



# fast-check

Property-based testing

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## ¿Qué es?

- Es una librería de js
- Se usa para probar nuestras aplicaciones
- Se basa en Property Based Testing
- Creador y principal programador Nicolas Dubien



## Property based testing

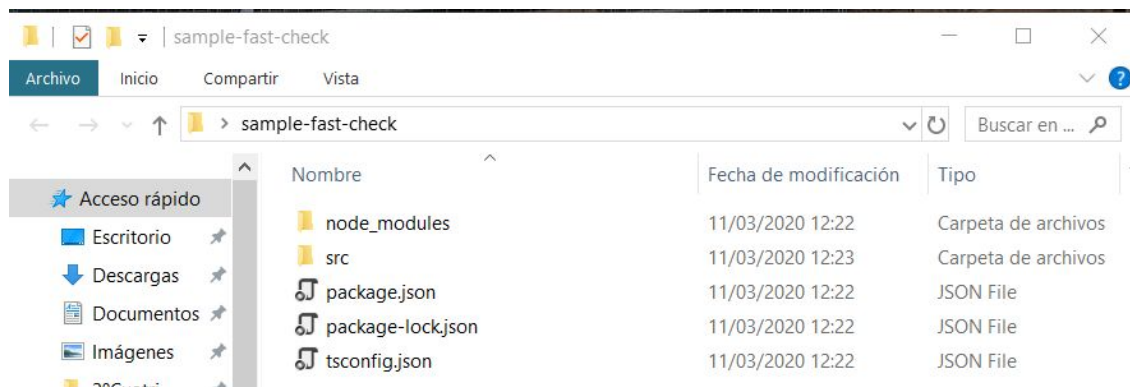
- La primera librería en usarlo fue QuickCheck
- Suple el problema de necesitar decenas de entradas para probar nuestro software
- Prueba el software a través de propiedades, entendiendo por propiedad una sentencia que siempre es cierta para unas condiciones particulares

```
17 test('should produce ordered array', () => {
18   fc.assert(
19     fc.property(fc.array(fc.integer()), data => {
20       const sorted = sort(data);
21       for (let idx = 1; idx < sorted.length; ++idx) {
22         expect(sorted[idx - 1]).toBeLessThanOrEqual(sorted[idx]);
23       }
24     })
25   );
26 });
```



# Instalación de Fast-Check

- Puedes instalar: `npm install typescript ts-node` y luego los marcos de prueba
- CodeSandBox



```
C:\Users\alber\Desktop\sample-fast-check (sample-fast-check@1.0.0)
λ npm install --save-dev jest ts-jest @types/jest
npm WARN deprecated request@2.88.2: request has been deprecated, see https://github.com/request/request/issues/3142
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@^2.1.2 (node_modules\jest-haste-map\node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.1.2: wanted {"os":"darwin","arch":
"any"} (current: {"os":"win32","arch":"x64"})
npm WARN sample-fast-check@1.0.0 No description
npm WARN sample-fast-check@1.0.0 No repository field.

+ @types/jest@25.1.4
+ jest@25.1.0
+ ts-jest@25.2.1
added 488 packages from 315 contributors and audited 1203902 packages in 124.542s

23 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

D:\Asignaturas\Tercero\2doSemestre\ASW\Seminario\sample-fast-check\package.json - Notepad++

Archivo Editar Buscar Vista Codificación Lenguaje Configuración Herramientas Macro Ejecutar Plugins Ventana ? X

sort.ts x sort.spec.ts x tsconfig.json x package.json x

```
1  {
2    "name": "sample-fast-check",
3    "version": "1.0.0",
4    "description": "",
5    "main": "index.js",
6    "scripts": {
7      "test": "jest"
8    },
9    "keywords": [],
10   "author": "",
11   "license": "ISC",
12   "dependencies": {
13     "ts-node": "^8.6.2",
14     "typescript": "^3.8.3"
15   },
16   "devDependencies": {
17     "@types/jest": "^25.1.4",
18     "fast-check": "^1.23.0",
19     "jest": "^25.1.0",
20     "ts-jest": "^25.2.1"
21   },
22   "jest": {
23     "moduleFileExtensions": [
24       "ts",
25       "tsx",
26       "js"
27     ],
28     "globals": {
29       "ts-jest": {
30         "tsConfig": "tsconfig.json"
31       }
32     },
33     "transform": {
34       "^.+\\.?(ts|tsx)$": "ts-jest"
35     },
36     "testMatch": [
37       "**/specs/*.+(ts|tsx|js)"
38     ]
39   }
40 }
41
```

JSON length : 699 lines : 41 Ln : 21 Col : 5 Sel : 0 | 0 Unix (LF) UTF-8 INS

C:\Windows\System32\cmd.exe

Microsoft Windows [Versión 10.0.18363.657]  
(c) 2019 Microsoft Corporation. Todos los derechos reservados.

D:\Asignaturas\Tercero\2doSemestre\ASW\Seminario\sample-fast-check>npm run test

```
> sample-fast-check@1.0.0 test D:\Asignaturas\Tercero\2doSemestre\ASW\Seminario\sample-fast-check
> jest

PASS specs/sort.spec.ts
  ✓ should contain the same items (64ms)
  ✓ should produce ordered array (29ms)

Test Suites: 1 passed, 1 total
Tests: 2 passed, 2 total
Snapshots: 0 total
Time: 1.826s, estimated 3s
Ran all test suites.

D:\Asignaturas\Tercero\2doSemestre\ASW\Seminario\sample-fast-check>
```



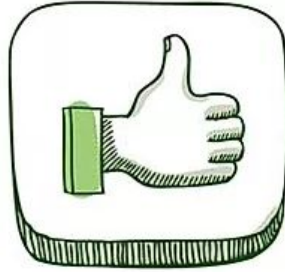
# Atributos de calidad

- Extensible
  - Derivable
  - Enlazar salida/entrada
  - Filtrar entradas
- Inteligente
  - Sesgado, valores
- Único
  - Modelos-->Propiedades
  - Condiciones de carrera
- Tipado
  - Actualizado-->TypeScript
- Depuración
  - Modo detallado
  - Contraejemplo
  - Personalizados
  - Registros





**Pero, ¿cuáles son las ventajas y desventajas en nuestro proyecto?**



- Genera pruebas automáticas
- Prueba de muchos casos

- Aprender la tecnología
- Adaptar al proyecto

# Stakeholders

- Nicolas Dubien



# Aspectos del Desarrollo

El proyecto está entero en github

dubzzz / fast-check

Used by 405Watch 18★ Star 1.2kFork 53

<> Code

Issues 30

Pull requests 4

Actions

Projects 0

Wiki

Security

Insights

Property based testing framework for JavaScript (like QuickCheck) written in TypeScript

property-based-testing

quickcheck

typescript

testing

generative-testing

unit-testing

tdd

fuzzing

1,057 commits

13 branches

0 packages

81 releases

19 contributors

MIT

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download

dubzzz Update Travis CI Url

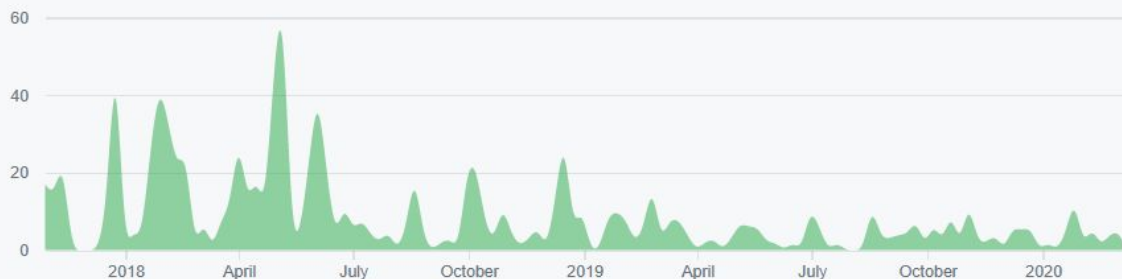
Latest commit c3cd886 8 days ago

<a href="#">.codesandbox</a>	Add metadata on the generated sources (#526) (#540)	2 months ago
<a href="#">.github</a>	Create Idea.md	7 months ago
<a href="#">documentation</a>	Add ability to generate objects without prototype (#552)	28 days ago
<a href="#">example</a>	Add example based on decomposition in prime numbers (#557)	16 days ago
<a href="#">logo</a>	Polish logo (#353)	10 months ago
<a href="#">perf</a>	Migrate from tslint to eslint (#440)	5 months ago
<a href="#">postbuild</a>	Add metadata on the generated sources (#526) (#540)	2 months ago
<a href="#">prebuild</a>	Remove unneeded `@param` jsdoc annotations for tuple and property (#495)	3 months ago
<a href="#">src</a>	Better typings for oneof and frequency (#556)	8 days ago

Contributions to master, excluding merge commits

# Aspectos del Desarrollo

- En desarrollo constante
- Un desarrollador principal
- Varios contribuyentes

**dubzzz**

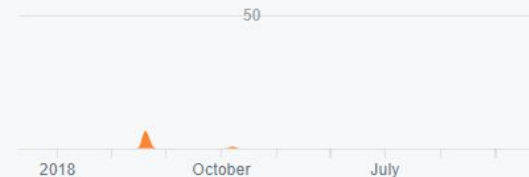
#1

1,019 commits 95,527 ++ 56,586 --

**hath995**

#2

14 commits 181 ++ 70 --

**willheslam**

#3

4 commits 6 ++ 6 --

**volrk**

#4

1 commit 77 ++ 0 --



# Aspectos del desarrollo

La comunidad tiene una serie de normas estándar a seguir

## Community profile

Here's how this project compares to [recommended community standards](#).

### Checklist

<div><div></div></div>	
✓ Description	
✓ <a href="#">README</a>	
● Code of conduct	<button>Propose</button>
✓ <a href="#">Contributing</a>	
✓ <a href="#">License</a>	
✓ Issue templates	
✓ <a href="#">Pull request template</a>	



# Aspectos del Desarrollo

Hay una plantilla para hacer pull requests

## Why is this PR for?

---

Describe the reason of this PR or give a link towards the associated issue.

## In a nutshell

---

✓/✗ New feature ✓/✗ Fix an issue ✓/✗ Documentation improvement ✓/✗ Other: *please explain*

(✓: yes, ✗: no)

## Potential impacts

---

If you expect some noticeable impacts with your change please explain.

Here are some examples of impacts that might be reported into this section:

- Generated values impact,
- Shrink values impact,
- Performance impact,
- Typings impact



# Define browser version to be esm build #521



dubzzz wants to merge 1 commit into `next-1_21_0` from `feat/next/browser-esm-build`



Conversation 2



Commits 1



Checks 0



Files changed 1



dubzzz commented on 27 Dec 2019

Owner



## Why is this PR for?

Define browser version to be esm build

Final aim: no more bundle.js required for jsdelivr and others

## In a nutshell

- ✗ New feature
- ✗ Fix an issue
- ✗ Documentation improvement
- ✓ Other: *config for jsdelivr and others*

(✓: yes, ✗: no)

## Potential impacts

Default JavaScript file served by jsdelivr should be the ES module one

See <https://www.jsdelivr.com/package/npm/fast-check>



# Aspectos del desarrollo

- Existen varias etiquetas a la hora de enviar issues
- No son demasiado frecuentes últimamente

30 Open ✓ 242 Closed		Author ▾	Label ▾	Projects ▾	Milestones ▾	Assignee ▾	Sort ▾
🔔	Add arbitrary.reject(predicate)	#560 opened 11 days ago by sluukkonen					
🔔	Mark fc.pre as assert function in TS	#558 opened 16 days ago by dubzzz	✓ Feature Accepted	🚀 Feature Request			
🔔	Feedback on `oneof`	#546 opened on 1 Feb by gcantl	✓ Feature Accepted	🚀 Feature Request			💬 2
🔔	Add troubleshooting page	#513 opened on 26 Dec 2019 by dubzzz	💡 Idea				
🔔	Add fc.assertProperty function	#500 opened on 12 Dec 2019 by ethanresnick		🚀 Feature Request			💬 2
🔔	Helper to deal with dangerous strings		✓ Feature Accepted	🚀 Feature Request			💬 2

✓ Bug Confirmed

🧑 Bug Report

✗ Can't Reproduce

duplicate

✓ Feature Accepted

✗ Feature Rejected

🚀 Feature Request

first-timers-only

good first issue

help wanted

💡 Idea

🔥 Next Major

💬 Question

🔥 Regression Report



# Aspectos del Desarrollo

Se puede contribuir al proyecto de varias maneras

## How Can I Contribute?

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### Asking questions

Before asking questions, please double-check you can not find your answer in one of the examples provided or in the documentation of the project:

- [Documentation](#)
- [Examples provided inside the project](#)
- [Examples of properties](#)
- [Example: fuzzing a REST API](#)

If nothing answered your question, please do not hesitate to [create a new issue in GitHub](#).

### Reporting bugs

You should report bugs using [create a new issue in GitHub](#).



# Aspectos del Desarrollo

## Update your PR

If you plan to update your PR with either a fix for the tests or change following code reviews please directly commit your new commit in your branch, PR will get updated automatically.

Before your fix:

```
--*---> master      on dubzzz/fast-check
      \
      #1  branch-pr on your fork
```

After your fix:

```
--*--->      master      on dubzzz/fast-check
      \
      #1 --- #2  branch-pr on your fork
```

## Resync PR with master

Ideally to resync your branch with master prefer a merge of master branch into your PR branch. It has the advantage to preserves the commit history on GitHub PR (contrary to rebase and force push).

## Examples