Safe methods - GET and HEAD methods SHOULD NOT have the significance of taking an action other than retrieval.

These methods ought to be considered "safe". This allows user agents to represent other methods, such as POST,

PUT and DELETE, in a special way, so that the user is made aware of the fact that a possibly unsafe action is being requested.

Naturally, it is not possible to ensure that the server does not generate side-effects as a result of performing a GET request;

in fact, some dynamic resources consider that a feature. The important distinction here is that the user did not request

the side-effects, so therefore cannot be held accountable for them.

Idempotent Methods - Methods can also have the property of "idempotence" in that (aside from error or expiration issues) the side-effects of

N > 0 identical requests is the same as for a single request. The methods GET, HEAD, PUT and DELETE share this property. Also,

the methods OPTIONS and TRACE SHOULD NOT have side effects, and so are inherently idempotent.

In the Node.js module system, each file is treated as a separate module.

Functions and objects are added to the root of a module by specifying additional properties on the special exports object

The module.exports property can be assigned a new value (such as a function or object).

The core modules are defined within Node.js's source and are located in the lib/ folder.

If the NODE\_PATH environment variable is set to a colon-delimited list of absolute paths, then Node.js

will search those paths for modules if they are not found elsewhere.

The module wrapper:

Before a module's code is executed, Node.js will wrap it with a function wrapper (below)

(function(exports, require, module, \_\_filename, \_\_dirname) {

// Module code actually lives in here

});

-It keeps top-level variables (defined with var, const or let) scoped to the module rather than the global object.

-It helps to provide some global-looking variables that are actually specific to the module, such as:

The module and exports objects that the implementor can use to export values from the module.

The convenience variables \_\_filename and \_\_dirname, containing the module's absolute filename and directory path.

REQUEST:

Accept: application/json, application/x-www-form-urlencoded,

application/xml, text/html, text/css, text/csv, text/plain,

application/javascript, image/jpeg, image/png, image/gif, \*/\*

Accept-Encoding: gzip, deflate

Content-Type: (ver Accept)

Cookie: UserID=JohnDoe;

User-Agent: quem enviou pedido

RESPONSE:

Content-Encoding: (ver Accept-Encoding)

Location: utilizado em redirects

Set-Cookie: UserID=JohnDoe;

let headers = new Headers();

let options = {

method: "GET".

headers: headers

}

fetch(url, options).then(resp => resp.json())

.then(body => console.log(body));

Response.headers

Response.ok

Response.status

Response.url

Response.json()

Response.formData()

Headers.getAll()

Headers.get(name)

Headers.append(name, value)

Passport is authentication middleware for Node.js.

The verify callback invokes “done” to supply Passport with the user that authenticated

be sure to use session() before passport.session() to ensure that the login session is restored in the correct order, passport session poe o objeto do user no request

let passportInitializer = (bcrypt, localStrategy, CiborgError) => {

function initialize(passport, getUserById) {

const authenticateUser = async(userId, password, done) => {

try {

const userData = await getUserById(userId);

const user = userData.body;

let isMatch = await bcrypt.compare(password, user.password);

if (isMatch) {

return done(null, user);

} else {

throw new CiborgError(null,

'Error in passport initializer.',

'Password Incorrect.',

'500' // Internal Server Error

);

}

} catch (err) {

if (!(err instanceof CiborgError)) {

err = new CiborgError(err,

'Error in passport initializer.',

'Unable to login.',

'500' // Internal Server Error

);

}

console.log(err)

done(err);

}

};

passport.use(new localStrategy({

usernameField: "userId",

passwordField: "password"

}, authenticateUser));

passport.serializeUser((user, done) => done(null, user.userId));

passport.deserializeUser((id, done) => done(null, id));

}

return initialize;

}

addMusicToList: async function(playListId, musicId){

let playList = await yamaDb.getPlaylistById(playListId); //devolve a playList pelo ID ou undefined se nao existir

if(!playList){

let err = new Error("No playlist with that id");

err.status = 404;

throw err;

}

if(playList.allowRepeats || !playList.musics.find(music.id === musicId)) {

yamaDb.addGameToList(playListId, musicId)//adiciona uma musica a playlist

} else {

let err = new Error("Cannot add repeated music for this playlist");

err.status = 500;

throw err;

}

}

function promisify(fn) {

let oldFn = fn;

return async function() {

let args = arguments;

return new Promise(function(resolve, reject) {

let cb = (err, res) => {

if(err){

reject(err);

} else {

resolve(res);

}

};

args = [].slice.call(args);

args.push(cb);

oldFn.apply(null, args);

});

}

}

function profile(fn) {

let newFn = function () {

let start = new Date().getTime();

let result = fn.apply(null, arguments).then(res => {

let end = new Date().getTime();

newFn.execs.push(end - start);

return res;

});

return result;

}

newFn.execs = [];

newFn.avgDur = function () {

return (newFn.execs.reduce((accum, curr) => accum + curr, 0) / newFn.execs.length);

};

return newFn;

}

document.querySelector("#artists").addEventListener("change", listener);

async function listener(e) {

let input = document.querySelector("#artists");

let div = document.querySelector("#suggestions");

if(input.value.length < 3) {

if(input.className != "hiddenAutoComplete") {

input.className = "hiddenAutoComplete";

}

div.innerHtml = "";

} else {

if(input.className != "visibleAutoComplete") {

input.className = "visibleAutoComplete";

}

let artists = await getArtistsNames(input.value, 10);

let htmlList = "";;

artists.forEach(e => {

artistList += `<div>${e.name}</div>`;

});

div.innerHtml = artistList;

}

}

fetch = function() {

let originalFetch = fetch;

return async (p, o) => {

try {

let cachedResp = fetch.map[p];

if (!cachedResp) {

let resp = await originalFetch(p, o);

if(resp.headers.has("Cache-Control")

&& (resp.headers.has("Cache-Control") === "private"

|| resp.headers.has("Cache-Control") === "public")){

fetch.map[p] = resp;

}

return resp;

} else {

return cachedResp;

}

} catch(e){

console.log(e)

}

}

}();

fetch.map = {};

array.slice() - copy

arrat.slice(init, end) - sub arrany

end index not included in array

array.find((element, index, array)=>{})

- retorna o objeto se exstir ou undefined

array.findIndex((element, index, array)=>{})

- retorna index da 1ª ocorrencia ou -1

array.indexOf(arg) - igual a findIndex

array.includes(arg, fromIndex) - devolve true se encontrar

array.map((element, index, array)=>{})

array.filter((element, index, array)=>{return boolean for no filtering})

array.reduce((accumulator, element, index, array)

reduce implementado manualmente:

function reduce(array, func, start)

{

let current = start

for(let element of array)

{

current = func(current, element)

}

return current

}

=>{accumulator+element}, valor inicial)

array.sort((a,b)=>{

0 - iguais

1 - a > b

-1 - b < a

})

const array1 = [1, 2, 3];

const firstElement = array1.shift();

//Array [2, 3]

var arr = [1, 2];

arr.unshift(-2, -1); // = 5

// arr is [-2, -1, 0, 1, 2]

retorna comprimento de novo array

.class - elemento com classe

.class1.class2 - elemento com as 2 classes

#id - elemento com id

element - elementos com tag

element.class - elementos com tag e classe

element1,element2 - elementos com tag

elemento1 ou elemento2

element1 element2 - todos os elementos

element2 que estejam dentro de um element1

element1>element2 - todos os elementos

element2 em que o pai seja um element1

In short: more specific rules override

more general ones

em caso de empate a ultima a aparecer ganha

Bootstrap é uma CSS Framework

The CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content.

<table>

<h5>Games:</h5>

<thead class="thead-dark">

<tr>

{{#each header as |column|}}

<th scope="col" class="test-class">{{column}}</th>

{{/each}}

</tr>

</thead>

<tbody>

{{#if elements}}

{{#each elements as |row|}}

<tr>

<td name="gameId">{{row.id}}</td>

<td>

<button id="{{@index}}" name="remove" type="button" >R</button>

</td>

</tr>

{{/each}}

{{else}}

<tr>

<td colspan="5" class="no-records">No records found!</td>

</tr>

{{/if}}

</tbody>

</table>

//user o this é user o proprio objeto em vez de nome da propriedade

var template = Handlebars.compile("Handlebars <b>{{doesWhat}}</b>");

template({ doesWhat: "rocks!" })

{

person: {

firstname: "Yehuda",

lastname: "Katz"

}

}

{{#with person}}

{{firstname}} {{lastname}}

{{/with}}

{{person.firstname}} {{person.lastname}}

Document Object Model, “DOM”, is an interface to web pages.

allows read and manipulate the page’s content, structure, and styles.

The Document interface represents any web page loaded in the browser and

serves as an entry point into the web page's content, which is the DOM tree.

The Window interface represents a window containing a DOM document.

document.readyState - property describes the loading state of the document (loading, interactive, complete)

interactive - the document has finished loading but sub resources like imeges and stylesheets and frames are still loading

complete - trigger load event

window.location - alteraçao forca refresh

location.hash - alteraçao nao forca refresh

element = document.querySelector(selectors);

elementList = document.querySelectorAll(selectors);

element = document.getElementById(id);

element.addEventListener(type,listener, useCapture);

useCapture – true se quiser usar capturing, default false usa bubling

element.className – mudar a class

document.querySelector("input").disabled = true

eventos: change, click, copy, focus, hashchange,

input, keypress, mouseenter, mouseleave

onload - occurs when an object has been loaded, most often used within the <body> element to execute a script once a web page has completely loaded all content (including images, script files, CSS files, etc.)

<form id="searchGamesForm">

<input type="text" name="gameName" placeholder="name" value="" />

<input type="submit" />

</form>

input types: checkbox, email, hidden, image, password, number

event bubbling - eventos começam do elementos mais abaixo no DOM e propagam-se para os elementos de cima

Event Capturing - is the event starts from top element to target element.

event.stopPropagation(); - prevents further propagation of the current event in the capturing and bubbling phases

During an indexing operation, for example, it converts raw data, such as log files or message files, into internal documents and stores them in a basic data structure similar to a JSON object.

equipped with a rich and powerful HTTP RESTful API that enables you to perform fast searches in near real time

GET /twitter/\_search

{

"query" : {

"term" : { "user" : "kimchy" }

}

}

{

//...

"hits":{

"total" : {

"value": 1,

"relation": "eq"

},

"max\_score": 1.3862944,

"hits" : [

{

"\_index" : "twitter",

"\_type" : "\_doc",

"\_id" : "0",

"\_score": 1.3862944,

"\_source" : {

"user" : "kimchy",

"message": "trying out Elasticsearch",

"date" : "2009-11-15T14:12:12",

"likes" : 0

}

}

]

}

}

GET twitter/\_doc/0

{

"\_index" : "twitter",

"\_type" : "\_doc",

"\_id" : "0",

"\_version" : 1,

"\_seq\_no" : 10,

"\_primary\_term" : 1,

"found": true,

"\_source" : {

"user" : "kimchy",

"date" : "2009-11-15T14:12:12",

"likes": 0,

"message" : "trying out Elasticsearch"

}

}

req.on(‘data’, chunk => {

body.push(chunk)

}).on(‘end’, () => {

body = Buffer.concat(body).toString();

res.statusCode = 200;

res.end(handler.call())

})

\*handler – função que faz as cenas com o resultado do body

Strict mode makes several changes to normal JavaScript semantics: ('use strict';)

-Eliminates some JavaScript silent errors by changing them to throw errors.

-Fixes mistakes that make it difficult for JavaScript engines to perform optimizations: strict mode code can sometimes be made to run faster than identical code that's not strict mode.

-Prohibits some syntax likely to be defined in future versions of ECMAScript.

-Changes simplifying eval and arguments, changes making it easier to write "secure" JavaScript

e.g.: error -> delete Object.prototype;

Middleware - functions that have access to the request object (req), the response object (res), and the next middleware

Passar erros -> next(err)

Apanhar erros do outro lado -> (err, req, res, next)

var fs = require('fs');

fs.readFile('DATA', 'utf8', function(err, contents) {

console.log(contents);

});

JavaScript is often described as a prototype-based language — to provide inheritance, objects can have a prototype object, which acts as a template object that it inherits methods and properties from. Each object has a private property which holds a link to another object called its prototype. That prototype object has a prototype of its own, and so on until an object is reached with null as its prototype. (o.[[Prototype]])

prototype is a reference to another object and contains common

attributes/properties across all instances of the object

Arrow functions do not have a prototype property

Object.create(null) - criar objeto sem prototype

Object.create(Person) - criar objeto que herda do prototype Person

Object.prototype.constructor

Object.keys(obj)

Object.values(obj)

function Person(name, job, yearOfBirth){

this.name= name;

this.job= job;

this.yearOfBirth= yearOfBirth;

}

Person.prototype.calculateAge= function(){

console.log('The current age is: '+(2019- this.yearOfBirth));

}

let Person1= new Person('Jenni', 'clerk', 1986);

console.log(Person1) // there is no calculateAge in obj

let Person2= new Person('Madhu', 'Developer', 1997);

console.log(Person2) // there is no calculateAge in obj

Person1.calculateAge();

Person2.calculateAge();

object1.hasOwnProperty('property1') - whether the object has the specified property as its own property (as opposed to inheriting it).

Object.create(obj) method creates a new object, using an existing object as the prototype

Object.entries() - returns an array of a given object's own enumerable string-keyed property [key, value]

The Object.assign() method copies all enumerable own properties from one or more source objects to a target object

describe('Service-groups tests:', function() {

it('Should return list with 3 groups', function(done) {

resP.then((res) => { //ou catch em caso de erro

assert.equal(3, res.body.length);

done();//tem de ser chamada apenas 1 vez

});

});

});

before - before all tests on describe

after - after all tests on describe

beforeEach - before each test on describe

afterEach - after each test on describe

new Date()

new Date().getTime() - since 1970/01/01

Iterate obj props:

for(let p in obj) {

console.log(`${p} : ${obj[p]}`)

}

Iterate array:

for(let element of array) {

newArray.push(func(element))

}

deleting property: delete obj.prop

configs:

server.use(session({ //express-session

secret: props.session.secretKey,

resave: false,

saveUninitialized: false

}));

server.use(passport.initialize());

server.use(passport.session());

initialize: foram definidas estratégias de serializacao e desserializacao do user,

local strategy, authentication process

authMw: function(req, rsp, next) {

if (req.isAuthenticated()) {

return next();

} else {

res.redirect("/")

}

}

ENV FILE

BAR=bar1

exports FOO=foo2

var env = require('node-env-file');

process.env.FOO = "defaultfoo";

const express = require('express')

const app = express()

app.get('/games/:name', function (req, res) {

res.send('Hello World')

})

app.get('/', mw1, mw2, rootHandler)

express.Router() - A Router instance is a complete middleware and routing system

const routerBundleApi = require('./web-api')(express.Router(),service)

app.use('/bundleApi', routerBundleApi)

module.exports = function(router ,service){

router.get('/bundles', getBundles)

router.get('/', rootHandler)

return router;

function rootHandler(req, res){

res.send("RootHandler")

}

function getBundles(req, res){

res.send("getBundles")

}

}

express-session stores only a session identifier on the client within a cookie and stores the session data on the server

var bodyParser = require('body-parser');

app.use(bodyParser.json());

app.use(bodyParser.urlencoded({ extended: true }));

app.use('/', express.static('public'))

este middleware permite a pedidos ao servidor aceder a

conteudos estaticos como imagens e outro ficheiros

http://localhost:3000/images/kitten.jpg

se dentro da pasta public extistir este ficheiro

resp.set('Set-Cookie', cookieName) - para os headers

res.status(code) - podes fazer status(200).end(), encadear

let queryParam = req.query.param;

let urlParam = req.params.param;

let body = req.body;

let headerValue = req.header('User-Agent')

req.baseUrl

req.hostname

req.method

app.listen(port, console.log("Running on port: " + port));

Arrow function this:

function Point(x, y){

this.x = x

this.y = y

this.add = function(p) {

return new Point(this.x + p.x, this.y + p.y)

}

//this.add = p => new Point(this.x + p.x, this.y + p.y)

}

let p1 = new Point(5,4)

console.log(p1.add(p1))

//Point { x: 10, y: 8, add: [Function] }

let p2 = new Point(6,5)

console.log(p2.add(p2))

//Point { x: 12, y: 10, add: [Function] }

let f3 = p1.add

console.log(f3.call(p1,p2))

//Point { x: 11, y: 9, add: [Function] }

code executed by setTimeout() is called from an execution

context separate from the function from which setTimeout was called.

Default this is global scope, set via apply or bind

new Promise(function(resolve, reject) {

try {

setTimeout(resolve, 100, 'foo');

} catch() {

reject(e);

}

});

Promise.all([promise1, promise2, promise3]).then(function(values) {

console.log(values);//array of values

});

States:

pending (pendente): Estado inicial, que não foi realizada nem rejeitada.

fulfilled (realizada): sucesso na operação.

rejected (rejeitado): falha na operação.

settled (estabelecida): Que foi realizada ou rejeitada.

construtor - new Function('a', 'b', 'return a + b');

[].slice.call(arguments) - por arguments em array

func.apply(thisArg [, argsArray]);

func.call([thisArg[, arg1, arg2, ...argN]])

fixar o this de uma função - func.bind(thisArg)

The webpack library allows to bundle javascript files into one big file,

bundle other static resources like images, handle bar files, css files, etc.

field "module" several loaders are defined, to be able to load

static resources like images, css files and handlebars files.

"HtmlWebpackPlugin" plugin was used to simplify the creation

of HTML files to serve the webpack bundles.

npm run-script -> arbitrary command from a

package’s "scripts", same as npm-build

npm-build: executes build instruction on package.json

1xx Informational response

100 Continue -everything so far is OK, the client can continue the

request or ignore if it's finished.

101 Switching Protocol - indicates the protocol the server is switching to

102 Processing (WebDAV) - indicates the server received and is

processing the request, but no response available yet.

103 Early Hints

2xx Success

200 OK - The request has succeeded

201 Created - The request has succeeded, and new resource was created

202 Accepted - has been received but not yet acted upon

203 Non-Authoritative - meta-information set is not exact set as available

from the origin server but collected from a local or a third-party copy.

204 No Content - no content to send for this request

205 Reset

206 Partial

207 Multi-Status (WebDAV) - conveys information

about multiple resources

208 Multi-Status (WebDAV)

226 IM Used (HTTP Delta encoding)

3xx Redirection

300 Multiple Choice

301 Moved Permanently - URI of the requested

resource has been changed permanently

302 Found - has been changed temporarily

303 See Other - direct the client to get the requested

resource at another URI with a GET request.

304 Not Modified - has not been modified, so

the client can use cached version

305 Use Proxy - deprecated

306 unused - deprecated

307 Temporary - direct the client to get resource at

another URI with same method that was used in the prior request

308 Permanent - resource is now permanently located at

another URI, specified by the Location: HTTP Response header

4xx Client errors

400 Bad Request - server could not understand the request due to invalid syntax

401 Unauthorized - Asemantically this response means "unauthenticated"

402 Payment Required - This response code is reserved for future use

403 Forbidden - does not have access rights to the content,

unlike 401, the client's identity is known to the server.

404 Not Found - The server can not find requested resource.

405 Method Not Allowed - The request method is known

by the server but has been disabled and cannot be used

406 Not Acceptable

407 Proxy Authentication Required - This is similar to

401 but authentication is needed to be done by a proxy.

408 Request Timeout - sent on an idle connection by some servers

409 Conflict - conflicts with the current state of the server

410 Gone - content has been permanently deleted from server

411 Length Required - Content-Length header field is required

412 Precondition Failed

413 Payload Too Large - payload larger

than limits defined by server

414 URI Too Long - URI longer than server allows

415 Unsupported Media Type - The media format

is not supported by server

416 Requested Range Not Satisfiable

417 Expectation Failed

418 I'm a teapot - joke

421 Misdirected Request

422 Unprocessable Entity (WebDAV)

423 Locked (WebDAV)

424 Failed Dependency (WebDAV)

425 Too Early

426 Upgrade Required

428 Precondition Required

429 Too Many Requests - sent too

many requests ("rate limiting").

431 Request Header Fields Too Large

451 Unavailable For Legal Reasons

5xx Server errors

500 Internal Server Error - error

server doesn't know how to handle.

501 Not Implemented - The

request method is not supported

502 Bad Gateway

503 Service Unavailable - The server

is not ready to handle the request

504 Gateway Timeout - server is acting as

gateway and cannot get a response in time.

505 HTTP Version Not Supported

506 Variant Also Negotiates

507 Insufficient Storage

508 Loop Detected (WebDAV)

510 Not Extended

511 Network Authentication Required

-g or --global, it installs the package as global.

--production flag (or NODE\_ENV environment variable is "production"),

npm will not install modules listed in devDependencies

-P, --save-prod: Package will appear in your dependencies.

This is the default unless -D or -O are present.

-D, --save-dev: Package will appear in your devDependencies.

-O, --save-optional: Package will appear in your optionalDependencies.

--no-save: Prevents saving to dependencies.

Two aditional flags when saving packages to package.json:

-E, --save-exact: Saved dependencies will be configured with an exact

version rather than using npm’s default semver range operator.

-B, --save-bundle: Saved dependencies will also be added to

your bundleDependencies list.

GET - deve retornar apenas dados.

HEAD - GET sem conter o corpo da resposta.

POST - submeter uma entidade a um recurso específico, causando

mudança de estado do recurso ou efeitos colaterais no servidor.

PUT - substitui todas as atuais representações do recurso d

destino pela carga de dados da requisição.

DELETE - remove um recurso

CONNECT - faz túnel para servidor identificado pelo recurso.

OPTIONS - descrever as opções de comunicação com o recurso.

TRACE - executa um teste loop-back com o caminho para o recurso.

PATCH - aplica modificações parciais a recurso.