What is JavaScript runtime? Compare DOM context and Node.js context/runtime

A runtime environment is where our program is executed, it adds functionalities to help our code run and operate.

A javascript runtime environment provides all the necessary **components and functionalities for executing the javascript code**.

DOM Context is a specific part of **DOM (Document Object Model),** DOM represents structure of HTML document, and Javascript works within the DOM context and uses to access, manipulate, and update the elements, and content of the HTML Document.
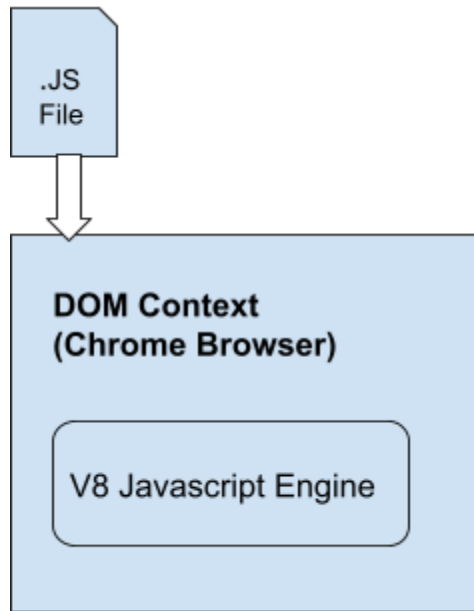
DOM context is the **runtime** for a web browser. It gives restricted access to Javascript Engine, specifically providing to **windows** and **document** objects only.

The DOM context is limited to **client side interactions and functionalities**, including javascript code within itself which focuses on the **structure and content of the web page.**
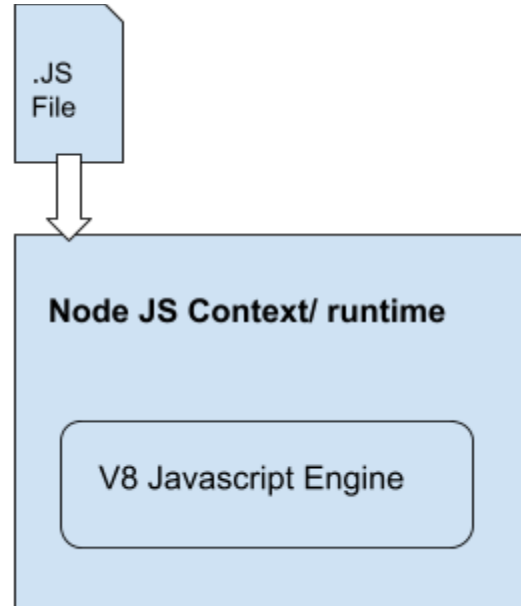
NodeJS context is a runtime environment which allows execution of JavaScript code **outside the web browser**, on the server side.

NodeJS context uses **Chrome's V8 engine.** Here the V8 Engine is taken **outside the browser** and is paired with NodeJS providing it with additional functionalities and tools **(context)** to operate.

NodeJS contexts/runtime enables javascript code to expand beyond the **client side to server side interactions,** including tasks like handling database operations, processing files, web server development and many more.

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.JS
File
```

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.JS
File
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**DOM Context
(Chrome Browser)**

V8 Javascript Engine

Node JS Context/ runtime

V8 Javascript Engine

Provides access to **window**
and **document** objects
only.

Provides access to Node API,
Libraries, memory, file system,
database etc **outside the
browser.**