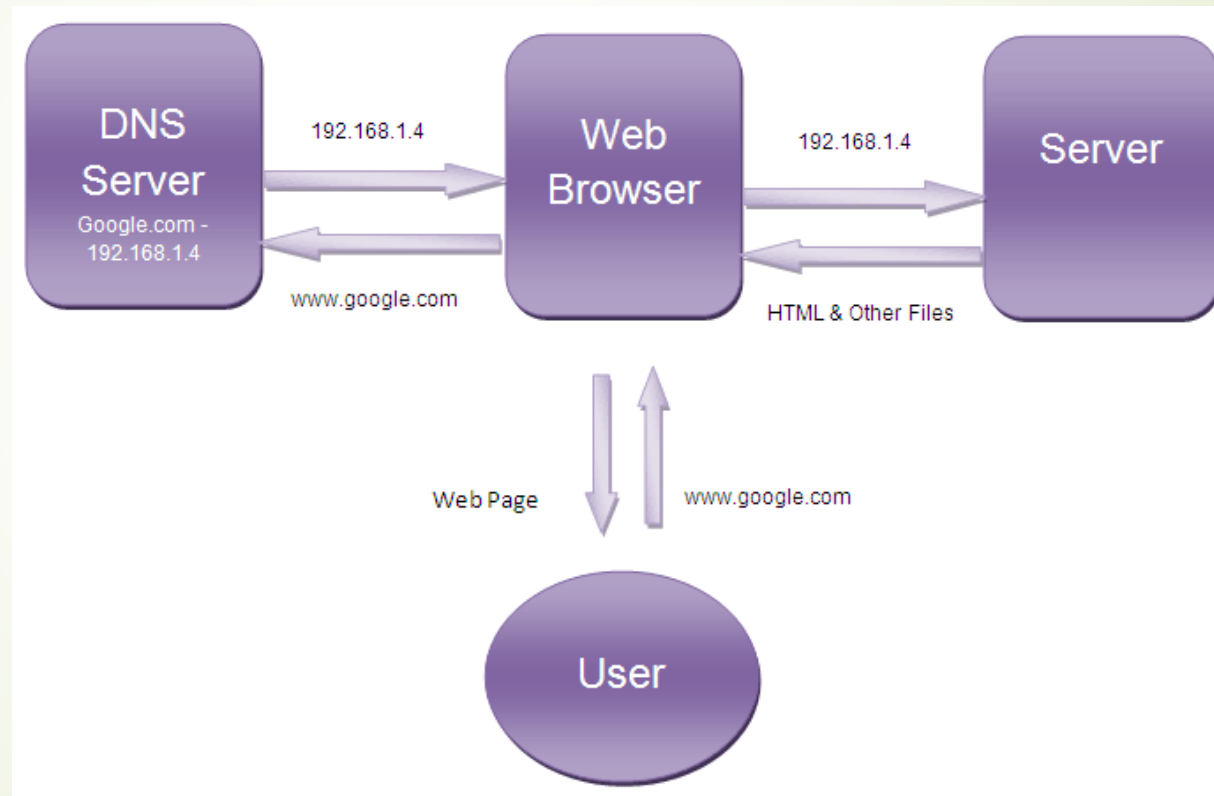# Web Browser's

What are Web Browser's

- A **Web browser** is an application software that is installed on a computer to provide access to the World Wide Web.
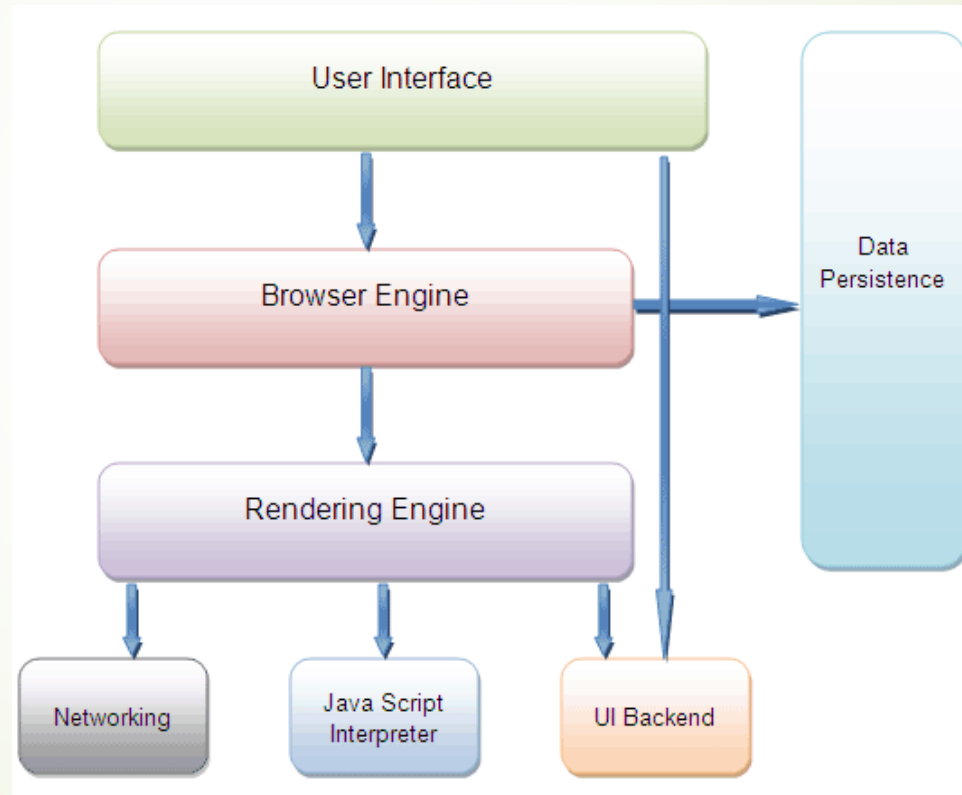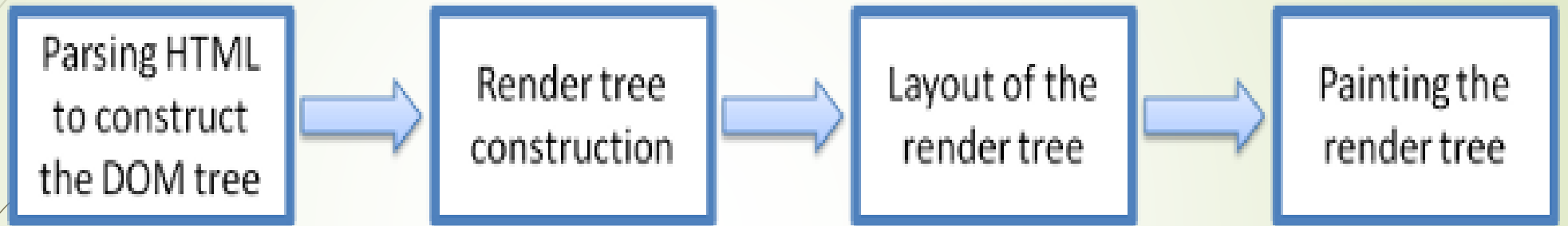
How Browser works

Browser Engines

- Google Chrome, Opera – Blink
- Internet Explorer – Trident
- Firefox – Gecko
- Safari – WebKit

* Compatibility issues

Architecture of a Web Browser

Main flow of rendering

Parsing HTML to construct the DOM tree	→	Render tree construction	→	Layout of the render tree	→	Painting the render tree

- Parsing
- Rendering
- Layout
- Painting

Parsing

- HTML Parsing
- Parse tree / DOM tree
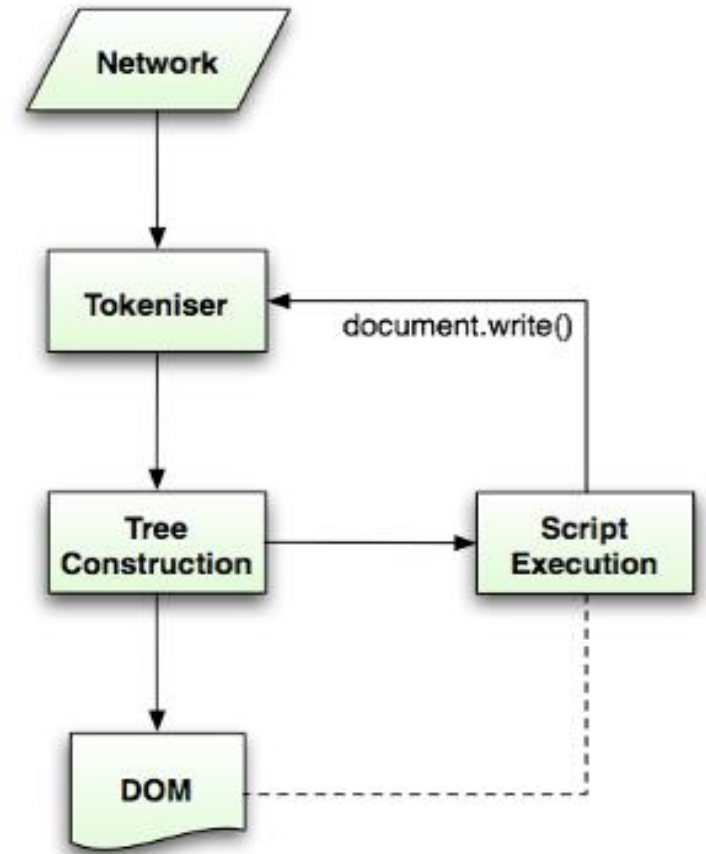- Custom Parsers
  - Tokenization
  - Tree construction

Figure : HTML parsing flow (taken from HTML5 spec)
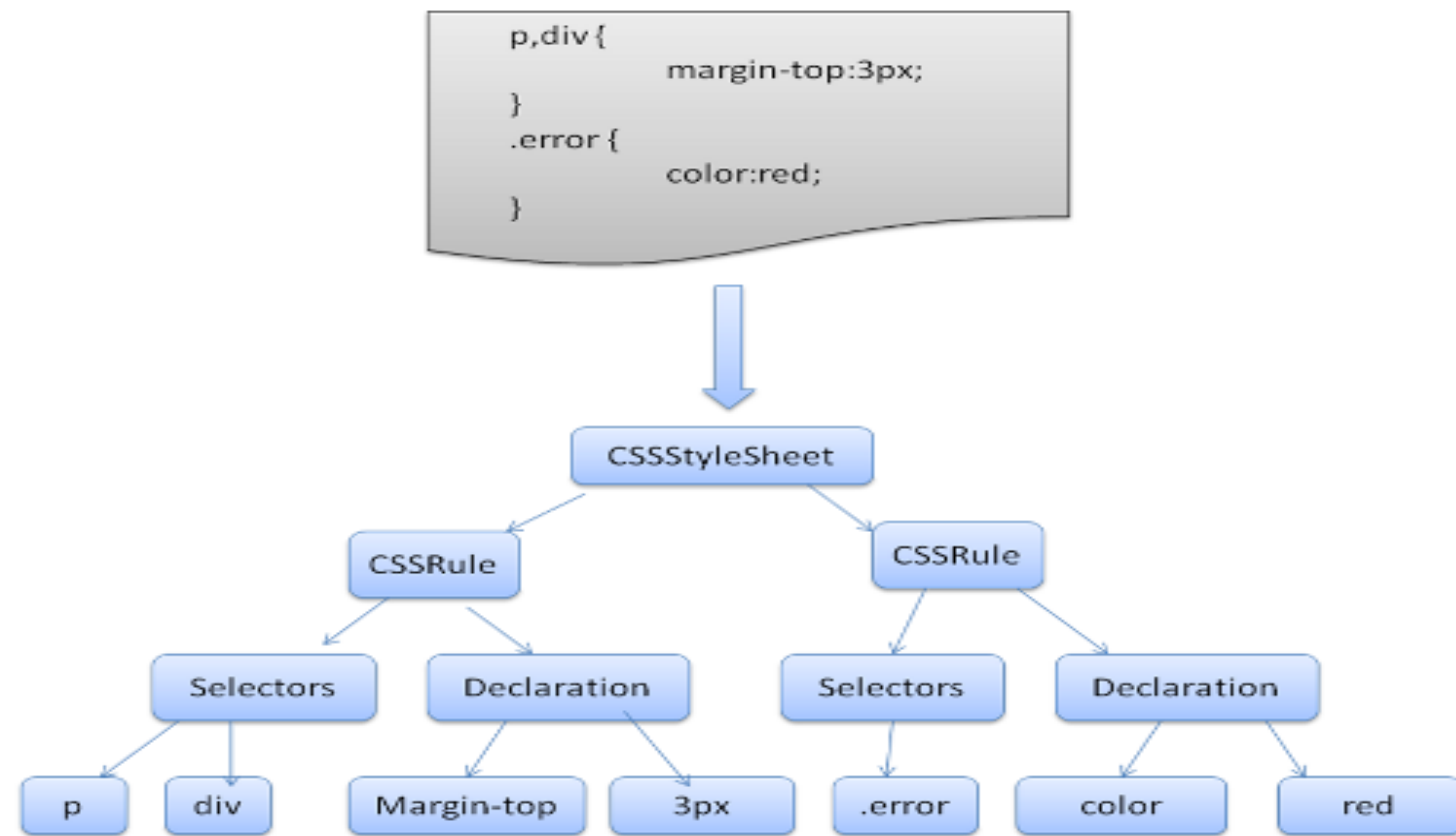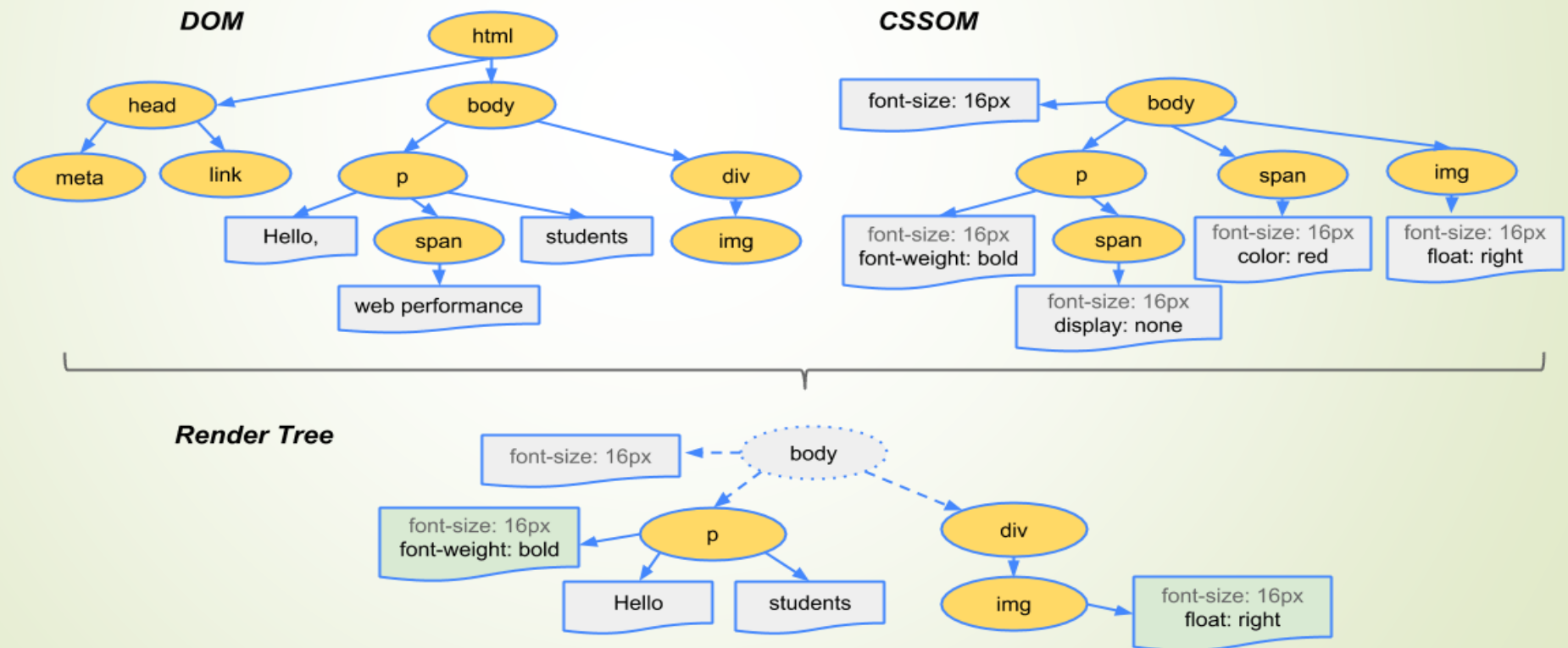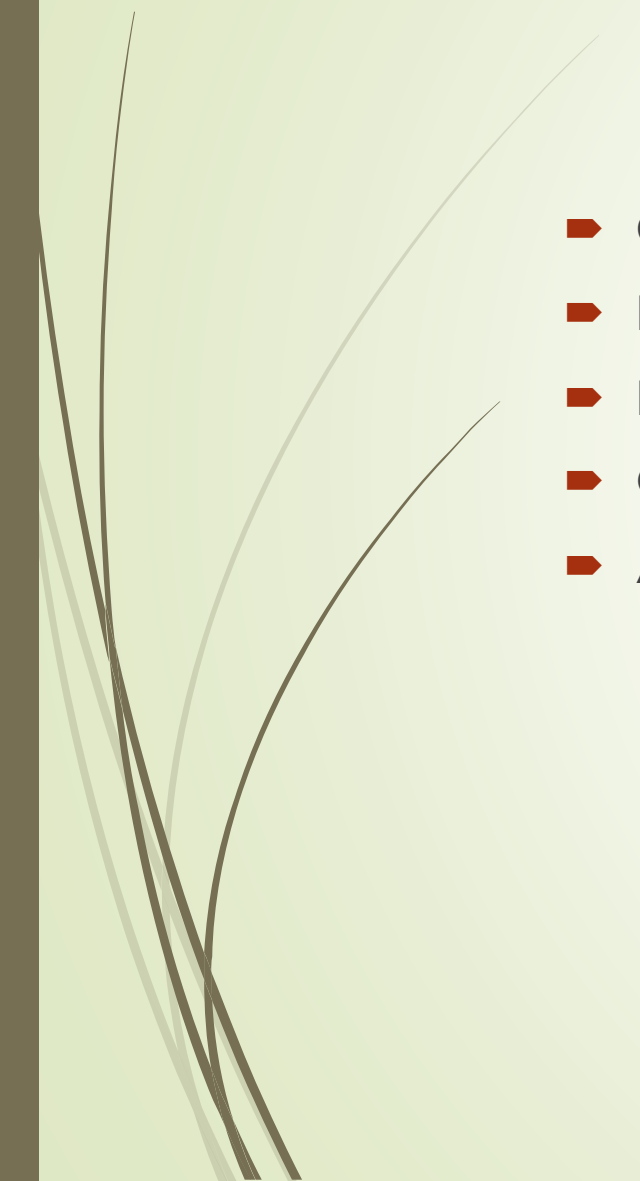
CSS Parsing

Figure : parsing CSS

Rendering

- Render tree – visual representation of the document
- Render tree relation to the DOM tree

Layout

- Calculating the position and size for the render tree is called layout
- Flow based layout model
- Dirty bit system
- Global and Incremental layout
- Asynchronous and Synchronous layout

Painting

- Render tree is traversed and renderers 'paint()' method is called
- Global and Incremental
- The painting order
  - Stacking context

WebKit main flow