES6
Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)

```
bob@dylan:~$ cat 10-main.js
import Car from './10-car.js';
```



Curriculums(/dashboards/my_curriculums)

```
const tc1 = new TestCar("Nissan", "Turbo", "Pink");
const tc2 = tc1.cloneCar();
```



```
console.log(tc1);
console.log(tc2);
```



```
console.log(tc1 instanceof TestCar);
console.log(tc2 instanceof TestCar);
```



```
console.log(tc1 == tc2);
TestCar { _brand: 'Nissan', _motor: 'Turbo', _color: 'Pink' }
true
TestCar { _brand: undefined, _motor: undefined, _color: undefined }
true
Video on demand(/dashboards/videos)
false
bob@dylan:~$
```



Sandboxes(/user_containers/current)

```
bob@dylan:~$
bob@dylan:~$ npm run dev 10-main.js
TestCar { _brand: 'Nissan', _motor: 'Turbo', _color: 'Pink' }
true
```



```
TestCar { _brand: undefined, _motor: undefined, _color: undefined }
true
Video on demand(/dashboards/videos)
false
bob@dylan:~$
```



Peers(/users/peers)

Repo:



- GitHub repository: `alx-frontend-javascript`
- Discord(<https://discord.com/app>)
- Directory: `0x02-ES6_classes`
- File: `10-car.js`



Check submission

> Get a sandbox

My Profile(/users/my_profile)



(/)



Home(/)

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My Planning(/planning/me)



Projects(/projects/current)



QA Reviews I can make(/corrections/to_review)



Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)



Curriculums(/dashboards/my_curriculums)



Concepts(/concepts)



Conference rooms(/dashboards/video_rooms)



Servers(/servers)



Sandboxes(/user_containers/current)



Tools(/dashboards/my_tools)



Video on demand(/dashboards/videos)



Peers(/users/peers)



Discord(https://discord.com/app)



My Profile(/users/my_profile)