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10 Best NodeJS Frameworks for Developers

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(https://twitter.com/intent/tweet?text=10+Best+NodeJS+Frameworks+for+Developers+https%3A%2F%2Fhackr.io%2Fblog%2Fnodejs-frameworks) (https://www.linkedin.com/shareArticle?mini=true&url=https://hackr.io/blog/nodejs-frameworks) (http://www.reddit.com/submit?url=https://hackr.io/blog/nodejs-frameworks) (https://news.ycombinator.com/submit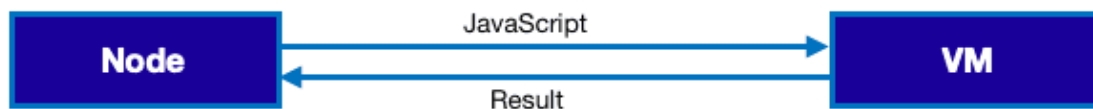link?u=https://hackr.io/blog/nodejs-frameworks) (https://api.whatsapp.com/send?text=https%3A%2F%2Fhackr.io%2Fblog%2Fnodejs-frameworks)
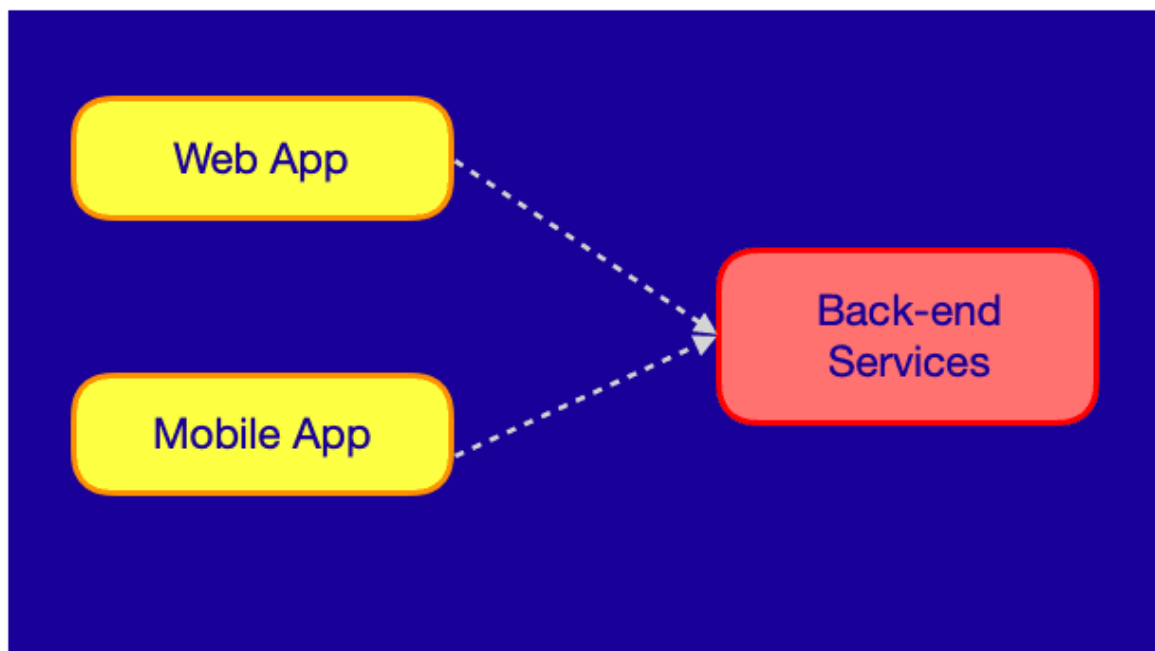
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What is Node?

Node also called Node.js where js means JavaScript is an open-source, cross-platform runtime environment for executing JavaScript code outside of the browser. To run JavaScript on the backend servers, a **virtual machine** like V8 by Google executes JS in the server so Node is a wrapper around virtual machines like V8 with built-in modules providing rich features through easy to use asynchronous API.

Backend services like **APIs(Applications Programming Interfaces)** uses Node to build its services. These services power client applications like web apps inside web browsers and mobile apps on mobile devices. Users see and interact with these clients' apps, so, they are just at the surface an interact with services sitting under server or in the cloud to store data, send emails, push notifications, kick of workflow and more.

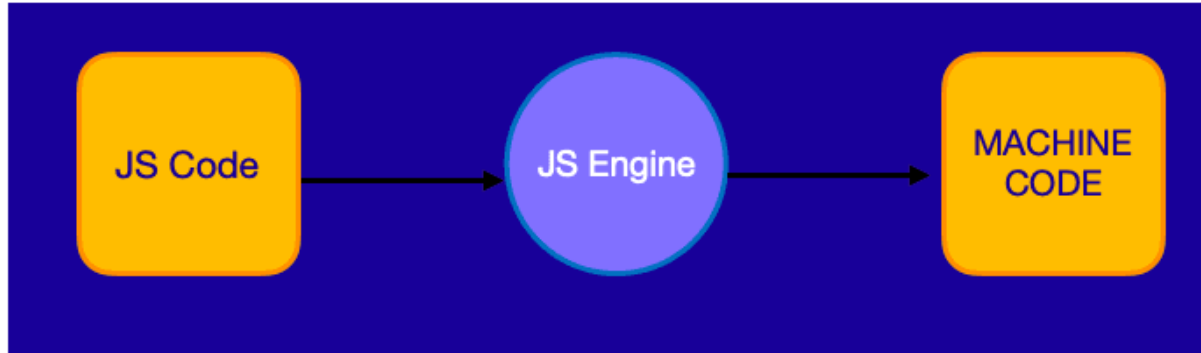
Node is ideal for highly-scalable, data-intensive and real-time backend services that power real-time applications.

Why Node is Special?

- Great for prototyping and agile development.
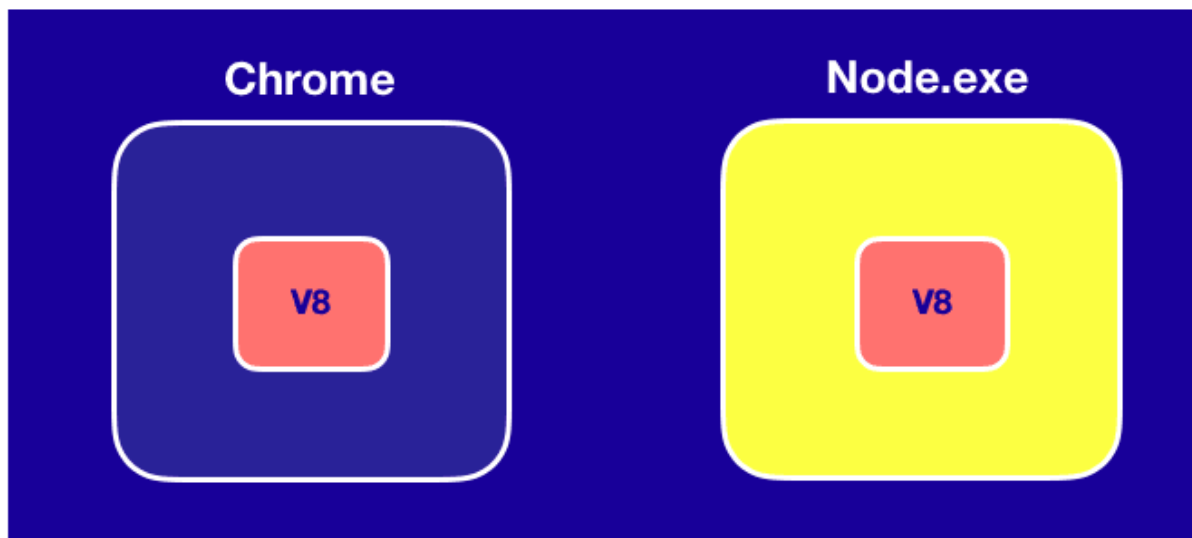- Building super fast and highly scalable services.

- Supports widely used language JavaScript

- Cleaner and more consistent codebase.

- Large ecosystem of open-source libraries.

Architecture of Node

Traditionally, the browser provided the runtime environment for the JS code. Every browser has a JS engine that converts the JS code to machine code. For instance, Microsoft Edge has Chakra, Firefox has spider monkey and Chrome has V8 engines (https://en.wikipedia.org/wiki/V8_engine).

To execute JS out of the browser the fastest engine V8 is embedded into a C++ program, this is called Node. Therefore, Node is a runtime environment for JS code.

It contains the JS engine that executes JS code but also has certain objects that provide an environment for JS code that is not provided inside browsers.

NodeJS Frameworks

Let us now look at the popular NodeJs Frameworks:

1. Hapi.js

It is introduced by Eran Hammer at Walmart while trying to handle traffic on black Friday. It is a powerful and robust open-source best node JS framework for developing JSON API. Application programming interface (API) servers, websites, and HTTP proxy applications are built with hapi.js. Various key features such as input validation, implement caching,configuration-based functionality, error handling, logging, and more and the well-developed plugin system and make the Hapi one of the most preferred frameworks. It is used in building useful applications and providing technology solutions by several large-scale websites such as PayPal, Disney.

Features:

- Code reusability
- No external dependencies
- Security
- Integrated Architecture: comprehensive authorization and authentication API available in a node framework.

2. Express.js

Built by TJ Holowaychuk, Express.js is a flexible and minimal Node.js application framework specifically designed for building single-page, multi-page, and hybrid applications that provide a robust set of features for web and mobile applications.

Express has no out-of-the-box object-relational mapping engine. Express isn't built around specific components, having "no opinion" regarding what technologies you plug into it. This freedom, coupled with lightning-fast setup and the pure JavaScript environment of Node, makes Express a strong candidate for agile development and rapid prototyping. Express is most popular with startups that want to build a product as quickly as possible and don't have very much legacy code.

The framework has the advantage of continuous updates and reforms of all the core features. It is a minimalist framework that is used to build several mobile applications and APIs.

3. Koa.js

Developed and maintained by the creators of widely used Node.js framework — Express.js, Koa, a cross-platform server-side runtime environment application, is an object containing an array of middleware functions that are composed and executed in a stacked manner upon request making it easier for web developers to build fast and scalable network applications with JavaScript. It improves interoperability, robustness, and makes writing middleware much more enjoyable.

Many web developers, at present, even use Node.js to write both the frontend and backend of a web application (https://hackr.io/blog/web-application-architecture-definition-models-types-and-more) in JavaScript. Web developers can further accelerate the development of custom web applications and application programming interfaces (APIs) by using several Node.js frameworks.

4. Sails.js

It is a model–view–controller(MVC) framework for Node.js that follows the principle of "convention over configuration." The Ruby on Rails web framework inspires it, thus emulates the familiar MVC pattern to build single-page apps, REST APIs, and real-time apps. Extensively uses code generators that allow building applications with less writing of code. The framework is built on top of Socket.io, a JavaScript library for adding real-time, bidirectional, event-based communication to applications and Express.js, one of the most popular Node.js libraries.

5. Meteor.js

It is a platform for building applications using Node.js with any frontend framework like Angular, React, or even Blaze, which is the Meteor front-end framework. The database it uses is MongoDB by default.

Features:

- Zero configuration build tools providing code splitting and dynamic imports.
- It is faster as it comes with real-time features.
- Nicely integrated frontend with backend
- Meteor methods that define server-side functionality on the server and then call the methods directly from the client-side and not have to interact with hidden API.
- Accounts and user authentication are excellent with meteor.

- Excellent platform for building as doesn't require code separate between its all a part of one code base that communicates smoothly.

6. Derby.js

DerbyJS is an open-source, full-stack framework for building modern realtime web applications. Uses PubSub and is compatible with any database. We can use the NPM to add features and functionality to a Derby project. Any other party library is not loaded automatically and is not globally included in Derby, and one has to "require" as they would with any node.js project. Derby is focused on allowing users to create fast-loading realtime web-apps and is flexible and extensible. Templates can be provided in the browser and on the server. In a browser, DerbyJS renders with fast, native DOM methods.

Features:

- Realtime Collaboration
- Server Rendering
- Components and data binding
- Modular

7. Total.js

Total.js is a modular and modern Node.js three-year-old framework supporting the MVC architecture. Client-side frameworks like Angular.js, Polymer, Backbone.js, Bootstrap, are fully compatible with this framework. This framework is extensible and asynchronous and offers excellent performance and stability. Any tools such as Grunt are not required to compress it easy to use. It also has NoSql embedded in it and supports the array and other prototypes.

Features:

- Rapid support and bug fixing
- Supports RESTful routing
- Supports video streaming
- Supports themes
- Supports workers
- Supports sitemap
- Supports WebSocket
- Supports models, modules, packages, and isomorphic code
- Supports Image processing via GM or IM
- Supports generators
- Supports localization with diff tool and CSV export
- Supports restrictions and redirections

8. Adonis.js

Adonis is a node.js framework that has a hardcore MVC structure, which is a design pattern where it breaks certain functionalities up into different sections of the applications. Adonis uses the edge template engine, which is really easy to use.

Features:

- It has its own CLI (Command Line Interface)

- Familiar to Laravel so easy to learn

- Validators are used to check if the data flowing into the controllers has the right format, and emit messages when some errors occur.

9. Nest.js

NestJS is a progressive Node.js framework for building efficient, reliable and scalable server-side applications helping developers create modular, highly scalable, and maintainable server-side web applications.

It implements the MVC (Model-View-Controller) pattern and provides extensibility. The outstanding feature of NestJS is its native support for TypeScript, which lets you access optional static type-checking along with strong tooling for large apps and the latest ECMAScript features.

Features:

- Extensible: Allows the use of any other libraries because of modular architecture, thus making it truly flexible.

- Versatile: It offers an adaptable ecosystem that is a fully-fledged backbone for all kinds of server-side applications.

- Progressive: Brings design patterns and sophisticated solutions to node.js world by taking advantage of the latest JavaScript features.

10. LoopBack.js

LoopBack is a Node.js framework with an easy-to-use CLI and a dynamic API explorer. It allows you to create your models based on your schema or dynamic models in the absence of a schema. It is compatible with a good number of REST services and a wide variety of databases, including MySQL, Oracle, MongoDB, Postgres, and more.

It can allow a user to build a server API that maps to another server, almost like creating an API that is a proxy for another API. It's support for native mobile and browser SDKs for clients like Android/Java, iOS, Browser JavaScript(Angular).

Features:

- Unbelievably extensible
- Graph QL Support

Conclusion

Learning new Node JS frameworks can be overwhelming and may require a lot of research before starting. Above mentioned Node JS frameworks are most popularly used and offer different features. Which NodeJS framework do you use or prefer to use? Do you have any more frameworks to share? Comment below!

If you are looking to master Node.js then this udemy course is a great stepping stone: The Complete Node.js Developer Course (https://click.linksynergy.com/deeplink?id=jU79Zysihs4&mid=39197&murl=https%3A%2F%2Fwww.udemy.com%2Fcourse%2Fthe-complete-nodejs-developer-course-2%2F).

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Simran works at Hackr as a technical writer. The graduate in MS Computer Science from the well known CS hub, aka Silicon Valley, is also an editor of the website. She enjoys writing about any tech topic, including programming, algorithms, cloud, data science, and AI. Traveling, sketching, and gardening are the hobbies that interest her. View all posts by the Author (https://hackr.io/blog/author/simran-arora)

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