**MERN STACK FULL E-COMMERCE**

*Backend*-

Nodemon

Creating routes

Using postman

Connecting to mongo dB

*Adding product resource*

Creating product model

Admin – create and save product

Creating data seeder

Display all products

Get a single product

Admin-update product

Admin-delete product

*Backend error handling*

Creating error handler class

Creating errors middleware

*Production vs development errors*

Catching async errors

Handling unhandled promise rejection

Handling uncaught exceptions

Validation and mongoose errors

*Adding filter, pagination search*

Search products

Filter products

Adding pagination

*Backend authentication and authorization* Creating user model

Encrypting password while registration

Generate json web token

Login user and assign token

Sending JWT token in cookie

Protecting routes from unauthorized users

Authorize user roles and permissions

Adding user in products

Generate forgot password token

Send password recovery email

Reset new password

Handling wrong JWT token and expire JWT error

*User routes*

Show user profile

Change update password

Update user profile

Admin – get all users and specific user

Admin – update and delete user

*Adding orders resource*

Creating order model

Create and save order

Get single order and logged in user order

Admin –get all order

Admin- update process order

Admin –delete order

*User reviews*

Add new update review

Get all reviews of product

Delete product review

*Front end*

Html and css details

Installing react and dependencies pacakages

Header and footer conmponmnet

Hjomepag4e

React router

*Redux*

Create redux store

reducer

action

redux state

*pagination and search filters*

adding pagination

search

filter

*user controls and authentication*

login user and action

login user component

registered user reducer and action

register user component

load logged in user

show user in header

logout user

show user profile

protected route component

update user profile reducer and action

update user password

handle forgot password

handle new password

*adding shopping cart*

adding cart button

cart component

handle quantity on cart component

remove cate item

handle cart summary

handle checkoput and payment

*handle shipping info*

checkout steps component

confirm order details

adding stripe backend

send stripe API to frontend

payment component

process payment to stripe

create new order reducer and action

place and confirm order

**MONGODB**

* relational vs document database
* mongo dB structure
* mongo dB shell and mongo dB server
* launch mongo db and connect to the mongo dB shell
* exploring mongo dB shell
* JSON overview
* BSON database storage format
* Extended JSON
* Data types on extended JSON
* How types are stored in BSON

*COLLECTION*

* Creation of a new collection
* Insert methods insert one and insert many
* Sample data overview
* Insert sample documents into a collection
* Mongo dB find methods and find one
* Query operators
* Sort, limit skip helper methods
* Update methods ,update one and update many
* Update query
* Delete methods and delete many
* Aggregating documents in mongoDB
* Mongodb Indexes

*UTILITIES*

* Mongodb Replica Set
* Mongodb Drivers

*SCHEMA RELATIONS*

* DATA Types
* Relations
* One to one relations
* One to one using reference
* One to many embedded
* One to many using reference
* Shema validation
* Using lookup for merging reference
* Schema validation
* Changing validation action

**Exploring the shell server**

* Setting dbpath logpath
* Shell options help
* Using a config file
* Mongodb as a background service
* Exploring the mongodb options

**Using Mongodb compass to explore data visually**

* Exploring the mongo dB compass
* Create operations
* Creating documents
* Insert methods
* Ordered inserts
* Write concern
* Atomicity
* Importing data
* **Read operations**
* Filters operations
* Operators
* Query selectors projection operators
* FindONE
* Comparison operators
* Querry embedded fields array
* In and nin operators
* Not operator
* Element operator

TYPES

* Evaluation operators – regex
* Evaluation operators – expr
* Query array
* Using array selectors –size
* Using array selectors –all
* Using array selectors –elem match
* Understanding cursors
* Applying cursors
* Sorting cursor results
* Skipping limiting cursor results
* Using projection to share our results
* Using projection in array
* Understanding slice

*UPDATE OPERATIONS*

* Updating fields with update one updatemany and set
* Updating multiple fields with set
* Incrementing decrementing values
* Using max min and mul
* Getting rid of fields
* Renaming fields
* Understanding upsert
* Updating matched array elements
* Finding updating specific fields
* Adding elements to array
* Removing elements from array
* Understating add to set

**Delete operations#**

Delete one and delete many

Deleting all entries in a collection

**Indexes**

What are indexes

Adding a single field index

Index restrictions

Creating compound indexes

Understanding the default index

Configuring indexes

Understanding partial filters

Applying the partial index

Understating the TTL INDEX

Query diagnosis/ query planning

Understanding covered queries

How mongo dB rejects a plan

Using multi-key indexes

Using indexes for sorting

Understaning text indexes

Text indexes sorting

Creating combined text indexes

Usine text indexex to exclude words

Setting the default language using weights

Building indexers

**Geospatial data**

Adding geojson data

Runnning g eo queries

Adding a geospatial index to track the distance

Adding additional locations

Finding places inside a certain area

Finding if a user is inside a certain area

Finding places within a certain radius

**Aggregation framework**

Aggregation pipeleine

Using aggregation framework

Group stage

Turning location to geojdon project

Birthdate

Isoweek year operator

Group vs project

Poushing elelments to newluy crated arrays

Unwinds stage

Eliminating duplicate values

Using projection with arrays

Getting the length of an array

Using filter operator

Applying multiple operations to our array

Understanding bucket

Diving into additional stages

Writing pipeline results int a new collection

Working with geonear stage

**Working with numersic data**

**Number types**

Working with int32

Working with int64

Doing maths with floats int3e2s int64s

Working with decimal 128bit

**Mongodb security**

Understanfig role based access control

Roles – examples

Creating a user

Built in roles

Assigning roles to user databases

Updating extended roles to other databases

Adding ssl transport encryption

**Performance fault tolerance deployment**

* Influence performance
* Understanding capped collections
* What is a replica set?
* Understanding shading
* Deploying a mongo dB server
* Using mongo dB atlas
* Backups setting alerts in mongo dB
* Connecting to our cluster

**Transactions**

* What is transactions
* A typical usecase

**NODEJS**

* Creating a node server
* The node lifecycle event loop
* Understanding requests
* Sending responses
* Routing requests
* Redirecting requests
* Parsing requested bodies
* Blocking and non-blocking code
* Development workflow and debugging
* Understanding npm scripts
* Using nodemon for autoresarts
* Understanfing different error types
* Fixing syntax errors
* Dealing wirth runtime errors
* Logical errors
* Using the debugger
* Restarting debugger automatically

**EXPRESS**

* Middleware
* Different routes
* Parsing incoming routes
* Using express router
* Creating and serving HTML pages
* Serving files statistatically
* Tempplating engines
* Ejs ,handlebars

**CSS 3**

* **Transition delay**
* **Transition tioming functioin**
* **Cubix Bezier**
* **Transitioning multiple properties**
* **Css transition shorthand**
* **Css transition**
* **Gradient effect**
* **Fade in and fade out**
* **Hover effect**
* **2D CSS transition**
* Css transforms
* Rotate
* Scale
* Skew
* Translate
* Transform –origin
* Multiple transformation
* 3D transforms
* Backface visibility
* Perspective

***ANIMATION***

* Key frames
* Animation –delay and animation iterate
* Animation-play-state
* Animation-fill-mode
* Chaining animations

**FLEX BOX**

* **Flex-direction - creating row and column layouts**
* **Justify-content justify items along the main axis**
* **Align-items-alignging items along the cross axis**
* **Flex-wrap-multiple rows and wrapping items inside flex container**
* **Align –content- justifying content along the cross axis**

***DESIGNING FLEX ITEMS***

* **Order-reordering flex items**
* **Align –self**
* **Flex-grow items grow**
* **Flex-shrink – items shrink**
* **Flex-basis**

**CSS GRID**

* **Enabling css grid with display grid**
* **Defining the grid temaplate row and grid template**
* **Arranging grid items grid-row-started and grid-column-started**
* **Spanning a fixed number of rows or column span**
* **Defining gutters**
* **Using grid areas**
* **Using grid areas grid-template-area**
* **Repeating rows and columns repeat**
* **The fr unit**
* **Defining max and min sizes**
* **Auto filling a grid with rows and column repeat(auto-fill)**
* **Repeat(auto-fit)**
* **Justify items horizontally justify-items**
* **Aligning items veritically align-items**
* **Justify the container justify-content**
* **Aligning the container align-content**
* **Overriding alignments justify self and align-self**
* **The implicit grid auto rows and grid auto columns**
* **Flow for the implicit grid-auto-flow**
* **Overlapping grid items**
* **Nested grids**
* **Css grid and absolute positioning**

**REACT**

* Using create react app
* Understanding the folder structure
* Understanding the component basics
* Understanding JSX
* JSX restrictions
* Creating a functional component
* Working with components and re-using components
* Outputting dynamic content
* Working with props
* Understanding the children property
* Understanding and using the state
* Handling events with methods
* Manipulating the state
* Functional (stateless) vs class (state full)
* Passing methods references between components
* Adding two-way binding
* Adding styling with stylesheets
* Working with inline styles

***Working with lists and conditional***

* Rendering content conditionally
* Handling dynamic content
* Outputting lists
* Lists and state
* Updating state immutably
* Lists and keys
* Flexible lists

**Styling react component and elements**

* Setting styles dynamically
* Adding and using radium
* Using radium for media queries
* Enabling and using css modules
* Adding pseudo selectors
* Working with media queries
* Debugging react apps
* Splitting an into components
* Component lifecycle
* Converting stateless to state full component
* Component creation lifecycle in action
* Component updating lifecycle in hooks
* Understanding HOC
* Passing unknown props
* Using setstate correctly
* Validating props
* Using refs
* The context API
* The memo method

**REDUX**

* State
* Complexity of managing state
* Understanding the redux flow
* Setting up the reducer and store
* Dispatching actions
* Adding subscriptions
* Connecting react to redux
* Dispatching actions from within the component
* Passing and retrieving data with action
* Switch case the reducer
* Updating the state immutably
* Outsourcing action types
* Combining multiple reducer
* Understanding state types
* Combining local UI state and redux

**Authentication**

* Adding an auth form
* Getting a token from a backend
* Adding a sign-in link
* Storing the token
* Logging users out
* Accessing protected resources
* Adding a logout link
* Redirection to checkout page

**SQL**

* Importing a MySQL database
* Use SQL to get row counts
* Select statement
* Selecting specific columns from a table
* Using aliases to name columns
* Using SQL concat function to join columns
* SQL arithmetic operators
* Using SQL arithmetic operators in selecting data
* SQL data types
* Formatting date values with MYSQL
* Using left and Right MySQL functions
* Introduction to the SQL where clause
* Dealing with NULL values IN SQL where clause
* Using and AND and OR with SQL where clause
* Using in and not in with SQL where clause
* Using greater than and less than with SQL WHERE clause
* Using LIKE and not LIKE with SQL WHERE clause
* Using BETWEEN and NOT BETWEEN with sql where clause
* Ordering results with SQL order by
* Limiting results with SQL limit clause
* Using SQL to select distinct values

***GROUPING AND SUMMARISING DATA***

* USING THE SQL group by clause
* MySQL aggregate functions
* Using the SQL having clause
* Using the SQL sum function
* Using the SQL min and max functions
* Using the SQL AVG function

**USING SQL TO SELECT DATA FROM MORE THAN ONE TABLE**

* Inner joins
* Table alias with sql inner joins
* Using where clause with sql inner joins
* Using SQL natural joins
* Using sql equi joins
* Using sql union joins
* Left outer joins

**USING SQL TO INSERT DATA**

* Insert statement
* Specifying columns in sql inserts
* Foreign key concepts

**USING SQL TO UPDATE DATA**

* Update statement
* Drop database

**USING SQL TO DELETE DATA**

* delete statement
* Drop database
* Assignment Review - Create, Update, and Delete an Employee Record
* Intro to SQL transactions
* Database locks
* Lost SQL updates

**Advanced SQL reporting**

* Importing north wind database
* Create orders report
* **DDL statements**

**USING SQL TO CREATE MYsql DATABASE**

* Creating a table with SQL select
* Sql truncate table command
* Sql drop table command
* SQL create table command
* SQL create table with primary keys
* SQL create table with auto-increment feature
* SQL create table with foreign keys
* SQLcreate table with indexes
* SQL create table with unique indexes

**USING SQL TO UPDATE TABLES**

* Using SQL alter table command to add
* and remove a column
* Using SQL alter table to re-oder columns
* Using SQL alter table command to add

or remove a foreign key constant

**JAVASCRIPT FOUNDATION I**

* JavaScript engine
* Interpreters and compilers
* Inside the v8 engine
* Writing optimized code
* Web Assembly
* Call stack and memory heap
* Stack overflow
* Memory leaks
* Single threaded
* Javascript runtime
* Node js

**JAVASCRIPT FOUNDATION ll**

* Execution context
* Lexical environment
* Hoisting
* Function invocation
* Arguments keyword
* Variable environment
* Scope chain
* Scope
* Function scope vs block scope
* Global variables
* IIFE
* This keyword
* Call, bind and apply
* Currying
* Context vs scope

**Types in javascript**

* Array.is array
* Pass by value vs pass by reference
* Type coercion
* Dynamic vs static typing
* Weakly vs strongly typed
* Static typing in JavaScript

**THE PILLARS CLOSURES AND PROTOTYPAL INHERITANCE**

* Function are objects
* First class citizerns
* Higher order functions
* Closure
* Closure and memory
* Closures and encapsulation
* Prototypal inheritance

**Object object programming**

* OOP factory functions
* Object .create
* Constuctoir functions
* Es6 classes
* Object.create vs classes
* This keyword
* Inheritance
* Public vs private

**Async JS**

* Promises
* ES8 Async Await
* ASync
* Job queue
* Parallel, sequence and race
* Error handling
* Try catch
* Extending errors

**Laravel**

* Routes
* Naming routes
* **Controllers**
* Creating controller
* Routing controllers
* Passing data
* Resources and controllers
* Views
* Creating views
* Passing data to views

**Blade templating engine**

* Master layout setup

**Migrations**

* Environment configurations

**Migrating**

* Creating migration and dropping them
* Adding columns to existing tables migrations using migration commands

**Raw sql queries**

* Inserting data
* Reading data
* Deleting data
* Updating data

**Using Eloquent ORM**

* Reading data
* Reading finding with constraints
* More ways to retrieve data
* Inserting and saving data
* Creating data and configuring mass assignment
* Updating with eloquent
* Deleting data
* Soft deleting –trashing
* Retrieving deleted trashed records
* Restoring deleted trashed records
* Deleting records permanently

**Eloquent relationships**

* One to one relationships
* The inverse relation
* One to many relations
* Many to many relations
* Querying intermediate table
* Has many through relation
* Polymorphic relation
* Polymorphic relation the inverse
* Polymorphic relation many to many
* Polymorphic relation many to many –retrieving
* Polymorphic relation many to many –retrieving owner

**TINKER**

* Creating data with tinker
* Finding records and using constraints in tinker
* Updating and deleting with tinker
* Playing around with relations in tinker

**Forms and validation**

* Migrations and relations
* Setting up views and routes
* Setting the markup for create
* Setting up the controller and view
* Persisting data to database
* Reading data
* Showing individual posts and updating
* Editing the view
* Editing records
* Deleting records
* Pacakage and validation
* Installing package and testing
* Modyfrying package and testing
* Modifying our create form with form package
* Basic validation
* Displaying errors
* Advanced validation

**Some more manipulation**

* Dates
* Accessors
* Mutators
* Query scope

**Forms – uploading files**

* Modifying our create view for file input
* Retrieving file data
* Persisting file data into the database

Displaying images and using accessors

**Forms-login**

* Database connection and migration
* Creating login
* Login creation overview
* Retrieving authenticated data

**middlewares**

* Middleware –security protection
* Creating a new laravel installation
* Registering a new middleware and using it
* Roles and relations setup

**Sessions**

* Global session function deleting
* Setting and reading sessions
* Flashing data

**Sending email api**

* Mailgun
* Email verification
* Configuration
* Sending email –route
* Custom domain

**JQUERY**

* Mouse event
* Keyboard event
* JQuery effects
* JQuery animate effects
* Css effects
* Jquery selectors
* Chaining methods
* Stop delay methods
* Adding text-html attr
* Append, prepend after before functions
* Empty remove functions
* Addclass,removeclass,toggleclass
* Width ,height fucntions
* Inner ,outer functions
* Parents traversing
* Children traversing
* Sibing traversing
* Creating an image slider
* Scrolltop elements
* Scrolling event or postion
* Jquery UI
* Draggable function
* Sortbale function
* Accordion function
* Auto complete function
* Date picker
* Dialog box
* Creating menu
* Creating progress bar
* Creating a slider
* Spinner function
* Creating tabs
* Tooltip
* Get method with AJAX
* Post method with AJAX