MERN Stack Course Details

Environment Setup:

- **install node**

- Introduction to development tools
- Text Editor, IDE
- Git
- Git workflow(branching,push,pull)

• Git

Download from (download git)

“ also create an account in github.com ”

- Git workflow(branching,push,pull)

Pull code from github to our device

1. git init // this will create a .git folder in our local project directory
2. git remote add origin <remote_remote_url>
// eg: https://github.com/sagartmg2/express
// to check , git remote -v
3. git pull origin <branch_name>
// eg : git pull origin master

// another process to pull our code

1.git clone <git-url>

//check our changes.

git status

// To specify which files to be uploaded to remote github repo

git add <file_name> // add a single file

git add . // add all changed files

GUI // git gui

```
git commit -m "message"

git push --set-upstream origin master
// after this you can only do git push and  it will push to above
//specified branch

// to push to specific branch
git push origin master


//to create new branch
Git checkout -b <branch_name>

// BRANCH
git branch  // to view local branch
git branch -r  // to view remote branch

git checkout <branch_name> //to move from one branch to another

git merge < branch_name>
// delete branch locally
git branch -d localBranchName

// delete branch remotely
git push origin --delete remoteBranchName
```

- stash

- NPM, Yarn

- Postman

HTML & CSS

[figma-design]

html

- syntax and css basic syntax.
    - <elements/tags attribute > </closing-element-tag>
- comments
- basics
    - head
        - meta
    - body
        - header
        - nav
        - main
        - section
        - article
        - aside
        - footer
- links
    - absolute vs relative path
- images
    - download
- list
- table
- form
    - input types
- html entities
- iframe

CSS

- syntax
- selectors - differences
    - **combination of selectors**
        - **descendent selector <space>**
        - direct child selector >

        - **and selector**
        - **or selector**
        - **attribute selector**
        - adjacent sibling selector +
        - general sibling selecto ~

- **specificity score**
- **box model**
    - **block vs inline**
- measurement units //**% px em rem** vh vw
- pseudo classes
    - **hover**
    - focus
    - visited
    - **active**
    - **first-child**
    - last-child
    - **nth-child**
    - only-child
    - of-first-type
    - **not(selector) !**
    - :selected
    -

- pseudo element
    - **before**
    - **after**
- **position**
- **flex**

    direction :row (main-axis horizontal cross-axis vertical)
    direction : column (main- axis vertical)
    - flex - container
        - **direction** // when column (cross axis and main axis reverses too.)
        - **wrap**
        - j**ustify - content**
        - **align- items**
        - align - content
    - flex - items
        - order
        - **flex-grow**

        - align-self
- media query
    - desktop-first (max-with: breakpoint)
    - mobile-first (min-with : breakpoint)

BOOTSTRAP

Introduction:

• Introduction to JavaScript programming language

- Introduction to javascript
- Variables (scope)
    - var (keyword)
    - Const (ES6 2015)
    - Let
- Naming
- Data Types
    - - String
    - Number — integer, double, float
    - Boolean
    - null
    - **undefined**
    - Object {key:value}
        - Array

  .. spread operator // copies the value

- Functions
    - **Arrow function =>**

- Conditionals
- IF ELSE
    - **Ternary operator ? :**
- Operands and operators
    - assignment
    - arithmetic
    - comparison
    - logical
- Loops
- Array
    - **push**
    - unshift
    - **pop**
    - shift
    - splice
    - slice
    - forEach
    - **filter**
    - **Map** [1,2,3] => [2.4.6]
    - some =>BOOLEAN
    - every => BOOLEAN
    - **find**
    - indexOf
    - findIndex
    - **includes**

String

- String functions
    - **replace**()
    - **replaceAll()**
    - **substring**()
    - slice()
    - **split**()
    - trim()

        - chartAt()
        - toUpperCase()
        - toLowerCase()
    - String properties
        - length
    - Escape characters “\n” “\””

Template Literals

`randomstring${  variable }  `

---

callback

Asynchronous

- Promise
- setTimeout

Call stack

Callback queue

- Technologies around JavaScript.

MERN slides

Node JS:

slides

- Introduction to nodejs
- Node package manager (npm
* Global Object
- **Node modules //** import and export
- Node CLI
- Creating http server with nodejs
- Working on core NODE API
- Asynchronous and event loop in node js

Express JS:

slides

- Introduction to framework and Express
- The model-view-controller pattern in ExpressJS
- **Middlewares**
- **Routing**
- HTTP Protocol
- **Http Request Object**
- **Http Response Object**
- User **authentication using jw**t (json web token)
- Garbage collection and error handling

Mongo DB:

slides

https://docs.google.com/spreadsheets/d/1lp6AhApxIT3uOWq_lfEd1JvGwy8CzrjCwfwgcPuthF8/edit#gid=0

https://docs.google.com/spreadsheets/d/1r_pTVX23ELxrUHlPHFI6RfdIhYolqAsQGVVawBHPauI/edit#gid=0

- Installation
- Introduction SQL Vs NoSQL
- NoSQL (Schema Less Database)
- MongoDB (Collection & Documents)
- Data Modelling
- Create Database Shell Command
- Datatypes
- Update, insert delete and query documents
- Using Mongodb Native driver with Node
- Database modeling using MongoDb
- Aggregation in mongodb

- show dbs // view the existing databases
- use <db_name> // use selected database
- db // view the current database in use
- show collections // view the list of collections
- create collection // db.createCollection("<colection_name>")
- db.dropDatabase()

db.<collection_name>.<method>

Create

- insertOne // {}
- insertMany // [{},{}]

Read

- find()
- find({filterObject})
- find({filtctOberObject},{seleject})
- findOne({filterObject})

Update

- updateOne({filterObject},{})
- updateMany({filterObject}.{})
- replaceOne({filterObject},{})

Delete

- deleteOne({filterObject})
- deleteMany({filterObject})

Filter Operators // query operators

$**eq**

$ne

$**gt / $gte**

$lt / $lte

$i**n**

$nin

$**not**

$and

$or

$exists

Update Operators

$**set**

$inc

$rename

$unset

Read Modifiers

sort

limit

skip

React JS:

- Introduction Frontend tools (webpack , babel, more…) and React

- Single Page Application scope and objectives
- Dev Tool and Environment
- **JSX**, Babel, Webpack
- ES6 features practices
- Create-react-app and project setup
- **Components** patterns in React
- **State**
- **Props**
- **Life Cycle of React Components**
- Introduction to **hooks**
- **React Router**
- SPA using React Router
- **props drilling**
- **State Management Redux**
    - **store**
    - **useDispatch**
    - **useSelector**
- Error Handling
    - **.catch**