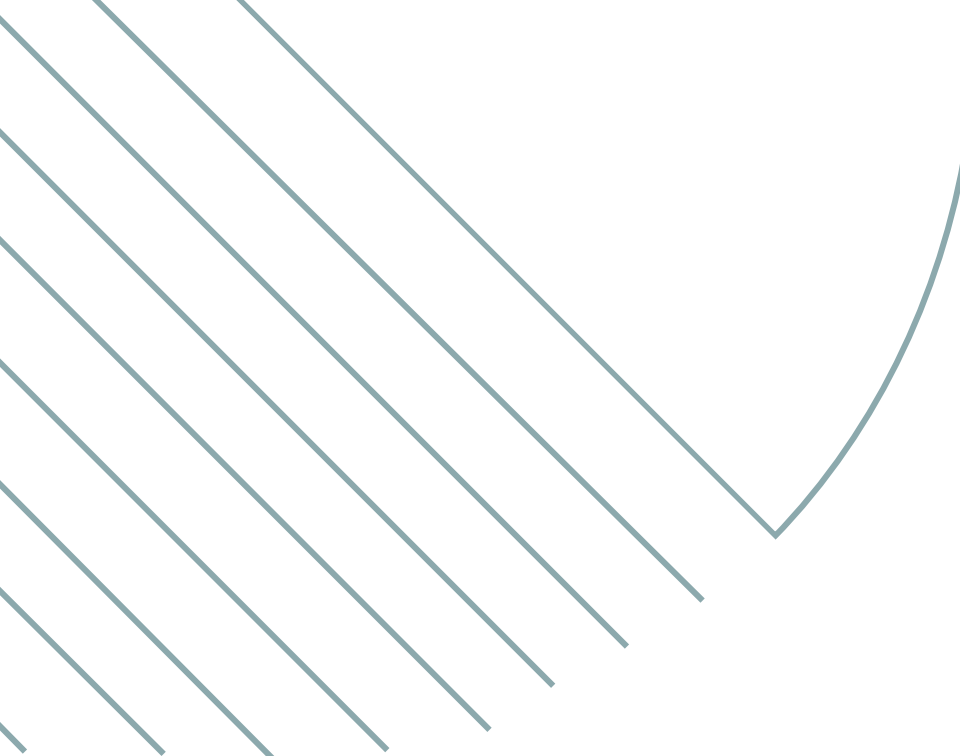# FRONTEND TECHSTACK

Luja Shakya

Nirjal Prajapati

WHAT YOU SEE
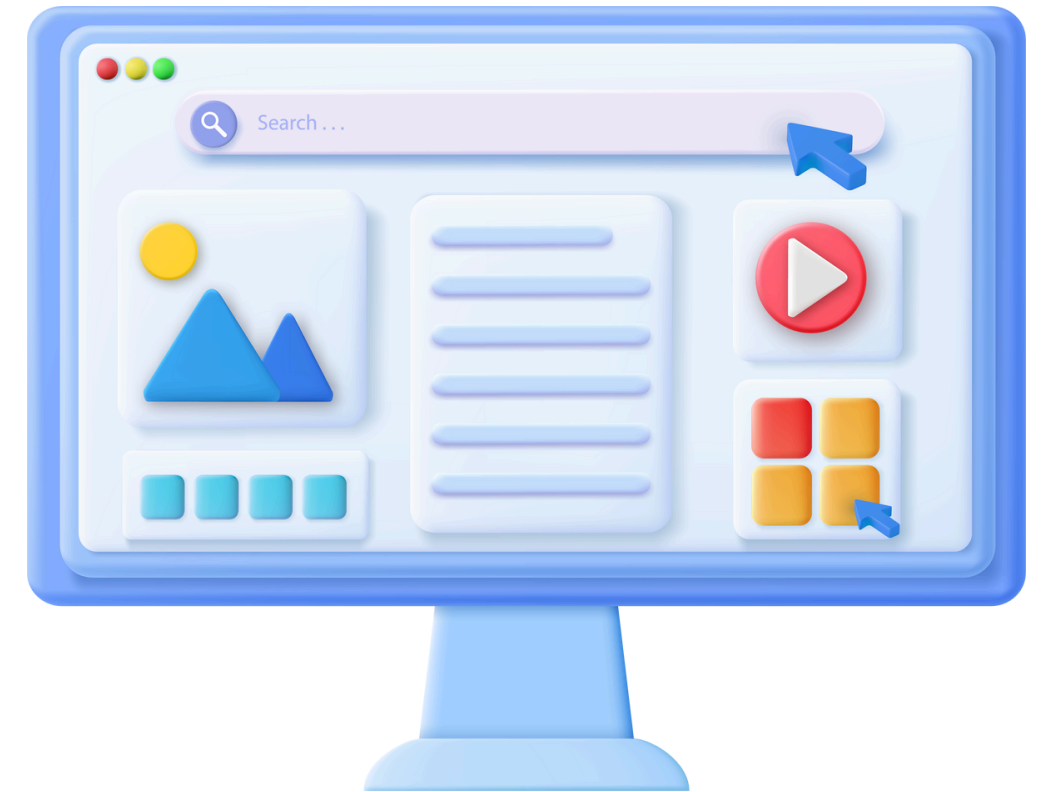
WHAT YOU CAN DO

HOW IT REACTS

FRONTEND

Front-end web development, or **client-side** development, refers to working with **HTML**, **CSS** and **JavaScript** for a website or web application that allows users to see and **interact** with them directly

FUNDAMENTALS
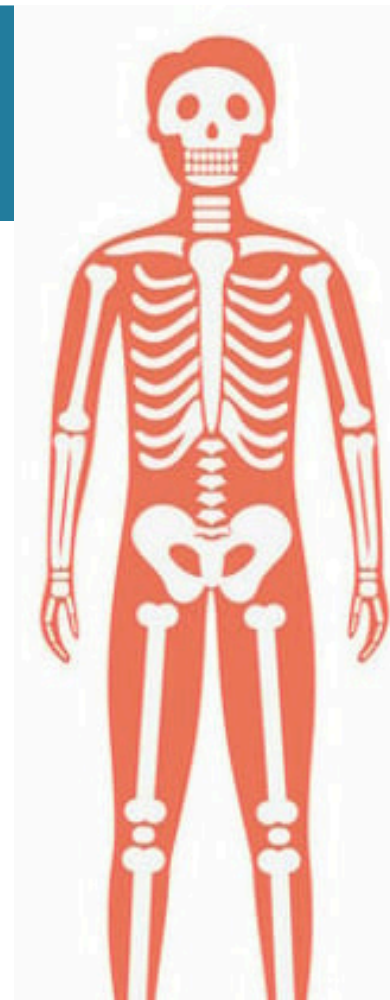
01 - HTML

02 - CSS

03 - JAVA SCRIPT

FUNDAMENTALS

01 - HTML

02 - CSS

03 - JAVA SCRIPT

STRUCTURE

Analogy as skeletal system in a human body

Tag out of Place can break whole system

FUNDAMENTALS

01 - HTML

02 - CSS

03 - JAVA SCRIPT

APPEARANCE

Analogy as
Outer looks of an
interactive system

Way it represents
info and data

FUNDAMENTALS

01 - HTML

02 - CSS

03 - JAVA SCRIPT

BEHAVIOUR OR ACTION

Analogy as Nervous system in a human body

Handles behaviours and actions to event

DEEP DIVE
-HTML-

HTML SYNTAX

```html
<html>

    <head>

        <title>Page title</title>

    </head>

    <body>

        <h1>This is a heading</h1>

        <p>This is a paragraph.</p>

        <p>This is another paragraph.</p>

    </body>

</html>
```

TAGS

<html> , <head>, <body>,

<h1> , <p> , <table> ...

ATTRIBUTES

id , class , style , width ,

height , data-*

DOM (DOCUMENT OBJECT MODEL)

```
                    ┌─────────────────┐
                    │    Document     │
                    └─────────────────┘
                             │
                    ┌─────────────────┐
                    │  Root element:  │
                    │     <html>      │
                    └─────────────────┘
              ┌──────────────┴──────────────────────┐
      ┌──────────────┐                        ┌──────────────┐
      │   Element:   │                        │   Element:   │
      │    <head>    │                        │    <body>    │
      └──────────────┘                        └──────────────┘
             │                          ┌───────────┴───────────┐
      ┌──────────────┐  ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
      │   Element:   │  │  Attribute:  │─│   Element:   │ │   Element:   │
      │   <title>    │  │    "href"    │ │     <a>      │ │     <h1>     │
      └──────────────┘  └──────────────┘ └──────────────┘ └──────────────┘
             │                                  │                │
      ┌──────────────┐              ┌──────────────┐ ┌──────────────┐
      │    Text:     │              │    Text:     │ │    Text:     │
      │  "My title"  │              │  "My link"   │ │ "My header"  │
      └──────────────┘              └──────────────┘ └──────────────┘
```
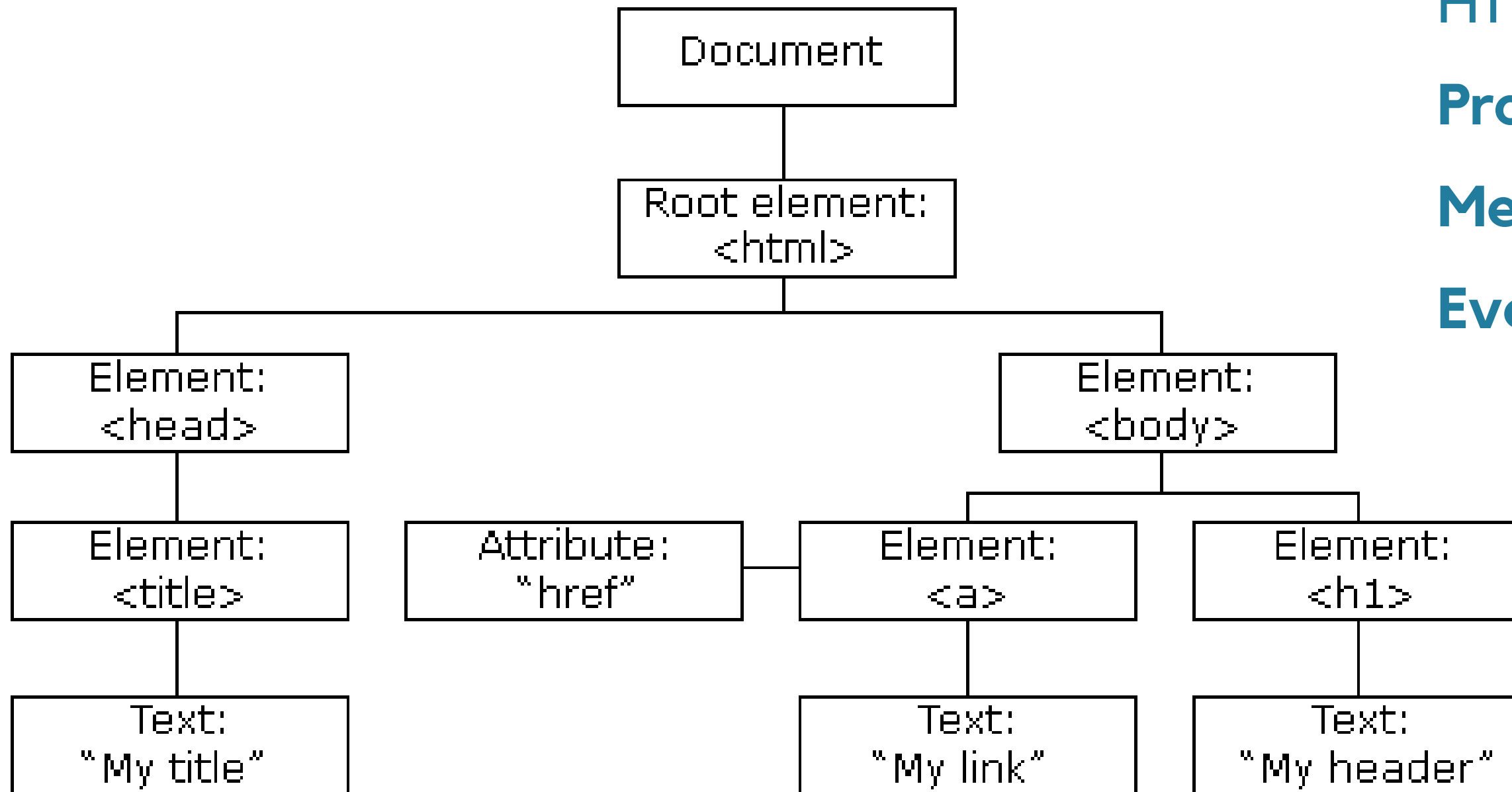
HTML elements as **objects**

Properties for all HTML elements

Methods for all HTML elements

Events for all HTML elements
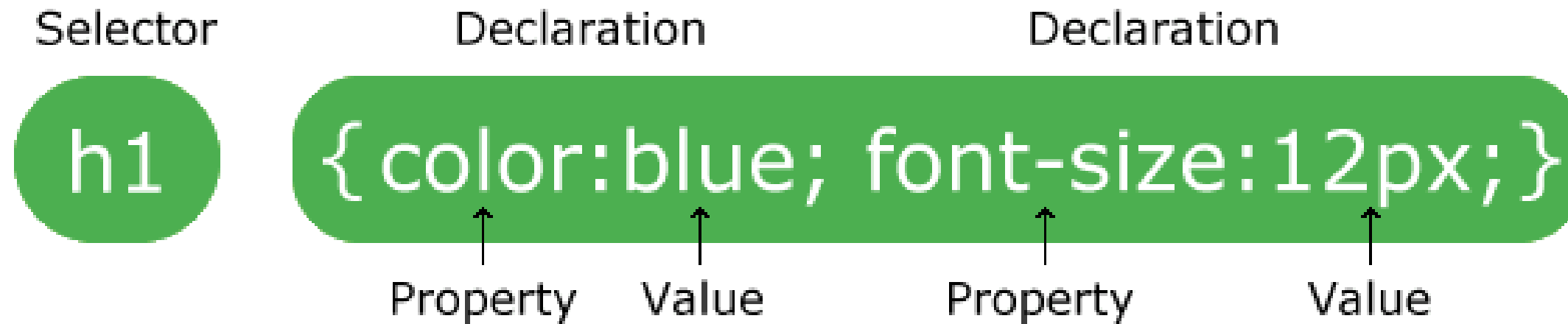
PS :We will see details in Demo

DEEP DIVE
-CSS-

CSS SYNTAX

CASCADING STYLE SHEETS

Selector   Declaration   Declaration

h1   { color:blue; font-size:12px;}

Property   Value   Property   Value

TYPES

EXTERNAL CSS :

HAS EXTERNAL FILE FOR CSS THAT LINKS WITH HTML

INTERNAL CSS :

HAS <STYLE> TAG BOUNDS FOR CSS INSIDE HTML FILE

INLINE CSS :

ATTRIBUTE STYLE INSIDE CORRESPONDING TAG

USAGE EXAMPLE

```html
<!DOCTYPE html>
<html>
<link rel="stylesheet" href="mystyle.css">

<style>
body {background-color: lightblue;}
</style>

<body style="background-color: olivedrab">
<h1>Multiple Styles Cascades into One</h1>
<p>Try experimenting by removing styles to see how the cascading stylesheets work.</p>
<p>Try removing the inline first, then the internal, then the external.</p>
</body>

</html>
```
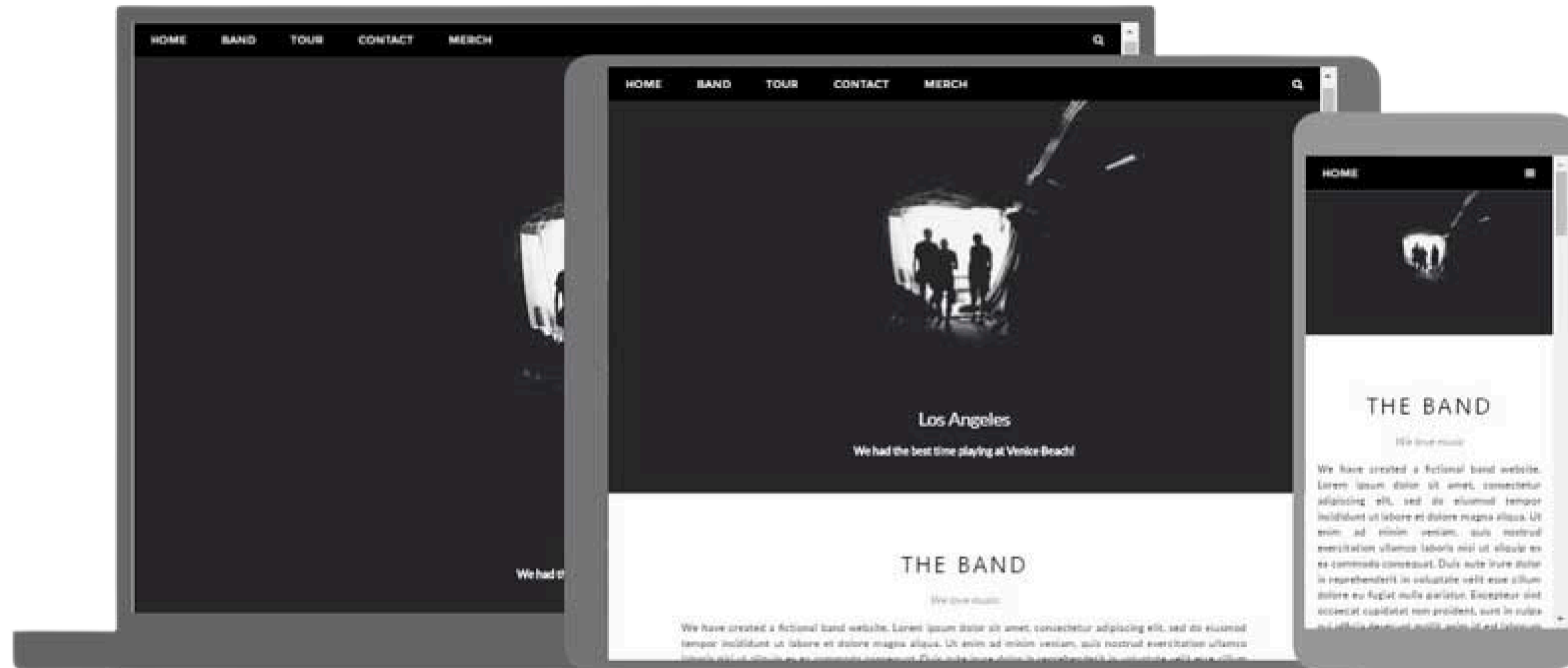
EXTERNAL CSS :

INTERNAL CSS :

INLINE CSS :

PS :We will see details in Demo

RESPONSIVE WEB DESIGN

Resizing or changing layout / elements according to screen size

Media Query

```
@media screen and (max-width:800px) {
    <responsive css here >
}
```

RESPONSIVE WEB DESIGN

Popular Libraries and Frameworks for Designing in Smart ways

Bootstrap : Powerful, feature-packed frontend toolkit

Tailwind CSS : A utility-first CSS framework packed with classes

MUI : A UI framework that provides a set of pre-designed components and utility classes based on Google's Material Design guidelines.

Bulma : A modern CSS framework that uses Flexbox to create responsive layouts.

...

DEEP DIVE
-JS-

JS FUNDAMENTALS

JavaScript variables can be:

- **Numbers**

- **Strings**

- **Objects**

- **Arrays**

- **Functions**

Function can be called and invoked as events to do certain behaviours .

```
element.addEventListener("click", function(){ alert("Hello World!"); });
```

PS :We will see details in Demo

DOCUMENT SELECTORS

The HTML DOM is an API (Programming Interface) for JavaScript:

- JavaScript can add/change/remove HTML elements

- JavaScript can add/change/remove HTML attributes

- JavaScript can add/change/remove CSS styles

- JavaScript can react to HTML events

- JavaScript can add/change/remove HTML events

```
document.getElementById("demo").innerHTML = "Hello JavaScript";

document.getElementsByClassName("intro");

document.querySelectorAll("p.intro");
```

API CONNECTION

XHR CONNECTION REQUEST

```javascript
function fetchUser   {
  const xhr = new XMLHttpRequest();
  xhr.open('GET', 'https://randomuser.me/api/?results=5', true);

  xhr.onload = function () {
    if (this.status === 200) {
      const data = JSON.parse(this.responseText);
      displayUsers(data.results);
    } else {
      console.error('Error fetching data');
    }
  };

  xhr.onerror = function () {
    console.error('Request error');
  };

  xhr.send();
}
```

FETCH REQUEST

```javascript
function fetchUsers() {
  fetch('https://randomuser.me/api/?results=5')
    .then(response => {
      if (!response.ok) {
        throw new Error('Network response was not ok ' + response.statusText);
      }
      return response.json();
    })
    .then(data => {
      displayUsers(data.results);
    })
    .catch(error => {
      console.error('There was a problem with the fetch operation:', error);
    });
}
```

PS :We will see details in Demo

DEMO

BASICS

START

DEMO
API CONNECTION

START

DEMO

REACT

START

FRONTEND ROADMAP

Detailed Frontend Roadmap can be found in :

Frontend Roadmap

THANK YOU

Any Queries ?

Resources :

Github Repo

Email Queries at:

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