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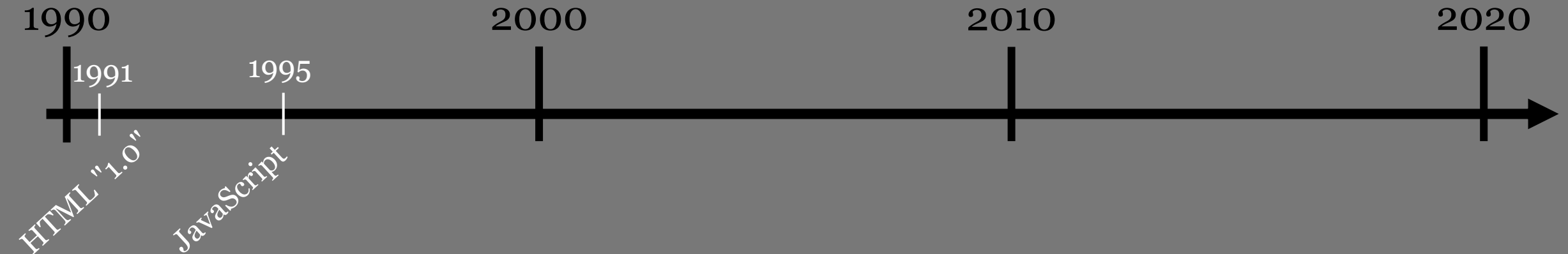
CLIENT-SIDE JAVASCRIPT & BOM

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INTRODUCTION

1990   2000   2010   2020

1991   1995

HTML "1.0"   JavaScript

When using client-side JavaScript:

- Don't expect users' web browsers to execute the code.
  - Can be disabled.
  - Search engines usually have trouble with JavaScript code.

- Don't expect users' web browsers to support the latest features.
  - Transpiling code: `const x = 1` → `var x = 1`

IMPROVING THE USER EXPERIENCE

https://svt.se

Examples:

- Showing/Hiding parts of the webpage.

- Validating form.

- Performing calculation.

WHERE TO WRITE JS CODE

1. In event attributes:

```
<p onclick="JavaScript-CODE">Some text</p>
```

- Can't re-use our JavaScript code on other elements ☹
- Shouldn't mix HTML and JavaScript code ☹

2. In the `<script>` element:

```
<script type="text/javascript">JavaScript-CODE</script>
```

- Can't re-use our JavaScript code in other files ☹

WHERE TO WRITE JS CODE

3. In a separate `.js` file:

```
<script src="the-js-file.js"></script>
```

JavaScript-CODE

`the-js-file.js`

- Can use the same JavaScript code in multiple files ☺
- JavaScript files can be cached ☺

BROWSER OBJECT MODEL

JavaScript can only be used for computations.

• No way of reading input from the user.

• No way to print output to the user.

• ...

The web browser adds some functionalities to the environment our client-side JavaScript code is executed in.

• Known as the Browser Object Model.

BROWSER OBJECT MODEL

Consists of many things:

- The Document Object Model
  - Interact with the webpage.
  - `document`

- The Navigator object
  - Contains information about the web browser.
  - `navigator`
  - https://html.spec.whatwg.org/multipage/system-state.html#the-navigator-object

- The History object
  - Read/modify the history of the current "tab".
  - `history`
  - https://www.w3.org/TR/2011/WD-html5-20110113/history.html#the-history-interface

BROWSER OBJECT MODEL

Consists of many things:

- The `alert` function.

- The `prompt` function.

- The `confirm` function.

- The console object.
  - Print values to the console.
  - `console`
  - https://console.spec.whatwg.org/#console-namespace

- More advanced features: https://whatwebcando.today

DEBUGGING CLIENT-SIDE JS CODE

Use the `debugger` statement.