STACK CHOICE

# MEAN Stack

MEAN Stack stands for:

Diagram

Description automatically generated

MEAN stack is collection of JavaScript technologies used to develop web applications. From client to server and server to database, everything is based on JavaScript. MEAN stack is used to build quick and robust web applications.

## Why MEAN stack?

* 1 language handles everything from frontend to backend
* Flexible Backend API – Flexible and reusable API which can be used for web apps or application
* Powerful Frontend – mobile app like experience, updates instantly, great user experience
* Separation of Concerns – separate frontend and backend, makes it easier to work in a team.
* High performance Technologies – Easy to use to build web applications

# MONGO

## What is MongoDB?

MongoDB is a free and open source database. MongoDB is a NoSQL database; it has no fixed schema which means that you can create records without first defining the structure. Unlike MySQL. Data is stored in JSON or BSON format unlike MySQL where data is stored in a tabular format. Adding new data to MongoDB is simpler as it does not require updating the whole table. With MongoDB you can develop an entire application using only JavaScript.

## NoSQL Database Model

NoSQL is non-relational database; they do not use tables or columns. A flexible database used for big data and real-time web applications. NoSQL handles unstructured data where data doesn’t have to relate and you don’t have to predefine data compared to relational data, it is cheaper to manage, and scales better, as the database gets bigger you can just add more nodes compared to upgrading a whole data infrastructure. NoSQL does not have steep learning curve.

# Express

## What is Express.js?

Express.js is a free and open source framework for NodeJS meaning most of the code is already written, you can implement what is available to the project. Used to build web applications quick and easily. Express.js only requires the knowledge of JavaScript, make it an easy to learn framework once you have learnt JavaScript. You can build applications and API or use available API. Expreess.js is:

* Model, View and Controller framework for NodeJS application
* Simple and lightweight
* Easy to configure and customise because it provides flexibility
* Great for creating API

Express packages we can use:

* Express Rate Limit – Middleware used for basic rate limiting and security
* PassportJS – Authentication and Authorisation
* Strapi – Content management

## Why Express.js?

* Easy to learn and it is a widely used language, makes find information on it a simple task.
* Build different kinds of web applications in a short period of time.
* Most codes are already written.
* Backend toolkit that only requires only knowledge of JavaScript.

# Angular

Angular is a JavaScript framework used to build single page applications using HTML and JavaScript. Angular will be used to create the front-end of the website in conjunction with Bootstrap, Angular requires knowledge of JavaScript and TypeScript (helpful but not required). Angular is used for future scalability, and ease of use, it includes features such as:

* Organised front-end structure
* Very powerful and packed with features
* It is an All-in-one solution, it includes routing, HTTP, RxJS and more.
* You can build powerful single page application

With Angular we can create elements that is constantly used into a component, which makes it so we don’t have to keep coding the same thing over and over again, Angular can be used to create headers, footers, special banner etc.

Angular also features Terminal, where you can components easily, it auto generates all files required to create a new component. Angular Bootstrap to be used to create the front-end UI/UX elements.

## Angular Bootstrap Module

Bootstrap will used to create the User Interface; bootstrap is a front-end framework that can be used to create responsive websites and web apps. It is free to use but packed with HTML and CSS templates and features to make creating user interface easy. It simplifies the project, saving time when creating user interface. Bootstrap contains documentation of all the features, making it easy to create the front-end of the website by simply following the documentation.

Bootstrap can be used without any experience in it as everything is readily available – although experience in HTML and CSS is highly recommended to make changes that is desired to fit the style on the company. We can use Bootstrap to create all the user interfaces in the web app this includes:

**For Customers:**

* Sign In/Sign up page
* Profile page of customers that are signed up
* Ordering page
* Shopping carts page
* Menu page
* Ratings page

**For Restaurants:**

* Sign in page for admins
* Admin portal – To manage menus - categories, items, payment system, update store hours
* Order History page
* Payment history page
* Ratings & review

This can all be created using Bootstrap, we can follow the documentations to create each of the following. As bootstrap is a library of features it will have prebuilt forms which can be used to create sign in/sign up page for both admins and customers. In the documentation, the navigation bar, image gallery, tables are all included to create all other pages.

# NodeJS

## What is NodeJS

NodeJS is a JavaScript runtime, instead of JavaScript running on browser environment, it runs on your machine as a service or a runtime, which allows use JavaScript as a server sided language like Php, python etc., essentially allows us to run JavaScript to code on the server. NodeJS requires knowledge of JavaScript Fundamentals.

## Why use NodeJS?

* Fast, efficient, and highly scalable
* Event driven, non-blocking I/O makes it very fast and efficient
* Popular in the industry
* Same language on front-end and back-end uses JavaScript
* Great for real time services such as chat, shopping carts etc.

# References

<https://www.guru99.com/mean-stack-developer.html>