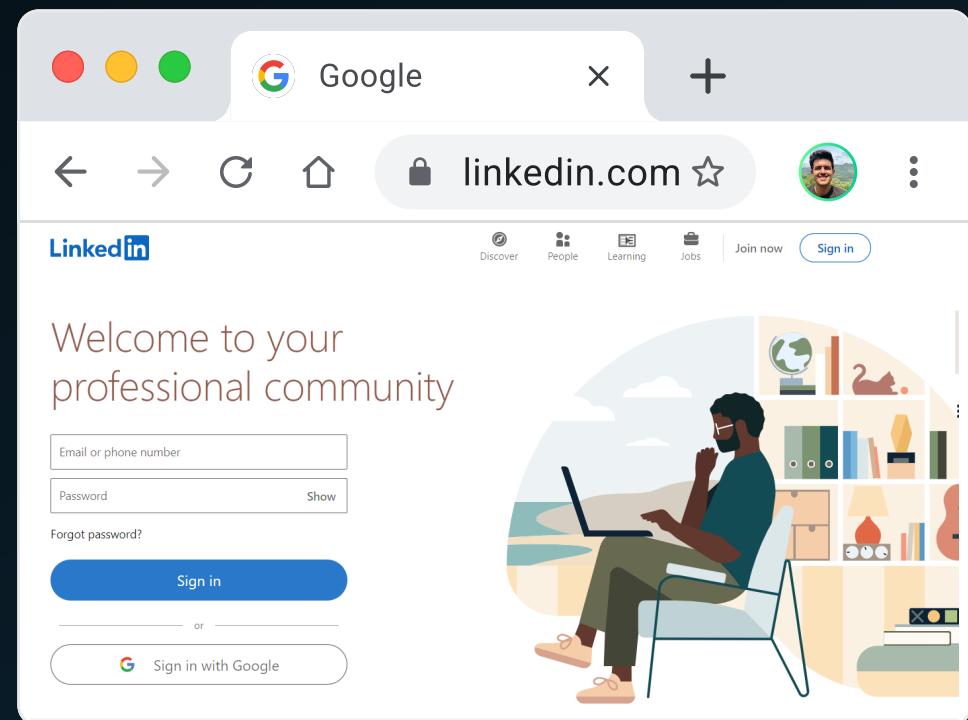




# HTML

## Lifecycle of a webpage



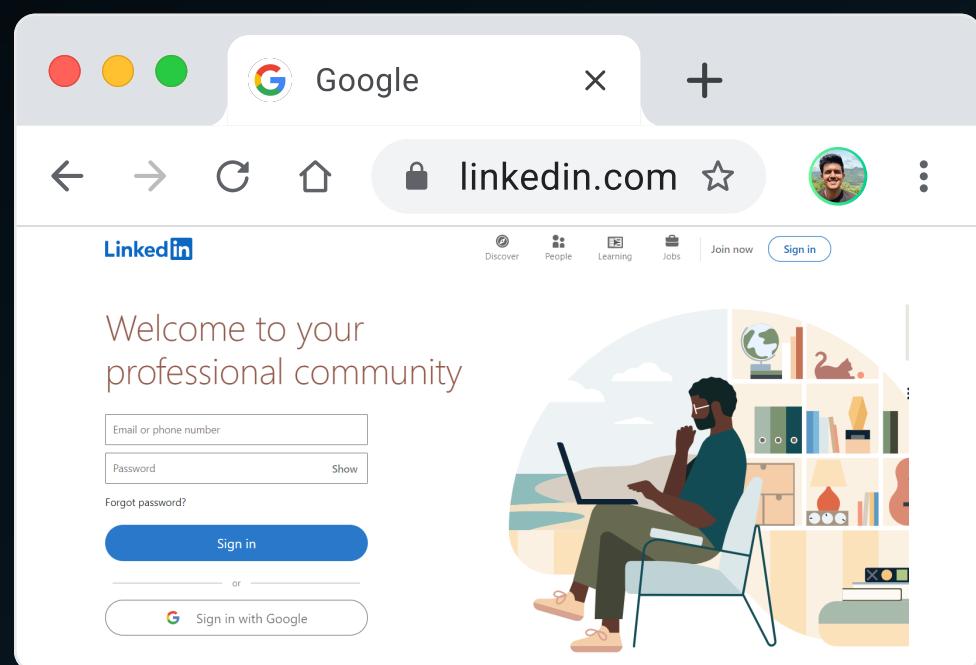
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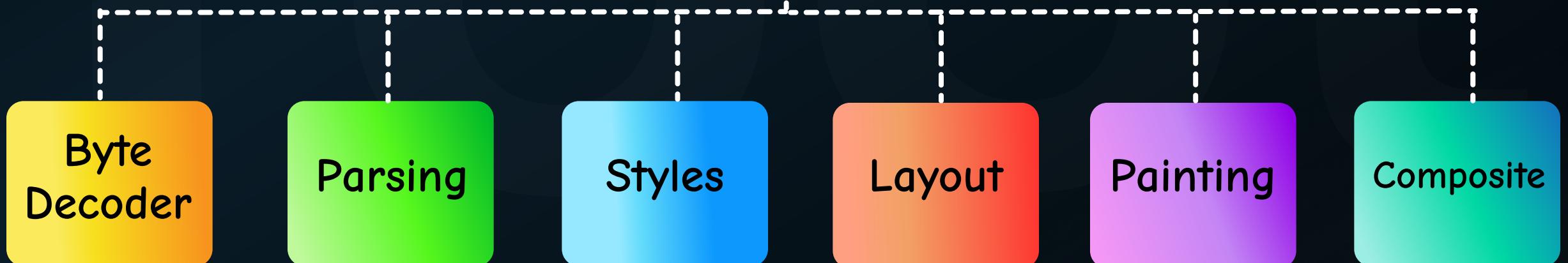
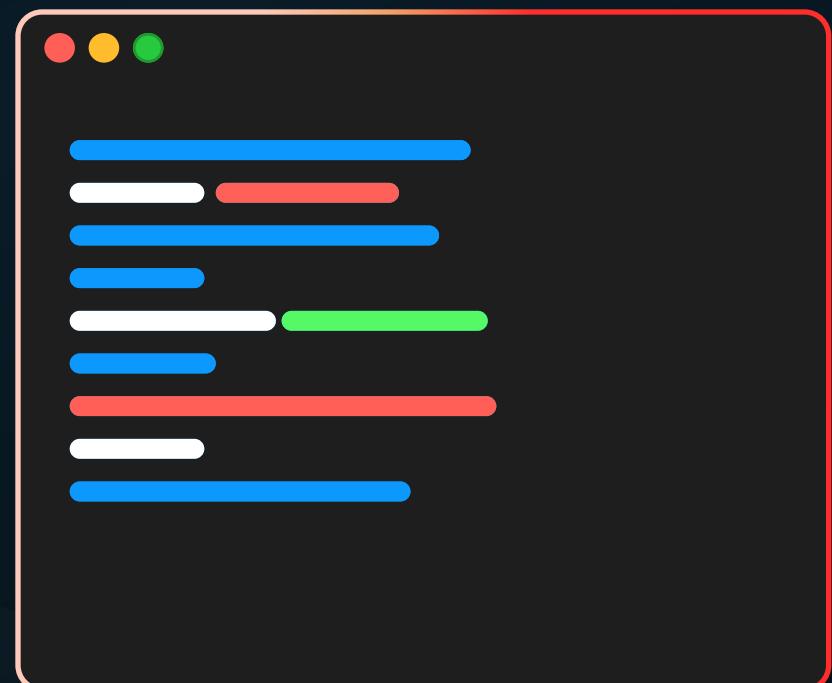


## The steps involved

Have you ever wondered how does your browser render HTML pages from the internet ?



There is a lot going on  
that we don't see

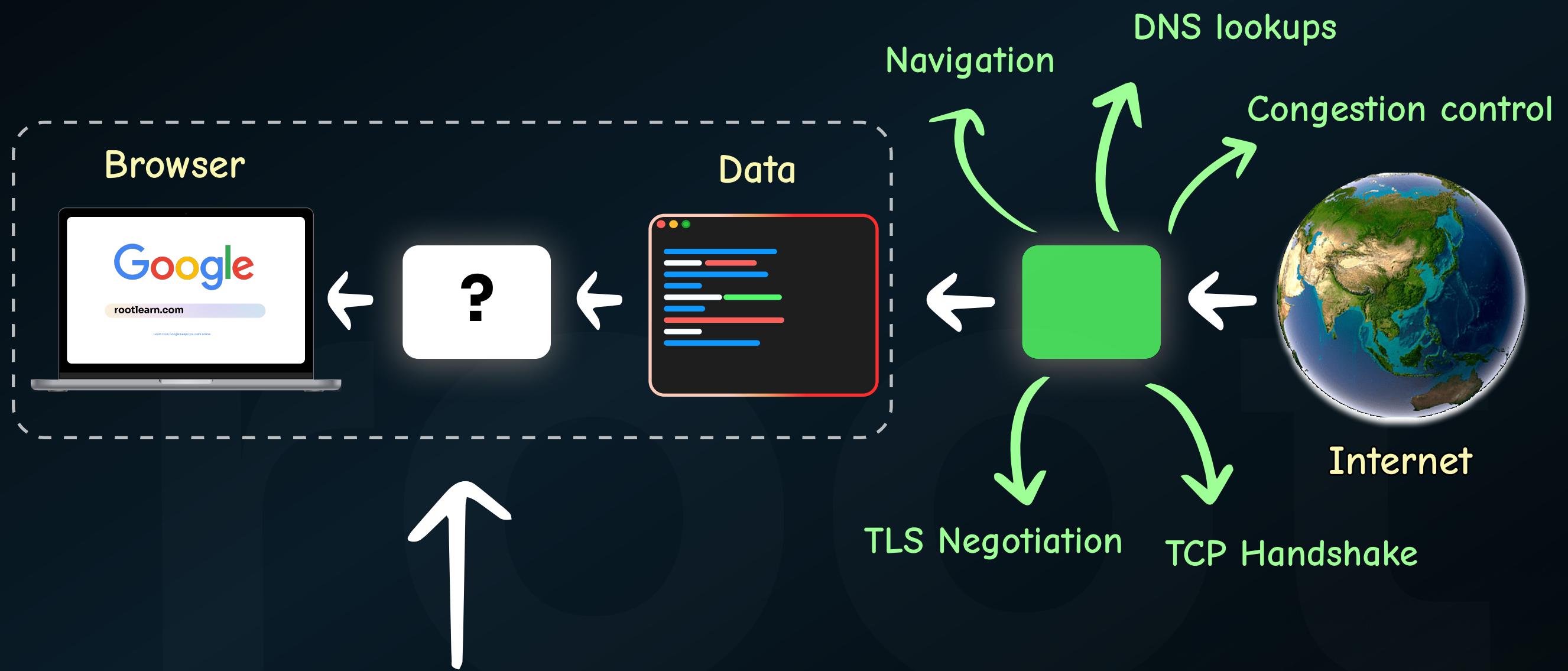


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# Before we begin

When you type in some url in your browser, a lot happens behind the scenes on how it fetches data from the internet



The part that we'll focus on



Manish Poduval





# 1. Byte Decoder

The data that you actually receive from the internet is in the form of bytes

The byte stream decoder converts the bytes to a set of tokens

```
3C 62 6F 64 7H 87 4C 79 3E 61  
3E 85 70 71 6F H4 2F 12 41 3C  
62 6F 6F 7H 87 4C 79 3E 61 3E  
85 70 71 6F H4 2F 12 41 3C 62  
6F 6F 7H 87 4C 79 3E 61 3E 85  
70 71 6F H4 2F 12 41
```

## Byte Decoder

bytes to characters

```
<html><head><title>rootlearn  
</title></head><body><heade  
r>ROOT</header><p>I'm Mani  
sh</p></div>
```



characters to tokens

startTag: html	startTag: head	startTag: title
content: rootlearn	endTag: title	
endTag: head	startTag: body	...
		...



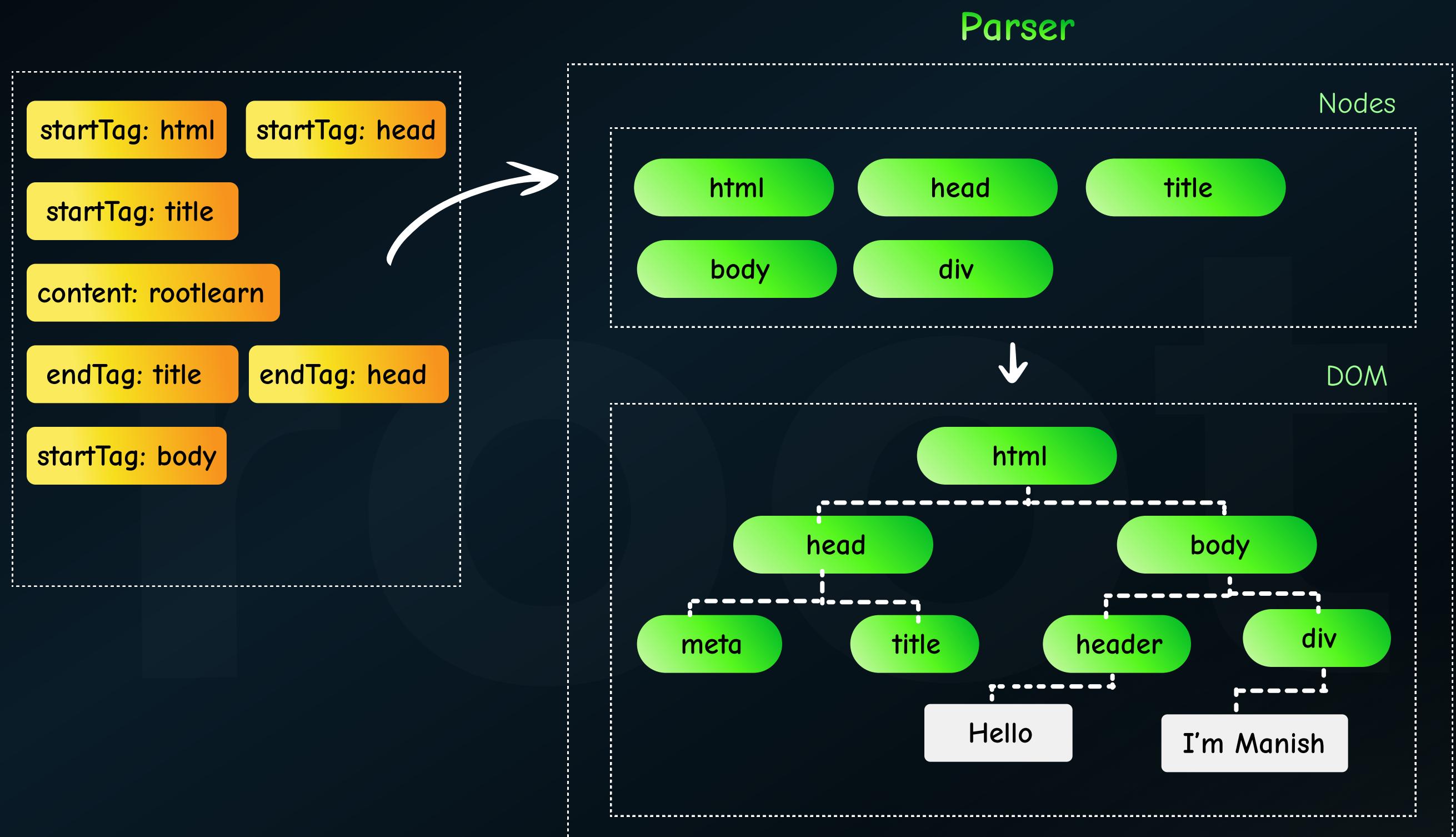
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## 2. Parsing

The parser starts converting the tokens it receives to a set of nodes and creates the DOM tree



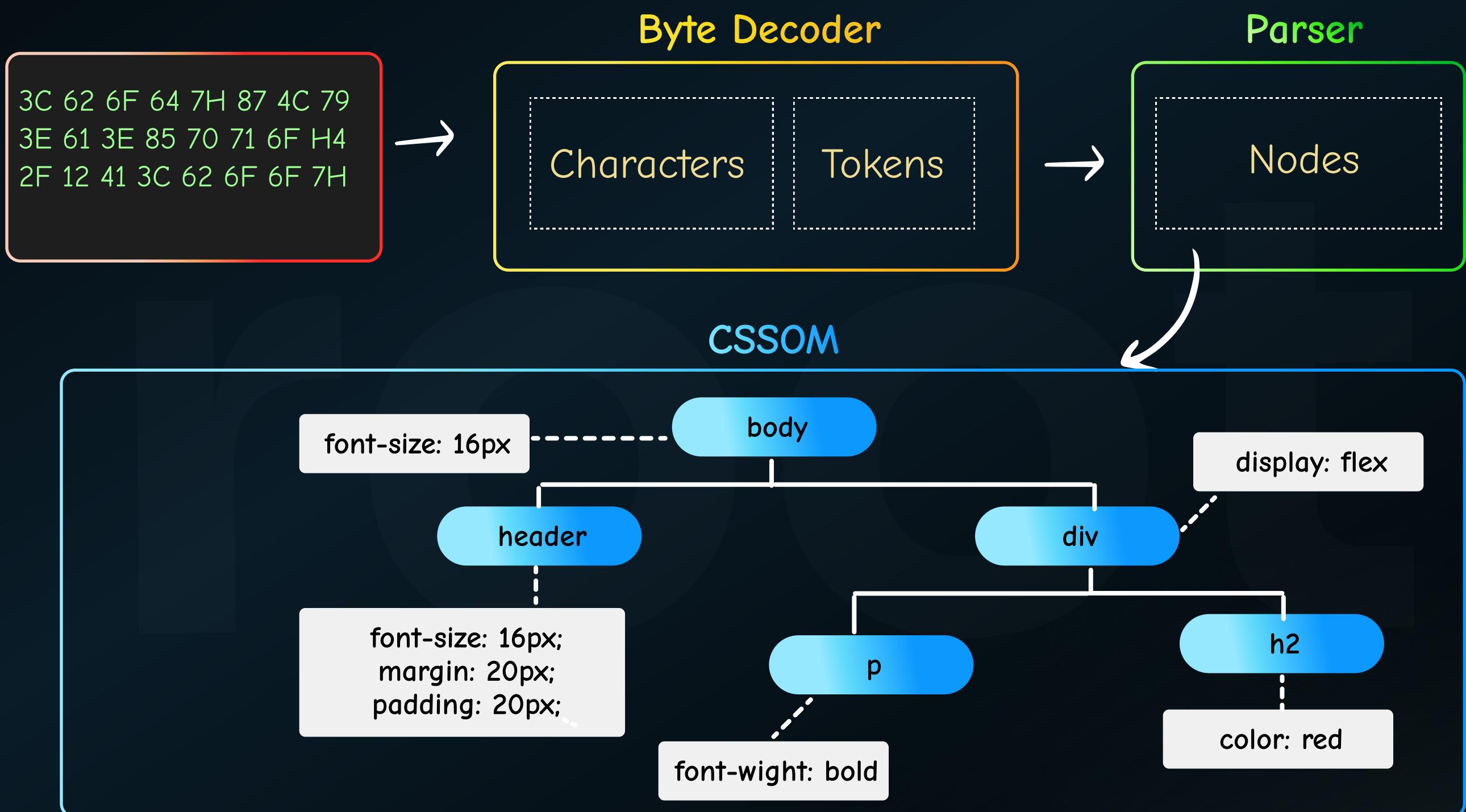
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### 3. Recalculating styles

It repeats this whole process with a CSS file as well and creates a CSSOM tree



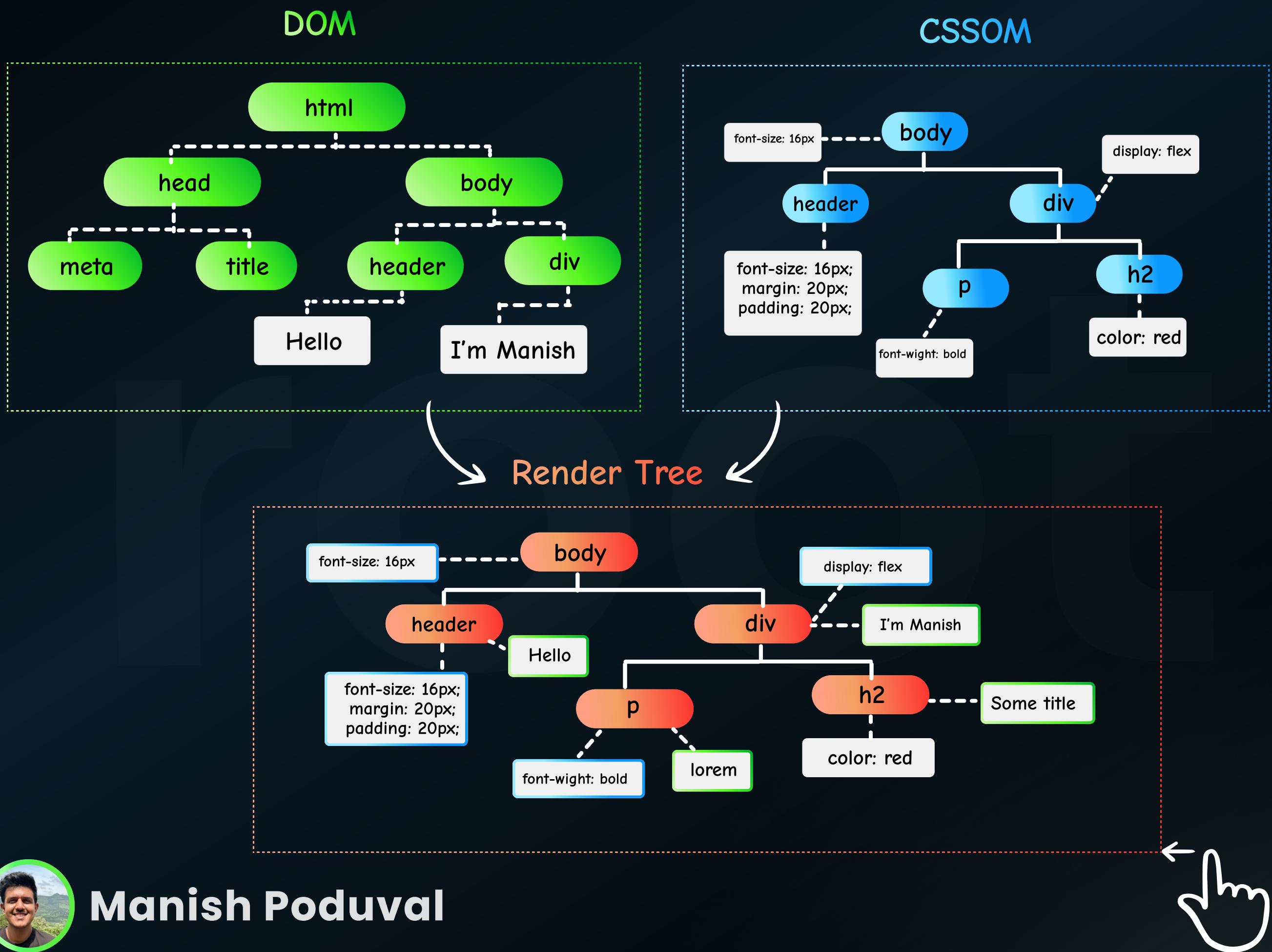
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# Generating the render tree

The browser combines the DOM and CSSOM and creates the render tree. It's the visible content on the screen

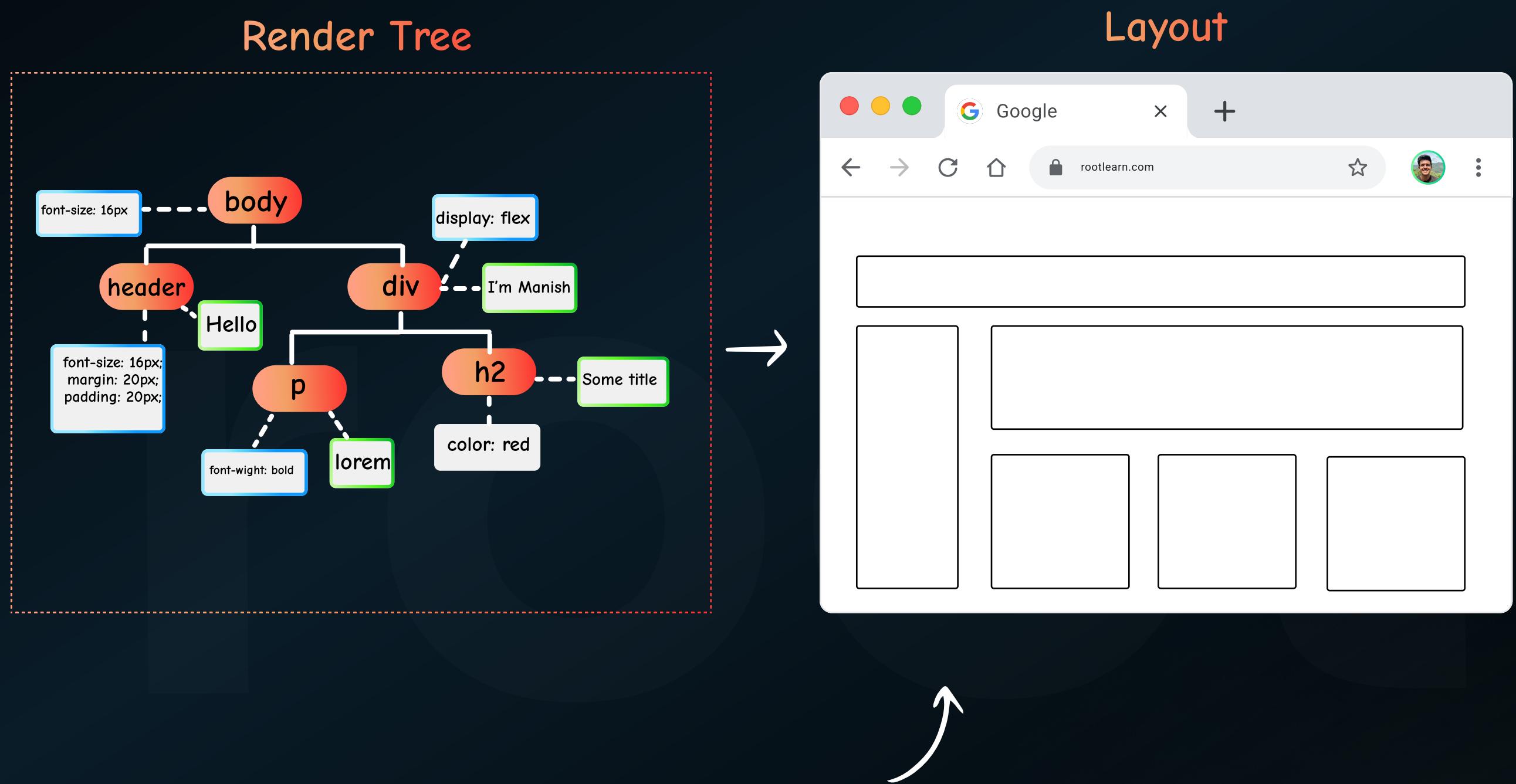


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## 4. Layout

The browser then starts generating the layout of the page using the render tree



The browser is trying to figure out where to position elements



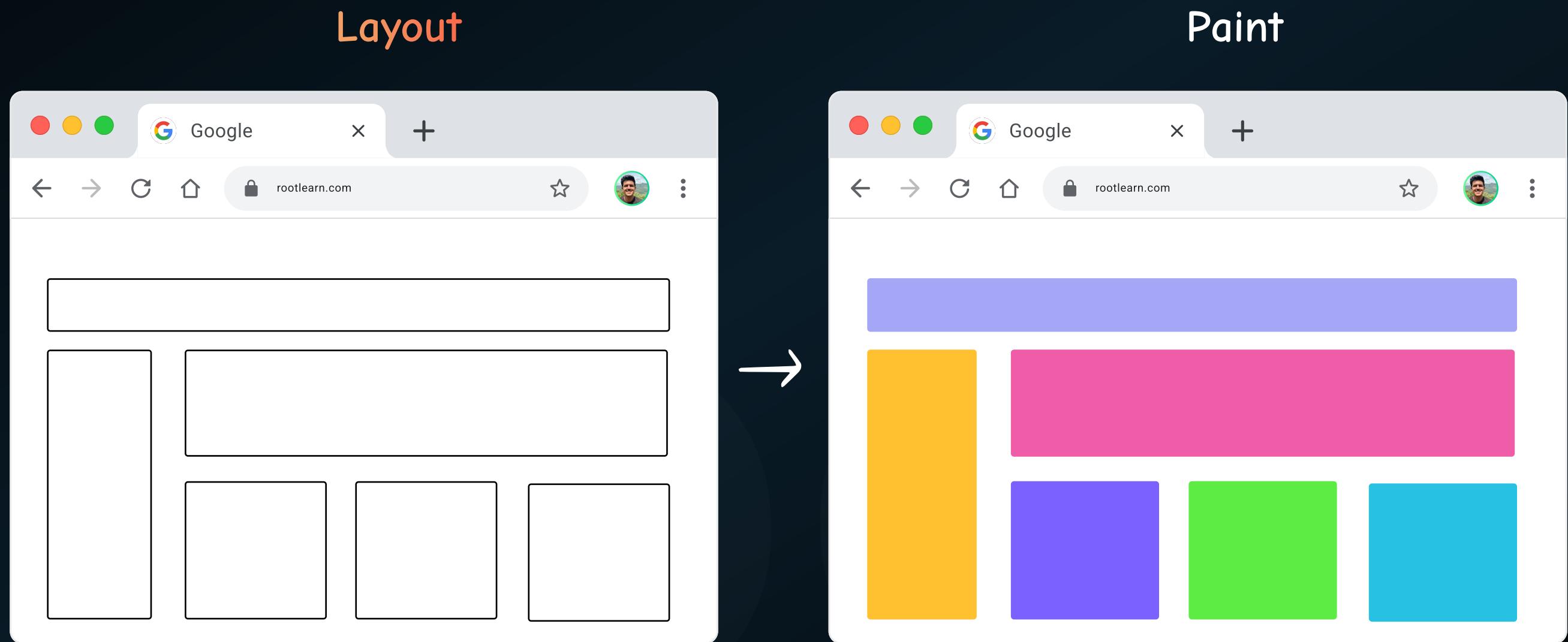
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## 5. Paint

Once the layout is generated, the next step is to paint the pixels on the screen



PS: It also adds in text although it's not shown in the visuals



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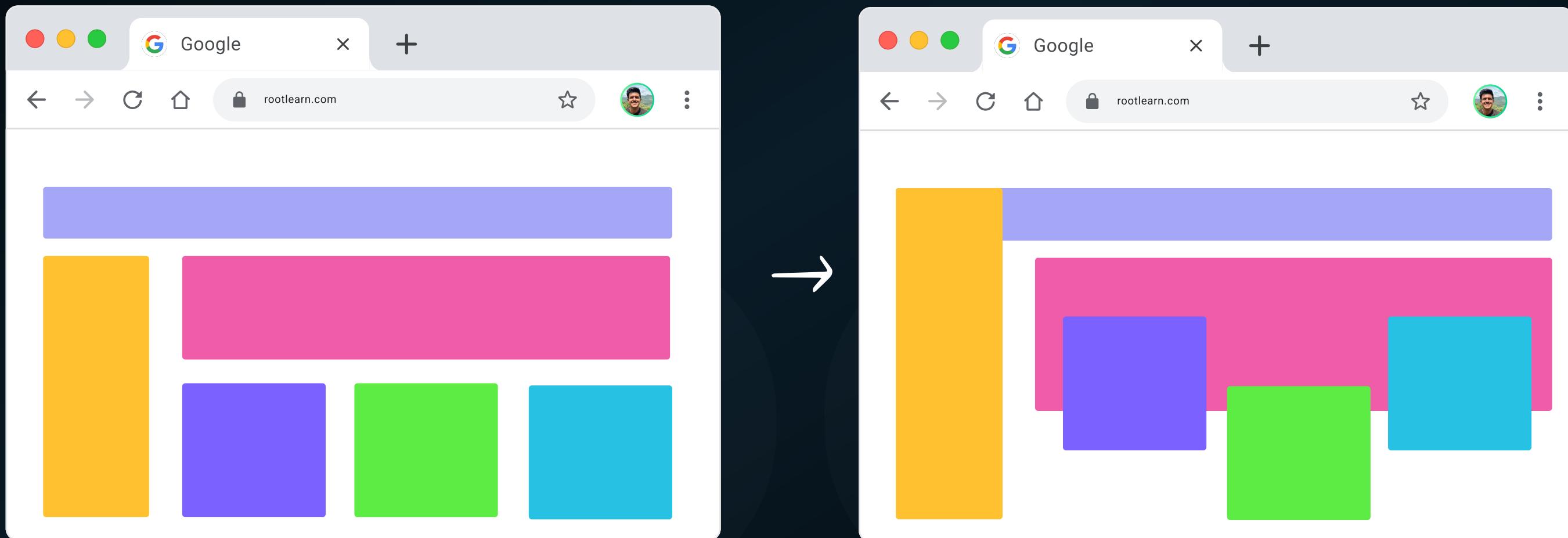




## 6. Compositing

In this step the browser builds layers on the screen depending on how elements need to appear (above/below some other elements)

Things like position: absolute

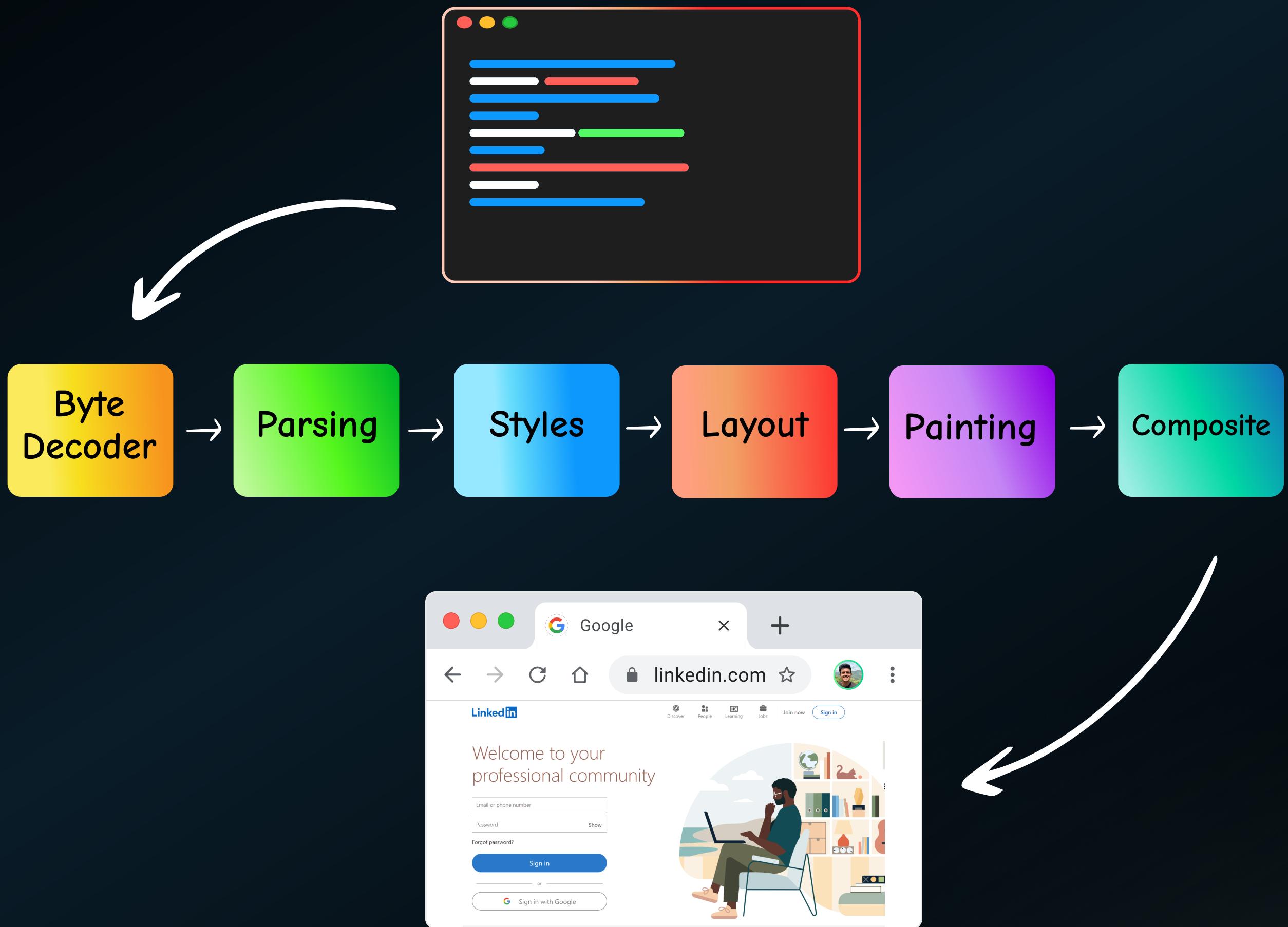


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To summarize it again, here's what happens from the point the browser receives the data till it renders on the page



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# Want to be a part of **root** ?

Scan to upskill  
yourself

