



**'Your go-to partner for education upgrading and upskilling with current, industry-relevant courses that unleash your employment potential and make you production-ready to fit the tech market demand!'**

A&T Edutech is democratizing access to high-quality education at an affordable price. We are playing our part in helping the country meet the growing demand for talent across segments. We follow an outcome-oriented approach while not compromising on either quality or affordability. Our emphasis is to become a bridge and fill the employment gap in our country by increasing the employment quotient of students and enabling them to access premium jobs.

## **About the Program**

A&T Edutech Full Stack Web Development Program prepares you to get job-ready and enhance your skills to match the industry standards. This program will help you build an end-to-end full-fledged functional website using MERN stack technologies. This program starts with the basics of website designing using HTML and CSS, guides you to make it functional using the most popular JS library React, and finally helps you implement APIs & enables you to connect to a database. You will be learning complete MERN stack technologies like MongoDB, Express, React, and Node, which would help you develop dynamic and interactive websites efficiently while increasing your employability multifold.

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# HTML

## ***Day 1: Introduction to Web Development***

### Topics

- Introduction to web development
- Who is a full-stack developer?
- Overview of the five stack technologies and their importance
- Understanding the basics of web development
- Introduction to the MERN Stack and its components

## ***Day 2: Overview of HTML***

### Topics

- Setting up development environments (Node.JS, MongoDB, code editors)
- What is HTML?
- HTML Page Structure
- Understanding HTML
- Introduction to HTML
- Purpose of Using HTML
- Structure of an HTML Page

## ***Day 3: Exploring Fundamental HTML Tags - I***

### Topics

- <head>
- <body>
- <title>
- <meta>
- <img>
- Div (<div></div>) Tag

## ***Day 4: Exploring Fundamental HTML Tags - II***

### Topics

- Span (<span>) Tag
- Div Tag vs Span Tag
- <select> Tag
- <option> Tag
- <input> Tag
- <textarea> Tag
- <button> Tag

## ***Day 5: HTML Container Tags***

### Topics

- <form> Tag
- Table Tags
- List Tags
- Links and Container Tags

## ***Day 6: Introduction to HTML5***

### Topics

- Understanding HTML5
- HTML4 VS HTML5
- HTML5 Tags
- HTML5 APIs
- HTML5 DOM
- HTML5 SVG

## ***Day 7: Introduction to CSS***

### Topics

- Introduction to CSS
- Advantages of CSS
- Adding CSS to an HTML page
- Inline CSS
- Internal CSS
- External CSS
- Selectors in CSS
- Element Name Selector
- Element ID Selector
- Element Class Selector
- Universal Selector
- Grouping Selector

## ***Day 8: Properties in CSS***

### Topics

- CSS Background Property
- CSS Dimensions
- CSS Display Property
- Understanding CSS Box Model
- Border Property in CSS
- Margin Property in CSS
- Padding Property in CSS

## ***Day 9: Layouts in CSS***

### Topics

- CSS Position Property
- Z-Index
- Grid system and Flexbox
- Font Styles in CSS

## ***Day 10: Adding Styling and Responsiveness***

### Topics

- Responsive Web Design Using CSS
- Breakpoints in CSS
- Media Queries in CSS
- Debug CSS over Browser

## ***Day 11: SASS***

### Topics

- Introduction to Sass
- Working of Sass
- Installing Sass
- Variables in Sass
- Operators in Sass
- Nesting in Sass
- Mixins in Sass
- Parameters in Sass
- Functions in Sass

# Bootstrap

## ***Day 12: Bootstrap***

### Topics

- Introduction to Bootstrap
- Understanding Bootstrap
- How to Use Bootstrap
- Bootstrap vs. Media Queries
- Bootstrap Breakpoints

## ***Day 13: Working with Bootstrap Containers***

### Topics

### Topics

- Bootstrap Components (Buttons, Card, Carousel, Dropdowns, Modal, Navbar, Toast)
- Bootstrap Content (Typography, Images, Tables, and more.)
- Bootstrap Layout (Containers, Grid, CSS Grid, Utilities, etc.)
- Bootstrap Utilities (Borders, Colors, Spacing, Position, etc.)

## ***Day 15: Interview Preparation - HTML, CSS, and Bootstrap***

### Topics

- Interview Preparation on HTML, CSS, and Bootstrap
- Assessment on HTML, CSS, and Bootstrap

## ***Day 16: Project - Netflix Homepage***

A static homepage replica of Netflix created using HTML for structure, CSS for styling, and Bootstrap for responsive design, showcasing a user-friendly interface with navigation and media elements.

# JavaScript

## ***Day 17: JavaScript Essentials***

### Topics

- Introduction to JavaScript
- Adding JavaScript to HTML file
- Adding <script> tag in <head> section
- Adding <script> tag in <body> section
- Adding JavaScript using an external JavaScript file
- Benefits of JavaScript
- Variables in JavaScript
- Scope of variables in JavaScript
- Data Types in JavaScript
- var keyword in JavaScript

## ***Day 18: Data Types & Operators in JavaScript***

### Topics

- Primitive Data Types
- Reference Data Types - Objects and Functions (it's different types)
- JavaScript Operators
- Conditional Statements
- Looping Statements

## ***Day 19: I/O in JavaScript***

### Topics

- Input / Output Statements
- The String Object and its Functions
- Array and its Operations

## ***Day 20: OOPs in JavaScript***

### Topics

- Classes and Objects
- OOPS in JS
- Date and Maths Objects

## ***Day 21: Document Object Model***

### Topics

- DOM Manipulation and BOM
- Methods of DOM Manipulation

## ***Day 22: Event Handling***

### Topics

- Browser Event and Types
- Events Listeners
- Event Object
- Event Propagation
- Browser Compatibility

## ***Day 23: Modernize JavaScript with ES6 Features***

### Topics

- Form Validation
- ES5 Vs ES6
- JavaScript ES6
- ES6 Features
- var vs let vs const
- Arrow functions
- Concise Arrow Functions

## ***Day 24: Strict Mode in JavaScript***

### Topics

- JavaScript use strict
- Context of use strict keyword
- Default param

## ***Day 25: Callbacks in JavaScript***

### Topics

- Async Programming
- Callbacks
- Callback Hell
- Pyramid of Doom

## ***Day 26: Promises in JavaScript***

### Topics

- Introduction to Promise
- Promise Chaining
- Attaching Multiple Handlers

## ***Day 27: Promise APIs***

### Topics

- Promise API

## ***Day 28: Async and Await in JavaScript***

### Topics

- Async and Await
- Promise API

## ***Day 29: Working of this keyword***

- Modules in JavaScript
- this keyword
- Context of this keyword

## ***Day 30: Browser Storage in JavaScript***

### Topics

- Browser Storage
- Scheduling Functions

## ***Day 31: Debugging in JavaScript***

### Topics

- Introduction to Debugging
- How to debug code in JavaScript?
- Function Currying and Borrowing
- Internal working on JavaScript

## ***Day 32: Advance JavaScript***

### Topics

- Debounce, Throttling, Async, and Defer
- Additional Resources - JavaScript Frameworks

## ***Day 33: Interview Preparation - JavaScript***

### Topics

- Interview Preparation on JavaScript
- Assessment on JavaScript

## ***Day 34: Mini Project - II Weather Forecasting Application***

A JavaScript-based weather application that provides real-time climate updates, forecasts, and atmospheric conditions using geolocation and API integration.

# Node.JS

## ***Day 45: Sets and Heap***

### Topics

- Fundamental of Sets and Heap
- Set Definitions
- Set Operations
- Inserting a node into the Binary Heap
- Removing a node from the Binary Heap
- Binomial Heaps
- Operations on Binomial Heaps
- Comparison between Binary and Binomial Heaps

## ***Day 46: Graphs***

### Topics

- Graphs Basics
- Undirected Graphs (Adding & Removing of Edges and Vertices)
- Directed Graphs
- Graph Traversal (Breadth First Search & Depth First Search)
- Greedy Algorithm (Self-paced)
- Brute Force Algorithm (Self-paced)
- Recursive Algorithm (Self-paced)
- Dynamic Programming (Self-paced)
- Randomized Algorithms (Self-paced)
- Backtracking (Self-paced)

## ***Day 47: Digital Backstage: Backend Basics***

### Topics

- Introduction to Backend Development
- Introduction to Node.JS
- Installation of Node.JS
- Working on Node.JS
- How different tech giants use Node.JS

## **Day 48: NPM - Streamlined Workflow**

### Topics

- Introduction to npm
- Modules
- Packages in Node.JS

## **Day 49: Using Node.JS Packages**

### Topics

- Packages (OS, HTTP, FTP)
- Significance of using nodemon

## **Day 50: Setting up Backend**

### Topics

- Introduction to Postman
- Express in Node.JS
- Routing in Node.JS

## **Day 51: Navigating Backend Infrastructure**

### Topics

- Node.JS Express Rest API
- Nginx Server
- Introduction to CORS

## **Day 52: Understanding MVC**

### Topics

- Introduction to MVC Architecture
- Role of Backend in MVC

# MongoDB

## ***Day 53: Databases: A Brief Introduction***

### Topics

- Introduction to Database
- Relational vs. non-relational database
- Introduction to MongoDB
- Data Modelling and its different approaches

## ***Day 54: Database Management with NOSQL***

### Topics

- Types of Data Models
- MongoDB Architecture

## ***Day 55: Operation on MongoDB***

### Topics

- Instances in MongoDB
- MongoDB Compass
- CRUD operations

## ***Day 56: Backend-Database Connection***

### Topics

- Introduction to Mongoose
- Models
- Introduction to MVC Architecture
- Creating API's

## ***Day 57: Interview Preparation - Node.JS and MongoDB***

### Topics

- Interview Preparation on Node.JS and MongoDB

- Assessment on Node.JS and MongoDB

## ***Day 58: Mini Project-III Netflix Backend***

This project involves building a robust backend for a video streaming application using Node.JS for server-side logic and MongoDB for storing and managing video content and user data.

# ReactJS

## *Day 59: Overview of React*

### Topics

- Introduction to Web Applications
- Frontend Technologies
- Introduction to React
- Frameworks of React and their comparison
- Bundlers of React
- Features of React

## *Day 60: React Features Unveiled - I*

### Topics

- Transpiler in React - Babel, Webpack
- Single Page Application vs. Multi Page Application
- Role of React in MVC

## *Day 61: React Features Unveiled - II*

### Topics

- React Architecture
- Client-side Architecture
- Advantages and Disadvantages of React.JS
- React, and its competitors

## *Day 62: JSX and DOM*

### Topics

- Introduction to JSX
- Document Object Model

## ***Day 63: Virtual DOM***

### Topics

- VDOM
- Working of VDOM

## ***Day 64: React Bundlers***

### Topics

- Role of npm in React
- Introduction to Vite Bundlers

## ***Day 65: React Essentials***

### Topics

- Installation of React
- Introduction to React Element
- Importance of Render Function

## ***Day 66: Exploring React Components***

### Topics

- Understanding React Components and constructor function
- Exploring Multiple Components

## ***Day 67: Variables in React***

### Topics

- States and Props

## ***Day 68: React Lifecycle***

### Topics

- Lifecycle of React and its Methods

## ***Day 69: React Bootstrap***

### Topics

- Introduction to React Bootstrap Typeahead
- Implementation of Typeahead in React

## ***Day 70: Event Handling***

### Topics

- Introduction to React Events
- Conditional Handling
- Passing values between components

## ***Day 71: Create Dynamic UI: React***

### Topics

- Introduction to React Forms
- Introduction to JSX and employ iteration in JSX

## ***Day 72: Implementing Routing in React***

### Topics

- Implement API
- Rest API
- Routing
- React Router

## ***Day 73: Dynamic Routing Exploration***

### Topics

- Navigation using links
- URL parameters
- Dynamic Routing
- Query String

## ***Day 74: Styling in React***

### Topics

- Applying style in React components
- Working with POSTMAN
- Callbacks

## ***Day 75: Connecting Frontend with Backend***

### Topics

- Promises
- Mockable
- CORS
- React Modals

## ***Day 76: Introduction with Hooks***

### Topics

- Limitation of JavaScript Classes
- Need of Hooks
- Exploring Basic Hooks

## ***Day 77: Types of Hooks***

### Topics

- Exploring different Hooks
- Custom Hooks

## ***Day 78: Web Payment and Deployment***

### Topics

- Payment Integration using Stripe or Paytm
- Deployment of Backend and Frontend

## ***Day 79: Interview Preparation – ReactJS***

### Topics

- Interview Preparation on ReactJS
- Assessment on ReactJS

## ***Day 80: Project– Netflix Frontend***

This project involves developing the frontend of a video streaming application using React, leveraging Hooks for state management and lifecycle features to create a dynamic user interface.

# Version Control and GIT (Self-paced)

## ***Introduction to Version Control***

### Topics

- Introduction to Version Control
- Understanding the need for version control in software development

## ***Fundamentals of Version Control***

### Topics

- Key concepts: repository, commit, branch, merge, and more

## ***Introduction to GIT***

### Topics

- Different types of version control systems (e.g., Git, SVN)
- Git Basics

## ***Setup GIT***

### Topics

- Setting up Git: Installation and Configuration
- Creating a local repository

## ***GIT Basics***

### Topics

- Tracking changes and creating commits
- Basic Git commands: add, commit, status, log, diff, etc.

## ***Branching in GIT***

### Topics

- Branching and Merging
- Creating and Managing branches
- Merging branches: fast-forward, recursive, and conflict resolution

## ***Branching Strategies***

### Topics

- Branching strategies: feature branching, release branching, and Gitflow

# Professional Development

**Day 81 and 82: Capstone Project – Build a Movie Recommender System like Netflix**

**Day 83: Mock Exam and Real-world Use Cases**

**Day 84: Final Assessment**

**Day 85 and 86: Profile Building**

**Day 87 and 88: Logical Reasoning**

**Day 89 and 90: Aptitude**

**Day 91 and 92: Communication Skills**

**Day 93 to 96: Mock Interviews**

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