**Intro to MERN stack -** [Namal Pathum Wishvajith](https://medium.com/@namalganegama?source=post_page-----eb94597c1e9f--------------------------------) May 15, 2022

**What is MERN Stack?**

MERN stands for MongoDB, Express, React, Node, after the four key technologies that make up the stack.

* MongoDB — document database
* Express(.js) — Node.js web framework
* React(.js) — a client-side JavaScript framework
* Node(.js) — the premier JavaScript web server

Express and Node make up the middle (application) tier. Express.js is a server-side web framework, and Node.js the popular and powerful JavaScript server platform. Regardless of which variant you choose, ME(RVA)N is the ideal approach to working with JavaScript and JSON, all the way through.

**How does MERN Stack works?**

The MERN architecture allows you to easily construct a 3-tier architecture (frontend, backend, database) entirely using JavaScript and JSON.

Graphical user interface, website

Description automatically generated

**React.js Front End**

The top tier of the MERN stack is React.js, the declarative JavaScript framework for creating dynamic client-side applications in HTML. React lets you build up complex interfaces through simple Components, connect them to data on your backend server, and render them as HTML.

React’s strong suit is handling stateful, data-driven interfaces with minimal code and minimal pain, and it has all the bells and whistles you’d expect from a modern web framework: great support for forms, error handling, events, lists, and more.

**Express.js and Node.js Server Tier**

The next level down is the Express.js server-side framework, running inside a Node.js server. Express.js bills itself as a “fast, unopinionated, minimalist web framework for Node.js,” and that is indeed exactly what it is. Express.js has powerful models for URL routing (matching an incoming URL with a server function), and handling HTTP requests and responses.

By making XML HTTP Requests (XHRs) or GETs or POSTs from your React.js front-end, you can connect to Express.js functions that power your application. Those functions in turn use MongoDB’s Node.js drivers, either via callbacks for using Promises, to access and update data in your MongoDB database.

**MongoDB Database Tier**

If your application stores any data (user profiles, content, comments, uploads, events, etc.), then you’re going to want a database that’s just as easy to work with as React, Express, and Node.

That’s where MongoDB comes in: JSON documents created in your React.js front end can be sent to the Express.js server, where they can be processed and (assuming they’re valid) stored directly in MongoDB for later retrieval. Again, if you’re building in the cloud, you’ll want to look at Atlas. If you’re looking to set up your own MERN stack, read on!

**Why should we choose MERN Stack for building Mobile and Web applications?**

1. **Cost-effective:**All the four technologies that are mentioned above, MERN (MongoDB, Express.js, React.js, and Node.js) are used in MERN Stack is built on JavaScript that makes it cost-effective and within less cost investment user will able to get the better results or output.
2. **SEO friendly:**Here, **SEO** (**Search Engine Optimization**) friendly means that Google, Yahoo and other search engines can search each page on the website efficiently and easily, interpret and correlate the content effectively with the searched text and easily index it in their database. As whenever websites are created using MERN technologies, then it is always SEO friendly.
3. **Better performance :**Better performance refers to the faster response between backend and front-end and database, which ultimately improves the website speed and yields better performance, thus providing a smooth user experience.
4. **Improves Security:** It mainly concerns the security of applications generated using MERN; her web application security refers to various processes, methods or technologies used for protecting web servers and various web applications, such as APIs (**Application user interface**) from the attack by internet-based threats. Generally, secured hosting providers can easily integrate applications created using the MERN stack. For more or better security Mongo DB and Node.js security tools are also used.
5. **Provide the fastest delivery:**Any Web applications and mobile applications created by using MERN Stack are built much faster, which also helps to provide faster delivery to our clients.
6. **Provides faster Modifications:** MERN stack technologies supports quick modifications as per the client’s request in the mobile and web applications.
7. **Open Source:** All the four technologies that are involved in MERN are open-source. This feature allows developers to get solutions to queries that may evolve from the open portals during development. As a result, it will be ultimately beneficial for a developer.
8. **Easy to switch between client and server:** MERN is very simple and fast because it is written in only one language. And also, it is very easy to switch between client and server.

**Advantages of MERN Stack**

There are a lot of advantages of MERN Stack, some of them are mentioned below -

1. For a smooth development of any web application or mobile app, it supports MVC (**Model View Controller**) architecture; the main purpose of this architecture is to separate the presentation details with the business logic.
2. It covers all the web development stages starting from front-end development to backend development with JavaScript.
3. It is an open-source framework mainly used to develop web-based or mobile applications and is supported by the community.
4. It is very fast and efficient compared to MEAN Stack and mostly suitable for small applications, whereas MEAN Stack is suitable for developing large applications.