



4TO. CONGRESO INTERNACIONAL

SEGURIDAD INFORMÁTICA

28 - 30 de Noviembre - La Paz, Bolivia

Extracción de código fuente de las más populares bibliotecas y frameworks

Drayko Escobar



Whoami

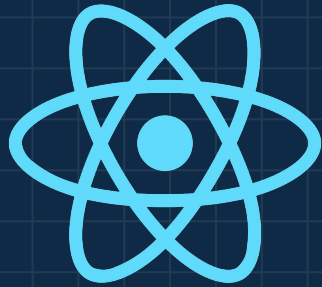
- Especialista en Web Security Testing y Pentesting
- Lider de pruebas de seguridad
- Estudiante perpetuo
- Varios premios/reconocimientos en seguridad
- Speaker, Mentor & Trainer
- In love with Linux <3



@DraykoEs

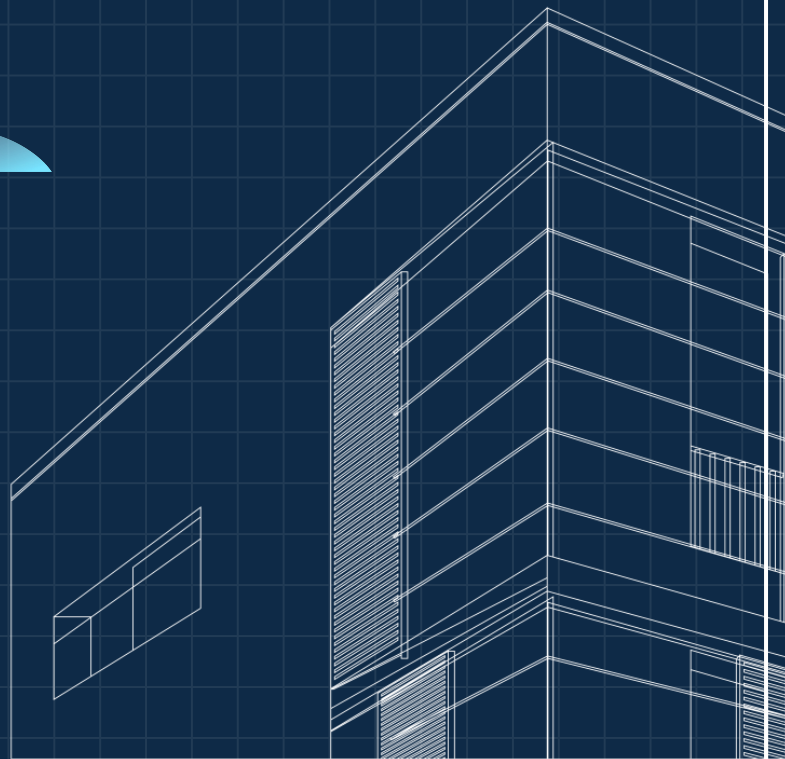
<https://drayko.github.io>

¿Qué frameworks y bibliotecas?



01

¿Cómo trabaja un
framework?



5 W's de las bibliotecas y frameworks

What?

Código que nos ayuda a hacer código para la Web. Más fácilmente.

How?

When?

Where?

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How?

Transforma el código en código nativo y/o mejorado, minificado.

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Where?

Everywhere.

Why?

Why?

Alguna vez intentaron debuggear el código de alguno de estos frameworks o librerías?

```

~ ➤ cat scripts/urls/06e5040e9b98a88eb453.js
(window.webpackJsonp=window.webpackJsonp||[]).push([[25],[396:function(e,t,r){var content=r(398);"string"
==typeof content&&(content=[[e.i,content,""]]),content.locals&&(e.exports=content.locals);(0,r(5).default
)("18bbf893",content,!0,{sourceMap:!1}),397:function(e,t,r){"use strict";var o=r(396);r.n(o).a,398:func
tion(e,t,r){(e.exports=r(4)(!1)).push([e.i,".preguntas{list-style:none;margin:0;padding:0}.preguntas input
{position:absolute;opacity:0;z-index:-1}.preguntas input:checked+.preguntas-titulo .el-icon-arrow-right{
transition:all .35s ease;transform:rotate(90deg)}.preguntas input:checked~.preguntas-respuesta{max-height
:100vh;padding:15px 20px}.preguntas>li{border-top:1px solid #f0f0f0;padding:10px 15px;position:relative}.
preguntas>li:first-child{border:none}.preguntas .el-icon-arrow-right{position:absolute;top:13px;right:15p
x;font-size:1.2rem;transition:all .35s ease}.preguntas .preguntas-titulo{margin:0;cursor:pointer;color:#0
}
Terminal - crhyst@berserker: ~
~ ➤ js-beautify scripts/urls/06e5040e9b98a88eb453.js
(window.webpackJsonp = window.webpackJsonp || []).push([
  [25], {
    396: function(e, t, r) {
      var content = r(398);
      "string" == typeof content && (content = [
        [e.i, content, ""]
      ]), content.locals && (e.exports = content.locals);
      (0, r(5).default)("18bbf893", content, !0, {
        sourceMap: !1
      })
    },
    397: function(e, t, r) {
      "use strict";
      var o = r(396);
      r.n(o).a
    },
    398: function(e, t, r) {
      (e.exports = r(4)(!1)).push([e.i, ".preguntas{list-style:none;margin:0;padding:0}.preguntas i
nput{position:absolute;opacity:0;z-index:-1}.preguntas input:checked+.preguntas-titulo .el-icon-arrow-rig
ht{transition:all .35s ease;transform:rotate(90deg)}.preguntas input:checked~.preguntas-respuesta{max-hei
ght:100vh;padding:15px 20px}.preguntas>li{border-top:1px solid #f0f0f0;padding:10px 15px;position:relativ
e}.preguntas>li:first-child{border:none}.preguntas .el-icon-arrow-right{position:absolute;top:13px;right:

```

Terminal - crhyst@berserker: -

```
~ > cat scripts/urls/06e5040e9b98a88eb453.  
(window.webpackJsonp=window.webpackJsonp||  
==typeof content&&(content=[[e.i,content,"  
)("18bbf893",content,!0,{sourceMap:!1}}],3  
tion(e,t,r){(e.exports=r(4)(!1)).push([e.i  
t{position:absolute;opacity:0;z-index:-1}.  
rotate  
>li{b  
e}.  
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acks  
tent &&  
e.expor  
of893",  
1.n(0).d  
},  
398: function(e, t, r) {  
    (e.exports = r(4)(!1)).push([e  
nput{position:absolute;opacity:0;z-index:-  
ht{transition:all .35s ease;transform:rota  
ght:100vh;padding:15px 20px}.preguntas>li{  
e}.preguntas>li:first-child{border:none}.p
```

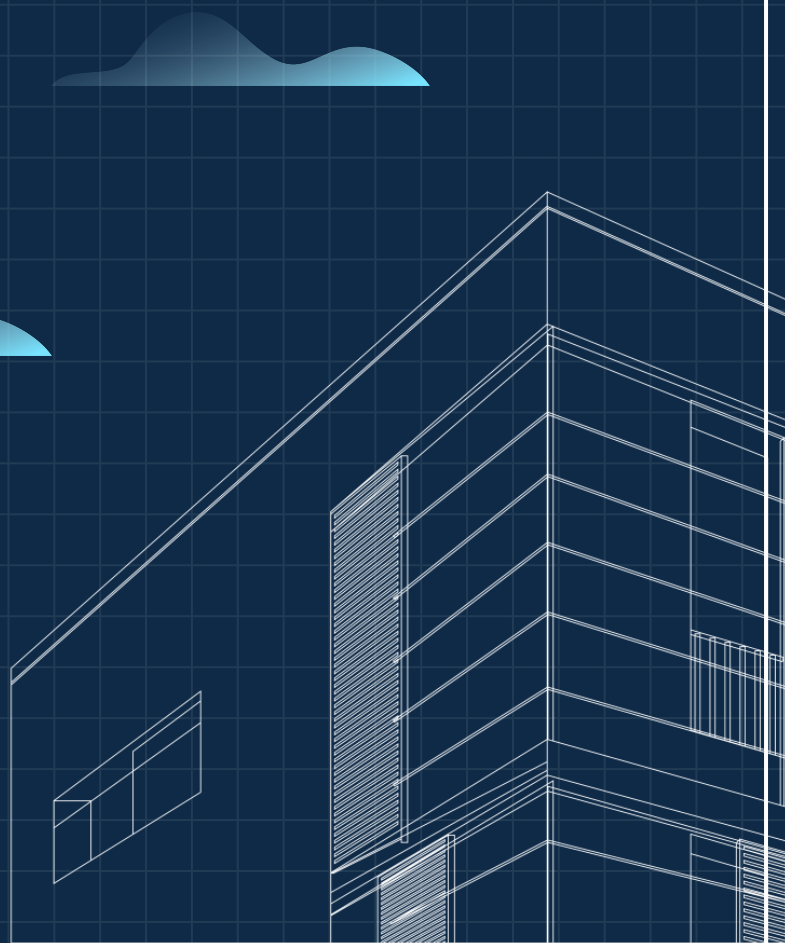


¡ES HORRIBLE!

¡ME ENCANTA!

02

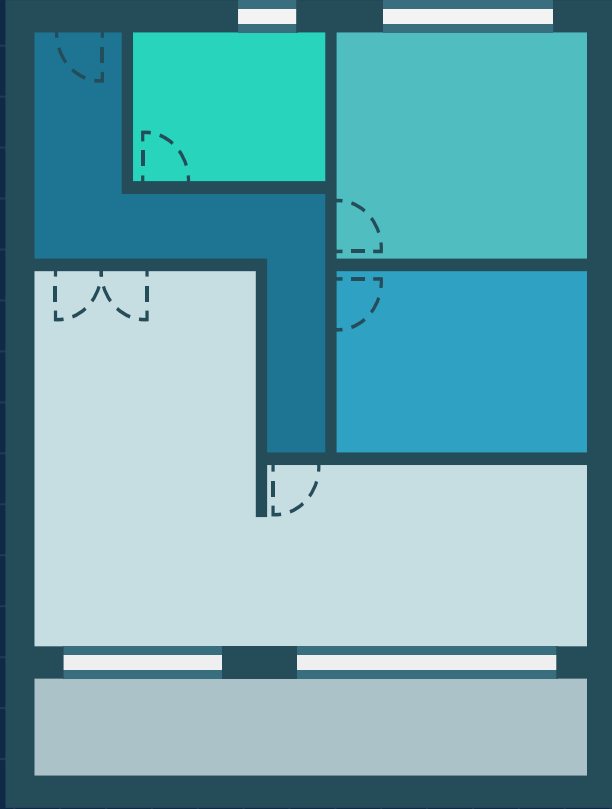
En busca del mapa





Un Mapa

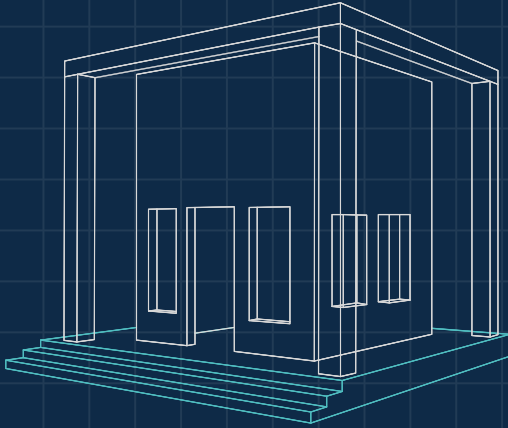
Del tesoro!



Un Mapa del código

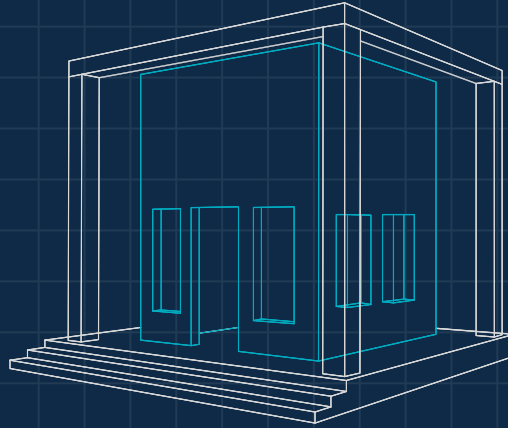
SourceMap, es un mapa de su estructura. Ideal para que el navegador reconstruya la fuente original y presente el original reconstruido en el debugger.

Source Maps



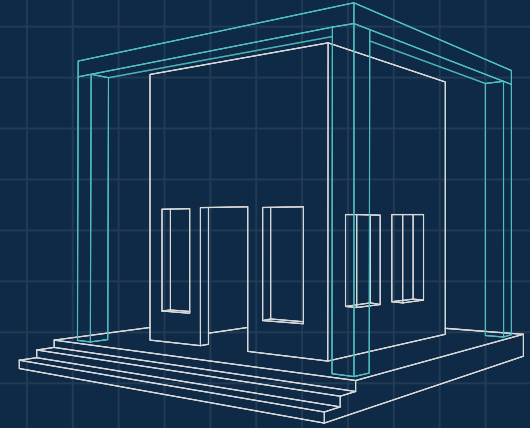
Minificado

Para reducir tiempos de carga



Estructura original

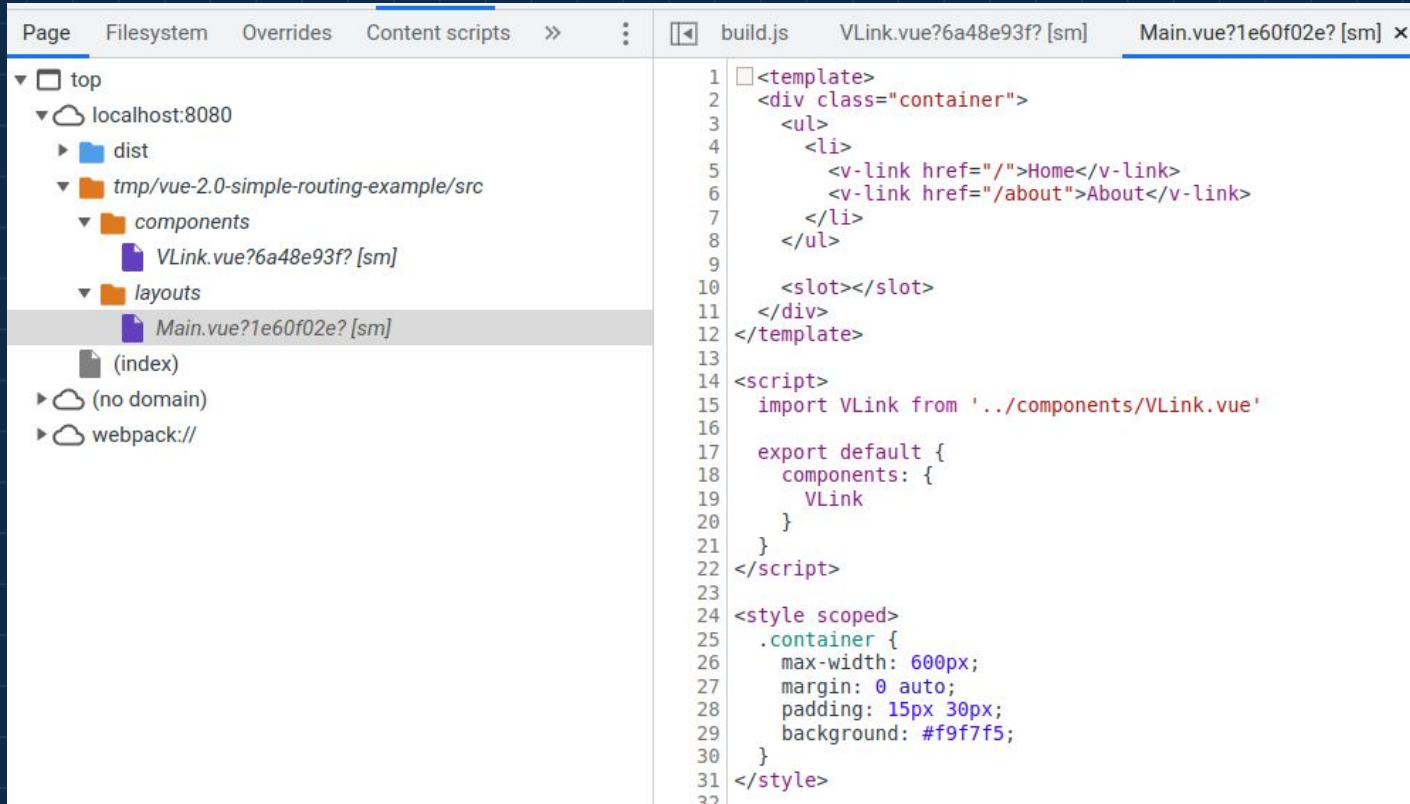
Código original de la biblioteca o framework



Ideal para debuggear

Se pueden realizar breakpoints durante la ejecución durante su **desarrollo**

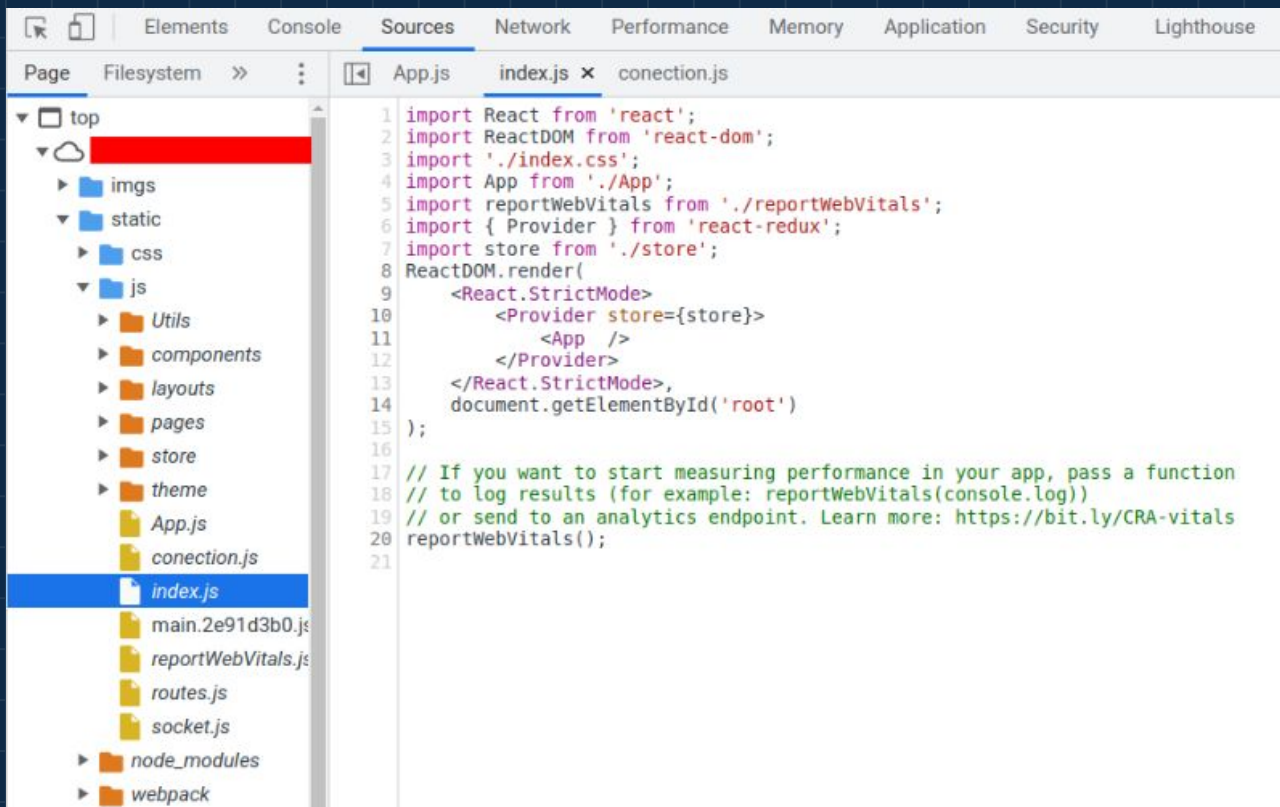
Como se ve?



```
1 <template>
2   <div class="container">
3     <ul>
4       <li>
5         <v-link href="/">Home</v-link>
6         <v-link href="/about">About</v-link>
7       </li>
8     </ul>
9
10    <slot></slot>
11  </div>
12 </template>
13
14 <script>
15   import VLink from '../components/VLink.vue'
16
17   export default {
18     components: {
19       VLink
20     }
21   }
22 </script>
23
24 <style scoped>
25   .container {
26     max-width: 600px;
27     margin: 0 auto;
28     padding: 15px 30px;
29     background: #f9f7f5;
30   }
31 </style>
32
```

Lo que pasa en el mundo real...

Como se ve?





La vida es bella...



Pero puede ser mejor

sourcemappper

<https://github.com/denandz/sourcemappper>

EXPLORER

...

JS index.js U X

v OPEN EDITORS

X JS index.js be U

v BE-WEB



v be

●

> .vscode

●

> components

●

> layouts

●

> node_modules

●

> packages

●

> pages

●

> store

●

> theme

●

> Utils

●

> webpack

●

JS App.js U

JS conection.js U

JS index.js U

JS reportWebVita... U

JS routes.js U

JS socket.js U

> be-css ●

≡ admData.txt U

≡ data.txt U

be > JS index.js

```
1  import React from 'react';
2  import ReactDOM from 'react-dom';
3  import './index.css';
4  import App from './App';
5  import reportWebVitals from './reportWebVitals';
6  import { Provider } from 'react-redux';
7  import store from './store';
8  ReactDOM.render(
9    <React.StrictMode>
10     <Provider store={store}>
11       <App />
12     </Provider>
13   </React.StrictMode>,
14   document.getElementById('root')
15 );
16
```

Pero no siempre se añaden..

Page Filesystem Overrides >> styles.8ea254fc16cf22e2.css light-theme.css main.e9e3a32d7af34bbb.js x >>

top

angular.io

assets/images/logos/angular

angular.svg

angular_whiteTransparent_withMargin.png

shield-large.svg

generated/images/marketing/home

joyful-development.svg

responsive-framework.svg

speed-performance.svg

(index)

main.e9e3a32d7af34bbb.js

polyfills.ed08fdac4b920dd0.js

runtime.ff3f4aafe985435c.js

src_app_custom-elements_announcement-bar_ann

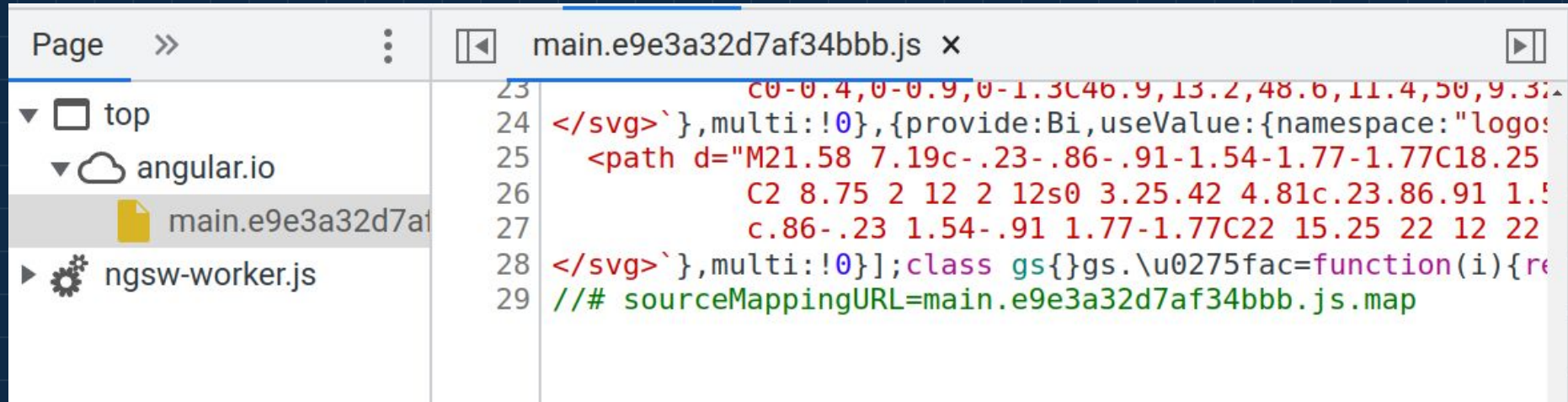
light-theme.css

styles.8ea254fc16cf22e2.css

pwa-manifest.json

```
1 "use strict";(self.webpackChunksite=self.webpackChunksite||[]).push([[{"main":{5733:(Me,W,g)=>{g
2 <path d="M19 6.41L17.59 5 12 10.59 6.41 5 5 6.41 10.59 12 5 17.59 6.41 19 12 13.41 17.59 19 19
3 <path d="M0 0h24v24H0z" fill="none" />
4 </svg>`},{multi:!0},{provide:Bi,useValue:{name:"insert_comment",svgSource:ti.YP`<svg focusable="f
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8 <path d="M8.59 16.34l4.58-4.58-4.58-4.59L10 5.75l6 6-6 6z" />
9 </svg>`},{multi:!0},{provide:Bi,useValue:{name:"menu",svgSource:ti.YP`<svg focusable="false" view
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11 </svg>`},{multi:!0},{provide:Bi,useValue:{namespace:"logos",name:"github",svgSource:ti.YP`<svg fo
12 <path d="M25.9,0.2C11.8,0.2,0.3,11.7,0.3,25.8c0,11.3,7.3,20.9,17.5,24.3c1.3,0.2,1.7-0.6,1.7-1.
13 c-7.1,1.5-8.6-3-8.6-3c-1.2-3-2.8-3.7-2.8-3.7c-2.3-1.6,0.2-1.6,0.2-1.6c2.6,0.2,3.9,2.6
14 c0.2-1.7,0.9-2.8,1.6-3.4c-5.7-0.6-11.7-2.8-11.7-2.8c0-2.8,1-5.1,2.6-6.9c-0.3-0.7-1.1
15 c2-0.6,4.2-0.9,6.4-0.9c2.2,0,4.4,0.3,6.4,0.9c4.9-3.3,7-2.6,7-2.6c1.4,3.5,0.5,6.1,0.3,
16 c0,9.8-6,12-11.7,12.6c0.9,0.8,1.7,2.4,1.7,4.7c0,3.4,0,6.2,0,7c0,0.7,0.5,1.5,1.8,1.2c1
17 C51.5,11.7,40.1,0.2,25.9,0.2z" />
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21 C5,20,3.4,19.6,2,18.8c0,0,0,0.1,0,0.1c0,5,3.5,9.1,8.2,10.1c-0.9,0.2-1.8,0.4-2.7,0.4c-
22 c1.3,4.1,5.1,7.9,6.7,11.3c5.2,8-7.9,4.4-12.7,4.4c-0.8,0-1.6,0-2.4-0.1c4.5,2.9,9.9,4.6
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26 C2 8.75 2 12 2 12s0 3.25.42 4.81c.23.86.91 1.54 1.77 1.77C5.75 19 12 19 12 19s6.25 0
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38 </svg>`},{multi:!0},{provide:Bi,useValue:{namespace:"logos",name:"whatsapp",svgSource:ti.YP`<svg f
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68 </svg>`},{multi:!0},{provide:Bi,useValue:{namespace:"logos",name:"vimeo",svgSource:ti.YP`<svg f
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70 </svg>`},{multi:!0},{provide:Bi,useValue:{namespace:"logos",name:"vimeo",svgSource:ti.YP`<svg f
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Sin embargo...



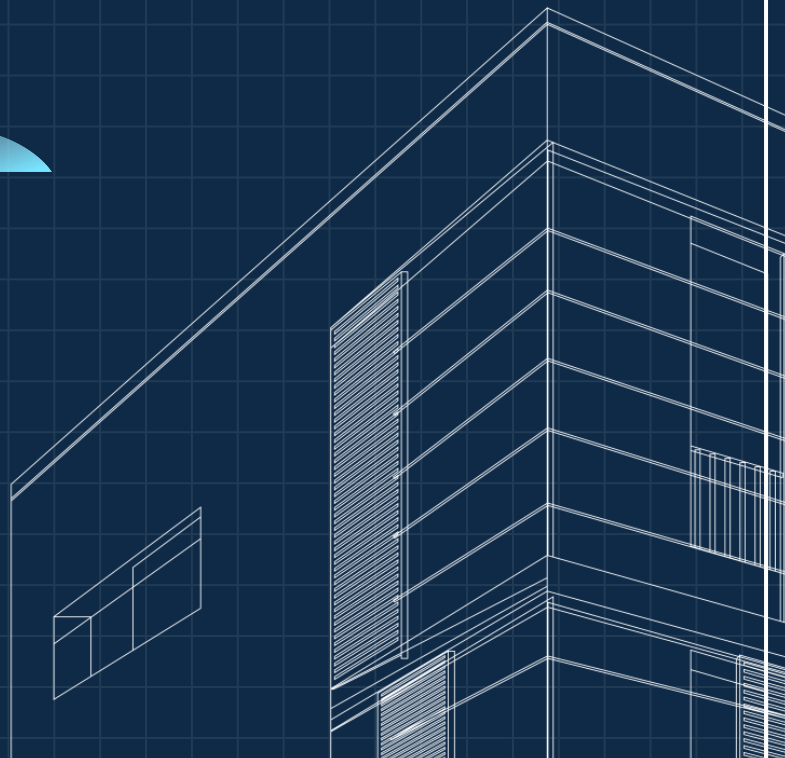
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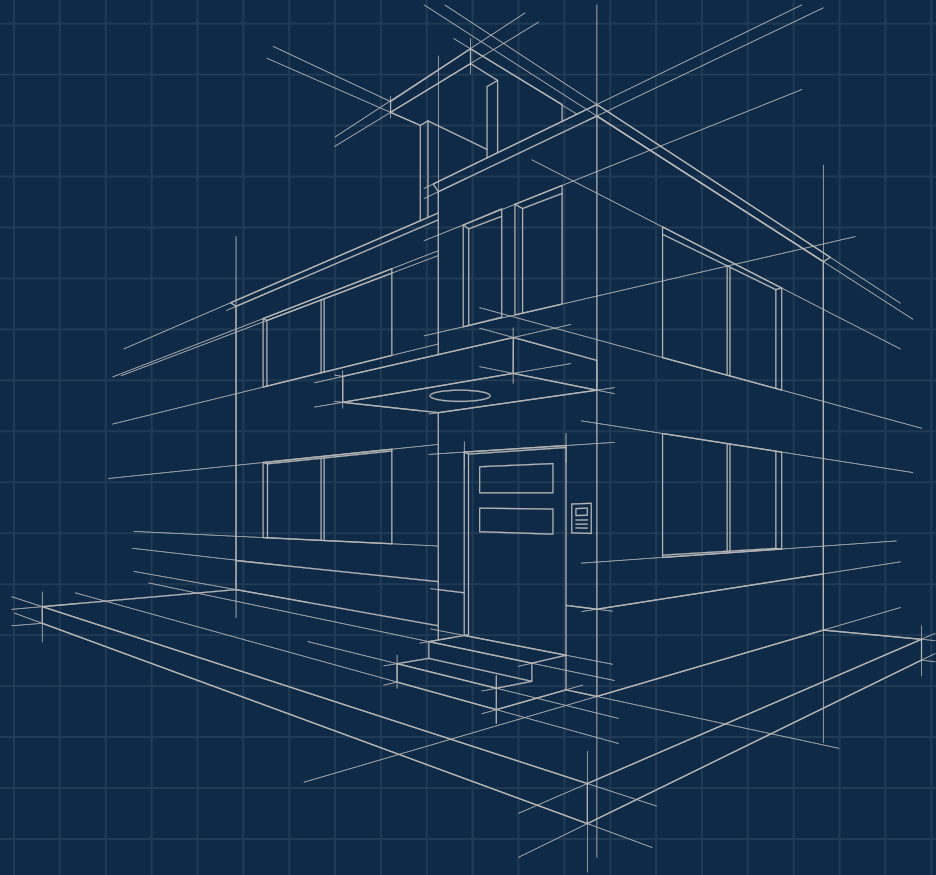
03

Y ahora qué?



OWASP Top 10

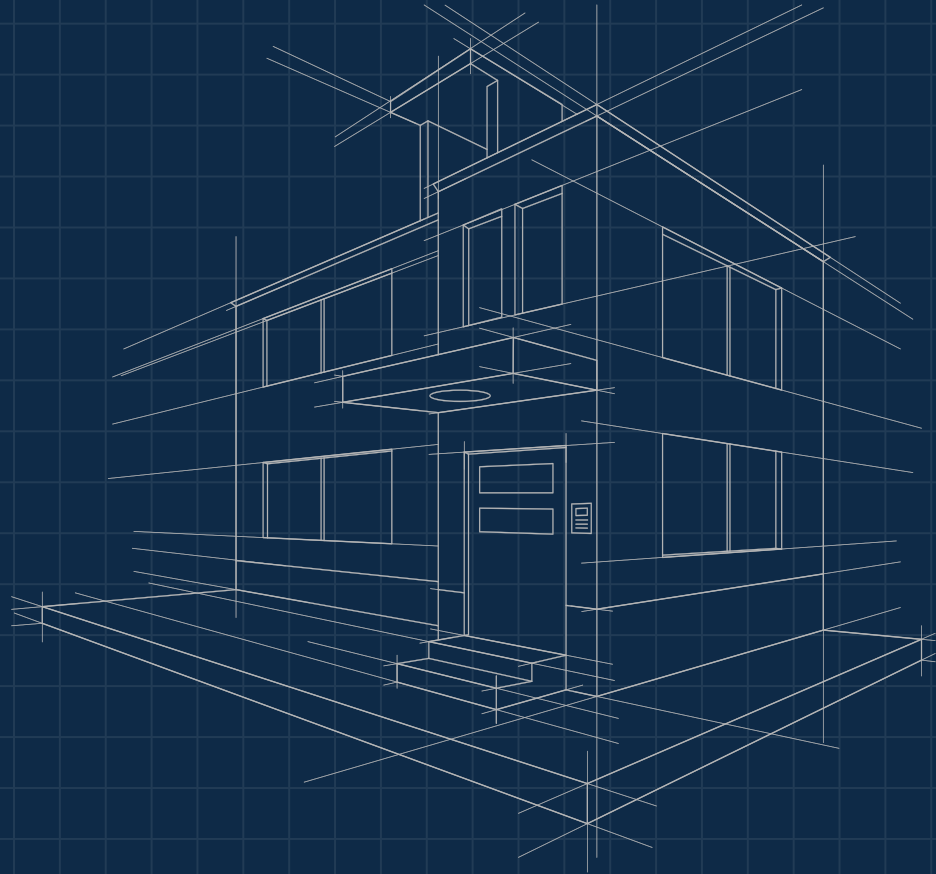
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OWASP Top 10

A01:2021 - Pérdida de Control de Acceso

A03:2021 - Inyección

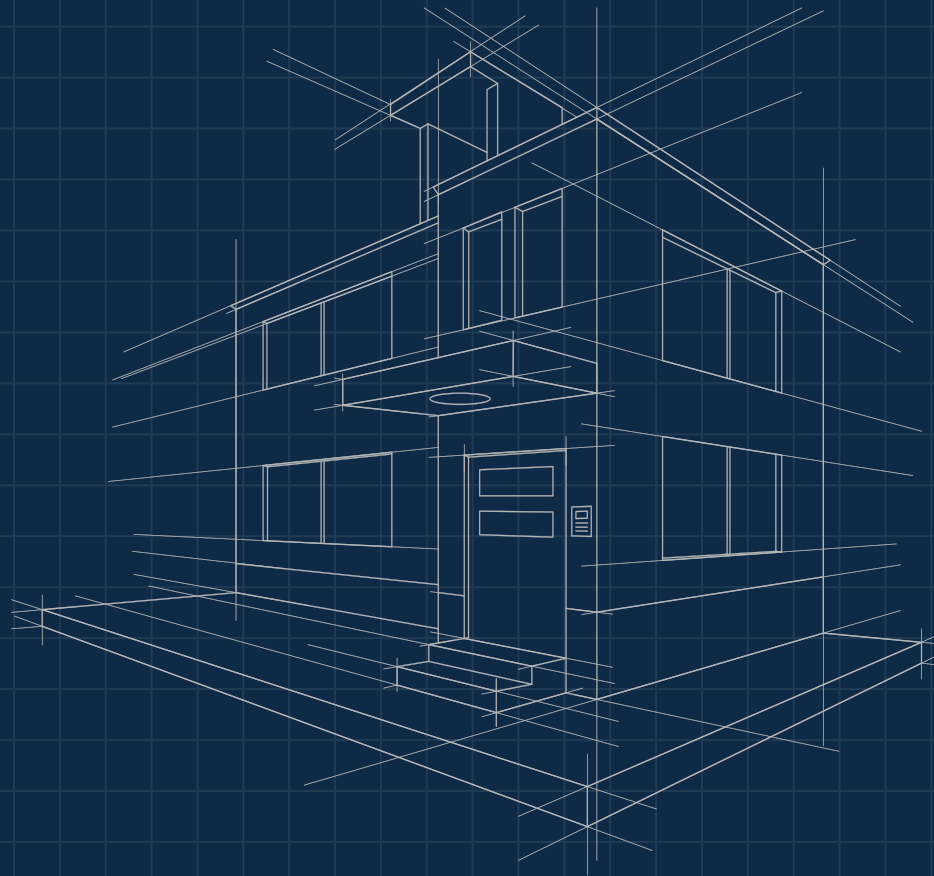


OWASP Top 10

A01:2021 - Pérdida de Control de Acceso

A03:2021 - Inyección

A04:2021 - Diseño Inseguro



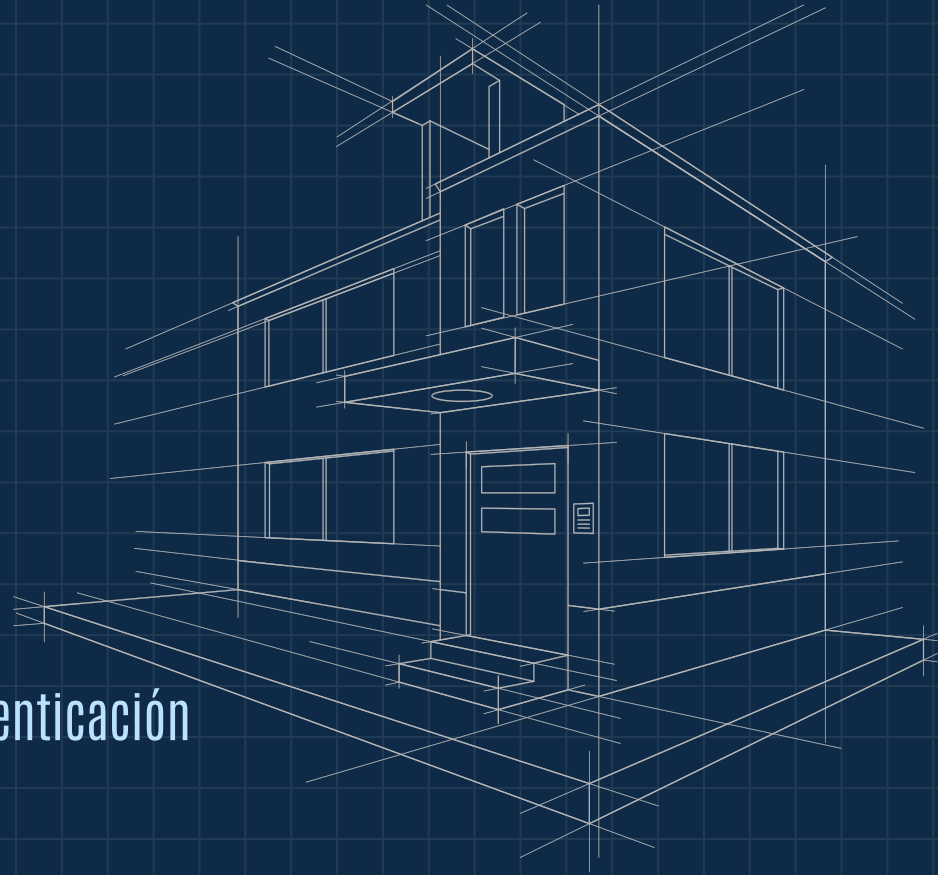
OWASP Top 10

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A03:2021 - Inyección

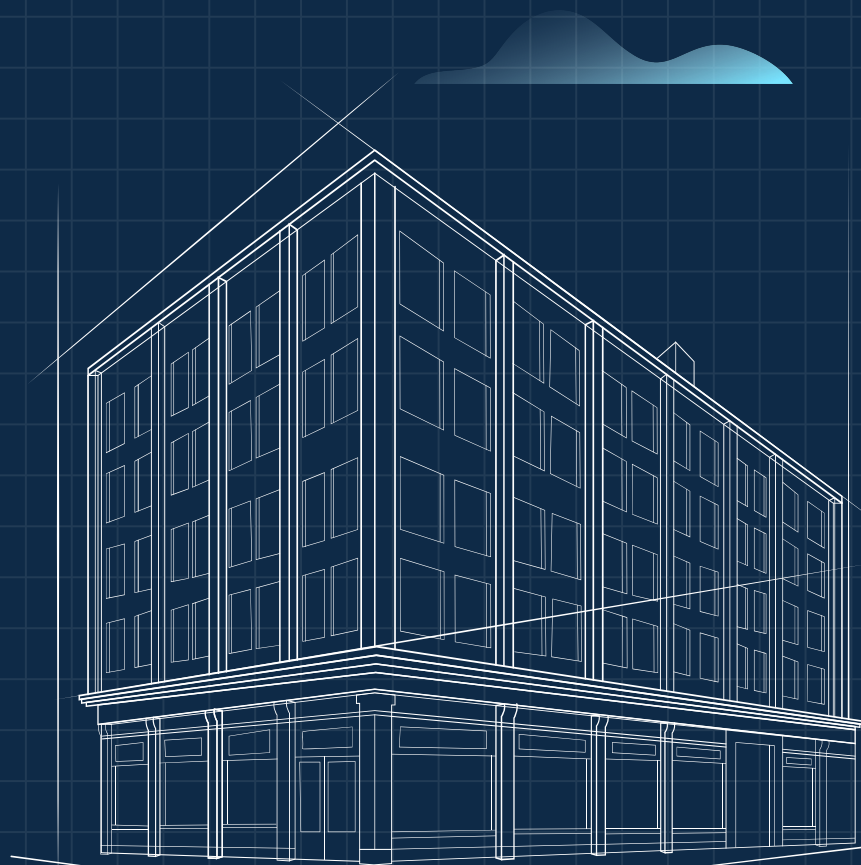
A04:2021 - Diseño Inseguro

A07:2021 - Fallas de Identificación y Autenticación



04

Como lo paro?



Cuida tu proceso de desarrollo y despliegue

Cientes de compilado

Algunos clientes tienen
activado por defecto el
sourcemap en Prod.

cross-env, vue-tsc, vite,
vue-cli-service.

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Entorno de pruebas

Solo usalo en un **Entorno de pruebas**.

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Revisa tus archivos

.js.map

Ya desplegaste? ¡Corre y revisa!

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Algunos lo ofuscan desde el código fuente sin querer :P

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Sigue estándares seguros de desarrollo

Revisa OWASP y evita darle mucho poder al cliente, revisa en backend.

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.js.map

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Ya desplegaste? ¡Corre y revisa!

LazyLoad por Rutas

Solo carga lo que necesites.

Básicamente toda
biblioteca/framework/**lenguaje**
que transforma tu código en JS
puro sufre este tipo efectos



@DraykoEs

<https://drayko.github.io>



4TO. CONGRESO INTERNACIONAL

**SEGURIDAD
INFORMÁTICA**

28 - 30 de Noviembre - La Paz, Bolivia

Gracias!

Alguna pregunta?