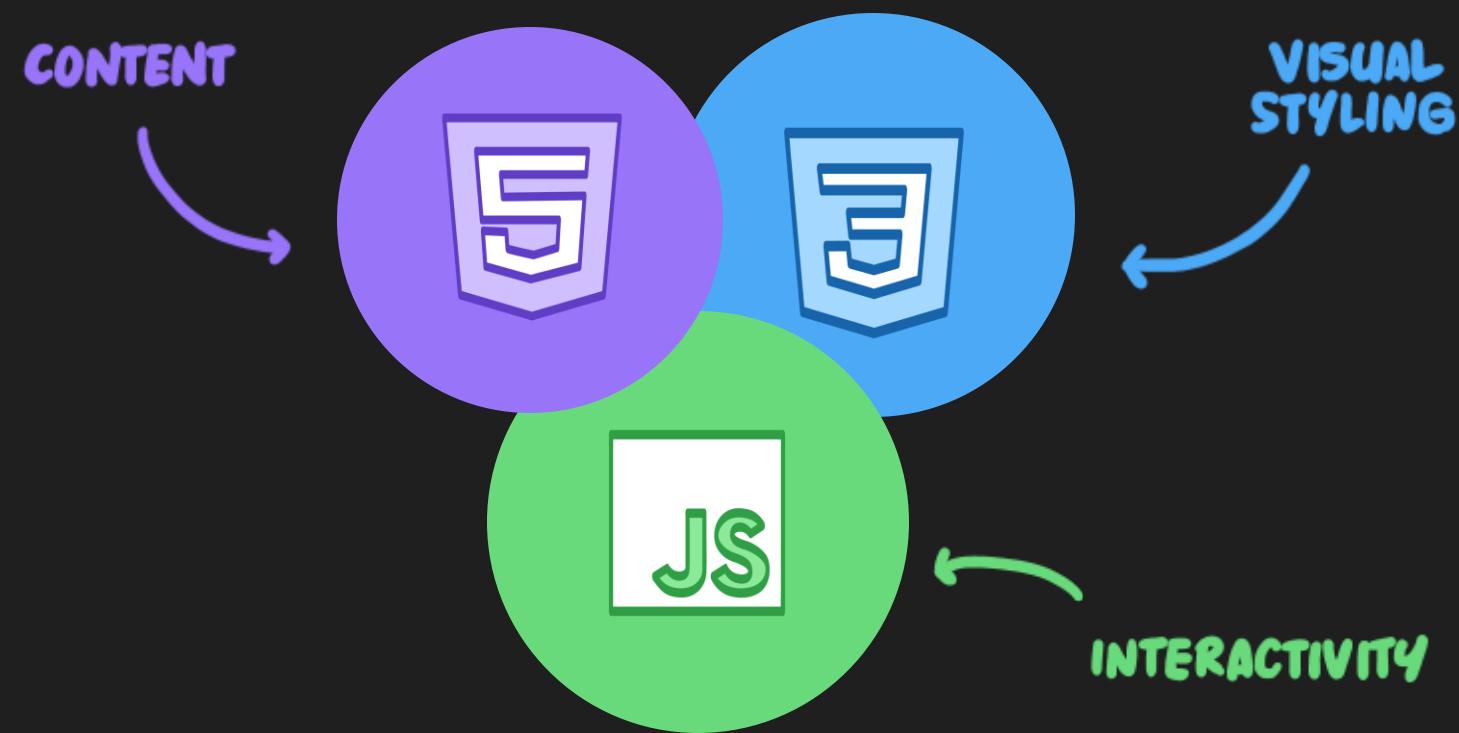


WHAT IS JAVASCRIPT?

A PROGRAMMING LANGUAGE ENABLING DYNAMIC
INTERACTION AND MANIPULATION OF WEBPAGE CONTENT



EVOLUTION OF THE WEB

HTML, CSS, AND JAVASCRIPT EMERGED AT DIFFERENT TIMES TO MEET THE WEB'S EVOLVING NEEDS



NEW RELEASES HAVE CONTINUOUSLY ENHANCED
WEB STRUCTURE, STYLE AND FUNCTIONALITY



HTML

FIRST HTML WEBPAGE
DEVELOPED FOR SHARING
SCIENTIFIC WORK

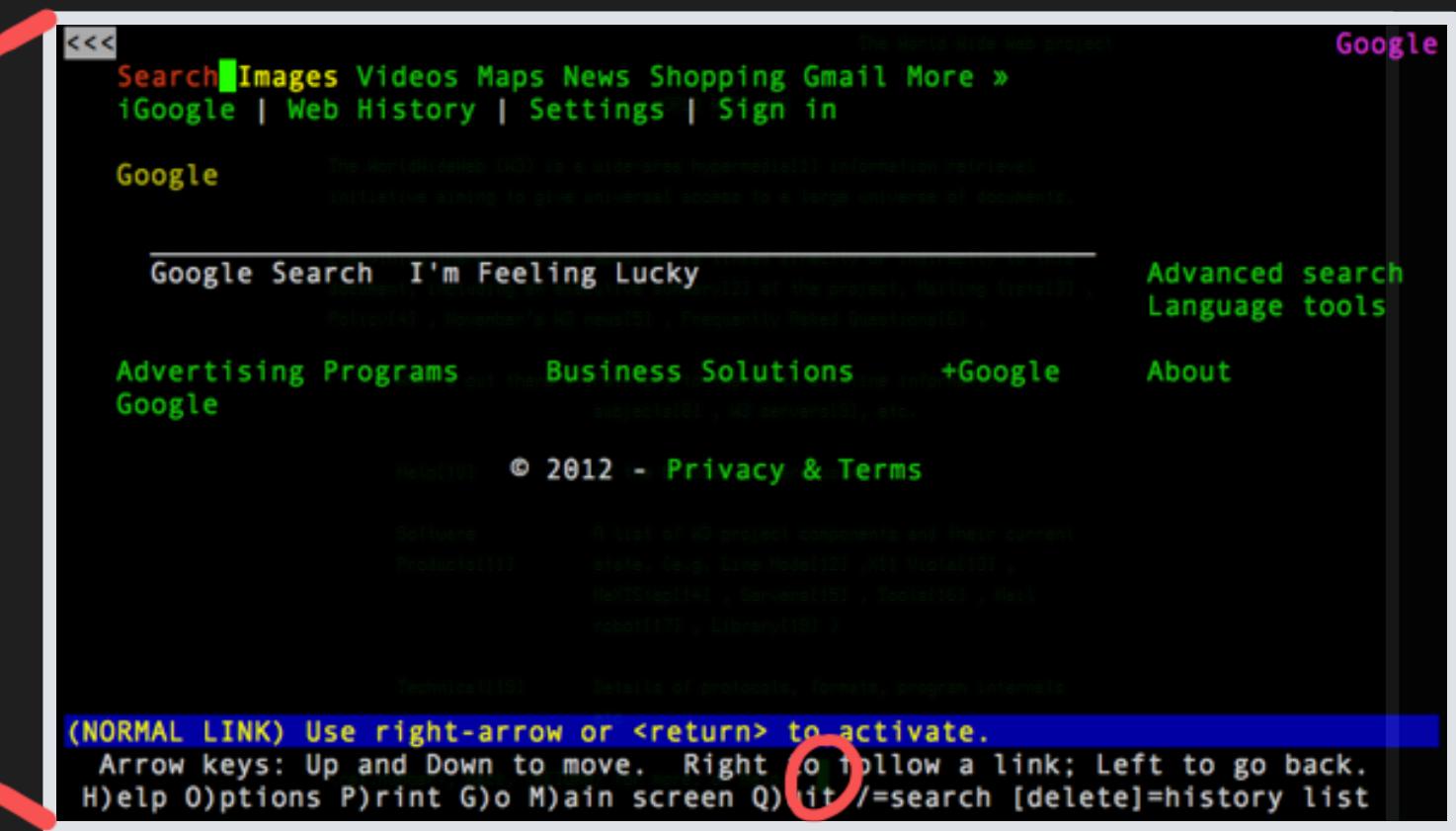
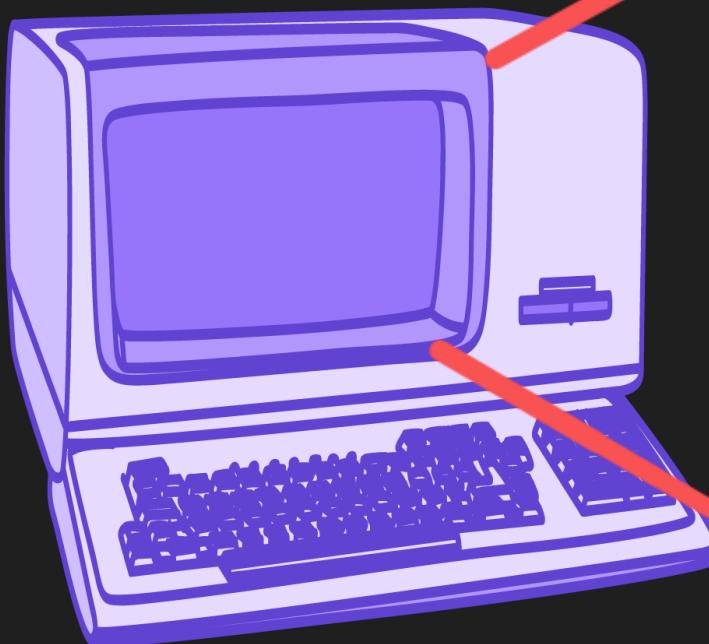
1991





HTML

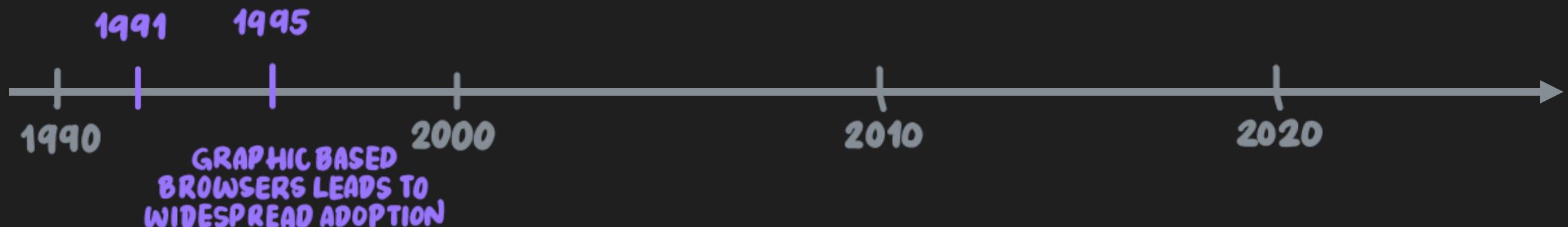
TEXT-BASED





HTML

FIRST HTML WEBPAGE
DEVELOPED FOR SHARING
SCIENTIFIC WORK





HTML

GRAPHICAL





HTML

The screenshot shows the Amazon.com Books homepage. On the left is the Amazon logo with the tagline "Earth's biggest bookstore". The main title "Welcome to Amazon.com Books!" is displayed in a large, bold, black serif font. Below it is a blue paragraph: "*One million titles,* *consistently low prices.*". At the bottom left, there is a callout: "(If you explore just one thing, make it our personal notification service. We think it's very cool!)" with a red arrow pointing to the word "cool". The entire page is framed by a white border.

HEADINGS

PARAGRAPH

HYPERLINKS

SPOTLIGHT! -- AUGUST 16TH

These are the books we love, offered at Amazon.com low prices. The spotlight moves EVERY day so please come often.

ONE MILLION TITLES

HTML

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



HTML

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

USER INPUTS
'COFFEE'



GENERATES
HTML PAGE
WITH COFFEE



PHP

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



SQL

SEARCHES FOR
COFFEE



LIST OF COFFEE

A NEW HTML PAGE LOADS FOR EACH REQUEST



CSS

CSS INTRODUCED TO ADD
VISUAL STYLING TO HTML





CSS

BASIC UI

COLOR

The screenshot shows the Amazon.com homepage from October 7, 1998. The top navigation bar features a green header with links for Book Search, Browse Subjects, Bestsellers, Featured in the Media, Computers & Internet, Gift Center, Kids, and Recommendation Center. A shopping cart icon and links for Your Account and Help are also present. The main content area includes a search bar, a 'Welcome' message for first-time visitors, and sections for 'What We're Reading' (featuring 'The Adams Family') and 'In Music' (featuring 'High Voltage' by Son Volt). The page uses a mix of green, orange, and white colors, with various fonts and icons. Red arrows on the left and right sides point to specific elements, likely highlighting the 'Basic UI' and 'Color' aspects mentioned in the text.

Get what you want. 3 million titles. Save up to 40%.

BOOKS MUSIC

Your Account | Help

Wednesday, October 7, 1998

Play [What's That Song?](#) to win \$50,000!

Plus prizes from the Beastie Boys and 19 others.

Welcome, first-time visitors: [click here](#).

Learn about Amazon.com's [security guarantee](#).

What We're Reading

The Adams Family

Middle managers, beware! Scott Adams's latest is a deeply amusing hybrid--half "Dilbert" book, half survival guide to the corporate jungle. The author has packed *The Joy of Work* with anecdotes from his readership that suggest that life is imitating art throughout the white-collar world. He also offers his own maliciously mirthful takes on telecommuting, goofing off, and must-to-play pranks in the workplace.

Check out the [Amazon.com Hot 100](#). Updated hourly!

In Music

High Voltage

Son Volt's *Wide Swing Tremolo* recalls the days when leader Jay Farrar listened to Hüsker Dü as much as to Hank Williams. Louder and grittier than the band's two previous albums, it's sure to satisfy alt-country fans who like reverb as much as twang. [Visit Music](#).

In Oprah®

Oprah Picks

Oprah has announced her September book-club selection! This time her choice is Pearl Cleage's *What Looks Like Crazy on an Ordinary Day*, a chronicle of two African American sisters contending with life in the troubled (and troubling) 1990s. A gifted playwright, the author has endowed her narrator with a voice that is earthy, street smart, and ultimately hopeful. Read

Text Only

Keyword Search Go!

Books
 Popular Music
 Classical Music

Full search: [Books](#) or [Music](#)

Browse books by subject Go!

Join Associates:
sell books and CDs from your Web site.

Plan for a party in Planning for the Holidays.

Visit Award Winners for the century's most acclaimed books.

Amazon.com Delivers e-mail reviews. Sign up now!

40% off

40% off

CSS

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



HTML CSS

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

USER INPUTS
'COFFEE'



GENERATES
HTML PAGE
WITH COFFEE



PHP

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



SQL

SEARCHES FOR
COFFEE



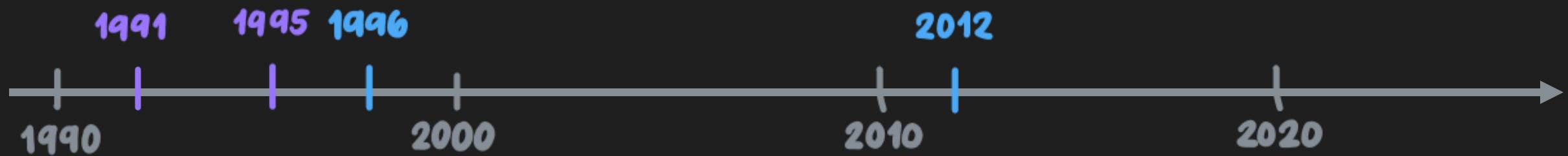
LIST OF COFFEE

A NEW STYLED HTML PAGE LOADS FOR EACH REQUEST



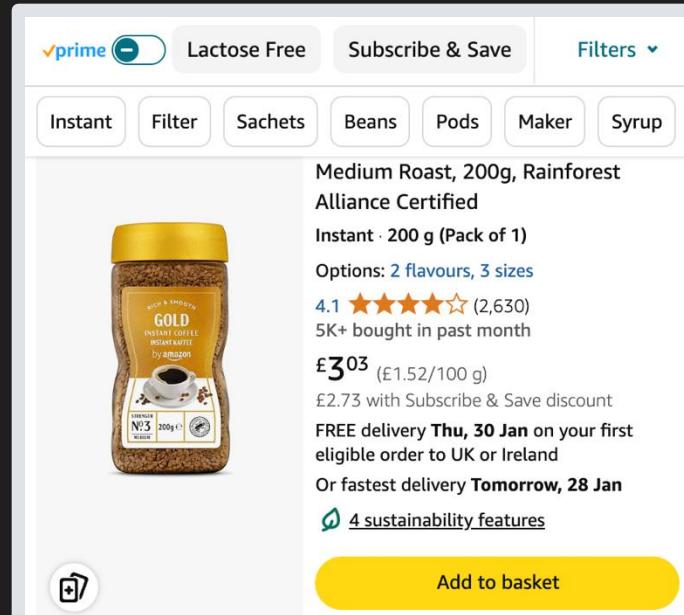
CSS

CSS INTRODUCED TO ADD
VISUAL STYLING TO HTML



MEDIA QUERIES
INTRODUCED FOR
RESPONSIVE LAYOUTS

CSS



A screenshot of an Amazon product page for Nescafe Gold Instant Coffee. The product is shown in a glass jar with a yellow lid. The page includes details like 'Medium Roast, 200g, Rainforest Alliance Certified', price (£3.03), and delivery information. A red arrow points from the word 'RESPONSIVE' to the 'Add to basket' button.

prime Lactose Free Subscribe & Save Filters ▾

Instant Filter Sachets Beans Pods Maker Syrup

Medium Roast, 200g, Rainforest Alliance Certified

Instant · 200 g (Pack of 1)

Options: 2 flavours, 3 sizes

4.1 ★★★★☆ (2,630)
5K+ bought in past month

£3.03 (£1.52/100 g)
£2.73 with Subscribe & Save discount

FREE delivery Thu, 30 Jan on your first eligible order to UK or Ireland
Or fastest delivery Tomorrow, 28 Jan

4 sustainability features

Add to basket

Sponsored ⓘ

NESCAFÉ Azera Americano Instant Coffee 140g (Pack of 6)

Ground · 140 g (Pack of 6)

Options: 3 sizes, 3 flavours

4.8 ★★★★☆ (898)
3K+ bought in past month

£39.00 (£4.64/100 g) RRP: £47.94
£35.10 with Subscribe & Save discount
Save 5% on any 4 qualifying items

6 x 140g 140g

RESPONSIVE
LAYOUT

CSS

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



HTML CSS

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

USER INPUTS
'COFFEE'



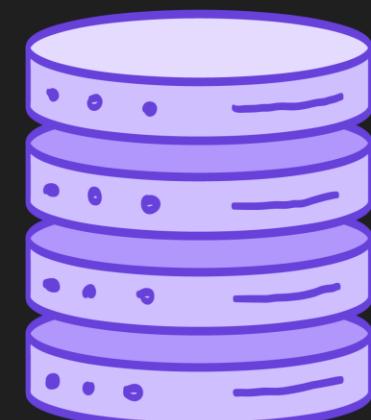
GENERATES
HTML PAGE
WITH COFFEE



PHP

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



SQL

SEARCHES FOR
COFFEE



LIST OF COFFEE

RESPONSIVE

A NEW STYLED HTML PAGE LOADS FOR EACH REQUEST



CSS

CSS INTRODUCED TO ADD
VISUAL STYLING TO HTML

1991 1995 1996



FLEXIBLE LAYOUTS WITH
FLEXBOX AND GRID

2012 2017

MEDIA QUERIES
INTRODUCED FOR
RESPONSIVE LAYOUTS

2010

2020



CSS

GRID LAYOUT

FLEX

The image shows the Amazon.co.uk website homepage for Valentine's Day. The main headline reads "Smart clock with vibrant sound." followed by "echo spot with Alexa". Below the headline is a large image of the Echo Spot device on a wooden shelf. To the left, there's a sidebar with a "She'll love these" section featuring a pink camera, a red heart-shaped plush toy, and a pink tumbler. To the right, there are sections for "Top offers" (including a yellow McLaren car and a golden Star Wars figure), "Little things he'll love" (a red massage gun, a red perfume bottle, and a red beanie), and "You're Cordially Invited - 30 Jan" (a man in a tuxedo hugging a large alligator). The top navigation bar includes links for All, Search, Account & Lists, Returns & Orders, and Basket.

amazon.co.uk Deliver to London NW4 1 All Search Amazon.co.uk

All Grocery Best Sellers New Releases Amazon Basics Today's Deals Prime Prime Video Music Books Gift Cards & Top Up Home & Garden

Hello, sign in Account & Lists Returns & Orders Basket

Cupid's corner

Smart clock with vibrant sound.

echo spot with Alexa

She'll love these

Top offers

Little things he'll love

You're Cordially Invited - 30 Jan

Watch trailer

See more

See more

https://www.amazon.co.uk/dp/B0C2GGPBZP/ref=ods_nw_GW_GB_EN_AUCC_BAK_MWAC1BAL_MWAC1_SH2_encoding=UTF8&pd_rd_w=474vx&content_id=amzn1.svmm.7fac4b59-73bd-4527-953a-71857d5e0a06&pf_rd_p=7fac4b59-73bd-4527-953a-71857d5e0a06&pf_rd_r=F37S7JIP34N

CSS

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



HTML CSS

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

USER INPUTS
'COFFEE'



GENERATES
HTML PAGE
WITH COFFEE



PHP

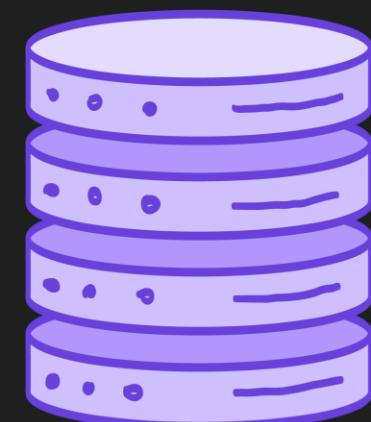
SEARCHES FOR
COFFEE



LIST OF COFFEE

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



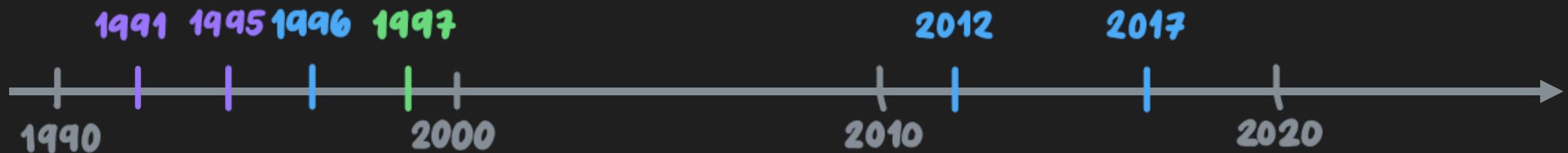
SQL

RESPONSIVE WITH FLEXIBLE LAYOUTS
A NEW STYLED HTML PAGE LOADS FOR EACH REQUEST



JAVASCRIPT

JAVASCRIPT ADDED TO THE
BROWSER FOR SIMPLE
INTERACTIVITY



JAVASCRIPT

Friday, August 27, 1999

SEARCH
All Products GO

BROWSE

- **Books**
[Bestsellers](#), [Computers](#),
[Kids](#), [Business](#)...
- **Music**
[New Releases](#), [Top Sellers](#), [Classical](#),
[Soundtracks](#)...
- **Video**
[DVDs](#), [Top Sellers](#), [New Releases](#), [Kids & Family](#)...
- **Auctions**
[Books](#), [CDs](#), [Photo Equipment](#),
[Collectibles](#)...
- **Electronics**
[TVs](#), [Cameras](#),
[Computer Add-Ons](#),
[DVD Players](#)...
- **Toys & Games**
[Toys for Grownups](#),

WELCOME TO amazon.com

Hello! Shopping at Amazon.com is 100% secure--guaranteed.
Already a customer? [Sign in](#).

In Books

London Calling



Wrapping up an ambitious reissue program, the great Penelope Fitzgerald delivers not one but two classics in miniature. *The Golden Child* is the British author's first novel, in which an ancient mummy ignites a curatorial ruckus, while *At Freddie's* revolves around a drama academy and its deeply amusing student body. Go to [Books](#)

In Electronics

MiniDisc the Magnificent



Sony's [Bundle5 MiniDisc package](#) harmonizes two separate products--a MiniDisc home recording deck and a portable MiniDisc player--so you can record, edit, and title your own discs from both analog and digital sources, then enjoy them on the go. Go to [Electronics](#)

In Toys & Games

Pack with Pride



We ain't lion: this adorable [Goliath Backpack Pal](#) is a *grrreat* way to scare away those first-day-of-school jitters. Fill his tummy with books, toys, and treats, and this furry beast will be your child's mane man in no time. Go to [Toys & Games](#)

What are they listening to in Austin, Texas?
Explore Amazon.com Purchase Circles.

Amazon.com 100 Hot Books
Updated Hourly

1. [Harry Potter and the Prisoner of Azkaban](#) by J. K. Rowling
2. [Harry Potter and the Sorcerer's Stone](#) by J. K. Rowling
3. [Harry Potter and the Chamber of Secrets](#) by J. K. Rowling

More Hot Books

SHOW OR HIDE

JAVASCRIPT

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



HTML
CSS
JAVASCRIPT

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

USER INPUTS
'COFFEE'

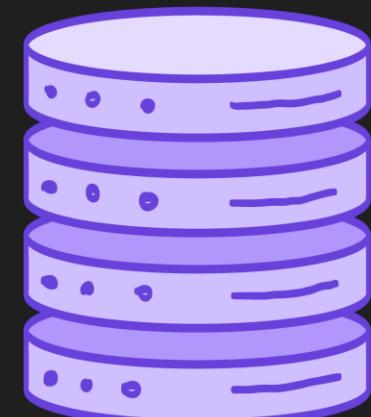
GENERATES
HTML PAGE
WITH COFFEE



PHP

SEARCHES FOR
COFFEE

LIST OF COFFEE



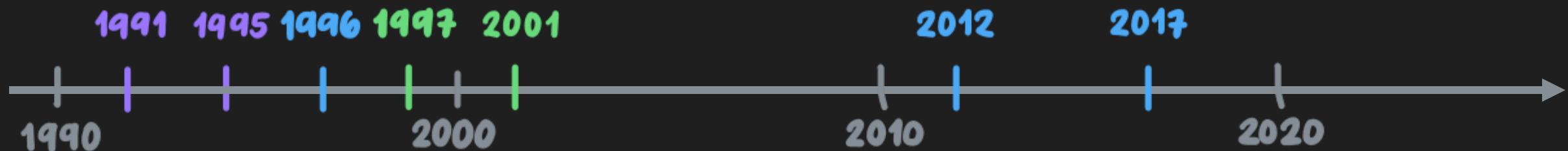
SQL

A NEW STYLED HTML PAGE WITH BASIC INTERACTIVITY LOADS FOR EACH REQUEST



JAVASCRIPT

JAVASCRIPT ADDED TO THE
BROWSER FOR SIMPLE
INTERACTIVITY



ASYNCHRONOUS DATA LOADING,
ALLOWS FOR SOME LIVE CONTENT
UPDATES WITHOUT PAGE RELOADS



JAVASCRIPT

INCREASING QUANTITY → **NUMBER CHANGES**

NUMBER CHANGE ↓

The screenshot shows a shopping basket interface. At the top left, it says "Shopping Basket" and "Deselect all items". There are two items listed:

- NUK Signature Day & Night Baby Dummy | 0-6 months | Soothes 95% of Babies | Heart-Shaped BPA-Free Silicone Soothers | Glow-in-the-Dark | Hearts | 4 Count**
Only 6 left in stock (more on the way).
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Colour Name: Pink
Size Name: 0-6m
Quantity: 2 (highlighted with a red box)
Delete | Save for later | Share
- L'OR Espresso Ristretto Coffee Pods x40 Intensity 11 (Pack of 1, Total 40 Capsules)**
by L'Or Espresso
In stock
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Flavour Name: Unflavoured
Size Name: 40 count (Pack of 1)
Quantity: 1 (highlighted with a red box)
Delete | Save for later | See more like this | Share

At the bottom left, it says "Your Items" and lists: "Saved for later (140 items)" and "Buy it again".

On the right side, there's a summary:
Subtotal (3 items): £28.00
 This order contains a gift
Proceed to Checkout

Below the summary, there are recommended products:

- 8 Pack Dummy Clip Girls, Pacifier Holders... £5.99 ✓prime Add to Basket
- 8Pcs Dummy Clip Girls, Baby Pacifier Clips... £5.19 ✓prime Add to Basket
- NUK Disney Winnie The Pooh Dummy Band &... £5.99 ✓prime Add to Basket
- COAR Meal Prep Containers Reusable 6... £6.99 ✓prime Add to Basket

At the very bottom, there are navigation links: Books (10), Bento boxes (2), Grocery store (5), Soothers (1), Hat racks (1), Space saver bags (3), Car seats (1), Furniture legs (1).

JAVASCRIPT

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



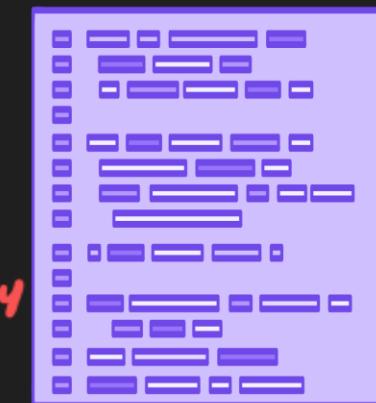
HTML
CSS
JAVASCRIPT

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

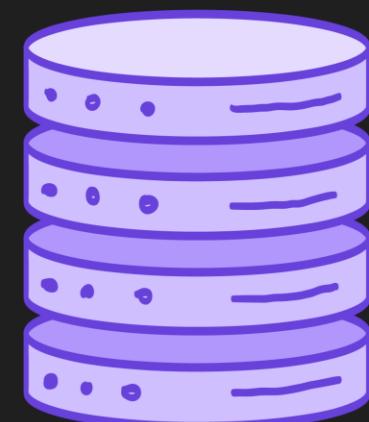
INCREASE
QUANTITY
→
←
UPDATES QUANTITY
& COST ON
HTML PAGE



PHP

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



SQL

SOME CONTENT IS ABLE TO UPDATE WITHOUT A FULL HTML PAGE RELOAD



JAVASCRIPT

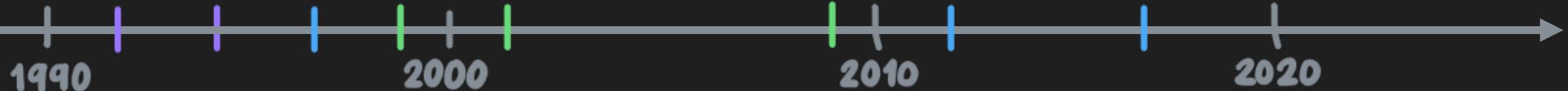
JAVASCRIPT ADDED TO THE
BROWSER FOR SIMPLE
INTERACTIVITY

NODE.JS ALLOWS
JAVASCRIPT ON
SERVER SIDE

1991 1995 1996 1997 2001

2009 2012

2017



ASYNCHRONOUS DATA LOADING
ALLOWS FOR SOME LIVE CONTENT
UPDATES WITHOUT PAGE RELOADS



JAVASCRIPT

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



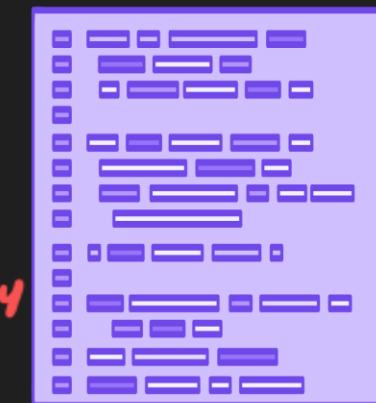
HTML
CSS
JAVASCRIPT

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

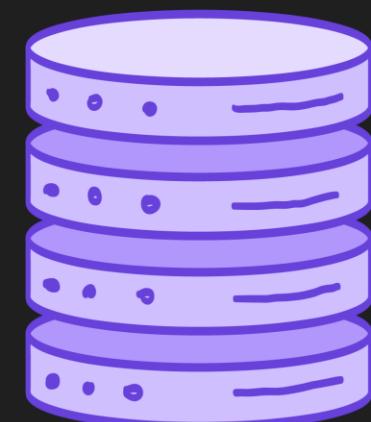
INCREASE
QUANTITY
→
←
UPDATES QUANTITY
& COST ON
HTML PAGE



PHP
NODEJS

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



SQL

JAVASCRIPT IS NOW AVAILABLE ON THE BACK-END



JAVASCRIPT

JAVASCRIPT ADDED TO THE
BROWSER FOR SIMPLE
INTERACTIVITY

1991 1995 1996 1997 2001

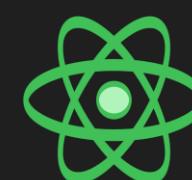
NODE.JS ALLOWS
JAVASCRIPT ON
SERVER SIDE

2009 2011 2012 2017



ASYNCHRONOUS DATA LOADING
ALLOWS FOR SOME LIVE CONTENT UPDATES WITHOUT PAGE RELOADS

GROWTH OF COMPLEX SINGLE PAGE APPLICATIONS (SPAs) LIKE
ANGULAR, REACT AND VUE



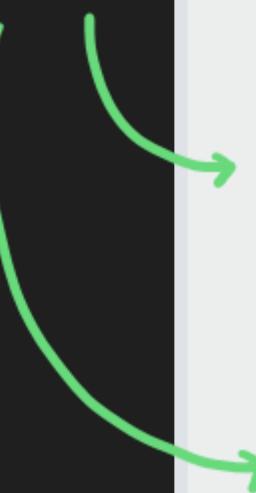
JAVASCRIPT

PRODUCT
COMPONENT

PRICE
COMPONENT

RELATED PRODUCT
COMPONENT

ADD
PRODUCT
TO CART



NUK Signature Day & Night Baby Dummy | 0-6 months | Soothes 95% of Babies | Heart-Shaped BPA-Free Silicone Soothers | Glow-in-the-Dark | Hearts | 4 Count
Only 6 left in stock (more on the way).
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Colour Name: Pink
Size Name: 0-6m
- 2 + | Delete | Save for later | Share

£9.00
Save 5% on any 4 Qualifying items | Terms

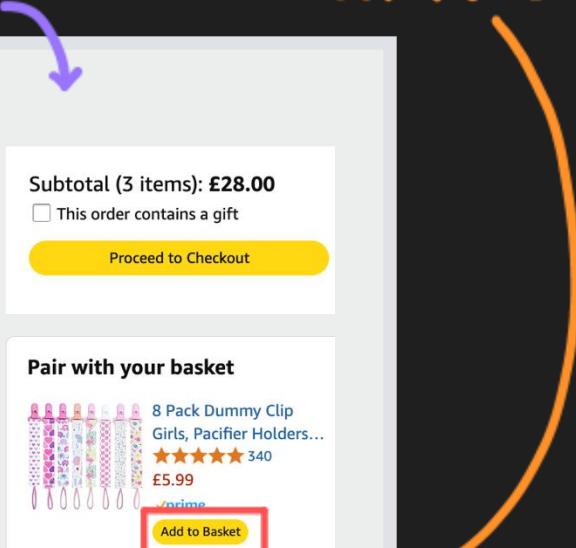
L'OR Espresso Ristretto Coffee Pods x40 Intensity 11 (Pack of 1, Total 40 Capsules)
by L'Or Espresso
In stock
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Flavour Name: Unflavoured
Size Name: 40 count (Pack of 1)
- 1 + | Delete | Save for later | See more like this | Share

£10.00
£0.25 / count
Save 5% now with Subscribe & Save >
Save 5% on any 4 Qualifying items | Terms

Subtotal (3 items): £28.00
 This order contains a gift
Proceed to Checkout

Pair with your basket

- 8 Pack Dummy Clip Girls, Pacifier Holders...
£5.99
✓prime
Add to Basket
- 8Pcs Dummy Clip Girls, Baby Pacifier Clips...
£5.19
✓prime
Add to Basket
- NUK Disney Winnie The Pooh Dummy Band &...
£5.99
✓prime
Add to Basket



JAVASCRIPT

PRODUCT
COMPONENT

PRODUCT
COMPONENT
ADDED

PRICE
COMPONENT
UPDATED

RELATED PRODUCT
COMPONENT

ADD
PRODUCT
TO CART

NUK Signature Day & Night Baby Dummy | 0-6 months | Soothes 95% of Babies | Heart-Shaped BPA-Free Silicone Soothers | Glow-in-the-Dark | Hearts | 4 Count
Only 6 left in stock (more on the way).
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Colour Name: Pink
Size Name: 0-6m
- 2 + | Delete | Save for later | Share

L'OR Espresso Ristretto Coffee Pods x40 Intensity 11 (Pack of 1, Total 40 Capsules)
by L'Or Espresso
In stock
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Flavour Name: Unflavoured
Size Name: 40 count (Pack of 1)
- 1 + | Delete | Save for later | See more like this | Share

8 Pack Dummy Clip Girls, Pacifier Holders Leashes Set Soother Chains Holder Pacifier Clips Dummy Strap Pacifier Gag Strap Soother Clips for Baby Teething Toys Baby Sh...
In stock
✓prime One-Day
FREE delivery Tomorrow, 28 Jan
 This will be a gift Learn more
Colour: pink
- 1 + | Delete | Save for later | Share

£9.00
Save 5% on any 4 Qualifying items | Terms

£10.00
(£0.25 / count)
Save 5% now with Subscribe & Save >
Save 5% on any 4 Qualifying items | Terms

£5.99
Save 5% on any 4 Qualifying items | Terms

Subtotal (4 items): £33.99
 This order contains a gift
Proceed to Checkout

Pair with your basket

- 8 Pack Dummy Clip Girls, Pacifier Holders...
£5.99
✓prime
Add to Basket
- 8Pcs Dummy Clip Girls, Baby Pacifier Clips...
£5.19
✓prime
Add to Basket
- NUK Disney Winnie The Pooh Dummy Band &...
£5.99
✓prime
Add to Basket

JAVASCRIPT

CLIENT

FRONT-END

DISPLAYS CONTENT &
HANDLES USER ACTIONS



HTML CSS

JAVASCRIPT

JAVASCRIPT FRAMEWORKS

SERVER

BACK-END

TAKES USER REQUESTS TO
PROVIDE A RESPONSE

ADD NEW
PRODUCT



ADDS PRODUCT
AND UPDATES
PRICING

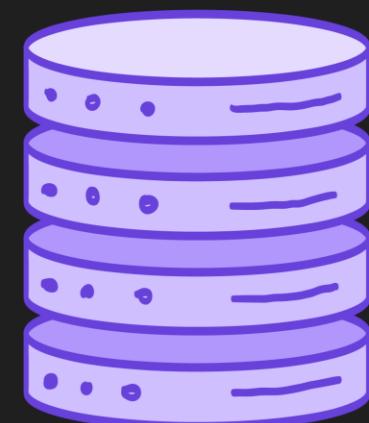


PHP

NODEJS

DATABASE

STORES AND MANAGES DATA
THAT USERS NEED



SQL

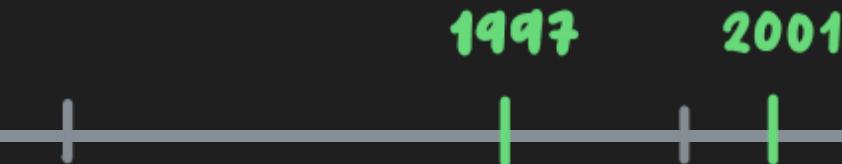
ONLY THE NECESSARY CONTENT IS UPDATED WITHOUT A FULL PAGE RELOAD

SUMMARY CARD

INTRODUCTION TO JAVASCRIPT

A PROGRAMMING LANGUAGE ENABLING DYNAMIC
INTERACTION AND MANIPULATION OF WEBPAGE CONTENT

SIMPLE INTERACTIVITY



ASYNC UPDATES

NODE.JS



SPAs

1990

2020