Week 5

DECO 1400/7140 Intro to Web Design

University of Queensland

Semester 1, 2022

Prototyping

- A prototype is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from.
- It is designed to test and try a new design to enhance precision by system analysts and users.

Why prototyping?

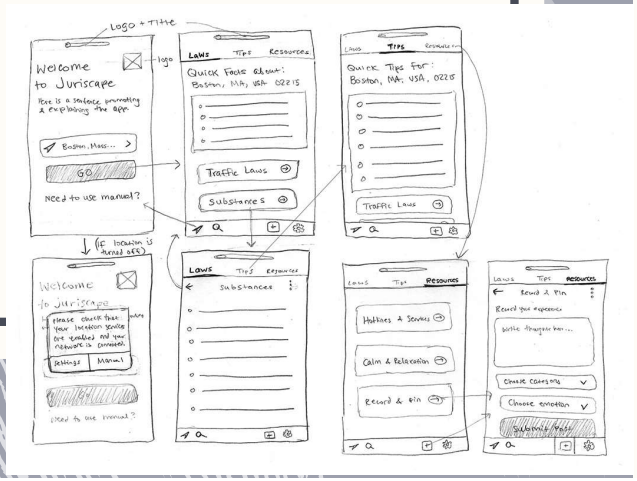
- It simulates the real and future product.
- It can help attract customers to invest in the product before allocating any resources needed for implementation.
- You can test the design's correctness before it comes into production and you can discover design errors
- https://uxplanet.org/basics-of-prototyping-1a4106e12c0e

Design fidelity

- **D**esign fidelity refers to the level of detail and functionality included in a prototype. Fidelity can vary in interactivity, visuals, content and commands, and other areas.
- **Low-fidelity (low-fi) prototypes**, for example, are simple and low-tech concepts. All you need to get started is a pen and paper. The goal is to turn your ideas into testable artifacts that you can then use to collect and analyze feedback in the early stages.
- **high-fidelity (high-fi) prototypes** are highly functional and interactive. They are very close to the final product, with most of the necessary design assets and components developed and integrated. Hi-fi prototypes are often used in the later stages to test usability

Benefits of low-fi prototyping

- **Focus on design and concepts:** Without the pressure of making every page linked, clickable, and interactive, you can worry less about the more technical parts of prototyping and spend more energy on ideation.
- **Real-time iteration:** Let's say you're gathering customer feedback on your sketched prototype. During this test, you can quickly redo part of the design based on customer comments in real time, in just a few minutes.
- **Accessible to everyone:** Everyone can doodle.

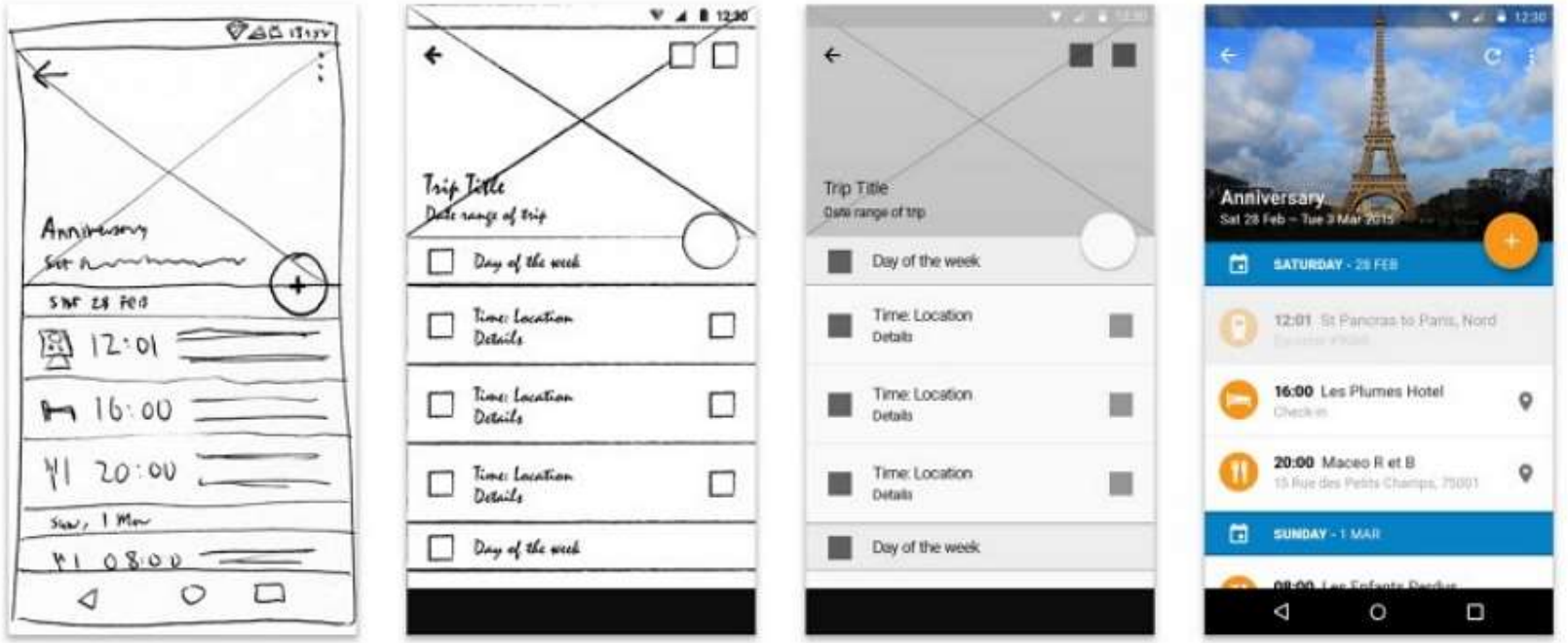


Benefits of high-fi prototyping

- **More familiar to users:** High-fidelity prototypes look like live software to customers, meaning participants would be more likely to behave naturally during testing.
- **Pinpoint specific components to test:** You can dive deep into a single component (like flow, visuals, engagement, or navigation) during user testing. This allows you to get detailed feedback on certain elements of the design that would not be possible with pen and paper.
- **More presentable to stakeholders:** Clients and team members will get a clear idea of how the product will look and work before it ever goes live.

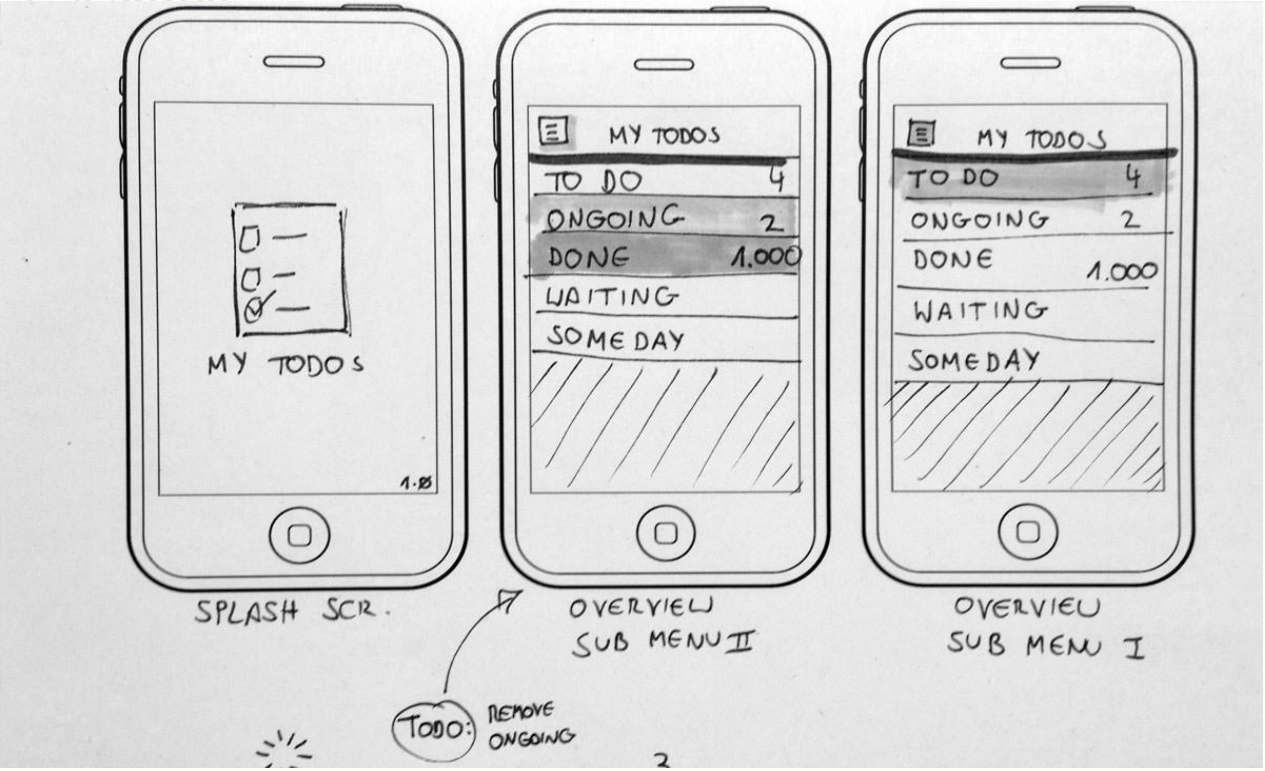
https://www.invisionapp.com/inside-design/low-fi-vs-hi-fi-prototyping/

https://blog.prototypr.io/high-fidelity-prototyping-what-when-why-and-how-f5bbde6a7fd4



https://www.mockplus.com/blog/post/high-fidelity-and-low-fidelity

Sketches

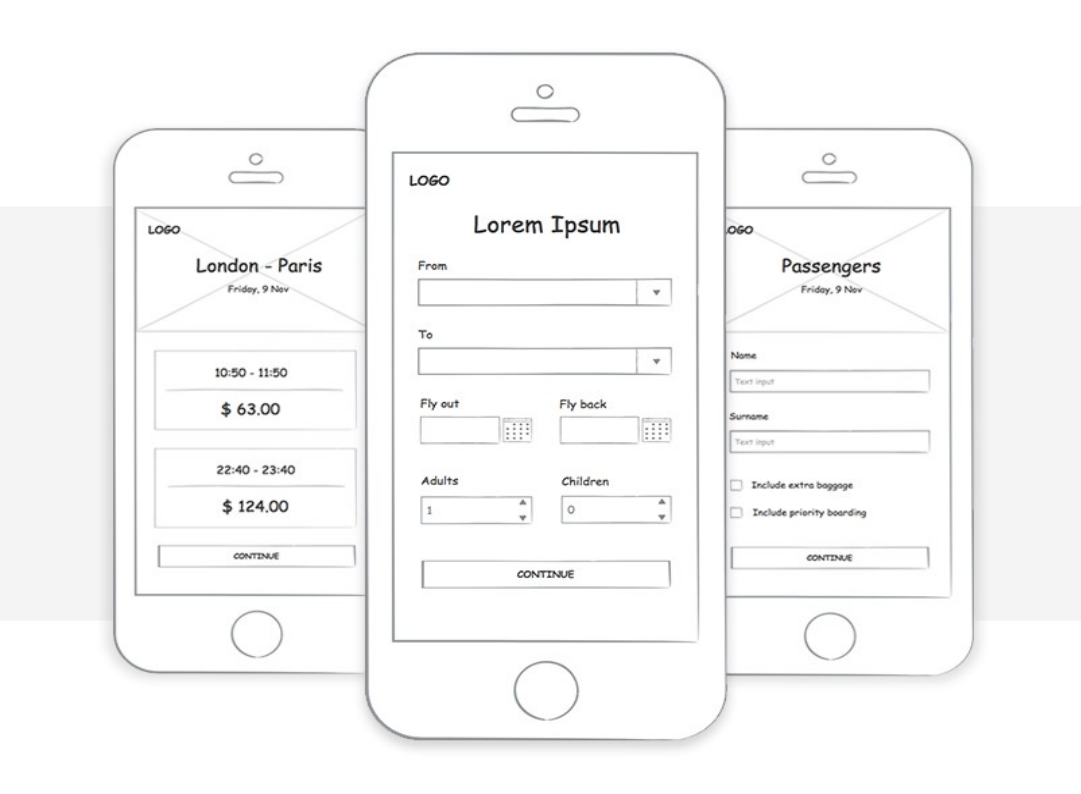

MY TODOS
SPLASH SCR.
MY TODOS
TO DO 4
ONGOING 2
DONE 1.000
WAITING
SOMEDAY
OVERVIEW
SUB MENU II
MY TODOS
TO DO 4
ONGOING 2
DONE 1.000
WAITING
SOMEDAY
OVERVIEW
SUB MENU I
TODO: REMOVE ONGOING

Wireframes

- An early skeleton of a website or an app, or of adding new functionality to an existing page. A wireframe is a visual representation of what will be on a given page: what content and functionality it will contain.
- The elements that are included in the wireframing of a page will wholly depend on the purpose of the given page.
- Web design projects can involve many stakeholders and moving parts. Bad communication or process can derail a project or cause it to miss its intended goals. Wireframing helps to avoid both.

https://cliquestudios.com/wireframing/

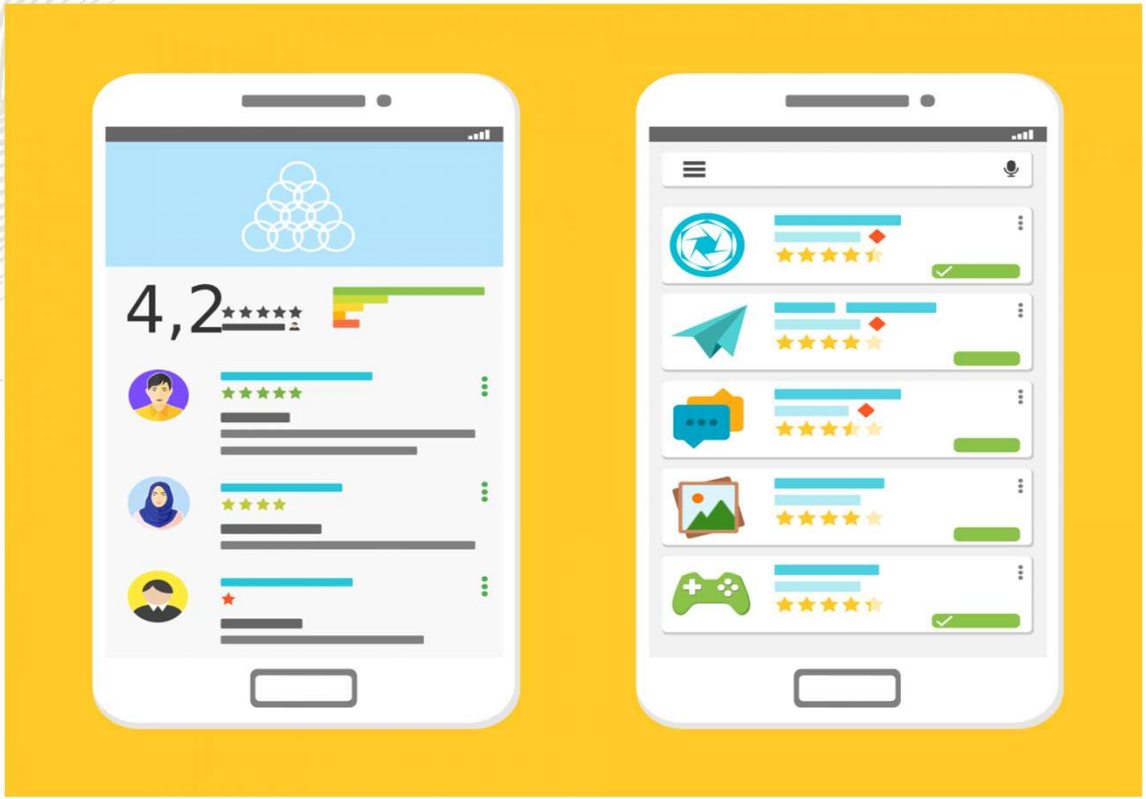
Wireframes


LOGO
London - Paris
Friday, 9 Nov
10:50 - 11:50
$ 63.00
22:40 - 23:40
$ 124.00
CONTINUE
LOGO
Lorem Ipsum
From
To
Fly out
Fly back
Adults
Children
1
0
CONTINUE
LOGO
Passengers
Friday, 9 Nov
Name
Text input
Surname
Text input
Include extra baggage
Include priority boarding
CONTINUE

Mokeup

- While a wireframe contains the basic layout of the web page or application, a mockup is a more advanced version of the product's design elements.
- A wireframe is used mostly to design the functionality of a product. A mockup is used to test different cosmetic elements of a product, but it is constrained to the functionality designed with a wireframe

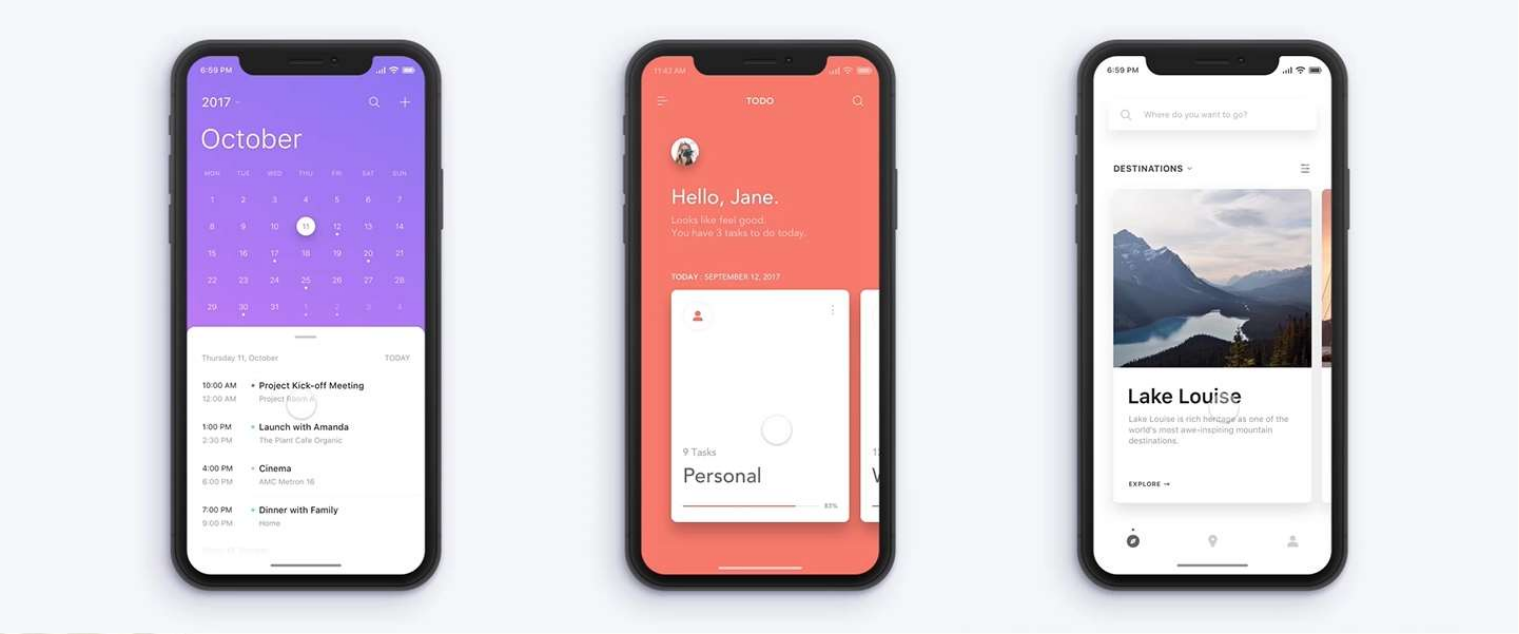
Mockup



Prototype

- A prototype is more advanced than either a wireframe or a mockup. The best way to think of a prototype is to envision it as the “rough draft” of a product. Prototypes are the only one of the three that is *interactive* and allows a user to click it.
- Overall, prototypes are not-yet-live simulations of the web page or application that allows a team to try out how it functions. It doesn’t function like the final product because it doesn’t incorporate elements of the back end, but a prototype is meant to be as close to the real thing as possible.
- A prototype of a home would be a virtual reality application that lets you walk through your house and make sure that the rooms flow naturally one to the next.

High Fidelity Prototypes



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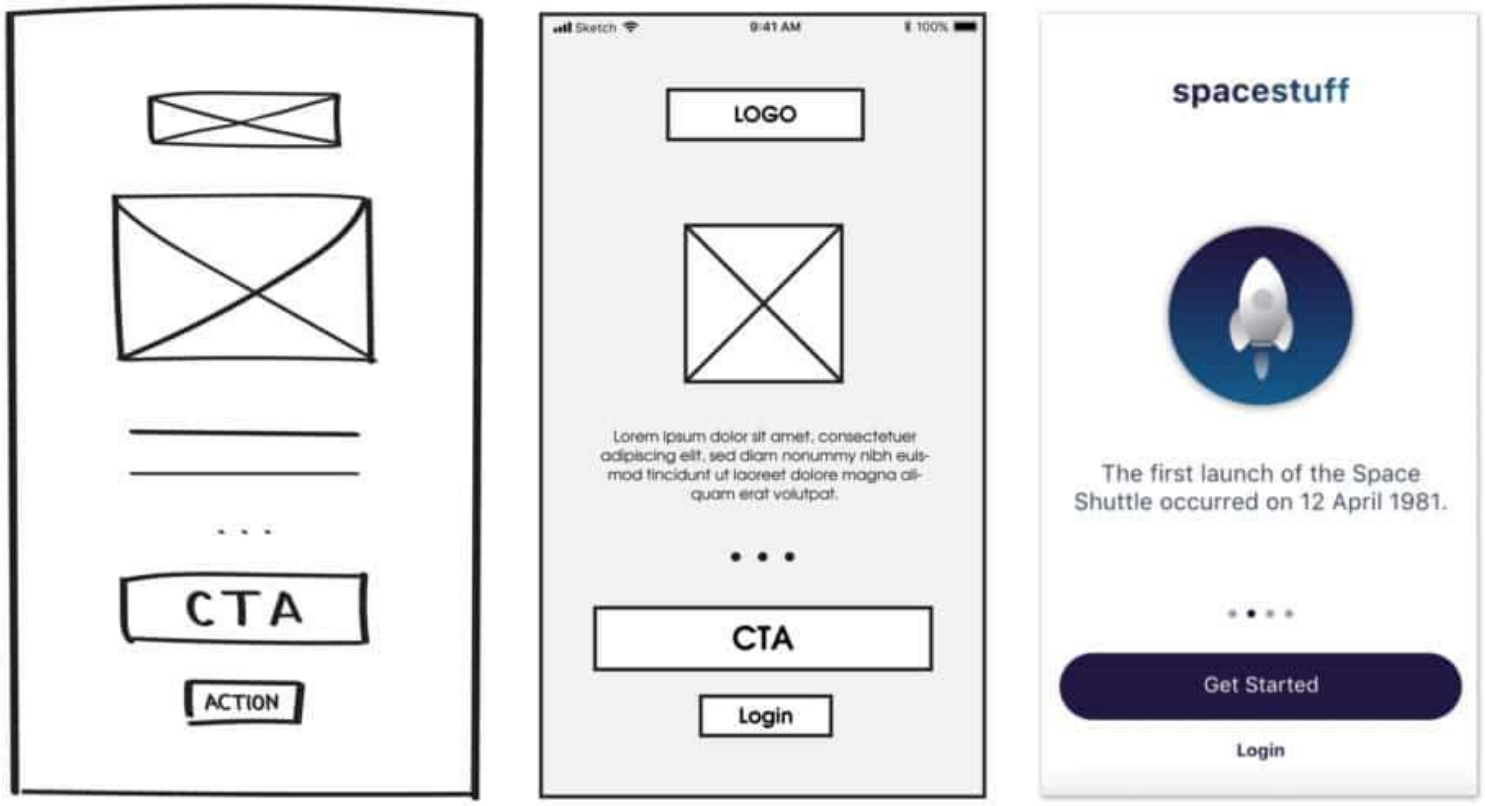

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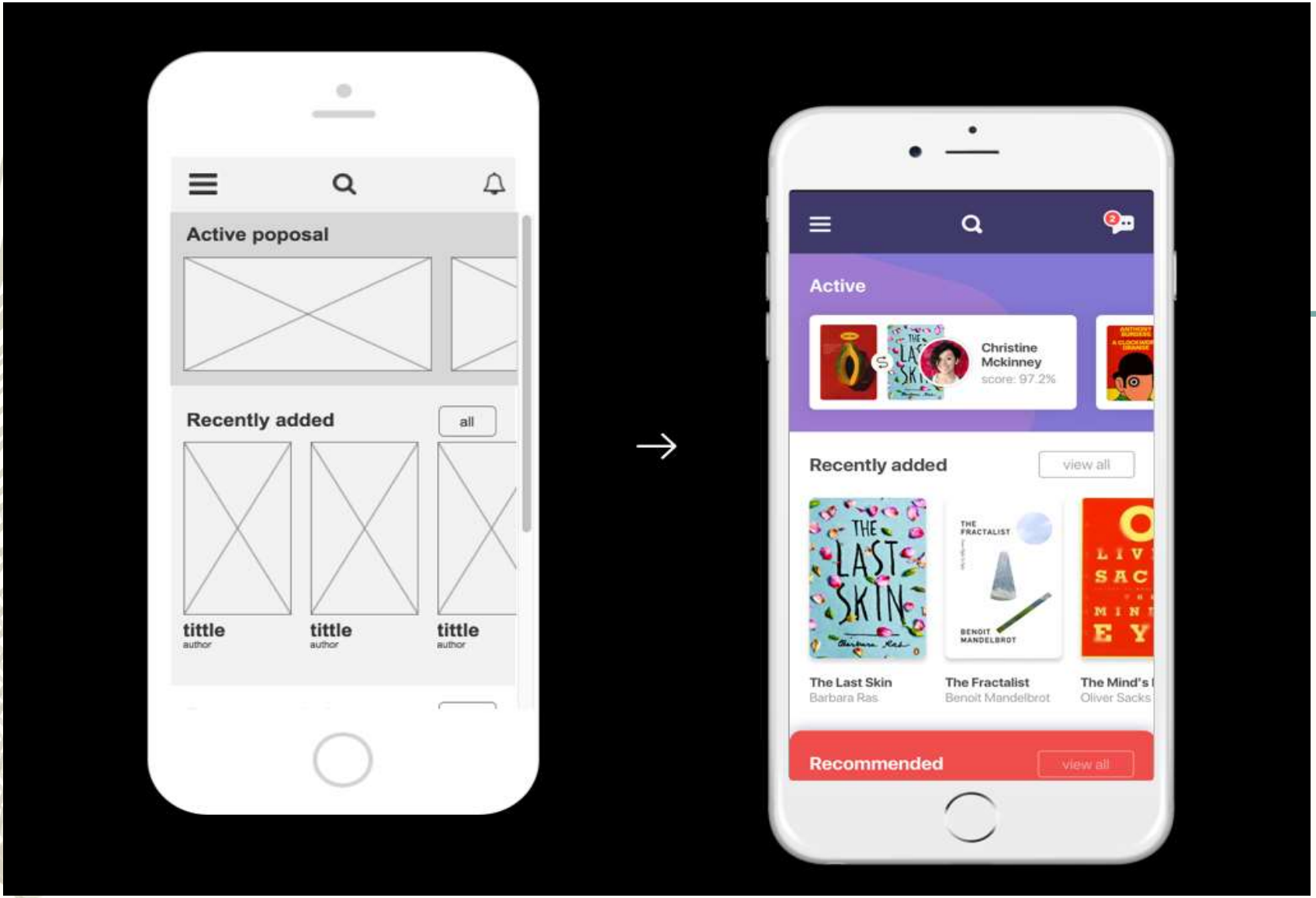


https://medium.com/7ninjas/low-fidelity-vs-high-fidelity-prototypes-903a7befaa5a

Prototyping tools

Some of the top web and mobile software prototyping tools currently in the industry are:

- Adobe XD
- Marvel
- InVision
- Miro
- Figma
- Material
- Proto.io
- Axure

Prototyping

Rapid Prototyping 1 of 3: Sketching & Paper Prototyping

– https://www.youtube.com/watch?v=JMjozqJS44M

Rapid Prototyping 2 of 3: Digital Prototyping

– https://www.youtube.com/watch?v=KWGBGTGryFk

Prototyping with Marvel

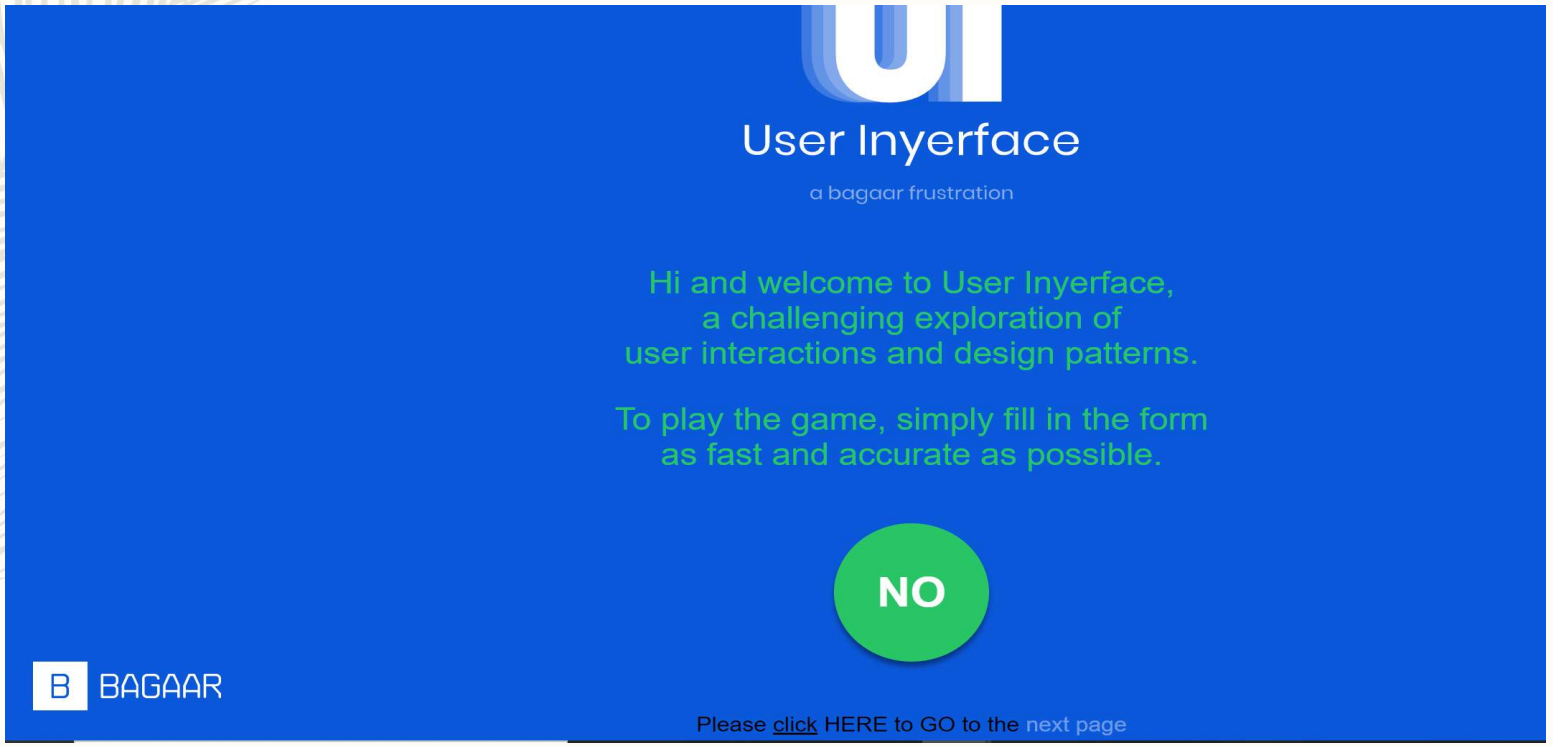
https://www.youtube.com/watch?v=Vm1J2wUhNOk

Games paper Prototyping

https://www.youtube.com/watch?v=x48qOA2Z_xQ

Why care about usability? ☺

https://userinyerface.com/



More on CSS

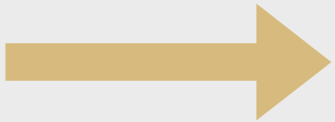
CSS Advanced Selectors

Share CSS Rules:

Give the same properties to a number of selectors

Separate elements/IDs/classes/etc with commas

```
p {
    color: red;
}
h1 {
    color: red;
}
.highlight {
    color: red;
}
```



```
p, h1, .highlight {
    color: red;
}
```

Go beyond just element, ID and class to:

- Style elements inside & next to a given element (child, descendant & adjacent).
- Style behaviours & states of an element (using pseudo classes).
- Style specific occurrences of an element (based on when it appears in the HTML).

Enables us to minimise the number of ID and class selectors created.

Child, Descendant & Adjacent

Descendant selector — all elements within:

— header h1 (any h1 element in header)

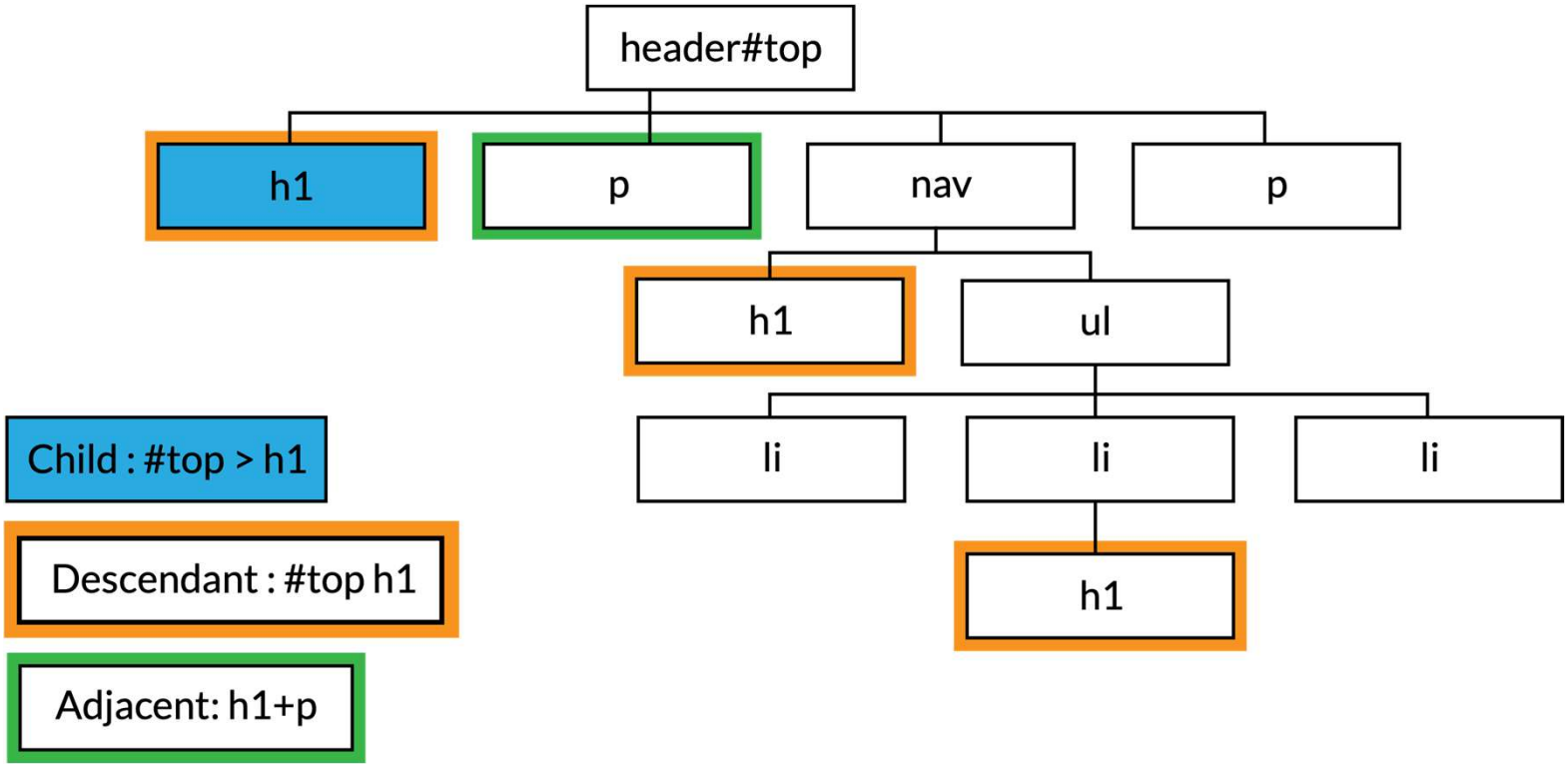
Child selector — immediate child element:

— header > h1 (immediate child h1 in header)

Adjacent selector — element immediately after:

— h1 + p (any p element that immediately follows h1)

Child & Descendant Selectors



```html
<article>
    <h2>Ice Cream Man!</h2>
    <p>Bob</p>
    <nav>
        <h2>Find An Ice Cream</h2>
    </nav>
    <p>Jane</p>
</article>
```

```css
article h2 {
    color: #f74479;
}

article > h2 {
    color: #e88b0f;
    border-bottom: 1px solid #e88b0f;
}

h2 + p {
    color: #47a52c;
}
```

Pseudo Classes

Attached to selectors to specify the state of the selector:

```
a:hover {
    color: orange;
}
```

:link — an unvisited link

:visited — a link that has been visited

:hover — change style on mouseover

:active — change style when clicked

:focus — change style when in focus

Link-based Pseudo Classes

Specifying Pseudo Classes

Must specify in the right order for links:

- a, a:link, a:visited, a:hover, a:active

Commonly use :hover and :active for most interactions

Recommended to set a global a style first

[tag]:first-child

— Where [tag] is first child of parent

[tag]:last-child

— Where [tag] is last child of parent

[tag]:first-of-type

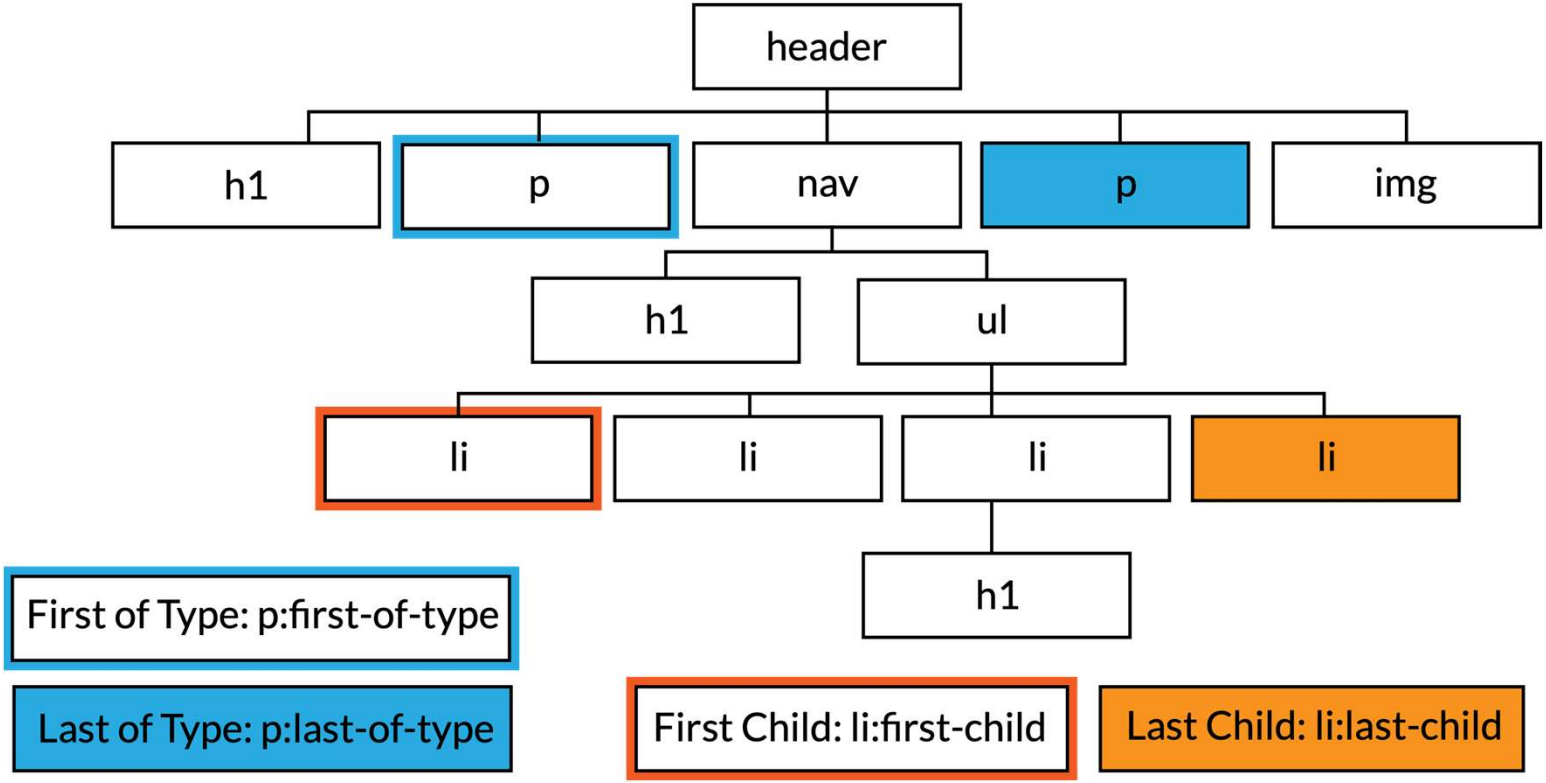
— First occurrence of that [tag] in parent

[tag]:last-of-type

— Last occurrence of that [tag] in parent

Position-based Pseudo Classes

Pseudo Class Selectors



Pseudo Elements

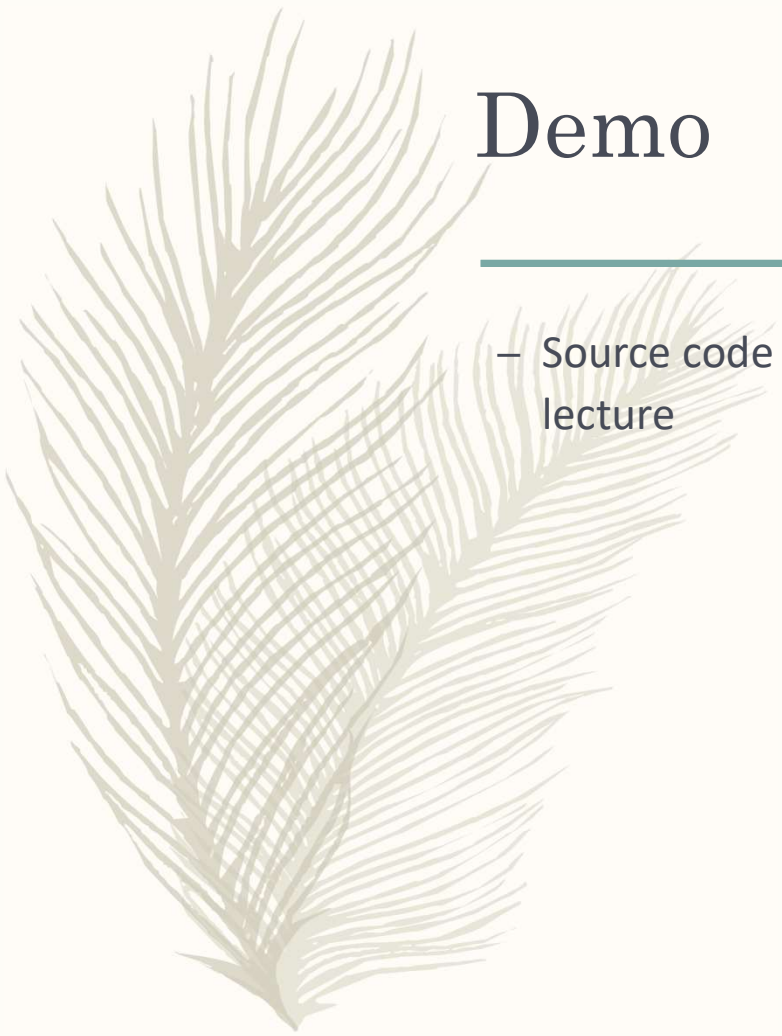
Styling parts of an element:

— `:first-letter` & `:first-line`

Inserting/styling content before or after an element:

— `:before` & `:after`

“But, like most politicians, he promised more than he could deliver.”



Demo

- Source code demoed during the class will be posted on Blackboard after the lecture

Basics of JavaScript

- JavaScript is the world's most popular programming language.
- JavaScript is the programming language of the Web.
- JavaScript is easy to learn.

- HTML defines the content of web pages
- CSS specifies the layout of web pages
- JavaScript programs the behavior of web pages
- You don’t get to download JavaScript

Markup
HTML

Hold content
Define content

Style
CSS

Present content
Visual styling

Static sites
with simple behaviours

Behaviour
JavaScript

Interactivity
Personalisation
Enhancements

3rd piece
of the
puzzle

What Kind of Behaviour?

- On-page content display/hiding/processing
- Change styling on the fly (highlight etc)
- Handle button functionality
- Trigger animations/transitions
- Pre-submission form validation
- Drag & drop functionality
- Etc

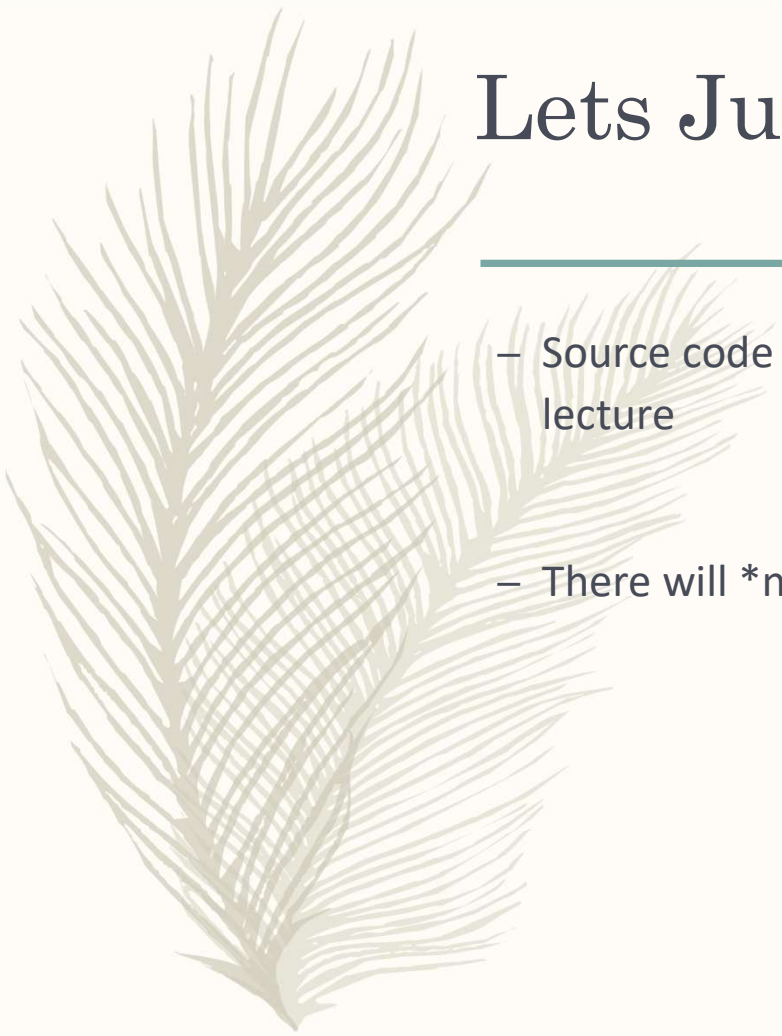
A bit of History

- It first appeared in December 1995 as a partnership between Sun (now Oracle) and Netscape. Brendan Eich was the main inventor of JavaScript, who up until 2014, was the founder & CEO of Mozilla.
- The first web browser it appeared on was Netscape Navigator 2.0

- Does JavaScript have any relation to Java?
- No. When invented, Netscape supposedly called this scripting language JavaScript as a marketing ploy — to increase the brand cachet with their new language.
- Apart from that, they're very different in both concept and design. JavaScript is considered a lightweight scripting language that is interpreted by the web browser when run. Interpreted languages (of which there are many, like PHP, Python etc) are executed by an interpreter program.

Why use JS?

- Programming language of the browser
- Highly popular
- Used to build highly interactive user interfaces
- Used in building full stack applications
- Used in desktop and mobile applications



Lets Jump in!

- Source code demoed during the class will be posted on Blackboard after the lecture

- There will *not* be any questions on JavaScript in next week's quiz! :-]

External JavaScript

Placing JavaScript code in external files has some advantages:

- It separates HTML and code
- It makes HTML and JavaScript easier to read and maintain
- Cached JavaScript files can speed up page loads

Online Resources

W3Schools: https://www.w3schools.com/js/default.asp

YouTube tutorial: https://www.youtube.com/watch?v=hdI2bqOjy3c

https://www.codecademy.com/learn/introduction-to-javascript

JavaScript The Definite Guide: https://www.amazon.com.au/JavaScript-Definitive-Guide-David-Flanagan/dp/1491952024/

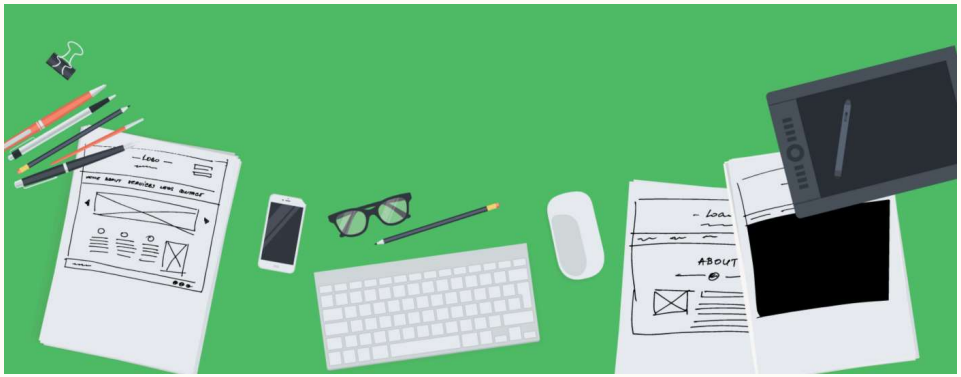
Topics we will cover in future lectures, when revisiting JavaScript:

JS Variables, JS Let, JS Const, JS Scope, JS Data Types, JS Objects, JS Functions, JS Events, JS Strings, JS Arrays, JS Conditions, JS Loop, JS Switch, JS Break, JS Typeof, JS Iterables, DOM, queryselector, jQuery, etc.

Next Weeks' Quiz

- 10 questions
- It will appear on Blackboard, under "Assessments" on Monday 4 April after the lecture
- Make sure you complete it by **Friday 8 April, 4pm**
- Once you start, you have 20 minutes to complete
- It is an open book test
- No need to be on Zoom
- There will not be any questions on JavaScript in next week's quiz! :-]
- Next week, we will show you some Website project examples from previous years. Marking rubric for Website Design report will be released soon as well.

Class Activity



- In the **Tutorial**, you'll work in groups of 2-4 to create sketches for a website (on paper or using Miro Zoom app) and present them to the class. You will work on creating a digital prototype in next week's tutorial. There are two scenarios, please feel free to pick one that you prefer:
  - *Healthy Lifestyle website:* You are hired as a UX/UI designer to design a website for a lifestyle business. Users should be able to log in, create a profile for themselves, browse healthy recipes, watch exercise videos, read health related content and talk to each other using the messenger.
  - *Bakery website:* You are hired as a UX/UI designer to design a website for a muffin business. The users should be able to register/log in on the app, browse different options, see the ingredients and add muffins of their choice to the shopping cart.

  Peerwise contribution: *DECO 1400*: Remember some of the highest rated questions might appear in next week's Quiz!

  DECO 7140: Gentle reminder - Your Interface Evaluation assignment is due on 8 April!
- In the Practical, you'll practice basics of CSS animation, will learn how to embed custom web fonts, embed different types of media and build/style a form. Download the class demo zip file and make sure you understand the code.