Slideshow 4

Information Architecture

INFO 6150 Fernando Augusto López Plascencia

In this lesson:

- What is information architecture
- Planning and organizing a website; website maps
- SEO
- Semantic HTML
- Putting it all together: an example

- What's the difference between data and information?

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- Data:
 - Anything that can be known.
 - Inputs and outputs of processes.

- What's the difference between data and information?
- Data:
 - Anything that can be known.
 - Inputs and outputs of processes.
- Information: Useful data.
 - Data that is relevant.
 - Data that someone cares about.
- "Data" can be noisy. "Information" is not.

Means: how to organize data in a way that is

- Relevant
- Intuitive (easy to find)
- Understandable

Think: What's the information architecture of a newspaper? A magazine? A book?



First, understand the user.

We already did this. Ideally we

- Interviewed stakeholders (at a minimum),
- Interviewed users,
- Possibly created personas,
- Possibly made user journey maps.

We know who the user is, what they want to do and (more or less) what we want to give them.

Understanding the information

- What kind of information?
 - If complex: how does it relate to each other?
- What functionality does the website or app need?
- How to organize it?

Now that you know your users, contexts and information, it's time to create a solution.

You will express that:

- Website maps,
- Flow charts,
- Low- and High-fidelity mockups.

(We will talk about the flow charts next week.)

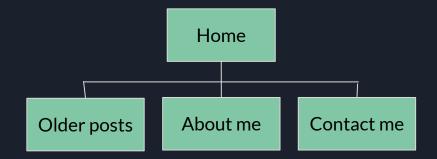
Website maps are hierarchical. They will be enough for smaller use cases, and will provide a blueprint for larger ones.

A website map shows:

- What pages are in the website or app;
- What information each page contains.

It also organizes the pages in sections.

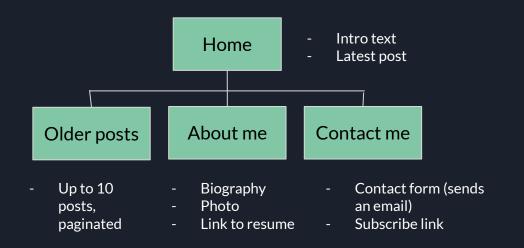
Each box is a page. A page can have sub-pages to create a website section. (Example: a blog.)

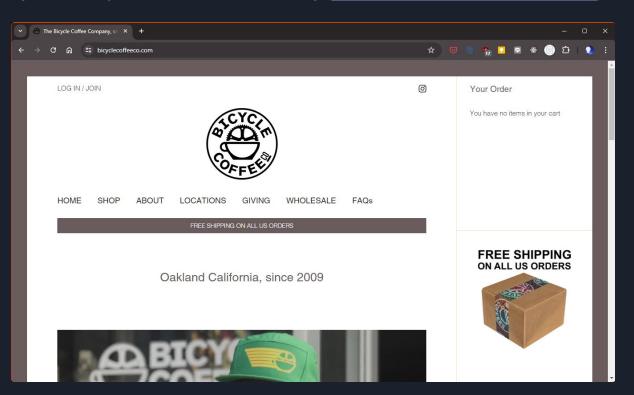


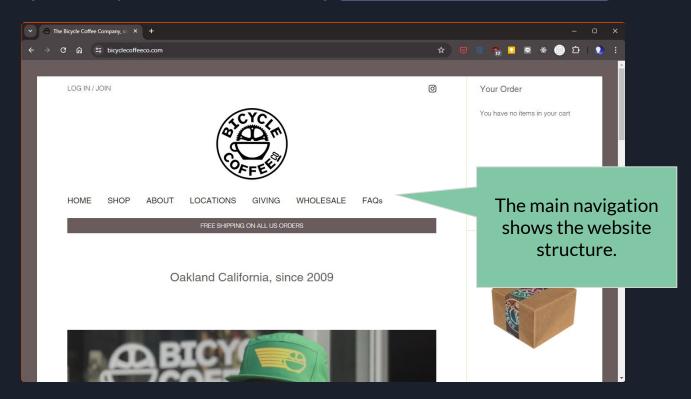
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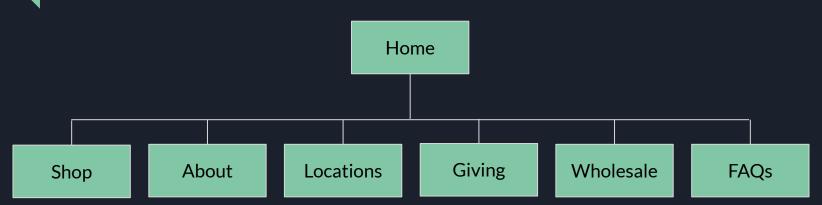
You can add what information is on each page using notes or lists.

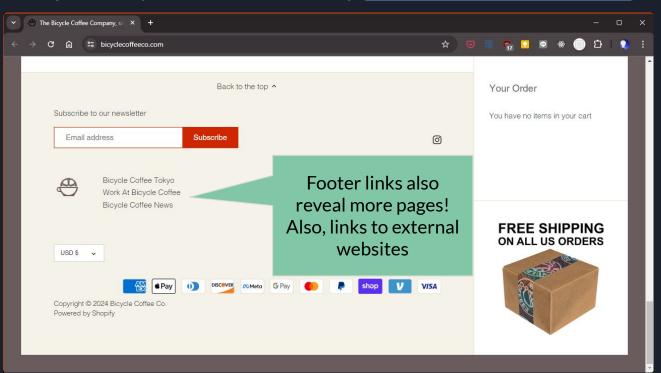
Remember: only use boxes for pages! A box means a page.

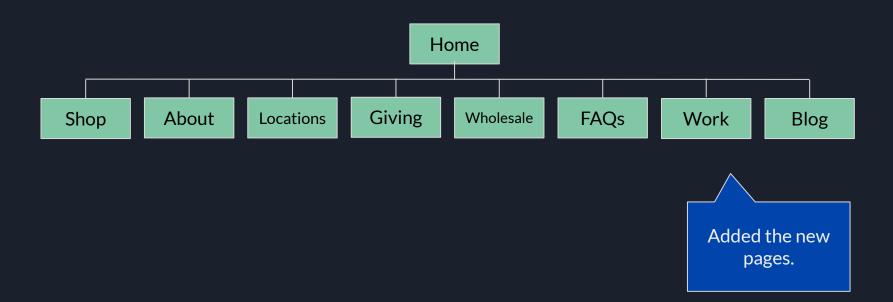


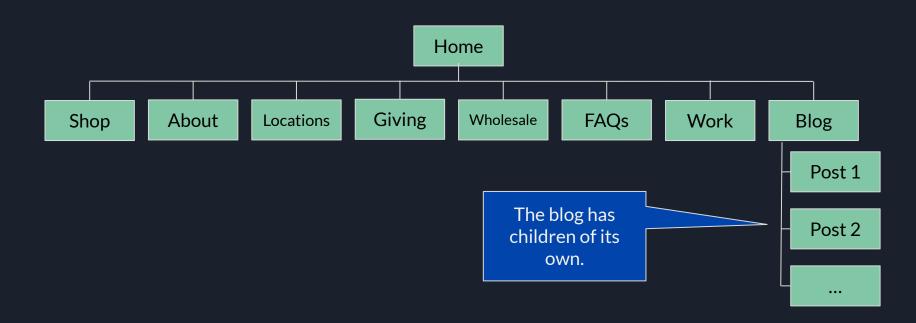


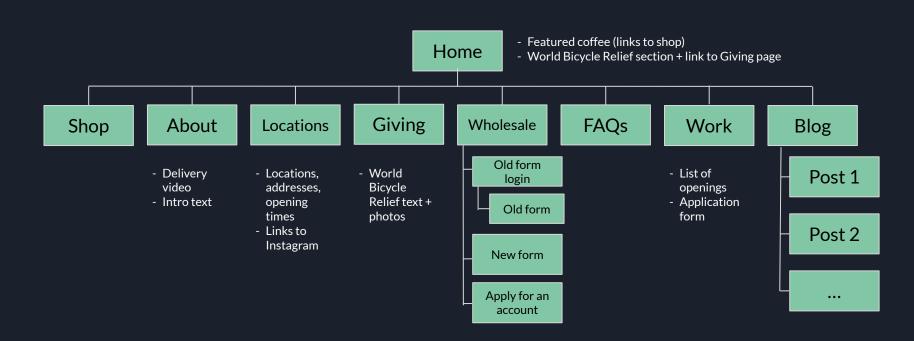


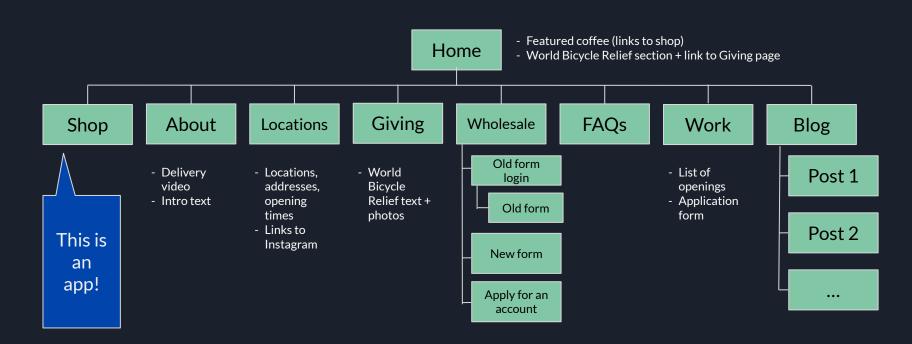












What about apps?

Apps will generally have static and dynamic parts.

We can represent different screens in the map, if that serves your purpose better.

You can also represent processes with steps as connected boxes. This can be part of the website map if needed.

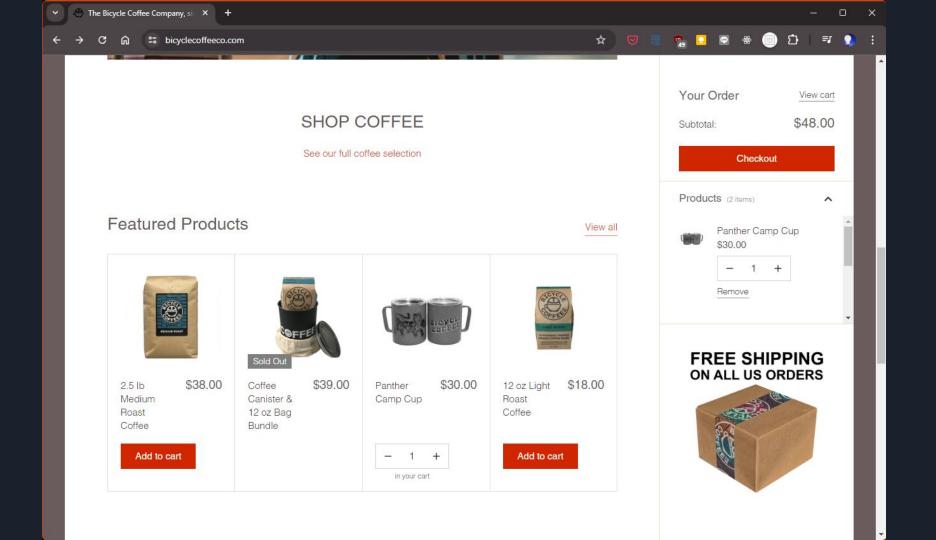


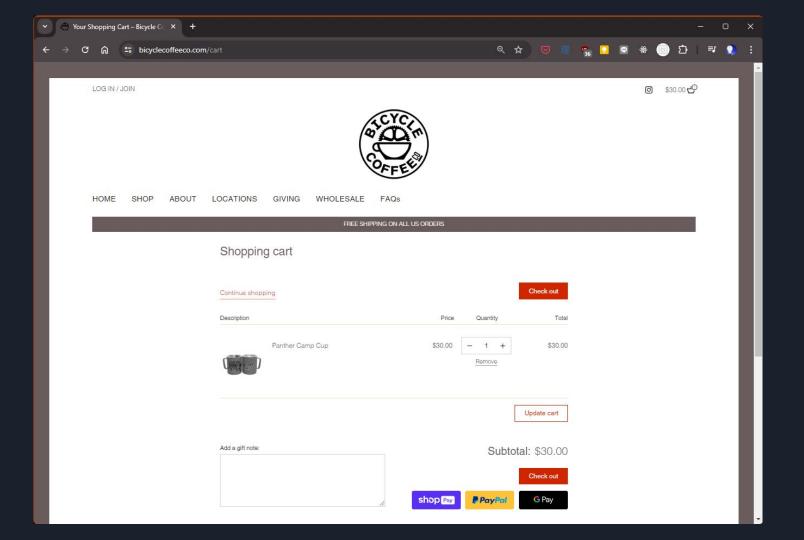
A box chart example

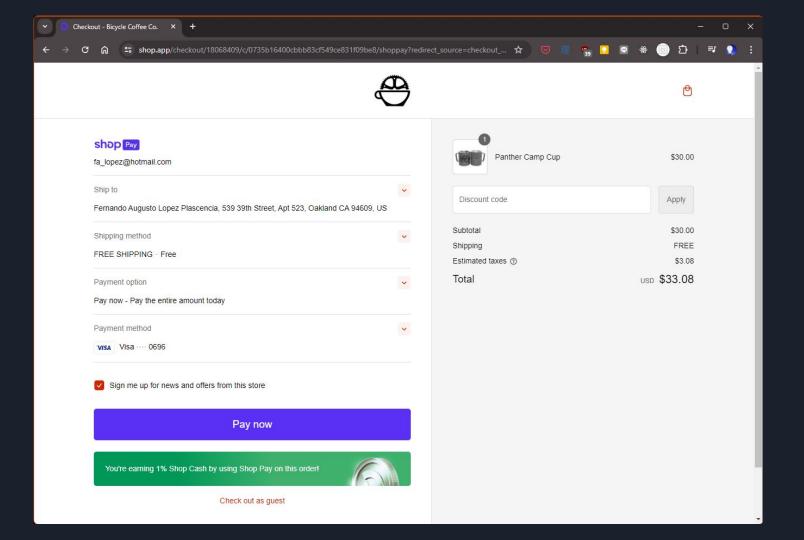
Example: the Bicycle Coffee Co. shop (https://www.bicyclecoffeeco.com/)

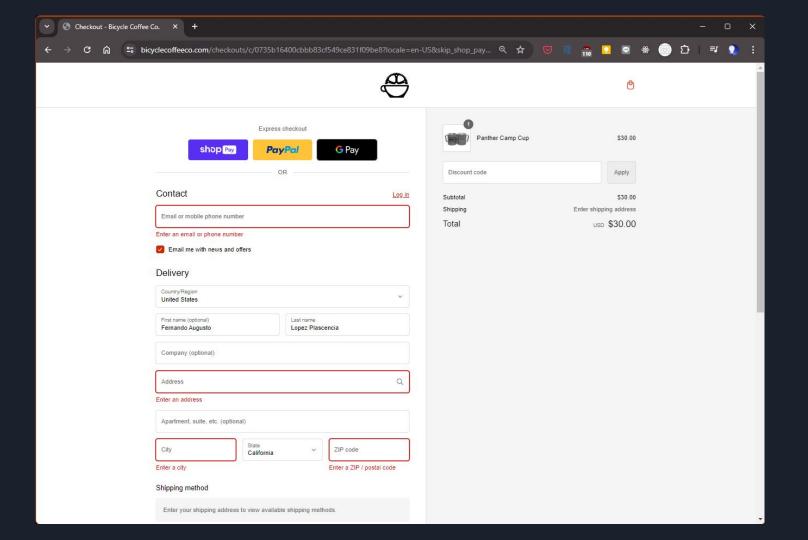
Here, the emphasis is on the screens we will display.

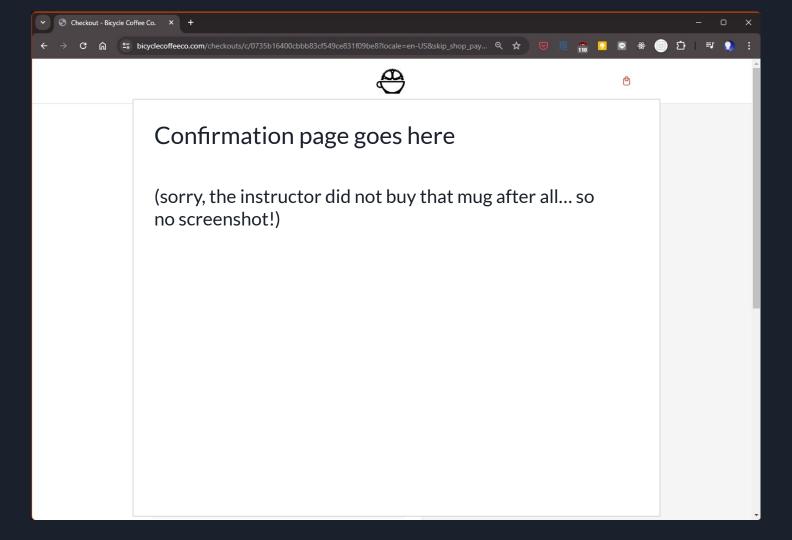
Let's first explore the process.







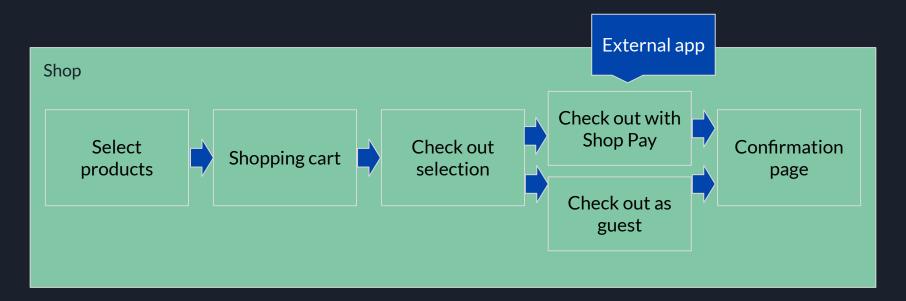




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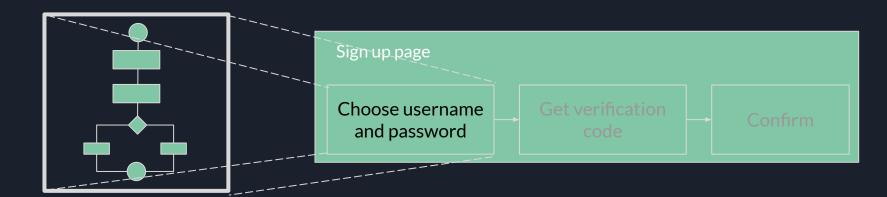
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Flowcharts vs. box charts

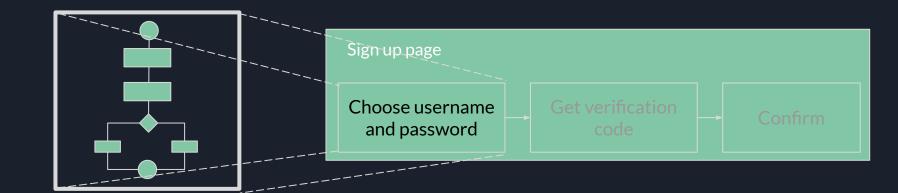
Boxes in box diagrams are more generic than flowcharts.

A box usually represents a wide "section" of a process. Each one can contain many smaller steps with logic in them. For example, the "choose username and password" may contain steps to: write the username, write the password twice, check that the password follows certain rules, etc.



Flowcharts vs. box charts

For complex processes, it may be useful to first know the process (eg. flowchart) and then split it in steps.



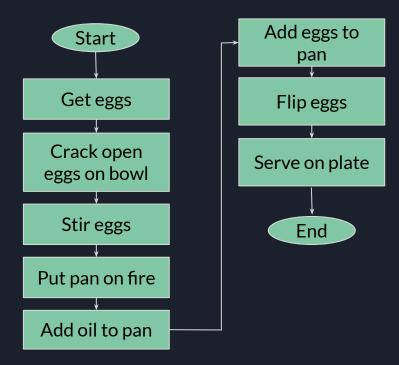
The main symbols of a flowchart and what they mean:

- "Start" or "end" it's a circle
- Instruction or step (eg. something that is done)
- Decision (eg. a question with "yes" or "no" answer)
- Connector: to join two flows it's a smaller circle, or a dot

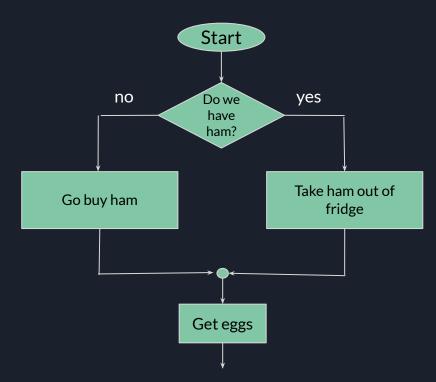
Flowchart rules:

- Connect symbols with arrows in the direction of the flow.
- Symbols have only one input (one arrow going in) and one output (one arrow going out).
 - Exceptions: conditions have two outputs; connectors have two inputs
- Always extend the chart down and to the right, wherever possible
 - You may also use connectors with letters to split the graph in sections if needed

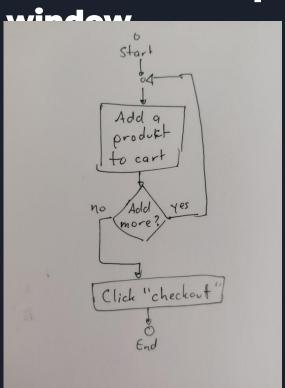
Example: Making an omelette



Example with decisions: Making an ham omelette



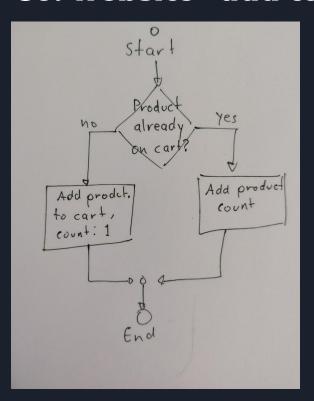
A (so-so) flowchart for the Bicycle Coffee Co. website shop "Select products"



A flowchart is not always the best way to represent a non-sequential flow such as that in a website.

- The user does not actually get asked "do you want to add more products?", it's just a decision that they choose to do.
- We are also missing functionality (buttons) such as "change number of products" or "remove from cart".

A (better) flowchart for the Bicycle Coffee Co. website "add to cart" button



However, flowcharts are great to represent sequences of events, for example, what happens when clicking a particular button.

(tip: handwritten notes and charts are totally okay, as long as they're correct and understandable!)

The page mockup

Once you know how the website is distributed, now you need to plan for the pages.

You do that through mockups.

These are just drawings of how the page will look like.

Two kinds:

- Low fidelity: simple schemes; could be even crude drawings in a page
- High fidelity: highly accurate drawings, sometimes interactive

We'll talk about these in the next lessons.

Mockups vs. website maps: Can you do them at the same time?

RESIST THE TEMPTATION TO FULLY DESIGN THE PAGES NOW!

This goes in the next step.

Do not design without a good architecture first!

At most, you could do low-definition mockups at the same time, and only if that helps you figure out the IA better.

In this class, we will do the website maps first!



Information Architecture of a website

The owner of a restaurant chain has asked you to create a website for their business.

- What questions will you ask? What do you need to know? (This is called requirements gathering).
 - Create personas and use cases.
 - Create a list of information and functionalities.
 - What information will be challenging to organize, if anything? How can we organize it?



Information Architecture of a website

The owner of a restaurant chain has asked you to create a website for their business.

- Understand the problem:
 - Do discovery. Think of personas and what they would do. Create at least one user journey to uncover hidden opportunities.
- Propose a solution:
 - Create a website map.
 - For any dynamic sections (app-like), create box diagrams.
 - You may create flow charts at this point, but it's not required.

SEO and Semantic HTML

Why SEO matters

An essential part of online marketing.

Search Engine
Optimization: to
make a website
more findable,
relevant and
popular in search
queries. Raises
organic search
results (as opposed
to ad-based).



https://blog.hubspot.com/marketing/seo

What it used to be:

"Trick Google into thinking our website is important"; "discover the algorithm"

What it is (or should be) now:

"Be a good citizen and build a good website"; "customize search results"

What it used to be:

"Trick Google into thinking our website is important"; "discover the algorithm"

What it is (or should be) now:

"Be a good citizen and build a good website"; "customize search results"

- Content semantics through semantic HTML
- Page speed and performance
- Internal linking and backlinks
- Optimization of appearance in search results
- XML sitemaps; robots.txt files
- Avoid duplicating content (eg. copying it from elsewhere in the web)
- etc.

What it used to be:

"Trick Google into thinking our website is important"; "discover the algorithm"

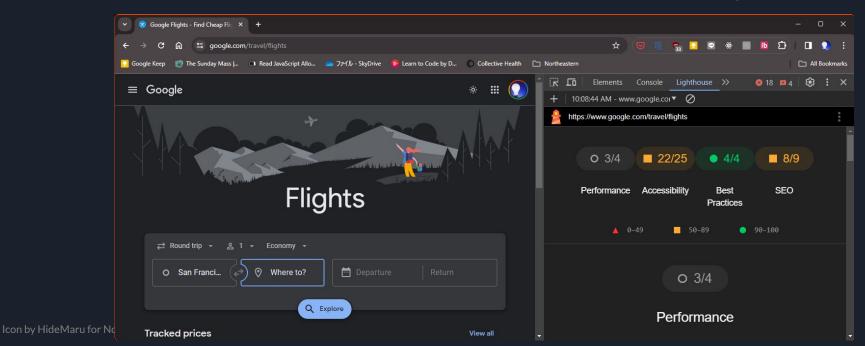
What it is (or should be) now:

"Be a good citizen and build a good website"; "customize search results"

- Content semantics through semantic HTML
- For everything else, there are free and paid tools
 - o Google Search Console: https://search.google.com/search-console/about
 - Free tools by Ahrefs: https://ahrefs.com/free-seo-tools
 - o And many others



- Generate a "snapshot" report of any website using the Searchlight panel of the Chrome Developer Tools.
 - What are the SEO observations? How can this website improve?



Search Engine Optimization and Semantic HTML

We want the computer and the spiders to understand our website's information too.

- Spiders, aka crawlers: programs used by Google, etc. to explore the web.
- Their results will power Google searches.

The different parts of the website and page have meaning.

- Within a website: homepage, internal pages... (XML sitemaps, robots.txt)
- Within a page: Header, footer, sidebars, navigation... (Semantic HTML)

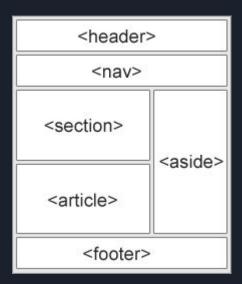
Semantic HTML

In programming, "Semantics" refers to the meaning of a piece of code (MDN); for example, what is the purpose of an HTML element.

- Choose the elements that represent the meaning of the contents.
- Important for more than SEO:
 - Helps screen readers narrate the page better
 - Creates code that is much simpler to read
- Around 100 semantic elements available.

Structuring a page with Semantic HTML

Some elements create blocks for the parts of the page.



From w3schools

Semantic tag examples

- Blocks for page parts: <header>, <footer>, <main>, <sidebar>, <section>,<article>, <aside>
- Semantic content: <time>, <meter>
- Blocks to give semantic context to non-semantic content: <figure>, <figcaption>,
 <mark>, , <cite>

Common non-semantic tags

These tags have specific usages, but do not transmit semantic content the same way the semantic tags do.

- Tags for text structure without semantic context: ,
- Tags for generic text styling (do not use): <i>, ,
- Lists such as and
- The generic block: <div>
- The generic text:

WAI-ARIA roles and accessibility

- WAI-ARIA roles (or simply "ARIA roles", or "roles") are what actually provides meaning to tags.
- "Semantic" tags have predefined ARIA roles.
- With a role, assistive technologies know how to interpret the content (example: screen readers).
 - Browsers create an "accessibility tree" based on the DOM.
 - The role can determine how screen readers announce each text, enable navigation commands, etc.
- You can add a role to a non-semantic tag using the role attribute.
 - Not needed most of the times; use the appropriate semantic tag instead.
 - Sometimes there is no other way; for example: 2 + 3 = 5



Exploring semantic tags

- Explore the source code of the HTML files provided here: https://github.com/sgenius/semantic-html
 - What do the tags do?
 - How do we know a tag is semantic or not?

Putting it all together: An example

Let's create a new website!

It's a great day! You've been hired to create the web presence for The Orange Grove, a new restaurant in downtown Oakland.

Riccardo, the owner, has heard great things about you and trusts you to create something great.



Definitely not an <u>Al-generated image of Riccardo</u>.

Okay... what do we do now?





First things first: What's this about?

"Something great" doesn't really work well as a description. Let's get requirements instead.

What would you ask?



Photo by Priscilla Du Preez on Unsplash

First things first: What's this about?

This is what we got from Riccardo:

- This is an italian restaurant.
- It needs a webpage and managing its social media presence.
 - We only work with websites, so we'll ignore the other request.



Photo by Priscilla Du Preez • on Unsplash



What information do we want in the website?

In no particular order, Riccardo talks about:

- History
- A link to buy his upcoming book, "Memoirs of a Totally Not Al-Generated Italian Chef"
- His motivation as a chef
- Beautiful photos of the food, and also of the Italian countryside

Who will use this webpage? What might they be looking for? What is missing? Let's figure it out.



Photo by Priscilla Du Preez • on Unsplash



Who will use this website?

Let's create a few light personas:

- John, a 65 year old lover of Italian food and wine; has heard about The Orange Grove and is curious
- Wanda, a 18 year old woman who is looking for a restaurant to go this weekend with friends, and is open to whatever as long as it's within her price range
- Peter, a 25 year old man that is planning a romantic date

What do they need? Are we providing everything they need to know, and enabling everything they need to do, about The Orange Grove?



Who will use this website?

What they could be needing:

- John may want to know what is the general vibe and what they serve. Probably show the menus?
- Wanda needs to know prices for sure; also, location and opening hours.
- Peter needs to make a reservation and enable to request something special for the date.
 - The reservation could be made by phone or we could provide a link to a third-party reservation system, or create the system ourselves.



Photo by Priscilla Du Preez • on Unsplash

A new list of contents

- History
- A link to buy his upcoming book, "Memoirs of a Totally Not AI-Generated Italian Chef"
- His motivation as a chef
- Beautiful photos of the food, and also of the Italian countryside
- Menus
- Location
- Opening hours
- Phone number
- Link to a reservation system? (We're not sure about this one, but we'll include it and ask for it.)



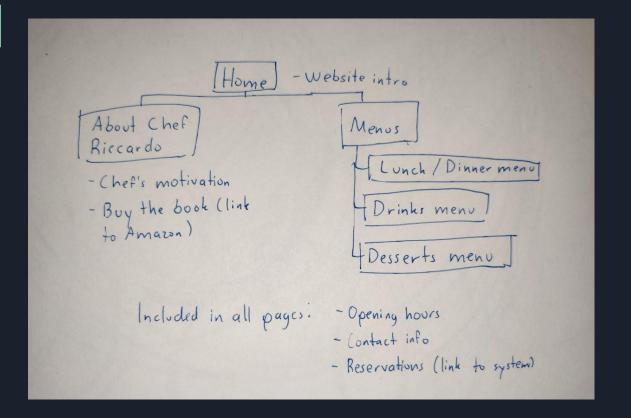
How do we organize this?

How would you organize the contents in a few pages?

- Some content deserves their own pages
- Some content may be part of headers or footers (eg. contact info)

Try this out first!

A sample website map



Note: in practice, the website map may already include low-fidelity mockups. We will talk about this in the next lessons.

A sample website map



Included in all pages (footer and/or header):

- Opening hours
- Contact info
- Link to reservation system (?)

Included in the design:

- Photos, as relevant

We will refine this in the next lessons.

Appendix: Organizing complex information

Understanding complex information

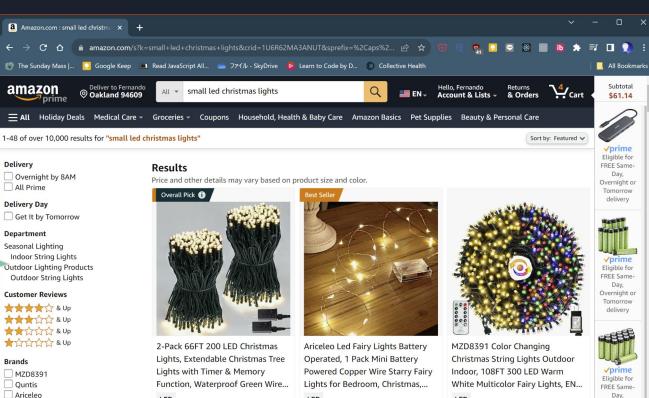
- Think of how the following is categorized:
 - A restaurant menu
 - A library
 - An e-commerce website such as Amazon

Understanding complex information

In many cases, there is more than one way to organize things.

- Is an affogato a drink or a dessert?
 - How do you usually think about it?
- Should a book of japanese poetry translated to Spanish be in the Japanese Literature or the Spanish section?
 - What if the library is in Japan? What if it is in Argentina?

Seasonal lighting? Outdoor lighting? It's both.



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Under \$25

Price

Dazzle Bright

*** × 2.660

\$2999 (\$15.00/Count)

√prime Overnight FREE delivery Overnight 4 AM - 8 AM

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7K+ bought in past month

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Subtotal

\$61,14

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Day.

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Eligible for

Day,

Tomorrow delivery

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Eligible for

Day,

Overnight or

- By category
 - Example: sections in a store, a library, or a website. Put everything related together

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 - Example: selecting a state, then a city
- Sequential
 - Example: a flow that is organized in steps, such as the process to buy something in Amazon
- By access restriction
 - "Public" and "private" pages; think of a website for a hospital. Info on your exam results is separate from the hospital's "latest news"
 - More complex schemes exist

These are all used at the same time.

"Solving" complex content

- Think of your content in terms of objects with
 - A consistent "shape" or structure
 - A series of "behaviors":
 - How they react
 - How they interact
 - How they change over time

"Solving" complex content

- Think of your content in terms of objects with
 - A consistent "shape" or structure
 - A series of "behaviors":
 - How they react
 - How they interact
 - How they change over time
- Example: a recipe
 - Shape: it has ingredients and steps. It can also be seasonal, and it's usually cultural (eg. tied to a kind of cuisine)
 - Behaviors: people can follow it, or store it
 - It can be more relevant to the user if they're looking at a similar recipe, or if they're buying one of the ingredients
- Imagine: how can we organize recipes in a recipe sharing website? What can we do with them?

How to find information: examples

- Hierarchical navigation (we've been talking about it)
 - A hierarchical menu is standard

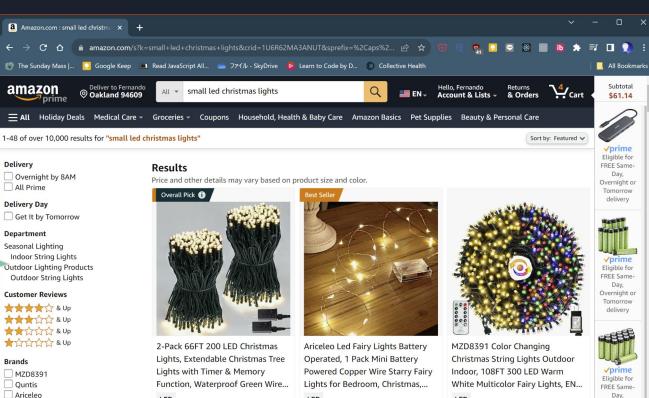
How to find information: examples

- Hierarchical navigation (we've been talking about it)
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- Search functionality
 - Can have "helpers" such as autocompletion
 - Always nice to have, not needed for smaller websites, and a must for bigger ones

How to find information: examples

- Hierarchical navigation (we've been talking about it)
 - A hierarchical menu is standard
- Search functionality
 - Can have "helpers" such as autocompletion
 - Always nice to have, not needed for smaller websites, and a must for bigger ones
- Tags
 - Add free-form "tags" to content to relate it with each other outside of the context of a hierarchy.
 - For example: articles in a blog
 - You could then search by tag

Seasonal lighting? Outdoor lighting? It's both.



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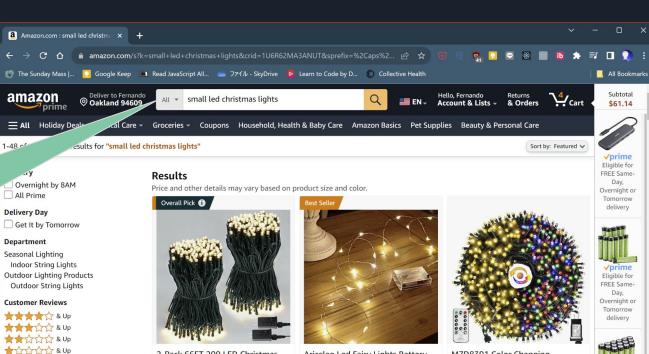
√prime

Eligible for

Day,

Overnight or

But it does not matter: I searched for it and got a results page



2-Pack 66FT 200 LED Christmas Lights, Extendable Christmas Tree Lights with Timer & Memory Function, Waterproof Green Wire...

Brands

MZD8391

Ountis

Ariceleo

BrizLabs

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JMEXSUSS

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Under \$25

Price

Dazzle Bright

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\$2999 (\$15.00/Count)

√prime Overnight FREE delivery Overnight 4 AM - 8 AM

Ariceleo Led Fairy Lights Battery Operated, 1 Pack Mini Battery Powered Copper Wire Starry Fairy Lights for Bedroom, Christmas....

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7K+ bought in past month

\$699 (\$0.44/Foot) List: \$9.99

√prime One-Day FREE delivery Tomorrow, Nov 5 Or FREE delivery Overnight 4 AM - 8

MZD8391 Color Changing Christmas String Lights Outdoor Indoor, 108FT 300 LED Warm White Multicolor Fairy Lights, EN...

LED

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Save 31%

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