MERN stack Roadmap

1. What is the MERN stack?

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

mongoDB	Express	React	node js

2. Requirements 🌟

You should have knowledge of the following:

- Web - Basis knowledge of Internet, WWW, HTTP, FTP, URL, Domain etc.
  (you can read this: https://en.wikipedia.org/wiki/Internet)

- Code Editor: https://code.visualstudio.com, Webstorm, Notepad++, Sublime Text etc.

- HTML - it is used to create the structure of web pages
  (you can learn from here: https://www.w3schools.com/html/)

- CSS - it is used to style and Layout web pages.
  (you can learn from here: https://www.w3schools.com/css/)

- JavaScript - it is used to add interactivity and dynamic functionality to web pages.
  (you can learn from here: https://www.w3schools.com/js/)

Note: *If you don't have knowledge of HTML, CSS, and JavaScript. All of them, you should learn first.*

You can skip this part if you already know HTML, CSS, JavaScript

3. Learn HTML, CSS and JavaScript

HTML

Topic	Duration
Basic of HTML: tags, attributes	**3 weeks (1 hour per day)**
All HTML5 elements: header, footer, nav etc.	
Form tag and Elements	
All tags related: Image, heading, position, paragraph, media, label, list etc.	

CSS

Topic	Duration
Basic of CSS - tag, class, selector	**6 weeks (2 hours per day)**
inline, internal, and external CSS	
spacing: padding, margin	
background styles	
image styles	
text styles	
border styles	
font styles	
element position	
display styles: float/flex/grid etc	
responsive	
box-shadow, text-shadow, border-radius	

JavaScript

Topic	Duration
Basis Javascript	**16 weeks (2 hours per day)**
Variable, Constant	
Loops(for,while,for in)	
If Statement, Switch	
Data Types (String, Number, Boolean, Array)	

String and Methods
Array and Methods
Math and methods
Date and methods
Operators(Arithmetic, Assignment, Logical, Comparison, Bitwise, Ternary)
Events
Functions
Error handling/ try/catch
Advanced Javascript (ES6)
import/export module
Promise, async/await
Arrow function
map/filter/reduce/forEach methods
concept of classes in javascript
Spread Operator, Map, Set
For/Of Loop
AJAX/Fetch API/JSON
Web Storage (cookie,localStorage,sessionStorage etc)

> Try to make multiple projects and use HTML, CSS, and JavaScript together. This thing will improve your confidence.

Project Ideas

1. Create your portfolio like my website: www.ravindernegi.com
2. Create your portfolio website with responsive. so that, it can open easily on small devices (mobile, tablet etc.)
3. Create a photo slider using HTML, CSS, and javascript.
4. Create a clock using javascript
5. create a shopping cart website or create a product list page where users can see the list and detail of the product. Show the product's images with carousel like: smartslider3.com/product-carousel
6. There are many more that you can build. Just think and gather requirements and make it a project.

4. MERN stack

> Need to learn the following thing to become a MERN stack developer

NodeJs

Topic	Duration
What is Nodejs?	**2 weeks (1 hour per day)**
What is npm?	
How to run Nodejs?	
How to install the Node package?	
Explore preinstalled Nodejs packages	
fs, HTTP, request, URL, path, net, os, query string etc.	
Explore concepts: import/export module, create server, set config, file handling, send mail etc.	

ReactJs

Topic	Duration
JSX	**10 weeks (2 hours per day)**
Component, State Full and Stateless Component	
State and props	
Hooks (useEffect, useState, useMemo, useRef etc.)	
Conditional rendering	
Context API	
Global State Management (Redux, React Query)	
Connect API with Fetch or Axios	
React Form or Forkik/Reacthooks Form library	
React Event	
NextJs or ReactRouter	
Any UI framework MUI, Tailwind CSS, Bootstrap etc.	
Conpect: 1. create a reusable component 2. Convert HTML UI into JSX 3. API integration 4. Unit test cases with(jest and react testing library)	

ExpressJs

Topic	Duration
How to setup ExpressJS	**6 weeks (2 hours per day)**
Create a Project Structure	
How to use and create middleware	
How to Build RestFull API	
How to connect database with expressjs	
How to create a data model or schema	
How to create a controller/view	
Explore Json based Token	
Explore these packages: body-parser, dotenv, mongoose, jsonwebtoken, cors	

MongoDB

Topic	Duration
How to install and run MongoDB	**8 weeks (2 hours per day)**
Install and Use Compass	
How to run a Query in Mongodb	
What is Database, Document, Collections etc	
CRUD operation (Create, Read, Update, Delete) in MongoDB	
Import/Export data into MongoDB	
Aggregation framework in MongoDB	
How to build a schema	
Indexes	

Split MERN into two part

Frontend	Backend
ReactJs/NodeJs	Nodejs/Express

Nextjs	MongoDB

6. Project Ideas

> Create beautiful projects with the MERN stack

1. **E-commerce** Website

2. News/Blog Website

3. Appointment booking Portal

4. OTT website

5. Social Networking Website

6. Chatting website

7. Website Builder

etc.

Approximate Estimate to Learn MERN stack:

Week = 7 days

Skill	Duration	In Hours
HTML	3 weeks * 1 hr	21
CSS	6 weeks * 2 hrs	84
Javascript	16 * 2 hrs	224
Nodejs	2 weeks * 1 hrs	14
ReactJs	10 weeks * 2 hrs	140
ExpressJs	6 weeks * 2 hrs	84
MongoDB	8 weeks * 2 hrs	112
Total	**51 weeks**	**679 hrs**

How long it takes to learn? = total course duration / your devoted hrs

Example:

1. Total Days: 679 / 4 hrs per day = 169.7 days
2. Total Month: 169.7 / 30 days = 5.65 month

Thank You

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www.youtube.com/@codewithnegi

www.ravindernegi.com