



ESCUELA POLITÉCNICA NACIONAL
FACULTAD DE INGENIERÍA DE SISTEMAS
INGENIERÍA DE SISTEMAS INFORMÁTICOS Y DE COMPUTACIÓN

Laboratorio de: Aplicaciones en ambientes libres

Tema: Documentación

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1. Objetivos:

1.1. Objetivo General

Realizar una documentación de forma colaborativa.

1.2. Objetivos Específicos

- Entender los beneficios de la documentación.
- Recopilar información de las herramientas que ayudan a la documentación.
- Realizar una documentación sobre un HTML.

2. Marco teórico:

2.1. Beneficios de la documentación

- Se contextualiza la información junto a la descripción del problema y la solución.
- Permite ahorrar tiempo cuando se desea reutilizar el código.
- Permite solucionar un problema en el código (que no ha sido revisado en un tiempo considerable) de forma más rápida.
- Se comprende mejor el dominio del problema.

2.2. ¿Qué hay que documentar?

No existen obviedades por lo que todo debe ser documentado hasta el último detalle. Pero para evitar llenar de mil líneas de texto se recomienda usar normas de programación de forma que el código este 'auto documentado' solo con los nombres de variables y nombres de métodos.

Si se sigue esa norma, lo que se deberá documentar será lo que sea 'no trivial' es decir que hay un contexto que considerar antes de realizar esas operaciones matemáticas.

En cada método se agrega una descripción general de lo que hace, de que se trata sus entradas, de qué se trata sus salidas y 2 ejemplos de validación (uno correcto y uno incorrecto).

2.3. Tipos de comentarios para páginas web

Línea: se inician con dos barras inclinadas `//` y sirven para agregar una anotación rápida.

`//Función que muestra mensaje de bienvenida`

Multilínea: se inician con `/*` y deben terminarse con `*/` sirven para agregar una descripción grande sobre un método o un contexto en general.

`/* Funciones JavaScript`

`Versión 0.1`

`Autor: Danny Díaz`

`*/`

2.4. Explique las herramientas de documentación:

2.4.1. Huddle

Permite administrar los documentos, revisiones, aprobaciones y discusiones en un mismo lugar con gran seguridad, alta colaboración, petición de archivos y tareas.

2.4.2. Read the Docs

Es portal web gratuito que nos permite alojar la documentación de un proyecto haciéndola fácil de encontrar y ofreciendo opción de búsqueda.

Read the Docs permite importar sus documentos desde cualquier sistema de control de versiones, incluyendo Mercurial, Git, Subversion, y Bazaar.

2.4.3. Javadoc

Javadoc es un generador de documentación creado por Sun Microsystems para el lenguaje Java (ahora propiedad de Oracle Corporation) para generar documentación API en formato HTML a partir del código fuente de Java. El formato HTML se utiliza para agregar la conveniencia de poder vincular documentos relacionados entre sí.

Javadoc también proporciona una API para crear doclets y taglets, que permite a los usuarios analizar la estructura de una aplicación Java. Así es como JDiff puede generar informes de lo que cambió entre dos versiones de una API.



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Javadoc no afecta el rendimiento en Java ya que todos los comentarios se eliminan en el momento de la compilación. Escribir comentarios y Javadoc es para comprender mejor el código y, por lo tanto, mantenerlo mejor.

2.4.4. Markdown

Markdown es un lenguaje de marcado que facilita la aplicación de formato a un texto empleando una serie de caracteres de una forma especial. En principio, fue pensado para elaborar textos cuyo destino iba a ser la web con más rapidez y sencillez que si estuviésemos empleando directamente HTML. Y si bien ese suele ser el mejor uso que podemos darle, también podemos usarlo para cualquier tipo de texto, específicamente de cuál sea su destino.

2.4.5. Swagger

Swagger es un marco de software de código abierto respaldado por un gran ecosistema de herramientas que ayuda a los desarrolladores a diseñar, construir, documentar y consumir servicios web RESTful. Incluye soporte para documentación automatizada, generación de código y generación de casos de prueba.

3. Desarrollo de la práctica:

En las primeras 40 líneas de código que se encuentran documentadas por bloques, se define el formato de codificación de los textos y se incluye la información que se desea que se haga responsive. También se define el header http con el fin de que sea usado para simular respuestas http. Se fija como título de la página Jonathan Ogden. Posteriormente se ejecuta una serie de comandos y funciones que permiten la comprobación de patrones de variables, verifican la existencia de referencias y, guardan y cargan datos e imágenes.

Ultima línea documentada: 40

Total de líneas del código: 323

Se encuentra documentado (1-10): 1.5 del código

De la cantidad documentada se entiende (1-10): 10

Para la siguiente documentación la última línea documentada es la 50

Se marcó una serie de comandos a ser ejecutados que permiten realizar trazados y dibujos de tipo svg, tambien define diferentes títulos. Debido a la complejidad de la parte de HTML se entiende el bajo progreso.

De la parte documentada se entiende del 1 al 10: un 10.

Código

```
<!DOCTYPE html>
```

```
<html lang="en" class="no-js">
```

```
<head>
```

```
    <meta charset="utf-8" /> <!--Formato de codificación para los textos-->
```

```
    <meta name="viewport" content="width=device-width" /> <!--Meta información para hacer responsive-->
```

```
    <meta http-equiv="x-ua-compatible" content="ie=edge">
```

```
    <!--Es el header HTTP puede ser usado para simular respuestas HTTP-->
```

```
    <title>Jonathan Ogden</title> <!--Título de la página-->
```



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```
<link rel="stylesheet"
href="https://dunked.cdn.speedyrails.net/assets/prod/6471/style_processed.css?v=15602873
33" media="screen" /> <!--[if lte IE 8]><link rel="stylesheet"
href="https://dunked.cdn.speedyrails.net/templates/mason/1/css/ie.css?1.2" media="screen"
/><![endif]-->
```

```
<script type="text/javascript">

    document.documentElement.className =
document.documentElement.className.replace(/\bno-js\b/, 'js'); <!--Reemplaza el nombre de
la variable para haga algo cuando Javascript esta disponible-->

    if (!("ontouchstart" in document.documentElement)) {

        document.documentElement.className += " no-touch";

    }

</script>
```

```
<script type="text/javascript">!function(a){var
b=navigator.userAgent;a.HTMLPictureElement&&/ecko/.test(b)&&b.match(/rv\:(\d+)/)&&Reg
Exp.$1<41&&addEventListener("resize",function(){var
b,c=document.createElement("source"),d=function(a){var
b,d,e=a.parentNode;"PICTURE"===e.nodeName.toUpperCase()?(b=c.cloneNode(),e.insertBefore
(b,e.firstElementChild),setTimeout(function(){e.removeChild(b)}):(a._pfLastSize|a.offsetWi
dth>a._pfLastSize)&&(a._pfLastSize=a.offsetWidth,d=a.sizes,a.sizes+="100vw",setTimeout(fun
ction(){a.sizes=d})),e=function(){var a,b=document.querySelectorAll("picture > img,
img[srcset][sizes]");for(a=0;a<b.length;a++)d(b[a])},f=function(){clearTimeout(b),b=setTimeout
(e,99)},g=a.matchMedia&&matchMedia("(orientation:
landscape)"),h=function(){f(),g&&g.addListener&&g.addListener(f)};return
c.srcset="
EAOw==",/^([c|i]|d$)/.test(document.readyState|'')?h():document.addEventListener("DOMC
ontentLoaded",h,f)})(window),function(a,b,c){"use strict";function d(a){return "===a| |"
```

```

    "===a||\"\\n\"===a||\"\\f\"===a||\"\\r\"===a}function e(b,c){var d=new a.Image;return
d.onerror=function(){z[b]=!1,aa()},d.onload=function(){z[b]=1===d.width,aa()},d.src=c,"pendin
g"}function
f(){L=!1,O=a.devicePixelRatio,M={},N={},s.DPR=O||1,P.width=Math.max(a.innerWidth||0,y.clie
ntWidth),P.height=Math.max(a.innerHeight||0,y.clientHeight),P.vw=P.width/100,P.vh=P.heigh
t/100,r=[P.height,P.width,O].join("-"),P.em=s.getEmValue(),P.rem=P.em}function g(a,b,c,d){var
e,f,g,h;return"saveData"===A.algorithm?a>2.7?h=c+1:(f=b-c,e=Math.pow(a-
.6,1.5),g=f*e,d&&(g+=.1*e),h=a+g):h=c>1?Math.sqrt(a*b):a,h>c}function h(a){var
b,c=s.getSet(a),d=!1;"pending"!=c&&(d=r,c&&(b=s.setRes(c),s.applySetCandidate(b,a))),a[s.ns
].evald=d}function i(a,b){return a.res-b.res}function j(a,b,c){var
d;return!c&&b&&(c=a[s.ns].sets,c=c&&c[c.length-
1]),d=k(b,c),d&&(b=s.makeUrl(b),a[s.ns].curSrc=b,a[s.ns].curCan=d,d.res|_|_(d,d.set.sizes)),d}fu
nction k(a,b){var
c,d,e;if(a&&b)for(e=s.parseSet(b),a=s.makeUrl(a),c=0;c<e.length;c++)if(a===s.makeUrl(e[c].url)
){d=e[c];break}return d}function l(a,b){var
c,d,e,f,g=a.getElementsByTagName("source");for(c=0,d=g.length;d>c;c++)e=g[c],e[s.ns]=!0,f=e.
getAttribute("srcset"),f&&b.push({srcset:f,media:e.getAttribute("media"),type:e.getAttribute("
type"),sizes:e.getAttribute("sizes")})}function m(a,b){function c(b){var
c,d=b.exec(a.substring(m));return d?(c=d[0],m+=c.length,c):void 0}function e(){var
a,c,d,e,f,i,j,k,l,m=!1,o={};for(e=0;e<h.length;e++)f=h[e],i=f[f.length-1],j=f.substring(0,f.length-
1),k=parseInt(j,10),l=parseFloat(j),W.test(j)&&"w"===i?((a||c)&&(m=!0),0===k?m=!0:a=k):X.te
st(j)&&"x"===i?((a||c||d)&&(m=!0),0>l?m=!0:c=l):W.test(j)&&"h"===i?((d||c)&&(m=!0),0===
k?m=!0:d=k):m=!0;m|||(o.url=g,a&&(o.w=a),c&&(o.d=c),d&&(o.h=d),d||c||a|||(o.d=1),1===o.
d&&(b.has1x=!0),o.set=b,n.push(o))}function f(){for(c(S),i="",j="in
descriptor");;){if(k=a.charAt(m),"in descriptor"===j)if(d(k))i&&(h.push(i),i="",j="after
descriptor");else{if(" "===k)return m+=1,i&&h.push(i),void e();if("("===k)i+=k,j="in
parens";else{if(" "===k)return i&&h.push(i),void e();i+=k}}else if("in
parens"===j)if(" "===k)i+=k,j="in descriptor";else{if(" "===k)return h.push(i),void e();i+=k}else
if("after descriptor"===j)if(d(k));else{if(" "===k)return void e();j="in descriptor",m-
=1,m+=1}}for(var g,h,i,j,k,l=a.length,m=0,n=[];;){if(c(T),m>=l)return n;g=c(U),h=[], " "===g.slice(-
1)?(g=g.replace(V,""),e()):f())}function n(a){function b(a){function
b(){f&&(g.push(f),f="")}function c(){g[0]&&(h.push(g),g=[])}for(var
e,f="",g=[],h=[],i=0,j=0,k=!1;;){if(e=a.charAt(j)," "===e)return
b(),c(),h;if(k){if(" "===e&&"/"===a[j+1]){k=!1,j+=2,b();continue}j+=1}else{if(d(e)){if(a.charAt(j-
1)&&d(a.charAt(j-1))||!f){j+=1;continue}if(0===i){b(),j+=1;continue}e=" "}}else
if(" "===e)i+=1;else if(" "===e)i-
=1;else{if(" "===e){b(),c(),j+=1;continue}if("/"===e&&"*"===a.charAt(j+1)){k=!0,j+=2;continue}}
f+=e,j+=1}}function c(a){return k.test(a)&&parseFloat(a)>=0?!0:l.test(a)?!0:"0"===a||"-
0"===a||"+0"===a?!0:!1}var e,f,g,h,i,j,k=/^(?:[+-]?[0-9]+|[0-9]*\.[0-9]+)(?:[eE][+-]?[0-
9]+)?(?:(ch|cm|em|ex|in|mm|pc|pt|px|rem|vh|vmin|vmax|vw)$/i,l=/^calc\((?:[0-9a-z\.\+\-
\*\^\(\)]+)\)$/i;for(f=b(a),g=f.length,e=0;g>e;e++)if(h=f[e],i=h[h.length-
1],c(i)){if(j=i,h.pop(),0===h.length)return j;if(h=h.join(" "),s.matchesMedia(h))return
j}return"100vw"}b.createElement("picture");var
o,p,q,r,s={},t=function(){},u=b.createElement("img"),v=u.getAttribute,w=u.setAttribute,x=u.re
moveAttribute,y=b.documentElement,z={},A={algorithm:""},B="data-

```



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```
pfsrc",C=B+"set",D=navigator.userAgent,E=/rident/.test(D)||/ecko/.test(D)&&D.match(/rv\:(\d+)/)&&RegExp.$1>35,F="currentSrc",G=/\s+\+?\d+(e\d+)?w/,H=/(\([^\)]+\))?\s*(.+)/,I=a.pictur  
efillCFG,J="position:absolute;left:0;visibility:hidden;display:block;padding:0;border:none;font-  
size:1em;width:1em;overflow:hidden;clip:rect(0px, 0px, 0px, 0px)",K="font-  
size:100%!important;",L=!0,M={},N={},O=a.devicePixelRatio,P={px:1,"in":96},Q=b.createEleme  
nt("a"),R=!1,S=/^\[ \t\n\r\u000c\]+/,T=/^\[ \t\n\r\u000c\]+/,U=/^\^[  
\t\n\r\u000c\]+/,V=/[,]+$/,W=/^\d+$/,X=/^-?(?:[0-9]+|[0-9]*\.[0-9]+)(?:[eE][+-]?[0-  
9]+)?$/Y=function(a,b,c,d){a.addEventListener?a.addEventListener(b,c,d||!1):a.attachEvent  
&a.attachEvent("on"+b,c),Z=function(a){var b={};return function(c){return c in  
b||!(b[c]=a(c)),b[c]},$,function(){var a=/^([\d\.])(em|vw|px)$/,b=function(){for(var  
a=arguments,b=0,c=a[0];++b in a;)c=c.replace(a[b],a[++b]);return  
c},c=Z(function(a){return"return "+b((a||"").toLowerCase(),/\band\b/g,"&&"/,/,g,"||"/min-  
([a-z-\s]+):/g,"e.$1>="/max-([a-z-\s]+):/g,"e.$1<="/calc([^\s]+)/g,"($1)/,/(\d+[\.\s]*[\d]*)([a-  
z]+)/g,"($1 * e.$2)/,/^(?!([e.[a-z]]|[0-9]\.&=|><\+|-*\(\)\V)).*/gi,"")+";"};return  
function(b,d){var e;if(!(b in M))if(M[b]=!1,d&&(e=b.match(a)))M[b]=e[1]*P[e[2]];else  
try{M[b]=new Function("e",c(b))(P)}catch(f){}return M[b]}(),_=function(a,b){return  
a.w?(a.cWidth=s.calcListLength(b||"100vw"),a.res=a.w/a.cWidth):a.res=a.d,a,aa=function(a){  
var  
c,d,e,f=a||{};if(f.elements&&1===f.elements.nodeType&&("IMG"===f.elements.nodeName.to  
UpperCase())?f.elements=[f.elements]:(f.context=f.elements,f.elements=null)),c=f.elements||s.  
qsa(f.context)||b,f.reevaluate||f.reselect?s.sel:s.selShort,e=c.length){for(s.setupRun(f),R=!0,d  
=0;e>d;d++)s.fillImg(c[d],f);s.teardownRun(f)};o=a.console&&console.warn?function(a){consol  
e.warn(a)}:t,F in  
u||!(F="src"),z["image/jpeg"]=!0,z["image/gif"]=!0,z["image/png"]=!0,z["image/svg+xml"]=b.im  
plementation.hasFeature("http://www.w3.org/TR/SVG11/feature#Image","1.1"),s.ns=("p  
f"+(new Date).getTime()).substr(0,9),s.supSrcset="srcset" in u,s.supSizes="sizes" in  
u,s.supPicture=!a.HTMLPictureElement,s.supSrcset&&s.supPicture&&s.supSizes&&!function(  
a){u.srcset="data:,a",a.src="data:,a",s.supSrcset=u.complete===a.complete,s.supPicture=s.sup  
Srcset&&s.supPicture}(b.createElement("img")),s.selShort="picture>img,img[srcset]",s.sel=s.se  
lShort,s.cfg=A,s.supSrcset&&(s.sel+="img["+C+"]"),s.DPR=O||1,s.u=P,s.types=z,q=s.supSrcset  
&&s.supSizes,s.setSize=t,s.makeUrl=Z(function(a){return  
Q.href=a,Q.href}),s.qsa=function(a,b){return  
a.querySelectorAll(b)},s.matchesMedia=function(){return  
a.matchMedia&&(matchMedia("(min-width:  
0.1em)"))||{}).matches?s.matchesMedia=function(a){return!a||matchMedia(a).matches}:s.mat  
chesMedia=s.mMQ,s.matchesMedia.apply(this,arguments)},s.mMQ=function(a){return  
a?$(a):!0},s.calcLength=function(a){var b=$(a,!0)||!1;return  
0>b&&(b=!1),b},s.supportsType=function(a){return a?z[a]:!0},s.parseSize=Z(function(a){var  
b=(a||"").match(H);return{media:b&&b[1],length:b&&b[2]}},s.parseSet=function(a){return
```

```

a.cands || (a.cands=m(a.srcset,a)),a.cands},s.getEmValue=function(){var
a;if(!p&&(a=b.body)){var
c=b.createElement("div"),d=y.style.cssText,e=a.style.cssText;c.style.cssText=J,y.style.cssText=K
,a.style.cssText=K,a.appendChild(c),p=c.offsetWidth,a.removeChild(c),p=parseFloat(p,10),y.style
e.cssText=d,a.style.cssText=e}return p || 16},s.calcListLength=function(a){if(!(a in N) || A.uT){var
b=s.calcLength(n(a));N[a]=b?b:P.width}return N[a]},s.setRes=function(a){var
b;if(a){b=s.parseSet(a);for(var c=0,d=b.length;d>c;c++)_(b[c],a.sizes)}return
b},s.setRes.res=_,s.applySetCandidate=function(a,b){if(a.length){var
c,d,e,f,h,k,l,m,n,o=b[s.ns],p=s.DPR;if(k=o.curSrc || b[F],l=o.curCan || j(b,k,a[0].set),l&&l.set===a[
0].set&&(n=E&&!b.complete&&l.res-
.1>p,n || (l.cached=!0,l.res>=p&&(h=l))),!h)for(a.sort(i),f=a.length,h=a[f-
1],d=0;f>d;d++)if(c=a[d],c.res>=p){e=d-
1,h=a[e]&&(n || k!==s.makeUrl(c.url))&&g(a[e].res,c.res,p,a[e].cached)?a[e]:c;break}h&&(m=s.
makeUrl(h.url),o.curSrc=m,o.curCan=h,m!==k&&s.setSrc(b,h),s.setSize(b))},s.setSrc=function(
a,b){var
c;a.src=b.url,"image/svg+xml"===b.set.type&&(c=a.style.width,a.style.width=a.offsetWidth+1+
"px",a.offsetWidth+1&&(a.style.width=c)),s.getSet=function(a){var
b,c,d,e=!1,f=a[s.ns].sets;for(b=0;b<f.length&&!e;b++)if(c=f[b],c.srcset&&s.matchesMedia(c.me
dia)&&(d=s.supportsType(c.type))){return "pending"===d&&(c=d),e=c;break}return
e},s.parseSets=function(a,b,d){var
e,f,g,h,i=b&&"PICTURE"===b.nodeName.toUpperCase(),j=a[s.ns];(j.src===c || d.src)&&(j.src=v.c
all(a,"src"),j.src?w.call(a,B,j.src):x.call(a,B)),(j.srcset===c || d.srcset || !s.supSrcset || a.srcset)&&(
e=v.call(a,"srcset"),j.srcset=e,h=!0),j.sets=[],i&&(j.pic=!0,l(b,j.sets)),j.srcset?(f={srcset:j.srcset,si
zes:v.call(a,"sizes")},j.sets.push(f),g=(q || j.src)&&G.test(j.srcset || ""))g || !j.src || k(j.src,f) || f.has1
x || (f.srcset+="
"+j.src,f.cands.push({url:j.src,d:1,set:f})):j.src&&j.sets.push({srcset:j.src,sizes:null}),j.curCan=nu
ll,j.curSrc=c,j.supported=!(!i || f&&!s.supSrcset || g),h&&s.supSrcset&&!j.supported&&(e?(w.call
(a,C,e),a.srcset=""):x.call(a,C)),j.supported&&!j.srcset&&(j.src&&a.src || a.src!==s.makeUrl(j.sr
c))&&(null===j.src?a.removeAttribute("src"):a.src=j.src),j.parsed=!0},s.fillImg=function(a,b){var
c,d=b.reselect || b.reevaluate;a[s.ns] || (a[s.ns]={}),c=a[s.ns],(d || c.evald!==r)&&(!c.parsed || b.
reevaluate)&&s.parseSets(a,a.parentNode,b),c.supported?c.evald=r:h(a)),s.setupRun=functi
on(){(!R || L || O===a.devicePixelRatio)&&f(),s.supPicture?(aa=t,s.fillImg=t):!function(){var
c,d=a.attachEvent?/d$/^c/;/d$/^c/^i/,e=function(){var
a=b.readyState || "";f=setTimeout(e,"loading"===a?200:999),b.body&&(s.fillImgs(),c=c || d.test(
a),c&&clearTimeout(f)),f=setTimeout(e,b.body?9:99),g=function(a,b){var c,d,e=function(){var
f=new Date-d;b>f?c=setTimeout(e,b-f):(c=null,a());return function(){d=new
Date,c || (c=setTimeout(e,b))}},h=y.clientHeight,i=function(){L=Math.max(a.innerWidth || 0,y.cli
entWidth)!==P.width || y.clientHeight!==h,h=y.clientHeight,L&&s.fillImgs();Y(a,"resize",g(i,99))
,Y(b,"readystatechange",e)}(),s.picturefill=aa,s.fillImgs=aa,s.teardownRun=t,aa._=s,a.picturefill
CFG={pf:s.push:function(a){var b=a.shift();"function"===typeof
s[b]?s[b].apply(s,a):(A[b]=a[0],R&&s.fillImgs({reselect:!0})));for(;l&&l.length;)a.picturefillCFG.p
ush(l.shift());a.picturefill=aa,"object"===typeof module&&"object"===typeof
module.exports?module.exports=aa:"function"===typeof
define&&define.amd&&define("picturefill",function(){return
aa}),s.supPicture || (z["image/webp"]=e("image/webp","

```




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FACULTAD DE INGENIERÍA DE SISTEMAS
INGENIERÍA DE SISTEMAS INFORMÁTICOS Y DE COMPUTACIÓN

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ABXRUIJQVIA4WAoAAAAQAAAAAAAAAAAAAAQUxQSAwAAAABBxAR/Q9ERP8DAABWUDggGAAA
ADABAJ0BKgEAAQADADQlpAADcAD++/1QAA=="))}(window,document),function(a){if("functio
n"==typeof define&&define.amd){var b="[history"+(new
Date).getTime()+"]",c=requirejs.onError;a.toString=function(){return
b},requirejs.onError=function(a){-
1===a.message.indexOf(b)&&c.call(requirejs,a)},define([],a)}return"object"!==typeof
exports||"undefined"!==typeof module?a():void(module.exports=a())}{function(){function
a(){function b(a,c,d){var e=/(?:(\w+\\.))?(?:\\V(?:[^\@]*@)?(?:\\V(?:\#)+)?(?:[0-
9]+))?(?:[^\#]*)(?:\?(\?[\#]+)|\?)(?:\#.*))?;/if(null==a||""===a||c)a=c?a.w.href,(!B||d)&&(a=a
.replace(/\^[^\#]*\/,"")||"#",a=w.protocol.replace(/:.*$/,"")+ "/" +w.host+M.basepath+a.repla
ce(new RegExp("^[^\#]/"?:"+M.type+"?"),""));else{var
f=b(),g=s.getElementsByTagName("base")[0];!d&&g&&g.getAttribute("href")&&(g.href=g.href,
f=b(g.href,null,!0));var
h=f._pathname,i=f._protocol;a=""+a,a="/^(?:\w+\\.)?\\V//.test(a)?0===a.indexOf("/")?i+a:a+i+/"
+f._host+(0===a.indexOf("/")?a:0===a.indexOf("?")?h+a:0===a.indexOf("#")?h+f._search+a:h
.replace(/\^[^\#]+$/g,"")+a)}O.href=a;var
j=e.exec(O.href),k=j[2]+(j[3]?":"+j[3]:""),l=j[4]||"/",m=j[5]||"",n="#"===j[6]?"":j[6]||"",o=l+m+
n,p=l.replace(new
RegExp("^"+M.basepath,"i"),M.type)+m;return{_href:j[1]+"/"+k+o,_protocol:j[1],_host:k,_hos
tname:j[2],_port:j[3]||"",_pathname:l,_search:m,_hash:n,_relative:o,_nohash:p,_special:p+n}}
function c(){var
a;try{a=r.sessionStorage,a.setItem(N+"t","1"),a.removeItem(N+"t")}catch(b){a={getItem:functi
on(a){var b=s.cookie.split(a+"=");return
b.length>1&&b.pop().split(";").shift()||"null"},setItem:function(a,b){var
c={};(c[w.href]=y.state)&&(s.cookie=a+"="+v.stringify(c))}}try{U=v.parse(a.getItem(N))||{}}cat
ch(b){U={}}J(F+"unload",function(){a.setItem(N,v.stringify(U)),!1)}function d(b,c,d,e){var
f=0;d||d={set:a,f=1};var
g=!d.set,h=!d.get,i={configurable:!0,set:function(){g=1},get:function(){h=1}};try{D(b,c,i),b[c]=b[
c],D(b,c,d)}catch(j){if(!(g&&h||b.__defineGetter__&&b.__defineGetter__(c,i.get),b.__define
Setter__(c,i.set),b[c]=b[c],d.get&&b.__defineGetter__(c,d.get),d.set&&b.__defineSetter__(c,d
.set)),g&&h))){if(f)return!1;if(b===r){try{var k=b[c];b[c]=null}catch(j){}}if("execScript"in
r)r.execScript("Public "+c,"VBScript"),r.execScript("var "+c+";","JavaScript");else
try{D(b,c,{value:a})}catch(j){"onpopstate"===c&&(J("popstate",d=function(){K("popstate",d,!1)
;var
a=b.onpopstate;b.onpopstate=null,setTimeout(function(){b.onpopstate=a,1}),!1),R=0)}b[c]=k}
else try{try{var l=u.create(b);D(u.getPrototypeOf(l)===b?!b,c,d);for(var m in
b)"function"===typeof
b[m]&&(l[m]=b[m].bind(b));try{e.call(l,l,b)}catch(j){b=l}catch(j){D(b.constructor.prototype,c,d)
}}catch(j){return!1}}return b}function e(a,b,c){return
```

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c=c||{};a=a===$?w:a,c.set=c.set|function(c){a[b]=c,c.get=c.get|function(){return
a[b]},c}function f(a,b,c){a in
V?V[a].push(b):arguments.length>3?J(a,b,c,arguments[3]):J(a,b,c)}function g(a,b,c){var
d=V[a];if(d){for(var e=d.length;e--;)if(d[e]===b){d.splice(e,1);break}}else K(a,b,c)}function
h(b,c){var e=(""+"string"===typeof
b?b:b.type)).replace(/^on/, "");f=V[e];if(f){if(c="string"===typeof b?c:b,null==c.target)for(var
g=["target","currentTarget","srcElement","type"];b=g.pop());c=d(c,b,{get:"type"===b?function(
){return e}:function(){return
r}});R&&(("popstate"===e?r.onpopstate:r.onhashchange)||a).call(r,c);for(var
h=0,i=f.length;i>h;h++)f[h].call(r,c);return!0}return L(b,c)}function i(){var
a=s.createEvent?s.createEvent("Event"):s.createEventObject();a.initEvent("popstat
e",!1,!1):a.type="popstate",a.state=y.state,h(a)}function j(){S&&(S=!1,i())}function
k(a,c,d,e){if(B)P=w.href;else{0===T&&(T=2);var f=b(c,2===T&&-
1!==( ""+c).indexOf("#"));f._relative!=b()._relative&&(P=e,d?w.replace("#"+f._special):w.hash
=f._special)!C&&a&&(U[w.href]=a),S=!1}function l(a){var
c=P;if(P=w.href,c){Q!=w.href&&i(),a=a||r.event;var
d=b(c,!0),e=b();a.oldURL|| (a.oldURL=d._href,a.newURL=e._href),d._hash!=e._hash&&h(a))}fu
nction
m(a){setTimeout(function(){J("popstate",function(a){Q=w.href,C|| (a=d(a,"state",{get:function(
){return y.state}})),h(a),!1)),0)!B&&a!=!0&&"location" in y&&(p(E.hash),j())}function
n(a){for(;a){if("A"===a.nodeName)return a;a=a.parentNode}}function o(a){var
c=a||r.event,d=n(c.target||c.srcElement),e="defaultPrevented" in
c?c.defaultPrevented:c.returnValue===!1;if(d&&"A"===d.nodeName&&!e){var
f=b(),g=b(d.getAttribute("href",2)),h=f._href.split("#").shift()===g._href.split("#").shift();h&&g.
_hash&&(f._hash!=g._hash&&(E.hash=g._hash),p(g._hash),c.preventDefault?c.preventDefault
t():c.returnValue=!1)}}function p(a){var
b=s.getElementById(a=(a|| "").replace(/^#/,""));if(b&&b.id===a&&"A"===b.nodeName){var
c=b.getBoundingClientRect();r.scrollTo(t.scrollLeft||0,c.top+(t.scrollTop||0)-
(t.clientTop||0))}function q(){var a=s.getElementsByTagName("script"),f=(a[a.length-
1]|| {}).src|| "",g=-
1!=f.indexOf("?")?f.split("?").pop():"";g.replace(/(\w+)(?=[^&]*)?/g,function(a,b,c){M[b]=(c
|| "").replace(/^0+false$/,"")});J(F+"hashchange",!1,!1);var h=[$,E,X,r,Z,y];C&&delete
Z.state;for(var i=0;i<h.length;i+=2)for(var j in
h[i])if(h[i].hasOwnProperty(j))if("function"===typeof h[i][j])h[i+1][j]=h[i][j];else{var
k=e(h[i],j,h[i][j]);if(!d(h[i+1],j,k,function(a,b){b===y&&(r.history=y=h[i+1]=a))})return
K(F+"hashchange",!1,!1,!1;h[i+1]===r&&(V[j]=V[j].substr(2))=[])}return
y.setup(),M.redirect&&y.redirect(),M.init&&(T=1)!C&&v&&c(),B||s[G](F+"click",o,!1),"comple
te"===s.readyState?m(!0):(B||b()._relative===M.basepath|| (S=!0),J(F+"load",m,!1)),!0)var
r=("object"===typeof window?window:this)||{};if(!r.history|| "emulate" in r.history)return
r.history;var
s=r.document,t=s.documentElement,u=r.Object,v=r.JSON,w=r.location,x=r.history,y=x,z=x.pus
hState,A=x.replaceState,B=!z,C="state" in
x,D=u.defineProperty,E=d({}, "t")?{}:s.createElement("a"),F="",G=r.addEventListener?"addEven
tListener":(F="on")&&"attachEvent",H=r.removeEventListener?"removeEventListener":"detac
hEvent",I=r.dispatchEvent?"dispatchEvent":"fireEvent",J=r[G],K=r[H],L=r[I],M={basepath:"/",re

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direct:0,type:"/",init:0},N="__historyAPI__",O=s.createElement("a"),P=w.href,Q="",R=1,S=!1,T=0,U={},V={},W=s.title,X={onhashchange:null,onpopstate:null},Y=function(a,b){var c=r.history!=x;c&&(r.history=x),a.apply(x,b),c&&(r.history=y)},Z={setup:function(a,b,c){M.basepath=""+(null==a?M.basepath:a).replace(/(?:^|\\V)[^\\V]*$/,""),M.type=null==b?M.type:b,M.redirect=null==c?M.redirect:!!c,redirect:function(a,c){if(y.setup(c,a),c=M.basepath,r.top==r.self){var d=b(null,!1,!0)._relative,e=w.pathname+w.search;B?(e=e.replace(/([\\V])$/,"$1/"),d!=c&&new RegExp("^"+c+"$", "i").test(e)&&w.replace(d)):e!=c&&(e=e.replace(/([\\V])\\?/,"$1/?"),new RegExp("^"+c,"i").test(e)&&w.replace(c+"#"+e.replace(new RegExp("^"+c,"i"),M.type)+w.hash))}},pushState:function(a,b,c){var d=s.title;null!=W&&(s.title=W),z&&Y(z,arguments),k(a,c),s.title=d,W=b},replaceState:function(a,b,c){var d=s.title;null!=W&&(s.title=W),delete U[w.href],A&&Y(A,arguments),k(a,c,!0),s.title=d,W=b},location:{set:function(a){0===T&&(T=1),r.location=a},get:function(){return 0===T&&(T=1),B?w:E}},state:{get:function(){return U[w.href]||null}},$={assign:function(a){0===(""+a).indexOf("#")?k(null,a):w.assign(a)},reload:function(){w.reload()},replace:function(a){0===(""+a).indexOf("#")?k(null,a,!0):w.replace(a)},toStringing:function(){return this.href},href:{get:function(){return b()._href}},protocol:null,host:null,hostname:null,port:null,pathname:{get:function(){return b()._pathname}},search:{get:function(){return b()._search}},hash:{set:function(a){k(null,(""+a).replace(/^(#|)/,"#"),!1,P)},get:function(){return b()._hash}}};return q()?(y.emulate=!B,r[G]=f,r[H]=g,r[I]=h,y):void 0}};</script><!--Ejecuta una serie de comandos que ejecutan una serie de funciones que tienen distintos propósitos entre ellos comprobar patrones de variables, verificar la existencia de referencias, guardar y cargar datos e imágenes, entre otras -->
```

```
<link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Playfair+Display:300,400,500,600,700"
type="text/css" />

<link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:300,400,500,600,700" type="text/css"
/>
```

```
<script>this.top.location !== this.location && (this.top.location =
this.location);</script>
```

```

<!-- BEGIN Open Graph -->

    <meta property="og:site_name" content="Jonathan Ogden" />

    <meta property="og:url"
content="https://www.ogvidius.com/" />

    <!-- END Open Graph -->

</head>

<body class="page-home is_home">

    <div class="content-wrapper">

        <header id="header">

            <div class="wrap">

                <div class="site-title">

                    <a href="https://www.ogvidius.com/">

                        Jonathan Ogden

                    </a>

                </div> <!-- define un contenedor o seccion para agrupar las
lineas de html -->

```

```

    <svg style="display: none;" xmlns="http://www.w3.org/2000/svg"><symbol
id="dribbble-logo" viewBox="0 0 46 46"
xml:space="preserve"><title>Dribbble</title><g><path d="M33.977303,39.290258
C33.777151,38.105709 32.730405,32.33982 30.152761,25.262273 C36.495443,24.248104
41.988828,25.987066 42.394543,26.119584 C41.520903,31.593392 38.386076,36.312658
33.977303,39.290258 L33.977303,39.290258 L33.977303,39.290258 Z M23.001352,42.643777
C18.246369,42.643777 13.886282,40.953495 10.486388,38.140867 C10.746046,38.351814
10.927265,38.484332 10.927265,38.484332 C10.927265,38.484332 14.692303,30.27362
26.341742,26.21424 C26.385018,26.198013 26.430999,26.187195 26.474275,26.173673
C29.238549,33.353989 30.377256,39.368687 30.669371,41.086013 C28.313518,42.08666
25.719645,42.643777 23.001352,42.643777 L23.001352,42.643777 L23.001352,42.643777 Z
M3.356618,22.998648 C3.356618,22.790405 3.367437,22.584867 3.372846,22.379329
C3.721762,22.387442 13.426471,22.606502 23.539601,19.580222 C24.102193,20.680934
24.640442,21.803281 25.13271,22.920219 C24.873052,22.990534 24.616099,23.068963
24.359146,23.155506 C13.759158,26.57934 8.382078,36.115233 8.382078,36.115233
C8.382078,36.115233 8.390192,36.123346 8.390192,36.126051 C5.260775,32.645423

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3.356618,28.045153 3.356618,22.998648 L3.356618,22.998648 L3.356618,22.998648 Z
M14.619274,5.238521 C14.881637,5.587395 18.514141,10.512199 21.914035,16.553942
C12.482507,19.060968 4.295173,18.960903 3.778562,18.95279 C5.052508,12.867776
9.139413,7.823976 14.619274,5.238521 L14.619274,5.238521 L14.619274,5.238521 Z
M18.295055,3.929567 C18.295055,3.932271 18.29235,3.934976 18.29235,3.934976
C18.29235,3.934976 18.268007,3.940385 18.232845,3.945793 C18.254483,3.940385
18.273417,3.93768 18.295055,3.929567 L18.295055,3.929567 L18.295055,3.929567 Z
M35.973423,8.262097 C35.924737,8.335117 33.128006,12.594626 25.711531,15.372097
C22.354913,9.203245 18.665608,4.302781 18.370788,3.91334 C19.855706,3.553648
21.405539,3.358928 23.001352,3.358928 C27.972717,3.358928 32.514024,5.214181
35.973423,8.262097 L35.973423,8.262097 L35.973423,8.262097 Z M42.637973,22.803927
C42.353972,22.741725 35.705651,21.311071 28.957253,22.160268 C28.816605,21.824916
28.678662,21.48686 28.532604,21.148804 C28.124184,20.186019 27.683307,19.234053
27.226201,18.298313 C34.983477,15.131401 38.131828,10.579811 38.169695,10.525722
C40.923149,13.871127 42.591992,18.144159 42.637973,22.803927 L42.637973,22.803927
L42.637973,22.803927 Z M45.53478,18.371333 C45.231846,16.894703 44.777445,15.437004
44.19051,14.046916 C43.617099,12.683873 42.900335,11.36951 42.069971,10.14169
C41.250426,8.924687 40.303757,7.778 39.265126,6.739491 C38.22379,5.698277
37.079673,4.754424 35.859822,3.932271 C34.631857,3.0993 33.31734,2.38803
31.954137,1.809277 C30.563885,1.225116 29.10872,0.770768 27.631916,0.470574
C26.117246,0.159563 24.559299,0 23.001352,0 C21.440701,0 19.882754,0.159563
18.368084,0.470574 C16.89128,0.770768 15.436115,1.225116 14.045863,1.809277
C12.68266,2.38803 11.368143,3.0993 10.137473,3.932271 C8.920327,4.754424
7.77621,5.698277 6.734874,6.739491 C5.696243,7.778 4.752278,8.924687
3.930029,10.14169 C3.099665,11.36951 2.382901,12.683873 1.80949,14.046916
C1.219851,15.437004 0.768154,16.894703 0.46522,18.371333 C0.156877,19.883121
0,21.440884 0,22.998648 C0,24.56182 0.156877,26.119584 0.46522,27.634076
C0.768154,29.110706 1.219851,30.565701 1.80949,31.953084 C2.382901,33.316127
3.099665,34.635899 3.930029,35.863719 C4.752278,37.080722 5.696243,38.222
6.734874,39.265918 C7.77621,40.304427 8.920327,41.245576 10.137473,42.070433
C11.368143,42.9007 12.68266,43.614675 14.045863,44.190723 C15.436115,44.780293
16.89128,45.229232 18.368084,45.529426 C19.882754,45.843142 21.440701,46
23.001352,46 C24.559299,46 26.117246,45.843142 27.631916,45.529426
C29.10872,45.229232 30.563885,44.780293 31.954137,44.190723 C33.31734,43.614675
34.631857,42.9007 35.859822,42.070433 C37.079673,41.245576 38.22379,40.304427
39.265126,39.265918 C40.303757,38.222 41.250426,37.080722 42.069971,35.863719
C42.900335,34.635899 43.617099,33.316127 44.19051,31.953084 C44.777445,30.565701
45.231846,29.110706 45.53478,27.634076 C45.843123,26.119584 46,24.56182 46,22.998648
C46,21.440884 45.843123,19.883121 45.53478,18.371333 L45.53478,18.371333

L45.53478,18.371333 Z"></path></g></symbol><symbol id="facebook-logo" viewBox="0 0 48
 48" xml:space="preserve"><title>Facebook</title><g><path d="M25.638355,48 L2.649232,48
 C1.185673,48 0,46.813592 0,45.350603 L0,2.649211 C0,1.18585 1.185859,0 2.649232,0
 L45.350955,0 C46.813955,0 48,1.18585 48,2.649211 L48,45.350603 C48,46.813778
 46.813769,48 45.350955,48 L33.119305,48 L33.119305,29.411755 L39.358521,29.411755
 L40.292755,22.167586 L33.119305,22.167586 L33.119305,17.542641 C33.119305,15.445287
 33.701712,14.01601 36.70929,14.01601 L40.545311,14.014333 L40.545311,7.535091
 C39.881886,7.446808 37.604784,7.24957 34.955552,7.24957 C29.424834,7.24957
 25.638355,10.625526 25.638355,16.825209 L25.638355,22.167586 L19.383122,22.167586
 L19.383122,29.411755 L25.638355,29.411755 L25.638355,48 L25.638355,48
 Z"></path></g></symbol><symbol id="instagram-logo" viewBox="0 0 48 48"
 xml:space="preserve"><title>Instagram</title><g><path d="M24.000048,0 C17.481991,0
 16.664686,0.027628 14.104831,0.144427 C11.550311,0.260939 9.805665,0.666687
 8.279088,1.260017 C6.700876,1.873258 5.362454,2.693897 4.028128,4.028128
 C2.693897,5.362454 1.873258,6.700876 1.260017,8.279088 C0.666687,9.805665
 0.260939,11.550311 0.144427,14.104831 C0.027628,16.664686 0,17.481991 0,24.000048
 C0,30.518009 0.027628,31.335314 0.144427,33.895169 C0.260939,36.449689
 0.666687,38.194335 1.260017,39.720912 C1.873258,41.299124 2.693897,42.637546
 4.028128,43.971872 C5.362454,45.306103 6.700876,46.126742 8.279088,46.740079
 C9.805665,47.333313 11.550311,47.739061 14.104831,47.855573 C16.664686,47.972372
 17.481991,48 24.000048,48 C30.518009,48 31.335314,47.972372 33.895169,47.855573
 C36.449689,47.739061 38.194335,47.333313 39.720912,46.740079 C41.299124,46.126742
 42.637546,45.306103 43.971872,43.971872 C45.306103,42.637546 46.126742,41.299124
 46.740079,39.720912 C47.333313,38.194335 47.739061,36.449689 47.855573,33.895169
 C47.972372,31.335314 48,30.518009 48,24.000048 C48,17.481991 47.972372,16.664686
 47.855573,14.104831 C47.739061,11.550311 47.333313,9.805665 46.740079,8.279088
 C46.126742,6.700876 45.306103,5.362454 43.971872,4.028128 C42.637546,2.693897
 41.299124,1.873258 39.720912,1.260017 C38.194335,0.666687 36.449689,0.260939
 33.895169,0.144427 C31.335314,0.027628 30.518009,0 24.000048,0 Z M24.000048,4.324317
 C30.40826,4.324317 31.167356,4.348801 33.69806,4.464266 C36.038036,4.570966
 37.308818,4.961946 38.154513,5.290621 C39.274771,5.725997 40.074262,6.246066
 40.91405,7.08595 C41.753934,7.925738 42.274003,8.725229 42.709379,9.845487
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 C5.725997,8.725229 6.246066,7.925738 7.08595,7.08595 C7.925738,6.246066



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<!-- define una serie de comandos a ser ejecutados que permiten realizar trazados y dibujos de tipo svg, tambien define diferentes titulos -->



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<!-- define una nueva clase a la que le coloca un formato con span, y les coloca hojas de referencia con href hacia determinado recurso, en este caso, hacia el logo de twitter -->

</div>

4. Análisis de resultados:

Varias personas documentaron código de varias máquinas de forma que el estilo, aunque no era el mismo, se mantuvo casi completamente. La disposición de la máquina afecta la velocidad de documentación para un desconocido.

La velocidad de documentación entre cada persona varió según su comprensión sobre el problema.

En general se realizó una buena documentación con una velocidad razonable.

5. Conclusiones y recomendaciones:

- Se comprendió los beneficios de la documentación.
- Se definió 5 herramientas que ayudan a la documentación y apuntan a documentar para seguir.
- Se realizó documentación con comentarios de bloque sobre un código HTML.
- La velocidad de documentación varía entre cada persona.
- El entorno (la computadora) facilita o dificulta la rápida documentación.
- Se recomienda utilizar un estándar para realizar documentación colaborativa que parezca hecha por una sola persona.
- Realizar documentación por bloques solo cuando la estructura sea repetitiva, caso contrario siempre será mejor documentar línea por línea.

6. Bibliografía:

[1]"Ventajas de documentar los cambios web - Blog GuGo Creative", *Blog GuGo Creative*. [Online]. Available: <https://blog.gugocreative.com/ventajas-documentar-los-cambios-web/>. [Accessed: 09- Dec- 2019].

[2]"5 reglas básicas y 5 pasos para documentar tu proyecto web", *Socialancer*. [Online]. Available: <https://www.socialancer.com/como-documentar-un-proyecto-web/>. [Accessed: 09- Dec- 2019].

[3]C. Krall, "Comentarios JavaScript en línea o multilínea. Punto y coma final ¿necesario? Inserción automática (CU01111E)", *Aprenderaprogramar.com*. [Online]. Available: https://www.aprenderaprogramar.com/index.php?option=com_content&view=article&id=787:comentarios-javascript-en-linea-o-multilinea-punto-y-coma-final-inecesario-insersion-automatica-cu01111e&catid=78&Itemid=206. [Accessed: 09- Dec- 2019].

[4]"Huddle | Secure Document Collaboration & Client Portal Software", *Huddle.com*. [Online]. Available: <https://www.huddle.com/>. [Accessed: 09- Dec- 2019].

[5]"¿Qué es Read the Docs?", *Un poco de Java y +*. [Online]. Available: <https://unpocodejava.com/2016/02/08/que-es-read-the-docs/>. [Accessed: 09- Dec- 2019].

[6]"Javadoc", *En.wikipedia.org*. [Online]. Available: <https://en.wikipedia.org/wiki/Javadoc>. [Accessed: 09- Dec- 2019].

[7]I. Lasso, "Qué es Markdown, para qué sirve y cómo usarlo", *Genbeta.com*, 2019. [Online]. Available: <https://www.genbeta.com/guia-de-inicio/que-es-markdown-para-que-sirve-y-como-usarlo>. [Accessed: 09- Dec- 2019].

[8]"Swagger (software)", *En.wikipedia.org*. [Online]. Available: [https://en.wikipedia.org/wiki/Swagger_\(software\)](https://en.wikipedia.org/wiki/Swagger_(software)). [Accessed: 09- Dec- 2019].