# Introduction

In this application, we will use MongoDB as the data store, Node JS for the back end, and Angular 6 for the front end. To gain a proper working knowledge of these technologies, please read online articles, or watch one of the many quite elaborate courses online. A YouTube channel like ***Traversy Media*** will be a very good starting place.

# MongoDB

1. Download — Open the [MongoDB download center page](https://www.mongodb.com/download-center?jmp=nav#community), and download the latest "Community Server" version of MongoDB for your Windows machine.
2. Install — Open the installation file that you downloaded. Follow the steps to install MongoDB on your computer.
3. Create a Mongo data directory — This directory is where MongoDB stores database files for full-stack web applications that you run locally. Open PowerShell, and enter the following command to create the Mongo data directory:  
     
   md \data\db
4. Start a Mongo process — before you run a full-stack web application locally, you must start a Mongo process in the background. The following command starts an instance of MongoDB that handles data requests, manages data access, and performs background management operations while you use your web application. Replace X.X with the version number you downloaded, like 3.6 for example.  
     
   & 'C:\Program Files\MongoDB\Server\X.X\bin\mongod.exe'   
     
   If Mongo starts correctly, you should see something like:   
     
   connection accepted from ... #1 (1 connection now open)
5. How to kill a Mongo process — When you're done using your Mongo process, or think your current process is in a bad state, navigate to the window that is running Mongo and press control and the letter c(CTRL-C) to exit the Mongo process.
6. Start/stop MongoDB as a windows service using the commands “net start mongodb” and “net stop mongodb”, where *mongodb* is the name of the service specified during installation

Refer to the article on this link for further details: <https://docs.mongodb.com/manual/tutorial/install-mongodb-on-windows/>

# Connecting to MongoDB and creating a database

Make sure that the MongoDB service is up and running. You can check in your windows Services, or open your Command Prompt and simply run “net start mongodb”, where mongodb is the name of the service specified during installation

Change Directory to the bin folder of your mongo DB installation path. For instance, if mongodb was installed on volume C, run the following command

cd \mongodb\bin

Then run the command “mongo”, to enter the mongo shell.

To create a new database called seedsofhope, for instance, simply run “use seedsofhope”

This command will create the new database if it doesn’t already exist, and switch context to connect to this database. You can try your hand here by create new collection (RDB equivalent of a database table) and inserting or reading from them. See the following article for some basic mongodb commands

<https://docs.mongodb.com/manual/core/databases-and-collections/>

# Node JS

1. Download and install the latest version of Node JS. This will install both the Node engine, as well as the Node Package Manager (NPM). Additionally, a Node Command Line client will be installed. Open it and run commands “node –v” and “npm –v” respectively to see the versions of Node and NPM installed.
2. You normally start a new Node server application by running “npm init”, and following through the initialization instructions. However, since we already have a node server application running, please skip this step
3. There are many ways to start you Node server application. Using the command prompt (either windows or node), switch to your server application path, where the index.js file is located), and then run the command “node index.js”, or simple “node index”. Node JS assumes files in this command have a .js extension by default.
4. Find out how to use nodemon to automatically restart your server when you make changes

Node JS Http Certificate

Your Node JS server application is running inside the folder “server”.

1. Open Git Bash and navigate to this folder, or open the folder in Windows Explorer, and launch Git Bash from that context
2. Run the following command:

openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout privatekey.key -out certificate.crt

This command will create a certificate and key file in the root directory of your service application. Your Node JS application is already configured to use these files (see Index.js), without which the server application will not run.

Angular