**Node.js -** [KATHISH KUMARAN R](https://medium.com/@kathishcivil94?source=post_page-----bb9c11d3c51e--------------------------------) Aug 6, 2022

Hi Friends, In this blog we are going to learn about Node.js.

**Node.js:**

* Node.js is a server-side, JavaScript-based runtime environment that’s a massive open-source tool.
* Node.js is library for execution of JavaScript applications external to the browser. It comes to use when you want to create server-side programs or network a web application. Its elementary modules are inscribed in JavaScript. It is mostly used for server applications in real-time.
* Node.js brought JavaScript to the next level. While JavaScript is used as a client-side development language, Node.js covers the server-side programming. Thanks to the Node.js, JavaScript has become an all-purpose full-stack development language.
* The JS frontend and Node.js backend are easier to keep in sync because of a single language used on both sides of the application. Node.js allows your programs to be written in JavaScript and to be executed on the server.

**Node.js features**

* Built on Chrome’s V8, an engine for chromium browsers
* Run-time platform
* Uses a non-blocking, event-driven I/O model
* Follows a single-threaded model
* Highly scalable and lightweight
* Efficient for processing multiple requests with less CPU usage
* Thousands of libraries and tools for JavaScript are gathered on npm (a default Node.js package manager and marketplace)

**Use cases of Node.js**

* Streaming web applications
* Real-time software & Streaming apps (Collaboration tools used for video/audio conferencing, document editing, Chat applications, etc. )
* Complex single-page apps
* Microservices
* IoT-based applications
* Backends and servers
* Developing APIs
* Scripting and automation

**Advantages of Node.js**

* **Unopinionated**: Builds everything from scratch with fewer restrictions, which gives developers the freedom to code their own way.
* **Non-blocking I/O System**: Lets you process several requests simultaneously, resulting in more scalability and faster performance.
* **Active Community**: Allows access to readily available solutions and codes that make it easy for startups and beginner developers.
* **Easy to learn**: Developers with experience in Javascript as a frontend language can easily adapt to the framework.
* **Full-Stack Privilege**: Allows Node.js developers to write frontend and backend both in Javascript. This enables the smooth deployment of apps and reduces the learning curve.
* **Caching facility**: Caches single modules in the application memory and eliminates the need to re-execute the code for faster response times.
* **Extensive support**: Assists developers with commonly used tools for different purposes such as testing or identifying project dependencies.

**Disadvantages of Node.js**

* **Productivity loss**: Since everything needs to be written from scratch, you may experience a decline in productivity. Beginners find it difficult to build apps from scratch due to the non-opinionated nature of Node.js.
* **Not suitable for extensive computing**: Although Node.js supports complex apps, it doesn’t fare well with heavy computing (CPU intensive) apps. Additionally, it is less efficient at heavy calculations as it doesn’t support multi-threaded programming.
* **Difficult to maintain code due to Async nature**: Due to nested callbacks in Node.js and its heavy reliance on asynchronicity, it becomes tedious to maintain and difficult to understand code.
* **Some of its tools lack quality**: Some Node.js tools don’t match high-coding standards and are not correctly structured due to the open-source ecosystem.

**Major Companies That Use Node.js**

Some of the companies favor Node.js over other frameworks are LinkedIn,Netflix, Uber, PayPal, ePay, Walmart, Citibank, GoDaddy, Medium etc.

These companies may have different reasons for using Node.js but they all came to the conclusion that Node.js was worth it.

**Netflix**

Netflix is a streaming service for television and film serving millions of users worldwide and likely one of the most familiar to you of the companies using Node.js. The user interface (UI) of Netflix was built using Node.js. According to the Netflix team, the modularity of the framework encouraged them to use Node.js.

**PayPal**

PayPal is the go-to online platform for making electronic payments through a trustworthy service. PayPal uses Node.js to build user-facing content.

The PayPal software team likes that Node.js empowers developers to build both server-side and client-side with JavaScript.

It unifies the developer experience in a way that is helpful to the development process.

**Conclusion**

First, Node.js is extremely fast, as exhibited by its reputation in speeding up web pages. Node.js can also be used for UI development, and many of the companies that use Node.js primarily use it for that reason. Lastly, but not least, Node.js is feature-abundant.

Okay Friends! In this Blog, we have learned a lot of fundamental things about Node.js. Hope to see you all in my next blog post, Until then Take Care! Keep Learning!