THE COMPLETE JAVASCRIPT COURSE

FROM ZERO TO EXPERT!

SECTION

DEVELOPER SKILLS & EDITOR SETUP

LECTURE

DEBUGGING (FIXING ERRORS)

JS

WHAT IS A SOFTWARE BUG?

👉 **Software bug:** Defect or problem in a computer program. Basically, any **unexpected or unintended behavior** of a computer program is a software bug.

👉 Bugs are **completely normal** in software development!

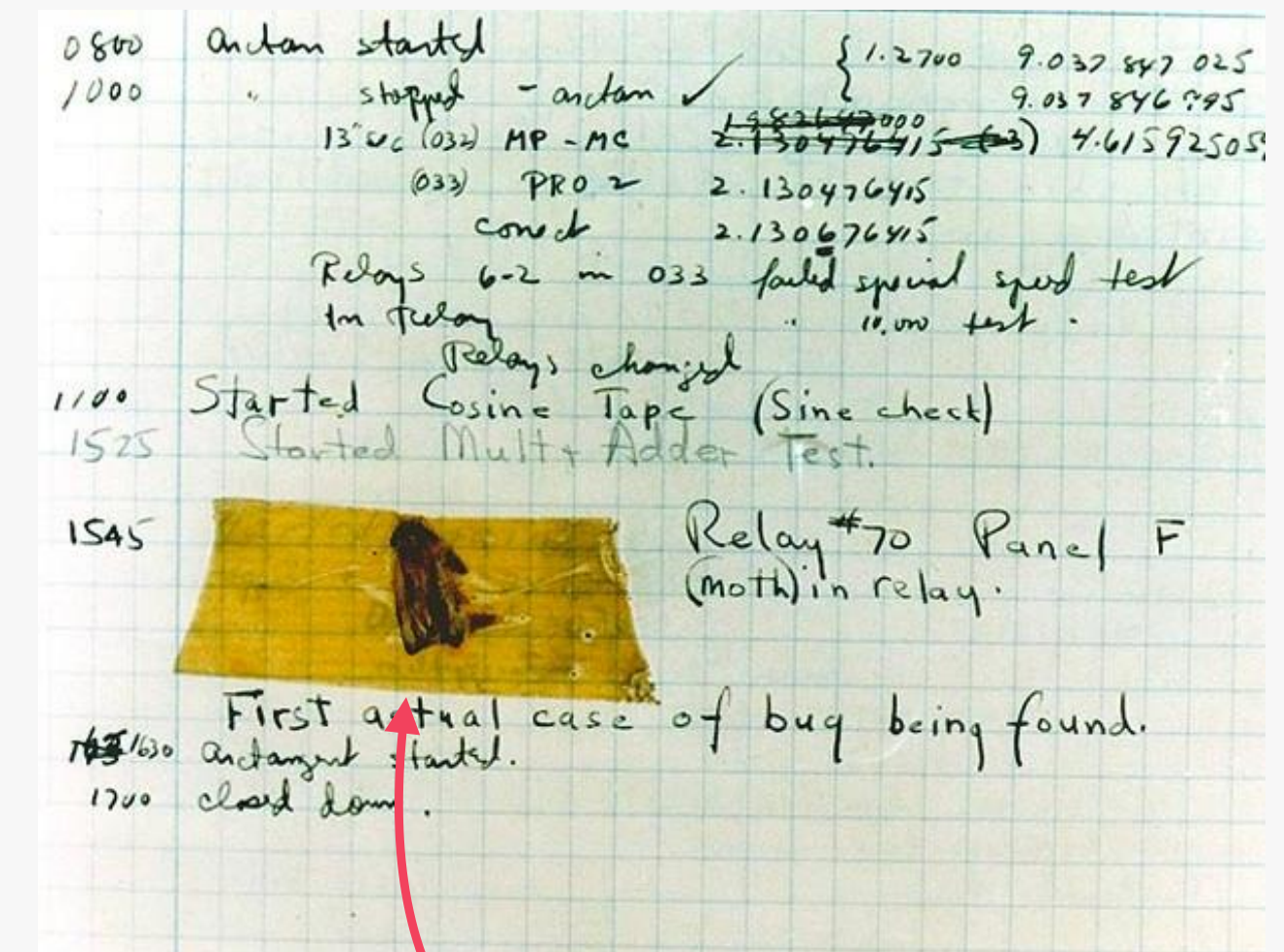👉 Previous example: *"We need a function that reverses whatever we pass into it"*

```
reverse([1, 3, 5, 7])
```

⬇

```
[5, 1, 7, 3]
```

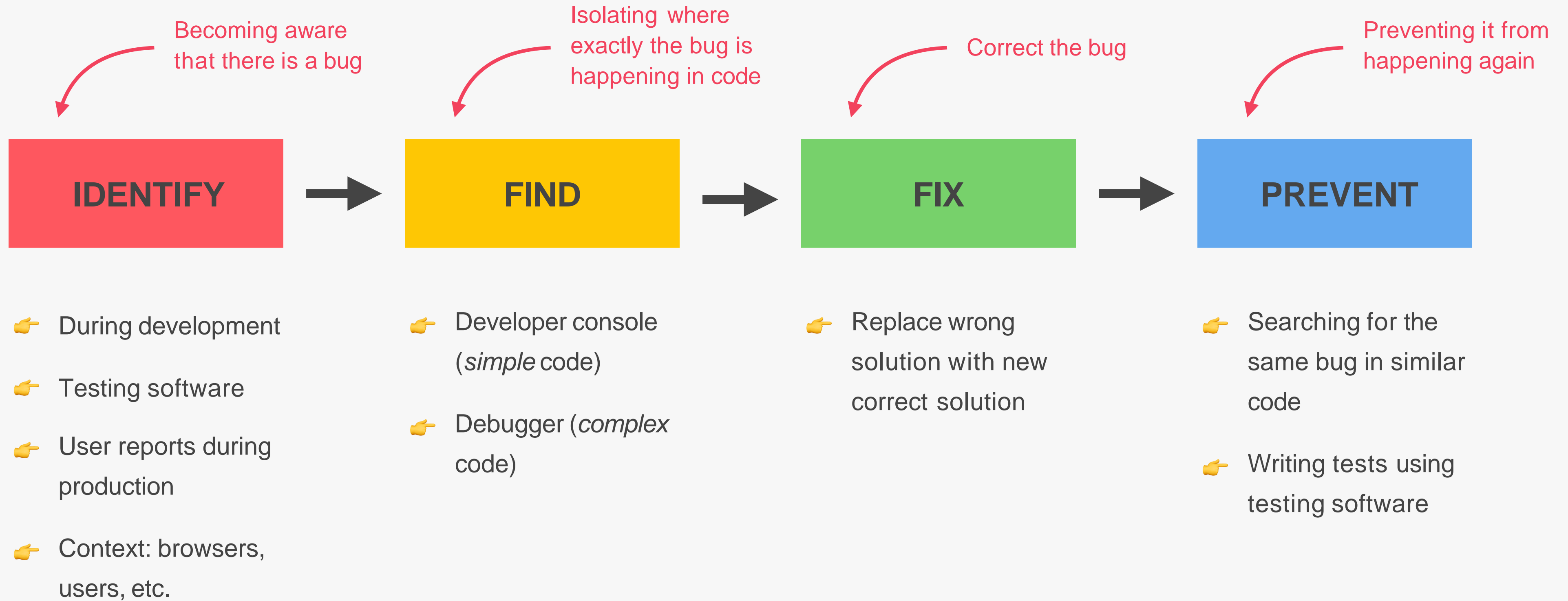Unexpected result: the array is scrambled, **NOT** reversed. So there is a **bug** in the `reverse` function 🐛

A *real bug* which was causing an error in Harvard's computer in the 1940s

👉 Debugging: Process of finding, fixing and preventing bugs.

THEDEBUGGING PROCESS

Becoming aware
that there is a bug

Isolating where
exactly the bug is
happening in code

Correct the bug

Preventing it from
happening again

IDENTIFY	→	FIND	→	FIX	→	PREVENT

👉 During development

👉 Testing software

👉 User reports during
production

👉 Context: browsers,
users, etc.

👉 Developer console
(*simple* code)

👉 Debugger (*complex*
code)

👉 Replace wrong
solution with new
correct solution

👉 Searching for the
same bug in similar
code

👉 Writing tests using
testing software

JAVASCRIPT IN THE BROWSER: DOM AND EVENTS FUNDAMENTALS

WHAT IS THE DOM?

DOM

Tree structure, generated by browser on HTML load
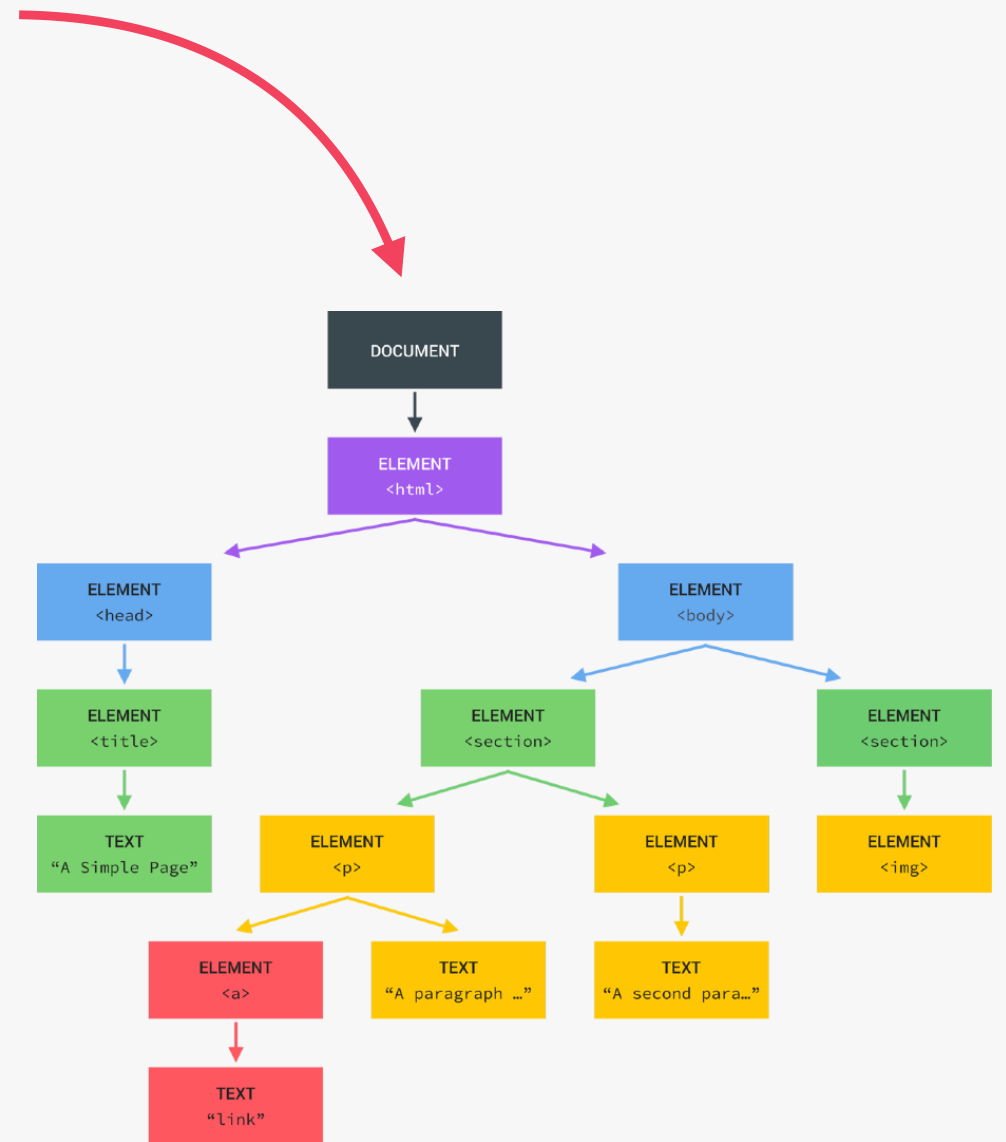
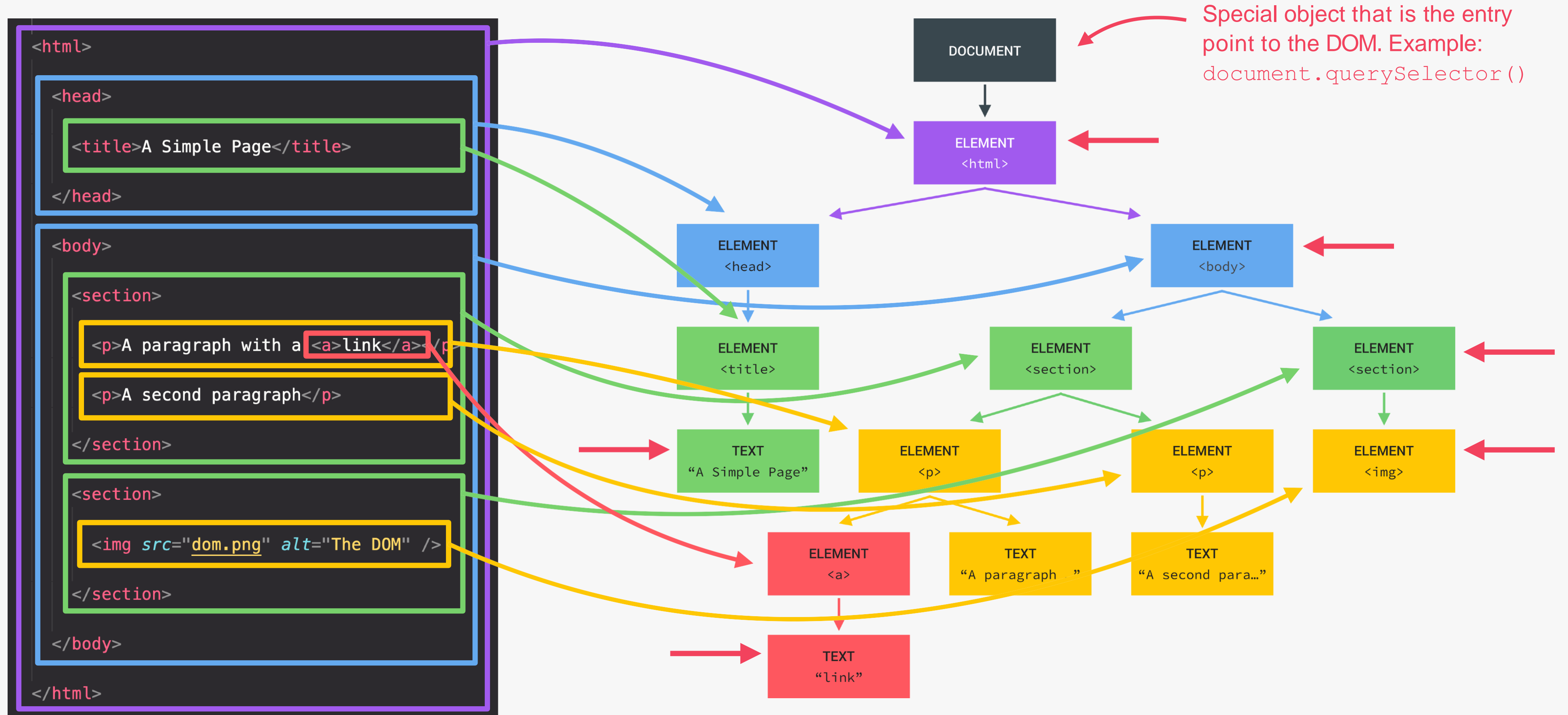DOCUMENT OBJECT MODEL: STRUCTURED REPRESENTATION OF HTML DOCUMENTS. ALLOWS JAVASCRIPT TO ACCESS HTML ELEMENTS AND STYLES TO MANIPULATE THEM.

Change text, HTML attributes, and even CSS styles

DOCUMENT

ELEMENT
<html>

ELEMENT
<head>

ELEMENT
<body>

ELEMENT
<title>

ELEMENT
<section>

ELEMENT
<section>

TEXT
"A Simple Page"

ELEMENT
<p>

ELEMENT
<p>

ELEMENT
<img>

ELEMENT
<a>

TEXT
"A paragraph ..."

TEXT
"A second para..."

TEXT
"link"

THEDOM TREE STRUCTURE

```html
<html>
  <head>
    <title>A Simple Page</title>
  </head>
  <body>
    <section>
      <p>A paragraph with a <a>link</a></p>
      <p>A second paragraph</p>
    </section>
    <section>
      <img src="dom.png" alt="The DOM" />
    </section>
  </body>
</html>
```

DOCUMENT

Special object that is the entry point to the DOM. Example: `document.querySelector()`

ELEMENT `<html>`

ELEMENT `<head>`

ELEMENT `<body>`

ELEMENT `<title>`

ELEMENT `<section>`

ELEMENT `<section>`

TEXT "A Simple Page"

ELEMENT `<p>`

ELEMENT `<p>`

ELEMENT `<img>`

ELEMENT `<a>`

TEXT "A paragraph "

TEXT "A second para…"

TEXT "link"

DOM !==JAVASCRIPT 🧐

DOM Methods and Properties for DOM Manipulation

👎

NOT PART OF

JS

ecma
INTERNATIONAL
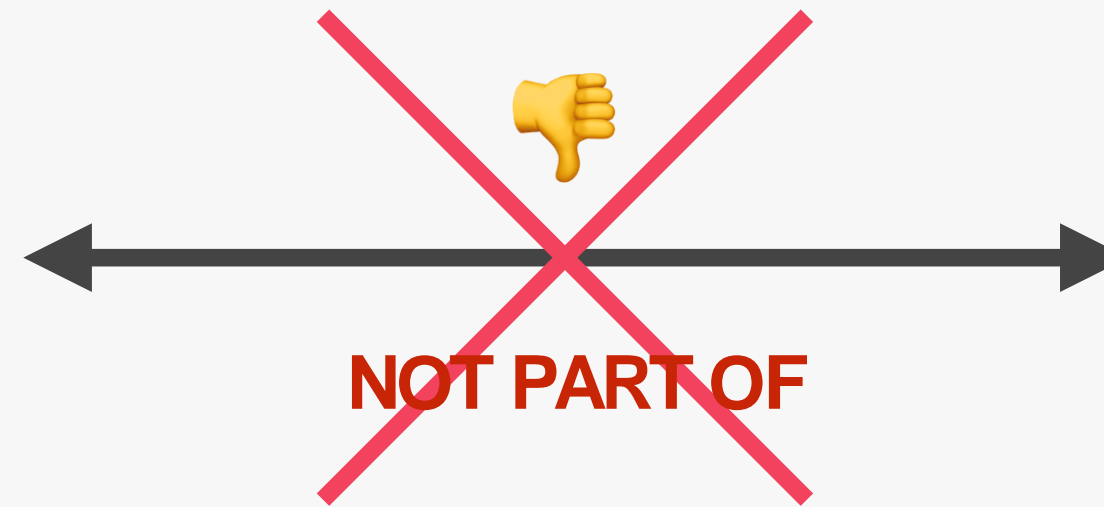
For example
`document.querySelector()`

API: Application Programming Interface

WEB APIs

DOM Methods and Properties

Timers

Fetch

👍

CAN INTERACT WITH

JS