

Web Development on AWS

Oh! The Possibilities.

@jennapederson

How will this work

- I'm going to talk. A lot.
- Use the chat!
- I have questions for you, too.
- Next week, we will build.

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Question

CHECK THE CHAT

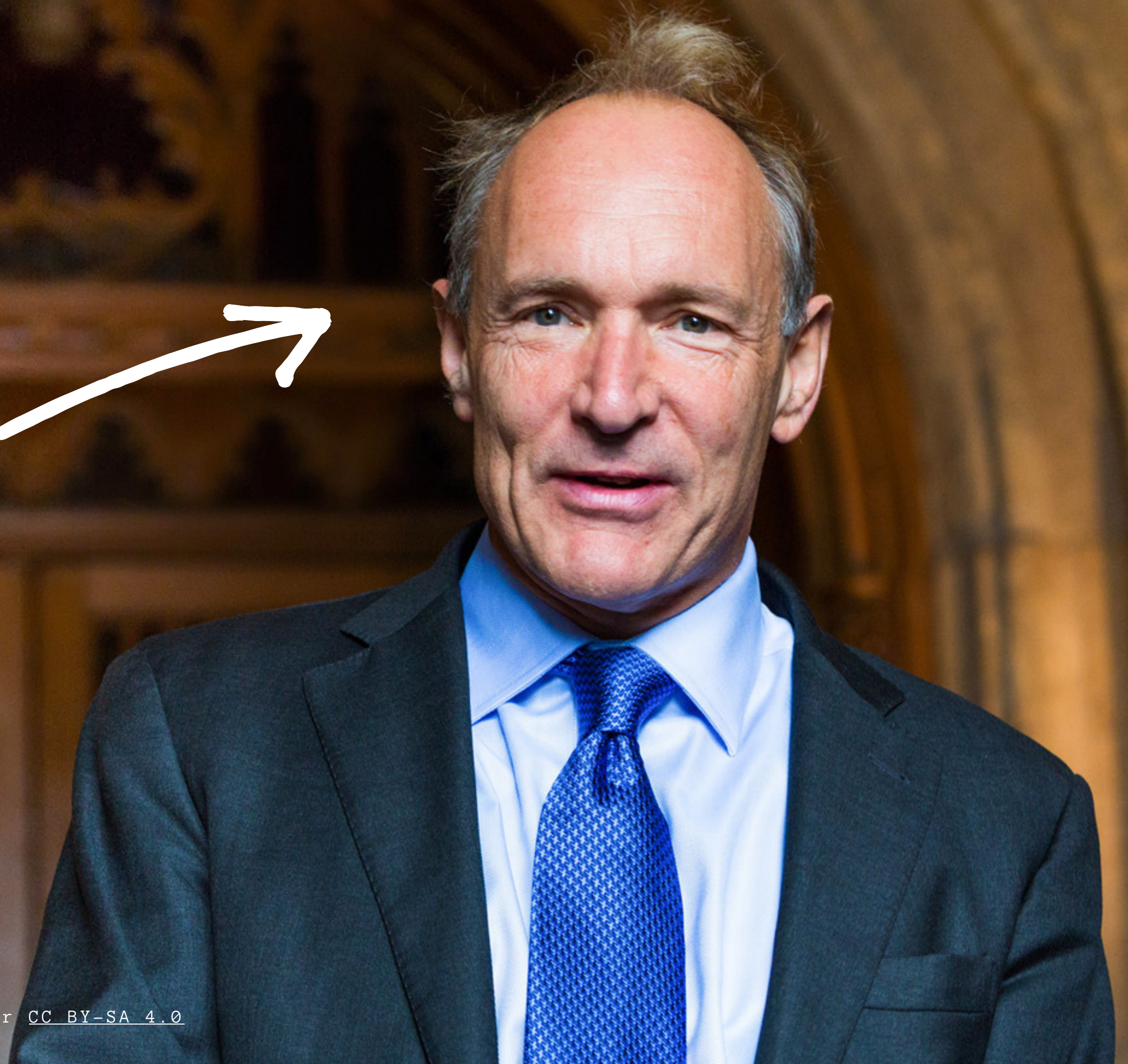
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1989

BIRTH OF THE WORLD WIDE WEB

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Invented
the web



The World Wide Web made the
Internet more accessible.

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**This machine is a server.
DO NOT POWER IT DOWN!!**

World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of

[What's out there?](#)

Pointers to the world's online information, [subjects](#) , [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#) ,X11 [Viola](#) , [NeXTStep](#) , [Servers](#) , [Tools](#)

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

<http://info.cern.ch/hypertext/WWW/TheProject.html>

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1991

WEB SOFTWARE WAS RELEASED PUBLICLY

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WORLD WIDE WEB

The WorldWideWeb (W3) is a wide-area hypermedia[1] information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary[2] of the project, Mailing lists[3] , Policy[4] , November's W3 news[5] , Frequently Asked Questions[6] .

What's out there?[7]Pointers to the world's online information,
subjects[8] , W3 servers[9], etc.

Help[10] on the browser you are using

Software
Products[11] A list of W3 project components and their current
state. (e.g. Line Mode[12] ,X11 Viola[13] ,
NeXTStep[14] , Servers[15] , Tools[16] , Mail
robot[17] , Library[18])

Technical[19] Details of protocols, formats, program internals
etc

<ref.number>, Back, <RETURN> for more, or Help:



EARLY

1993

BROWSERS RELEASED FOR X-WINDOW SYSTEM, PC, AND MAC

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APRIL 30TH

1993

SOURCE CODE PUT INTO THE PUBLIC DOMAIN

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LATE

1993

500+ WEB SERVERS + THE WEB ACCOUNTED FOR 1% OF THE INTERNET

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Justin's Home Page


Welcome to my first attempt at Hypertext

Howdy, this is twenty-first century computing... (Is it worth our patience?) I'm publishing this, and I guess you're readin' this, in part to figure that out, huh?

High Stylin' on the Wurld Wyde Webb

This is a Hypertext server using MacHTTP v1.2.3 running on a Powerbook 180 w/ 8 RAM and a 120 HD. It is currently being broadcast from the depths of Willets, a dorm nestled in the shrubbery here at Swarthmore College in Swarthmore, Pennisylvania.

I put this together with MacHTTP and the assistance of NCSA's HTML Primer that was invaluable. I would recommend it to anyone who is interested in creating their own statements out here in the waste vastland. More general information about HyperText Mark-up Language is also available. For information about the World Wide

Web and Mosaic, here's a recording of someone's voice:  here.

Swarthmore College



Swarthmore College

Don't mind the dust, we're under construction

As of January 22, I am trying to construct my first HyperText page.

Take a look at Swarthmore's Gopher link. Or try this directory if you need to find the e-mail address of anyone here (Mosaic Users will have to use the search window in the upper right hand corner of your

END

1994

10K WEB SERVERS + 10M USERS

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Ensuring long-term growth of the Web

W3C PRINCIPLES + VISION

Design Principles

Web for All

Web on Everything

Vision

Web for Rich Interaction

Web of Data and Services

Web of Trust

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Today



4,703,169,328

Internet Users in the world



1,806,319,438

Total number of Websites



2,935,130

Blog posts written **today**



327,843,171

Tweets sent **today**



36,533,012

Photos uploaded **today**
on Instagram

<https://www.internetlivestats.com/>



Zoom



Karsten Winegeart



Toshi

Connects us



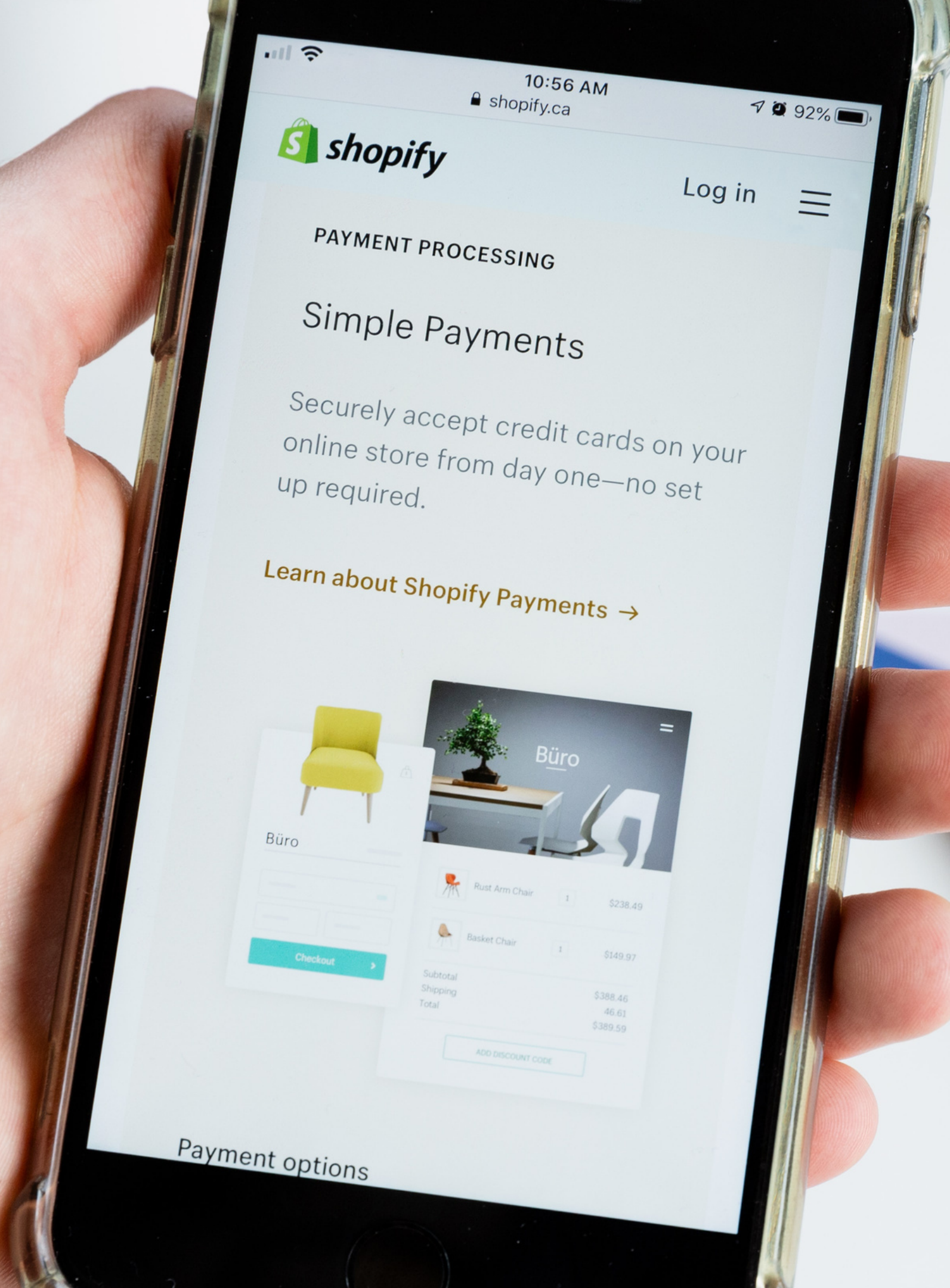
End Meeting



Enables telehealth



Allows us to feel
like we ate out



Empowers makers
+ small businesses



Enables volunteer efforts

Makes us laugh



Building quickly has the
power to impact people's lives.

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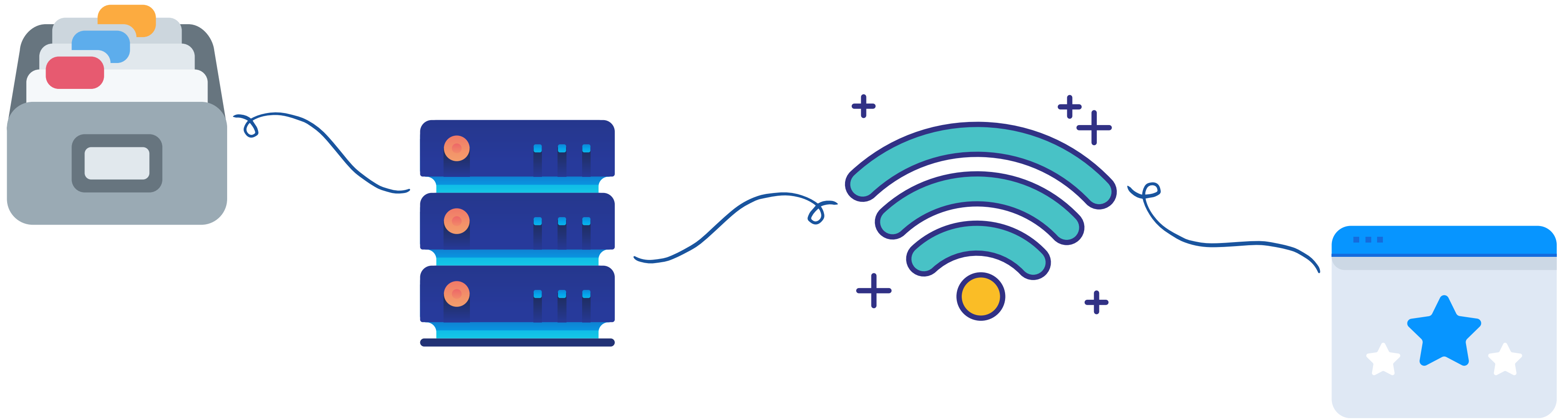
Question

CHECK THE CHAT

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How Do Websites Work?

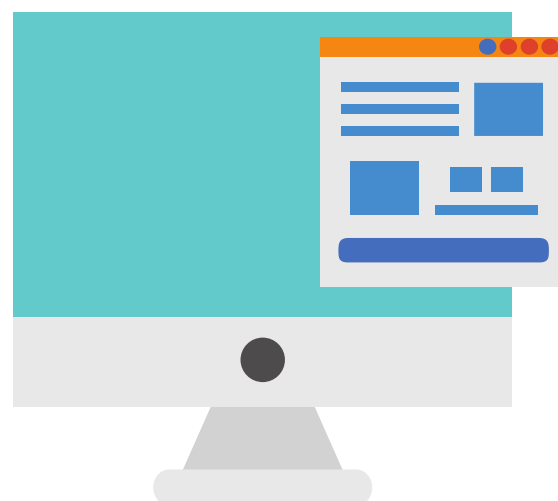
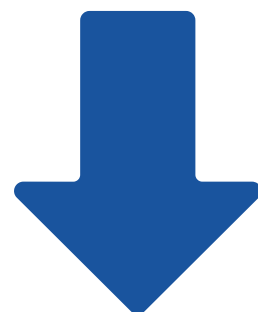
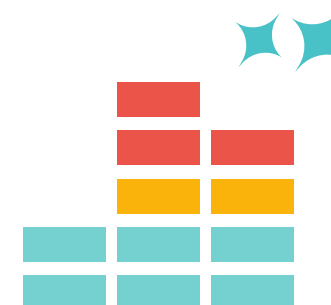
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Files are hosted on a server and sent
over the internet to your browser



Your browser looks up the server address using the URL and DNS



A copy of the files
is downloaded to
your computer

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Frontend

EVERYTHING THE USER EXPERIENCES DIRECTLY

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HTML

HyperText Markup Language .
Defines the structure of
your web page .

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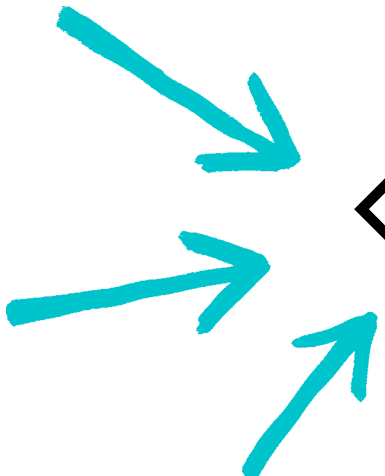
HTML Element

PARAGRAPH ELEMENT

```
<p>Hello, World! </p>
```

HTML Element

PARAGRAPH ELEMENT



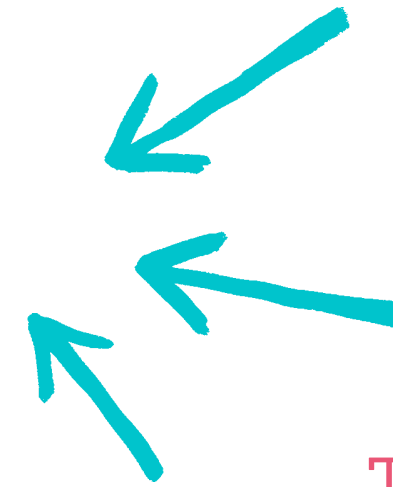
`<p>Hello, World! </p>`

THE OPENING TAG

HTML Element

PARAGRAPH ELEMENT

<p>Hello, World! </p>



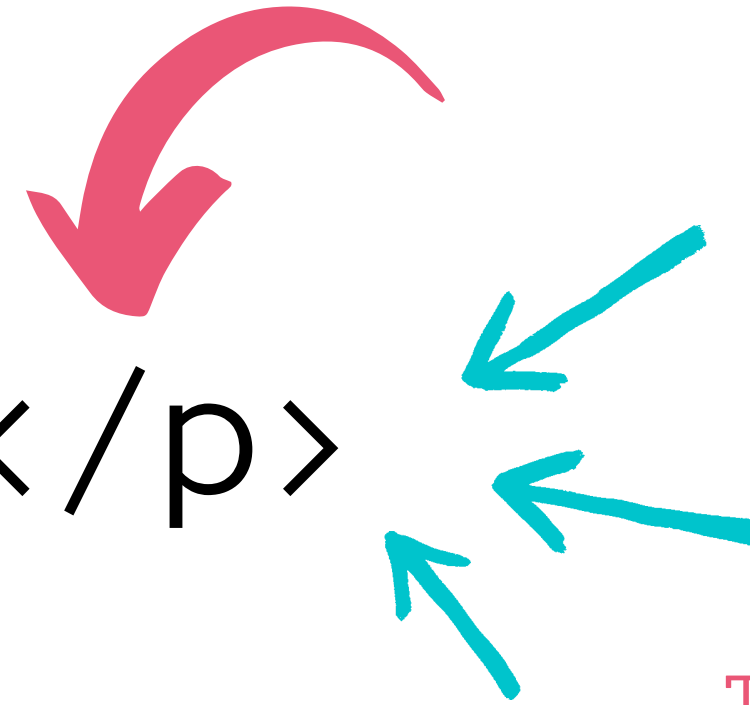
THE CLOSING TAG

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HTML Element

PARAGRAPH ELEMENT

<p>Hello, World! </p>

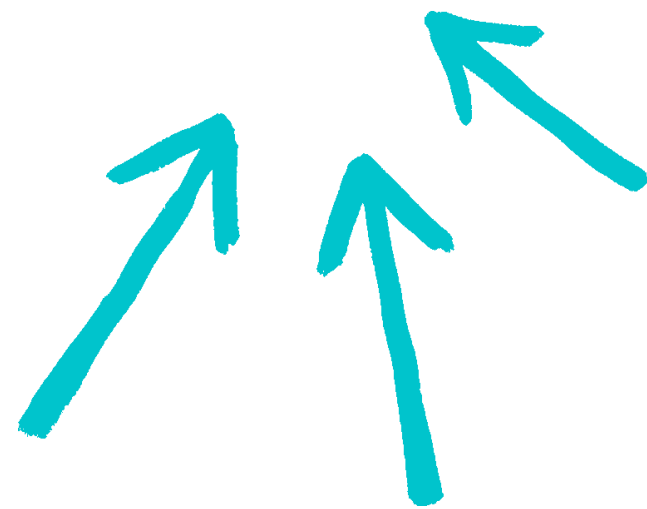


THE CLOSING TAG

HTML Element

PARAGRAPH ELEMENT

```
<p>Hello, World! </p>
```



THE CONTENT

Nesting

```
<p>Hello,  
<strong>World</strong>!  
</p>
```

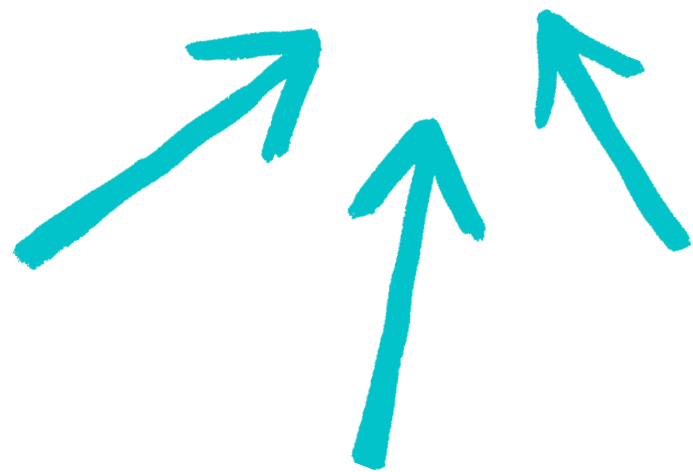


A NESTED ELEMENT

Attributes

EXTRA INFORMATION

```
<a href="/index.html">Home</a>
```



THE ATTRIBUTE

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Empty

IMAGE ELEMENT

```

```



NO CONTENT OR CLOSING TAG

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CSS

Cascading Style Sheets.
Code to style your
content.

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CSS Rule

`<p>Hello, World!</p>`

THE SELECTOR



```
p {  
  color: red;  
}
```

CSS Rule

```
<p id="hello-world">Hello, World!</p>
```

THE SELECTOR




```
#hello-world {  
  color: red;  
}
```

CSS Rule

```
<p class="text-red">Hello, World!</p>
```

THE SELECTOR



```
.text-red {  
  color: red;  
}
```


CSS Rule

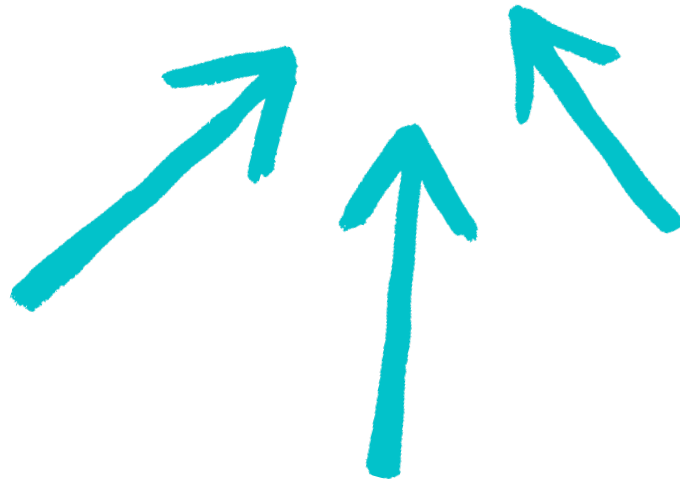
```
p {  
  color: red;  
}
```



THE RULE

CSS Rule

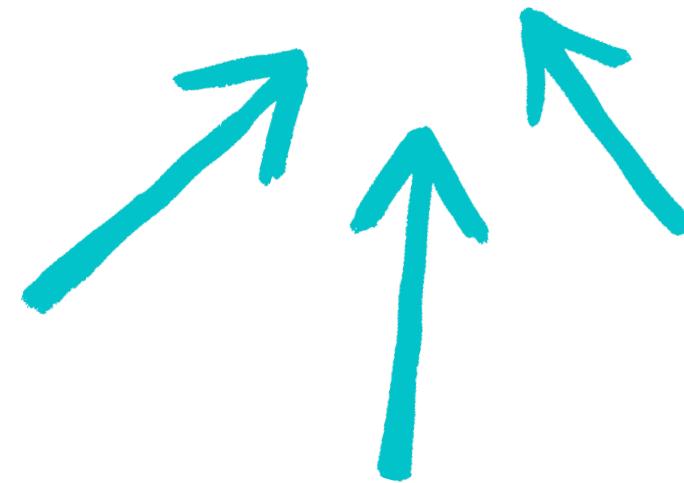
```
p {  
    color: red;  
}
```

Three teal arrows are drawn pointing upwards towards the 'color' property in the CSS rule. One arrow points from the bottom left towards the 'color' text, another points from the bottom center towards the 'color' text, and a third points from the bottom right towards the 'color' text.

THE PROPERTY TO INFLUENCE

CSS Rule

```
p {  
    color: red;  
}
```



THE VALUE

Browser Differences

Ruff Love Pet Rescue

Ruff Love's Adoptable Dogs

🐾 We hope you enjoy looking through our list of dogs available to adopt.

♥ Interested in adoption?

Apply to adopt



Ruff Love Pet Rescue

Ruff Love's Adoptable Dogs

🐾 We hope you enjoy looking through our list of dogs available to adopt.

♥ Interested in adoption?

Apply to adopt



Ruff Love Pet Rescue

Ruff Love's Adoptable Dogs

🐾 We hope you enjoy looking through our list of dogs available to adopt.

♥ Interested in adoption?

Apply to adopt



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JS

JavaScript.

Makes your website more
interactive.

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JS

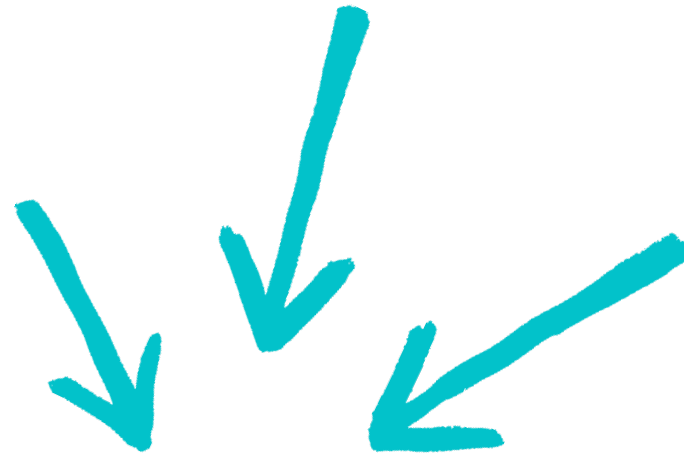


REFERS TO THE HTML OF THE PAGE

```
document.querySelector( 'button' ).onclick =  
function() {  
    alert( 'Hello, world!' );  
}
```

JS

SELECTS BUTTON ELEMENTS FROM THE DOCUMENT

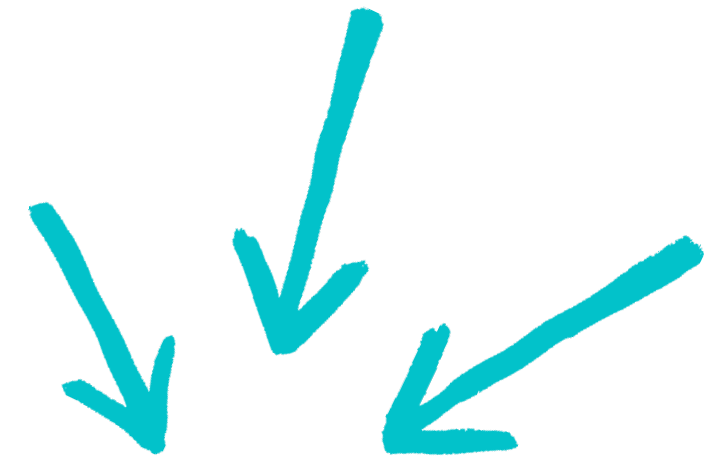


```
document.querySelector('button').onclick =  
function() {  
    alert('Hello, world!');  
}
```

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JS

ADDS A CLICK ACTION OR HANDLER TO ALL ELEMENTS SELECTED

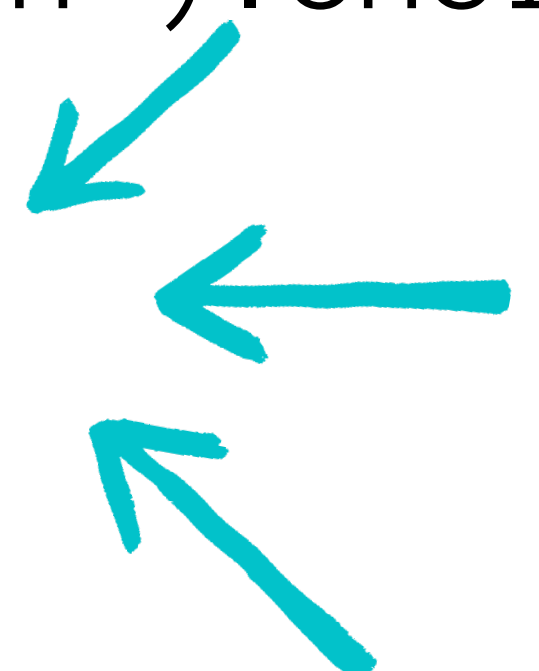


```
document.querySelector('button').onclick =  
function() {  
    alert('Hello, world!');  
}
```

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JS

```
document.querySelector('button').onclick =  
function() {  
    alert('Hello, world!');  
}
```

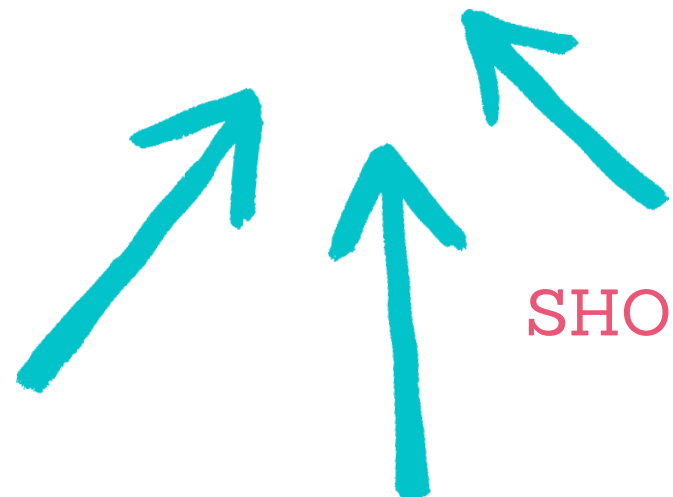


THE CLICK HANDLER

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JS

```
document.querySelector('button').onclick =  
function() {  
    alert('Hello, world!');  
}
```



SHOWS AN ALERT WITH "HELLO, WORLD!" TEXT

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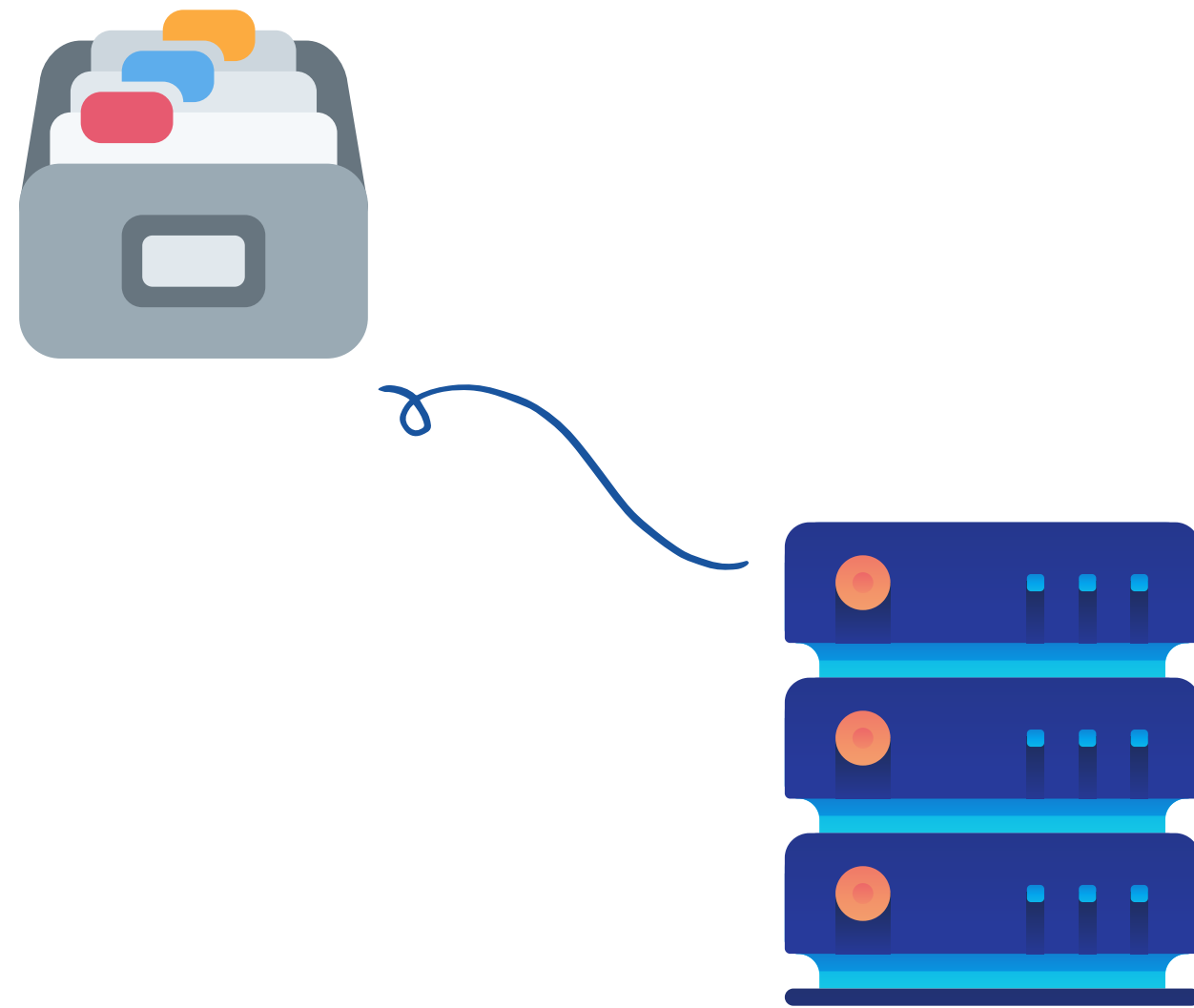
Let's See This
In Action!

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Backend

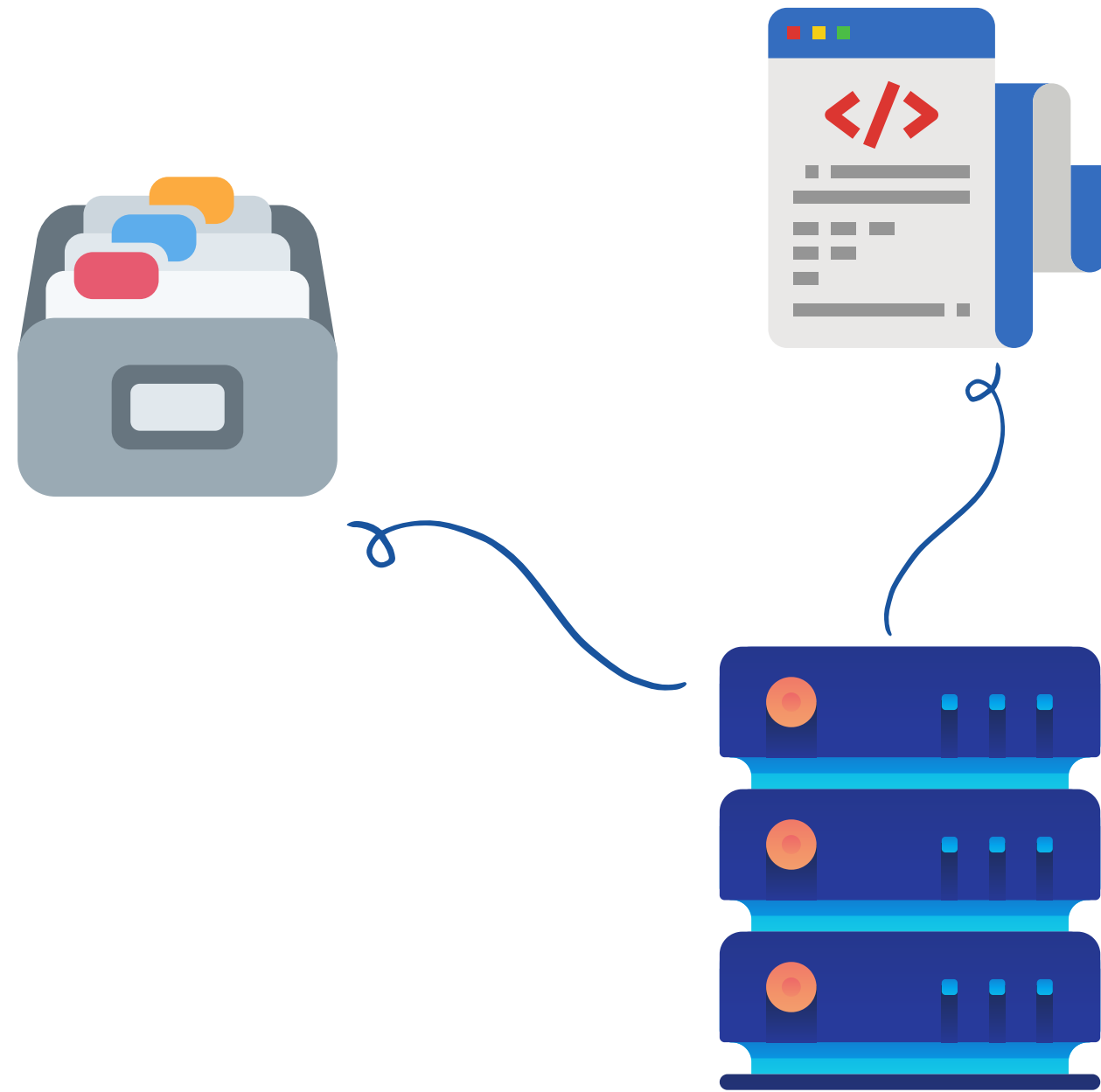
EVERYTHING BEHIND THE SCENES,
ENABLES THE FRONTEND TO BE MORE DYNAMIC

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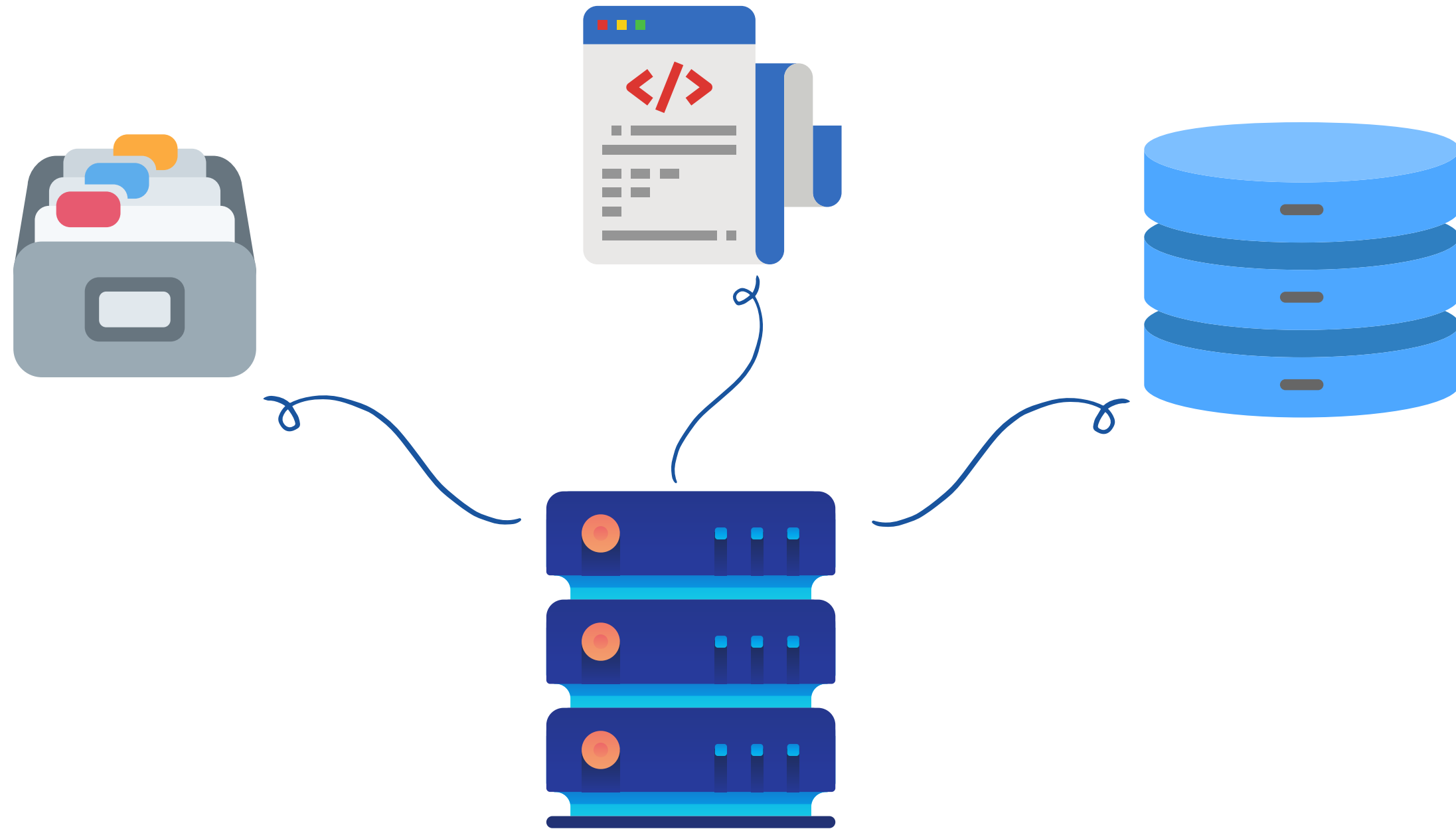
Backend servers contain frontend files

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Backend servers contain frontend files, run our backend code

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Backend servers contain frontend files, run our backend code, + store data in databases

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Datacenters

- Buy physical hardware
- Pay for heating and cooling costs
- Maintain a building
- Over-provision resources
- Took months to build
- Had to physically go there

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Not a big company?

YOU, ME, A NEW BUSINESS, OR SMALL BUSINESS

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What if...

WE COULD DEPLOY OUR WEBSITE OR APP TO SOMEONE
ELSE'S SERVERS IN DATACENTERS STRATEGICALLY
PLACED AROUND THE GLOBE?

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What if...

IT WAS MANAGED BY SOMEONE ELSE?

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What if...

WE ONLY PAID FOR WHAT WE USED, AS WE USED IT?

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What if...

WE COULD DO THIS IN MINUTES, NOT WEEKS OR MONTHS?

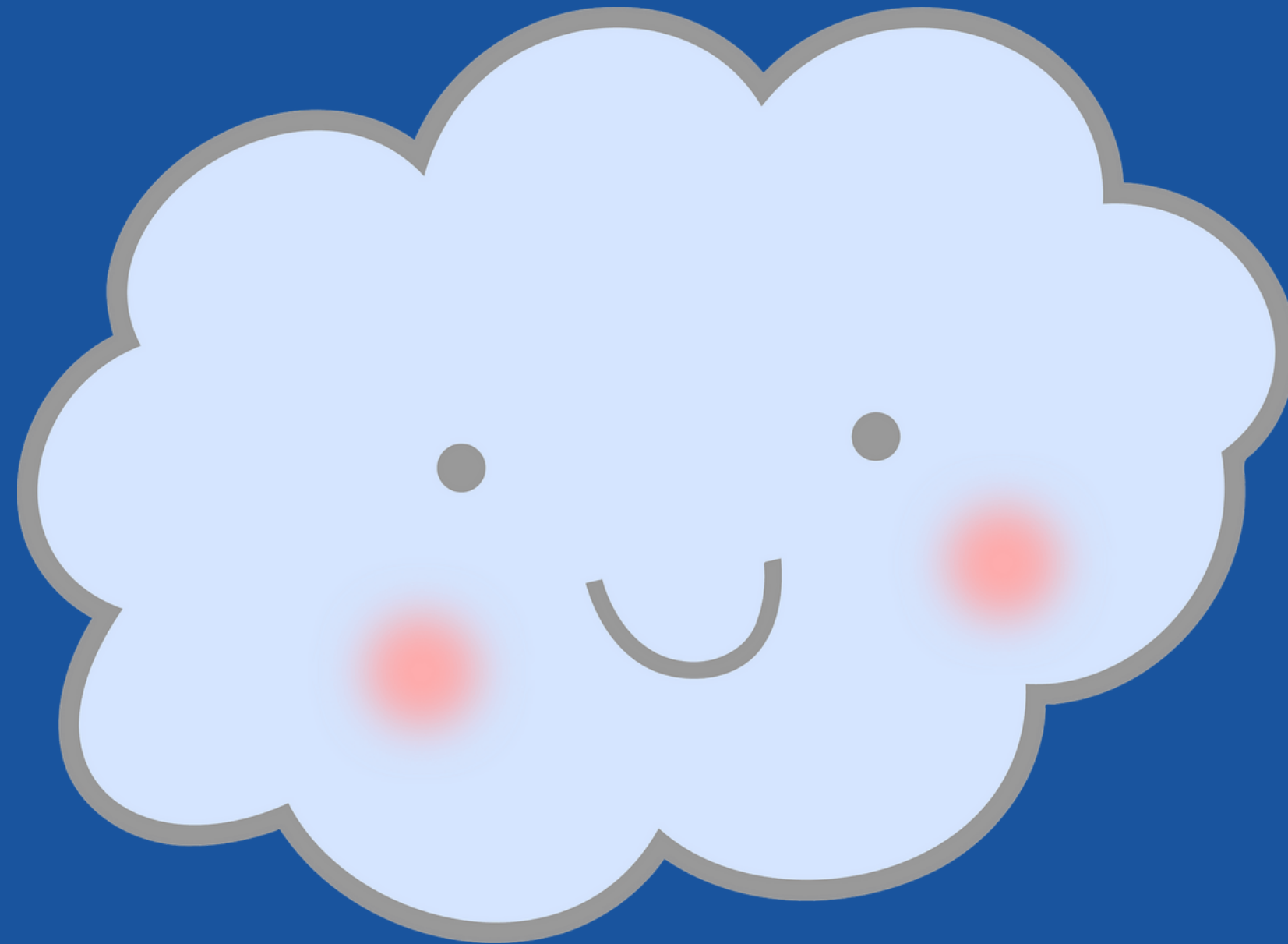
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What if...

WE COULD DO THIS WITH THE CLICK OF A BUTTON?

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That is the cloud.



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The cloud empowers us

- Innovate and experiment faster
- Deploy globally in minutes
- Grow and shrink resources as our business needs change
- Pay for what we use

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Amazon Web Services

SINCE 2006

- Secure, extensive, and reliable cloud platform
- Offers over 175 fully featured services from data centers globally
- 24 regions covering 245 countries and territories

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AWS Developer Community

THEY SUPPORT YOU AND CHEER YOU ON

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Question

CHECK THE CHAT

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Let's build a blog!

WHY A BLOG?

- Show off what you learn
- Build an audience
- Make you more attractive to employers
- Hone your writing skills

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Next week

FOR THOSE WHO'VE NEVER PROGRAMMED BEFORE (OR ANYONE, REALLY)

Workshop-style. Learn more about web development with HTML, CSS, and JS and build a static website on AWS Amplify.

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Week 3

FOR THOSE FAMILIAR WITH WEB DEVELOPMENT

Workshop-style. Build on first two sessions and build a web app deployed to AWS Amplify. Learn about more Amplify features.

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Before you join

MAKE SURE YOU ARE PREPARED

1. Install a text editor – VS Code is preferred (not Notepad or TextEdit)
2. Have access to Chrome or Firefox browser (not IE, Edge, or Safari)

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Last questions

CHECK THE CHAT

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Thank you!

Slides and resources can be found at:

<https://jenna.link/csa>

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