



NTI TECH ACADEMY

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## MERN Stack Development

**MERN is a popular JavaScript stack used for building modern web applications. MERN gets its name from 4 technologies that make up the stack which are MongoDB, Express, React, Node.**

### HTML

#### Introduction to HTML

- headings
- paragraph
- formatting tags
- image
- anchor
- lists
- table
- id
- class
- iframe
- div
- span
- form
- audio
- video
- html vs html5



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### CSS

#### Introduction to CSS

- ways to use CSS (inline , internal, external)
- css selectors
- css color
- border

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- padding
- margin
- height
- width
- lists
- text
- display (none, inline , block , inline - block)
- flex
- grid
- position
- z- index
- Media

## Java Script

### Js Basics

- keywords
- identifiers
- datatypes
- variables and constants
- tokens
- Operator



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## Decision Making Statements

### Conditions Statements Or Selection Statements

- if
- if else
- nested if else
- if else if ladder
- switch case

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## Iteration Statements Or Loops

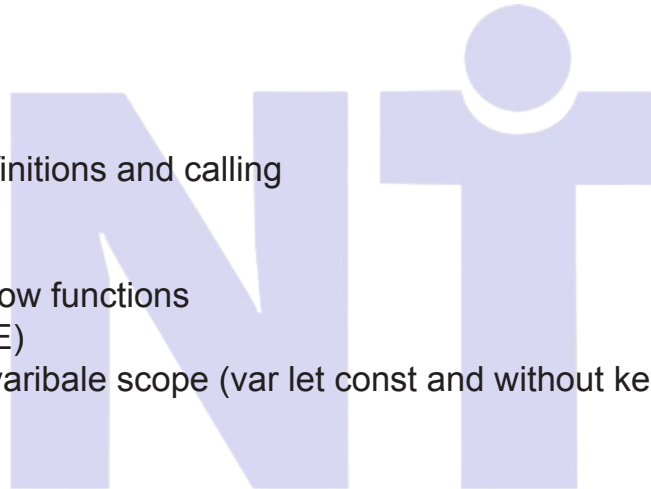
- for
- while
- do while
- for in
- for of

## Jump Statements

- continue
- break

## Functions

- function declarations, definitions and calling
- types of functions
- anonymous functions
- flat arrow functions or arrow functions
- self invoked function (IIFE)
- storage classification or variable scope (var let const and without keywords)
- recursion



## Strings Methods

## array Methods

## Global Execution Context and Function execution context

- scope chain rule and lexical scoping
- closure

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## Objects

- literal and keys
- object functions
- nested objects
- Object Prototypes
- setter and getter methods

## Set and Map WeakMap and WeakSet Dates and Time OOPS

- literal and keys
- object functions
- nested objects
- Object Prototypes
- setter and getter methods

## DOM Manuplation

- DOM
- BOM
- event handling
- time based events

## Advanced Js

### How Javascript Works

- hoisting
- strict mode
- closure
- synchronous and asynchronous programming

### Event propagation

- bubbling
- capturing



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**Event loop**

**function curring**

**ajax and json**

**calling api using ajax**

**callback hell**

**promise**

**async await**

**fetch**

**modules**

**version**

**Typescript**

- Why Typescript
- Basic Types
- Class and Interfaces
- Modules

## React Js

### INTRODUCTION TO REACT JS

What is React JS?

What is SPA?

DOM vs Virtual DOM

Advantages and Disadvantages

Key Features



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## ENVIRONMENTAL SETUP

- Node | NPM
- Installation of CLI
- Setup Project
- Directory Structure
- Code Editors
- How React JS Application Boot

## BASIC FEATURES OF REACT JS

- React Concepts
- JSX and TSX
- Render Elements
- Function and Class Components
- Props and State
- Handling Events
- Dynamic Data Rendering
- Property Binding

## KEY FEATURES OF REACT JS

- Conditional Rendering
- List and Keys
- Forms Handling
- Forms Validations

## COMPONENT LIFECYCLE HOOK

- Understanding component lifecycle
- All Lifecycle Hooks

## EVENT HANDLING REACT

- Understanding React Event System
- Passing arguments to event Handlers

## NETWORK CALL

- Fetch
- Axios



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## CUSTOM SERVICES

- Introduction to Services
- Building a Service

## LOCAL DATA STORAGE

- Local Storage
- Session Storage
- Cookies

## ROUTING WITH REACT ROUTER

- Setting up React Router
- Configuring route with Route Component
- Making routes dynamic with Route Params
- Working with nested routes
- Link and NavLink
- Redirect Routes

## UI COMPONENTS

- Angular Material
- PrimeNG

## INTRODUCTION TO REDUX

- Why Redux
- Install and setup
- Store ,Reducer , actions
- Dispatcher
- High order Components
- mapStateToProps and mapDispatchToProps usage

## ADVANCE REDUX

- Async Actions
- Middleware
- Redux Thunk and Redux Saga



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## React Hooks

- Why We Need Hooks.
- Different Types Of Hooks
- Using State And Effect Hooks
- Usereducer , Userref Etc.
- Custom Hooks
- Rules Of Hooks

## Third Party Modules

- Social Login
- Pagination
- Search
- Filter
- JWT Token
- File Upload
- Many More

## Rest Js Testing

- Jest with Enzyme

## Develop a CRUD Application in React Js React JS Application Deployment

- Build Application and Deployment

## Node Js

### Introduction to Node.js

- What is node.js
- A word on event loop
- Event driven architecture
- Blocking vs non-blocking code
- Node Process Model
- Setup node.js
- Node REPL
- Debugging node.js app



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## Modules in JS

- Understanding exports and require
- Creating modules
- Importing modules
- Quick tour on NPM
- Installing 3rd party modules

## Events & streams

Significance of Events  
Event Emitter class  
Emitting and listening to events  
Types of streams  
Working with streams  
Composing streams using pipe

## Working with Process and File System

- Process object
- Handling exceptions at process level
- Listening to process events
- Working with file system using fs module
- Creating, Copying, Deleting files
- Creating, Copying, Deleting directories
- Watching for file change

## HTTP

- Building a Web Server
- HTTP Request Methods, Headers
- Response Codes and Headers

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## Express Js

### Expressjs Introduction & Setup

- Building a Web Server
- HTTP Request Methods, Headers
- Response Codes and Headers
- Serving static files with express
- Express application generator

### Routing

- Route Methods
- Route Paths
- Parameterized Routes
- Route Handlers
- Express Router

### Middleware

Types of middleware

- Application
- Router
- Error
- Built-in
- Third-party
- Error middleware
- Body parser, cors , cookie parser, session management

### Template Engines

- What are template engines
- EJS
- Jade
- Handlebars



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## Expressjs security

- Authentication
- JWT
- Securing routes
- Debugging in Express
- Realtime programming with Socket.io

## MongoDB

### Introduction to MongoDB

- Installing MongoDB
- The current SQL/NoSQL landscape
- Document-oriented vs. other types of storage
- Mongo's featureset
- Common use-cases
- MongoDB databases
- MongoDB Collections
- MongoDB Documents

### CRUD Operations in MongoDB

#### Creating documents

- insert()
- update()
- save()

#### Querying documents

- find()
- Working with equality
- Query operators
- Building complex queries

#### Updating documents

#### Deleting documents

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Limit

Order By

## Introduction to Mongoose

- Word on ORM/ODM
- Installing mongoose
- Connecting to MongoDB from mongoose

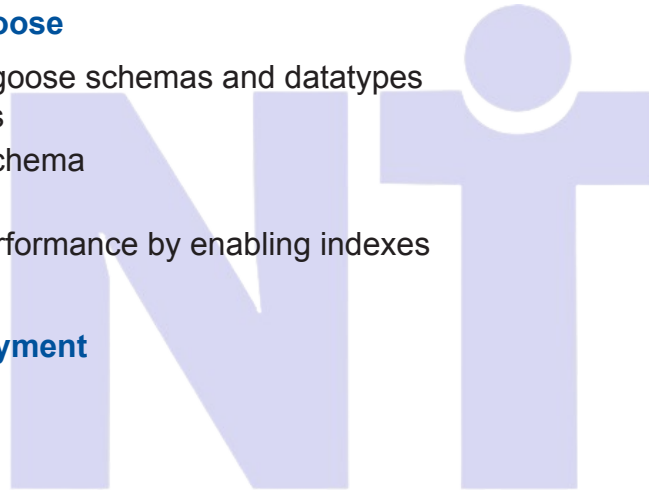
## Core concepts of Mongoose

- Understanding mongoose schemas and datatypes
- Working with Models
- Using modifiers in schema
- Using virtual fields
- Optimizing query performance by enabling indexes

## Mern Application Deployment

Build Application

Deploy in Heroku



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