



Instituto Politécnico
de Viana do Castelo

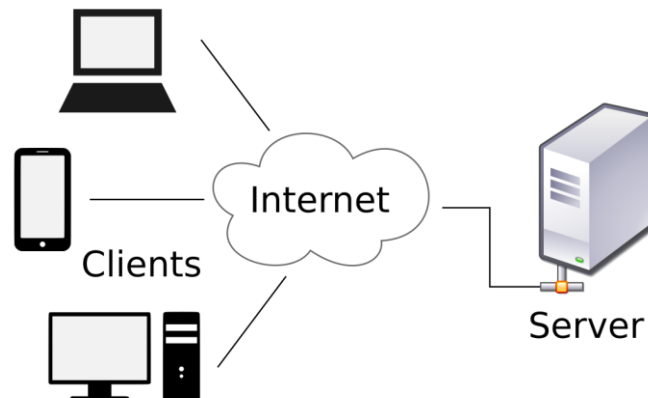
API - Intro

Aplicações Web



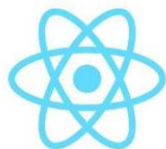
Programming / **web** development is divided into **two** major **domains**:

1. Development on the **client** side (front end);
2. **Server-side** development (back end).





ASP.NET

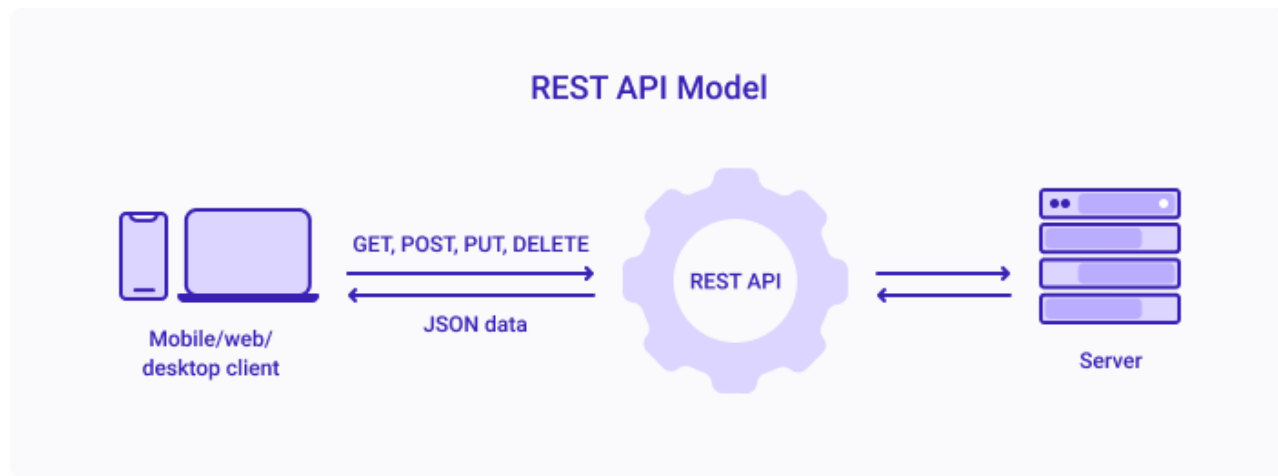


React



python™







An API, or **application programming interface**, is a set of rules that define how applications or devices can connect to and communicate with each other.



<https://www.ibm.com/topics/rest-apis>

Web development

HTTP Verbs



GET



PUT



POST



DELETE

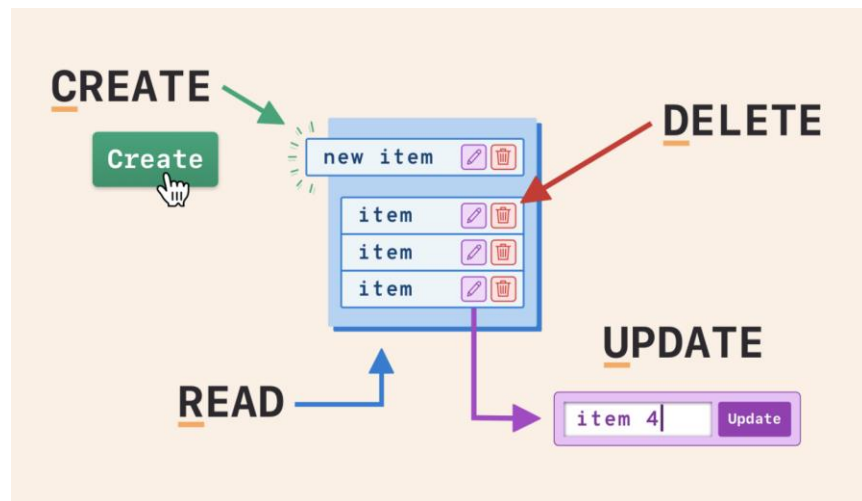


Web development

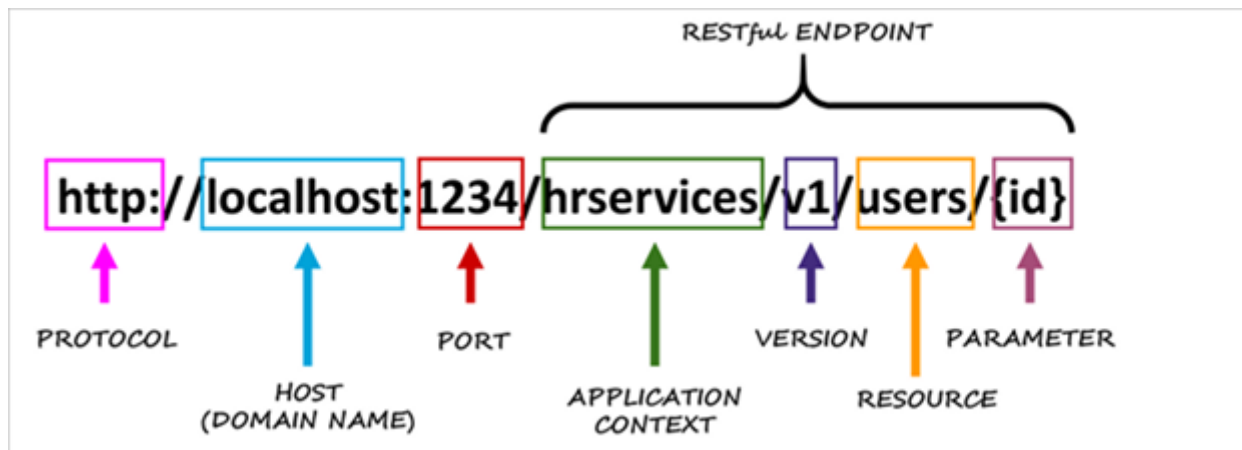
HTTP response status codes



<https://tracy.hashnode.dev/http-response-status-codes>

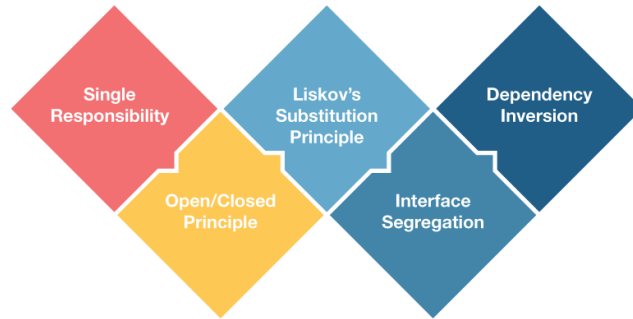


<https://tracy.hashnode.dev/http-response-status-codes>

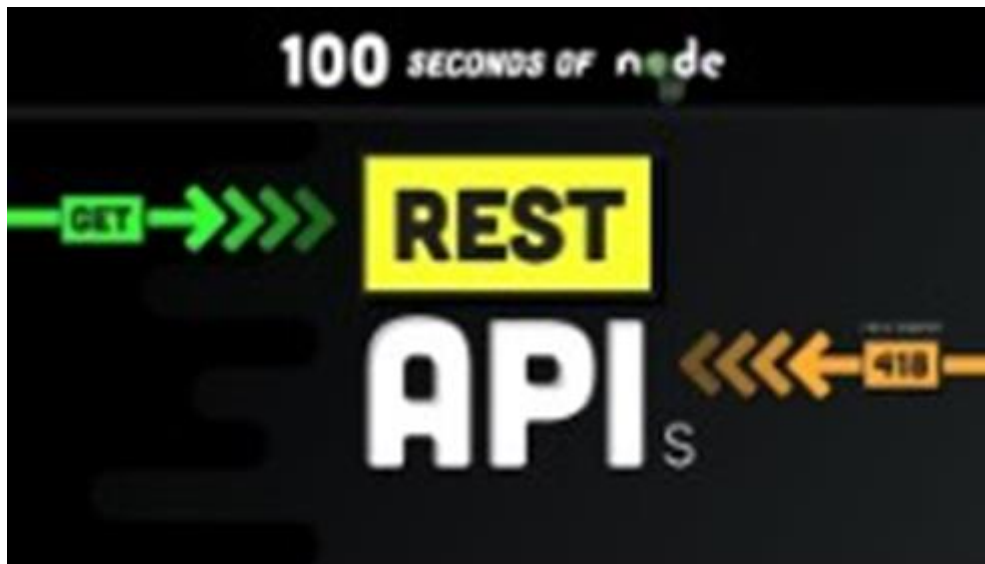


<https://developer.mozilla.org/pt-BR/docs/Web/HTTP/Methods>

S.O.L.I.D.



100 seconds of...





1. Criar conta no GitHub;
2. Criar um repositório – AW-P-EXEMPLO{{número-de-aluno}};
3. Instalar GitHub desktop e mapear o repositório;
4. Instalar node;
 1. <https://nodejs.org/en>
5. Instalar Postman;
 1. <https://www.postman.com/>
6. Abrir projeto mapeado com o VSCode;

1. Abrir terminal e executar `npm init`;
2. Preencher os dados pedidos;
3. Executar:
 1. `npm install express nodemon cors dotenv morgan --save`
4. Criar ficheiro `.env` na raiz do projeto.
`SERVER_HOST=localhost`
`SERVER_PORT=4242`

```
() package.json U X
() package.json > ...
1  {
2    "name": "aw-p-exemplo-1778",
3    "version": "1.0.0",
4    "description": "Educational project",
5    "main": "index.js",
6    "scripts": {
7      "test": "echo \\Error: no test specified\\ && exit 1"
8    },
9    "author": "Marcelo",
10   "license": "ISC"
11  }
12

PROBLEMS  OUTPUT  TERMINAL  PORTS  DEBUG CONSOLE
• PS C:\Users\35196\Desktop\ESTG IPVC\Aulas 23-24\1º Semestre\Aplicações Web\Exemplo - Prática\AW-P-EXEMPLO-1778> npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See 'npm help init' for definitive documentation on these fields
and exactly what they do.

Use 'npm install <pkg>' afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
package name: (aw-p-exemplo-1778) aw-p-exemplo-1778
version: (1.0.0) 1.0.0
description: Educational project
entry point: (index.js)
test command:
git repository:
keywords:
author: Marcelo
license: (ISC) ISC
About to write to C:\Users\35196\Desktop\ESTG IPVC\Aulas 23-24\1º Semestre\Aplicações Web\Exemplo - Prática\AW-P-EXEMPLO-1778\package.json:

{
  "name": "aw-p-exemplo-1778",
  "version": "1.0.0",
  "description": "Educational project",
  "main": "index.js",
  "scripts": {
    "test": "echo \\Error: no test specified\\ && exit 1"
  },
  "author": "Marcelo",
  "license": "ISC"
}
```

1. Criar ficheiro na raiz do projeto server.js

1. Alterar no package.json "main": "server.js"

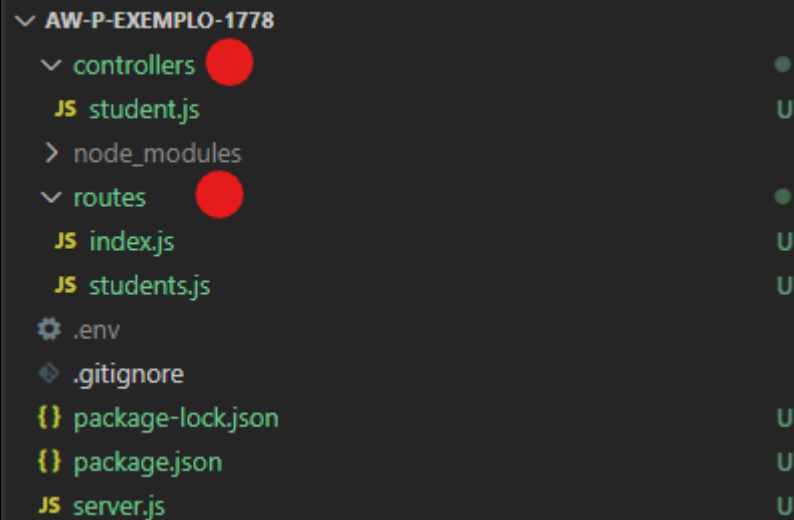
2. Adicionar script no package.json:

1. "start": "node server.js"

3. Alterar ficheiro server.js:

```
JS server.js > ...
1  require('dotenv').config();
2
3  const bodyParser = require('body-parser');
4  const cors = require('cors');
5  const express = require('express');
6
7  const router = require('./routes/index.js');
8
9  const app = express();
10 app.use(bodyParser.json());
11 app.use(cors());
12
13 app.use('/api/', router);
14
15 const port = process.env.SERVER_PORT || 8080;
16 app.listen(port, () => {
17   console.log('Express server listening on port', port)
18 });
19
```

1. Criar a estrutura de pastas e ficheiros



The screenshot shows a file explorer interface for a project named 'AW-P-EXEMPLO-1778'. The project is expanded, revealing a folder structure and several files. The 'controllers' and 'routes' folders are highlighted with red circles. The 'node_modules' folder is collapsed. The files listed are 'student.js', 'index.js', 'students.js', '.env', '.gitignore', 'package-lock.json', 'package.json', and 'server.js'. Each file has a status icon on the right: a green dot for folders, a 'U' for files, and a gear icon for '.env'.

- ▼ AW-P-EXEMPLO-1778
 - ▼ controllers ●
 - JS student.js U
 - > node_modules
 - ▼ routes ●
 - JS index.js U
 - JS students.js U
 - ⚙ .env
 - 📄 .gitignore
 - { } package-lock.json U
 - { } package.json U
 - JS server.js U

1. Routes

1. Index.js
2. Students.js

JS index.js U X

routes > JS index.js > ...

```
1 const router = require('express').Router();
2 const studentRouter = require('./students');
3
4 router.use('/students', studentRouter);
5
6 module.exports = router;
```

JS students.js U X

routes > JS students.js > ...

```
1 const studentRouter = require('express').Router();
2 const controller = require('../controllers/student');
3
4 studentRouter.get('/', controller.getAll);
5 studentRouter.get('/:id', controller.getById);
6 studentRouter.post('/create', controller.create);
7 studentRouter.put('/update', controller.update);
8 studentRouter.delete('/delete', controller.delete);
9
10 module.exports = studentRouter;
```




1. Controllers

1. Student.js

```
JS student.js U X
controllers > JS student.js > getAll
1 exports.getAll = async (req, res) => {
2   return res.send("ok");
3 }
4
5 exports.getById = async (req, res) => {
6   const id = req.params.id;
7
8   res.send(id);
9 }
10
11 exports.create = async (req, res) => {
12   const {name, city, age} = req.body;
13
14   return res.send({name, city, age});
15 }
16
17 exports.update = async (req, res) => {
18   const {name, city, age} = req.body;
19
20   return res.send({name, city, age});
21 }
22
23 exports.delete = async (req, res) => {
24   const id = req.body.id;
25   return res.send(id);
26 }
```



1. Executar no terminal npm start;
2. Testar no postman;
3. Push para o Git;

▼ AW-P-EXEMPLO-1778

GET GET: api/students

GET GET: api/students/:id

POST POST: api/students/create

PUT PUT: api/students/update

DEL DELETE: api/students/delete



[https://github.com/marcelowolfsmartindustries
/AW-P-EXEMPLO-1778](https://github.com/marcelowolfsmartindustries/AW-P-EXEMPLO-1778)

o teu • de partida



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