NS TRAINING
(SMC-PRIVATE) LIMITED
TRAINING - DEVELOPMENT!

IT TRAINING
INSTITUTE

No 1

FULL STACK
WEB DEVELOPMENT

FRONT-END

(HTML, CSS, BOOTSTRAP 5,
JAVASCRIPT, REACT JS)

BACK-END

MERN (MONGO DB, EXPRESS JS,
REACT JS, NODE JS)

DURATION **3 MONTHS**

SECP

www.nstrainings.com

FBR
PAKISTAN

NS TRAINING
(SMC-PRIVATE) LIMITED
TRAINING - DEVELOPMENT

IT TRAINING
INSTITUTE

No1

ABOUT US

NS Training, we specialize in transforming aspiring developers into proficient web developers with expertise in both frontend and backend technologies. Our expert instructors, hands-on projects, and interactive teaching methods ensure you are well-prepared to build, deploy, and maintain modern web applications.

65000+
Student Worldwide

100,000+
Certificates

100M+
Course Impressions

500,000+
Social Media Family

WHY US

- **Experienced Trainers:** Learn from seasoned industry experts with years of experience in web development.
- **Real-World Focus:** Work on real-world projects to gain hands-on experience.
- **Interctive Learning:** Live coding sessions, peer collaborations, and practical exercises.
- **Project-Based Curriculum:** Build your own web applications throughout the course.
- **Career-Focused Trainng:** Learn job-ready skills and tools to succeed in the web development industry.
- **Lifetime Access:** Access all lessons, projects, and materials any time after the course.

WE OFFER

5+ Years of Excllence

Experienced Trainer

Jobs Placement Cell

Practice-Based Learning

Career Oriented Learning

Industry Connectivity

SALIENT FEATURES

- **Immersive Learning Environment:** Code-along live sessions, project-based learning, and problem-solving activities.
- **Industry-Relevant Tools:** Work with the latest tools and technologies such as Git, Node.js, MongoDB, React.js, and more.
- **Career Development Focus:** Develop a portfolio with full-stack projects to showcase in job interviews.
- **Continuous Feedback:** Receive personalized corrections to enhance coding efficiency and quality.
- **Job-Ready Skills:** Learn frontend and backend technologies used in top companies and startups worldwide.

WHY THIS COURSE?

Our **3-Month Web Development Diploma** equips learners with the skills required to build full-stack web applications. Whether you're looking to work as a developer, pursue freelancing opportunities, or launch your own tech startup, this course will provide you with a deep understanding of both the frontend and backend technologies essential in today's tech-driven world.

COURSE OVERVIEW: FULL STACK WEB DEVELOPMENT

- **Build Real-World Web Applications:** Learn how to create responsive websites and web apps from scratch.
- **Master Frontend Technologies:** Gain expertise in HTML, CSS, JavaScript, React.js, and more.
- **Become a Backend Pro:** Understand server-side programming with Node.js, Express.js, and MongoDB.
- **Full Stack Development:** Learn how to integrate the frontend and backend to build dynamic web applications.
- **Prepare for Job Interviews:** Build a professional portfolio of projects and gain the skills necessary for technical interviews.
- **Deploy and Maintain Websites:** CLearn how to deploy websites and manage servers and databases.

WHO SHOULD ATTEND?

- **Beginners to Web Development:** Learn the foundations of web development and build a solid career path.
- **Aspiring Developers:** Transition from basic programming knowledge to becoming a full-stack developer.
- **Freelancers and Entrepreneurs:** Start building client-based web applications or your own product from scratch.
- **IT Professionals:** Upgrade your skills to stay current in the fast-evolving web development field.
- **Job Seekers:** Enhance your employability with in-demand web development skills.

REQUIREMENTS

No Prior Web Development Experience Needed:
This course is suitable for beginners and those with basic programming knowledge.

Device: A laptop or desktop with a stable internet connection is required.

Commitment: Dedicate 2–3 hours daily to practice and project work for the best results.

COURSE CURRICULUM: MODULES

Our 3-Month Web Development Diploma is divided into two comprehensive modules: Frontend Development and Backend Development, ensuring you gain expertise in building dynamic, full-stack web applications.

FRONTEND DEVELOPMENT

- CSS: Styling & Designing.
- HTML: The Backbone of the Web.
- Bootstrap 5: Rapid Prototyping.
- JavaScript: Bringing Web Pages to Life.
- React.js: Dynamic and Scalable Frontend Framework.

BACKEND DEVELOPMENT

- Node.js: The Engine for the Backend.
- Express.js: Simplified API Development.
- MongoDB: NoSQL Database Management.
- Authentication and Security.
- Full-Stack Integration with MERN.

FRONTEND DEVELOPMENT

Introduction to Frontend Development

- Understanding Frontend vs. Backend Development.
- Role of a Frontend Developer in the Web Development Process.
- Setting Up a Development Environment.
  - Text Editors (VS Code, Sublime).
  - Browser Developer Tools.
  - Version Control Systems (Git, GitHub).

HTML: The Structure of Web Pages

- Basics of HTML
  - HTML Syntax and Tags.
  - Structure of an HTML Document.
  - Common Elements: Headings, Paragraphs, Links, and Lists.
- Intermediate HTML
  - Forms and Input Types.
  - Tables and Semantic HTML.
  - Best Practices for Accessibility.

CSS: Styling The Web

- Basics of CSS
  - CSS Syntax and Selectors.
  - Colors, Units, and Typography.
  - Inline, Internal, and External CSS.
- Intermediate CSS
  - Box Model and Layout Techniques.
  - Flexbox and Grid Systems.
  - CSS Transitions and Animations.
- Responsive Design
  - Media Queries.
  - Mobile-First Design Principles.

JavaScript: Adding Interactivity

- JavaScript Fundamentals.
- Syntax, Variables, and Data Types.
- Functions, Loops, and Conditional Statements.
- DOM Manipulation.

Bootstrap 5: Rapid Styling

- Overview of Bootstrap Framework.
- Responsive Grid System.
- Utilizing Bootstrap Components (Navbars, Modals, Buttons, etc.).
- Customizing with CSS.

React.js: Building Dynamic Interfaces

- Introduction to React.js
  - Understanding React Components and JSX.
- Advanced React.js
  - React Router for Single Page Applications.
  - Hooks (useState, useEffect, etc.).

Frontend Tools and Deployment

- Introduction to Git and GitHub
  - Version Control Basics: Clone, Commit, Push, Pull.
  - Collaborating on Repositories.
- Deployment Options
  - Hosting with Netlify, Vercel, and GitHub Pages.
  - Setting Up a Live Frontend Project.

Frontend Portfolio Project

- Develop a Full-Scale Frontend Project
  - Responsive and Interactive Design
  - Implementation of a Framework (React.js)
  - Use of Version Control
- Showcase Projects on GitHub

BACKEND DEVELOPMENT

Introduction to Backend Development

- Role of Backend in Web Development
- Understanding Client-Server Architecture
- Setting Up a Development Environment
    - Installing Node.js, npm/yarn
    - MongoDB Installation and Configuration

Core Concepts of Node.js

- Introduction to Node.js
    - Understanding Non-Blocking I/O & Asynchronous Programming.
    - Working with the File System.
    - Built-in Modules.
- Advanced Node.js
    - Event-Driven Programming.
    - Promises and Async/Await.
- Advanced JavaScript
    - Event Handling and Listeners.
    - Working with APIs (Fetch, JSON).
    - ES6+ Features (Arrow Functions, Template Literals, Classes, etc.).

Building Web Servers with Express.js

- Setting up Express.js Applications.
- Routing and Middleware.
- Handling HTTP Methods (GET, POST, PUT, DELETE).
- Error Handling in Express.js.
- Serving Static Files.

DATABASE DESIGN AND MONGODB

Introduction to MongoDB

- CRUD Operations in MongoDB.
- Designing Data Models (Documents, Collections).

Introduction to MongoDB

- Schema Design and Data Validation.
- Middleware and Virtuals in Mongoose.
- Relationships and Population.

Authentication and Authorization

- Implementing Authentication.
- User Registration and Login Systems.
- Password Hashing with Bcrypt.
- Generating and Validating JSON Web Tokens (JWT).

Authorization Techniques

- Role-Based Access Control (Admin, User, etc.).
- Securing Routes and APIs.

Building RESTful APIs

- Understanding RESTful API Principles.
- Structuring APIs.
- Implementing CRUD Operations.
- Query Parameters, Sorting, and Pagination.
- Data Validation with Joi or Express Validator.
- Versioning APIs for Scalability.

Integrating the MERN Stack

- Connecting React.js Frontend to Node.js Backend.
- Setting Up a Full Stack Application.
- Handling API Requests and Responses.
- Managing State and Data Flow in the MERN Architecture.

FULL STACK INTEGRATION (MERN STACK)

- Schema Design and Data Validation.
- Middleware and Virtuals in Mongoose.
- Relationships and Population.

BACKEND PORTFOLIO PROJECT

Develop a Full-Scale MERN Stack Application

- User Authentication and Role Management.
- CRUD Operations with a Dynamic Frontend.
- API Design and Documentation.

WHAT WILL YOU LEARN

Frontend Development

Introduction to Frontend Development

- Frontend development focuses on creating the visible parts of a website or application, ensuring users can interact with its interface effectively.
- Students will learn about the tools and technologies used in frontend development, including text editors, browser developer tools, and version control systems like Git and GitHub.
- This section emphasizes the importance of responsive and user-friendly design in creating a seamless user experience.

HTML: The Structure of Web Pages

- HTML serves as the foundation of web development, providing the basic structure and content of a webpage.
- Students will learn how to use various HTML tags and attributes to create well-structured documents, including headings, paragraphs, lists, and links.
- Intermediate concepts, such as creating forms, using input types, designing tables, and implementing semantic HTML, will be introduced to enhance accessibility and maintain best practices.

CSS: Styling the Web

- CSS allows developers to control the appearance of web pages, including layout, colors, typography, and spacing, to create visually appealing designs.
- Students will explore different methods of applying CSS, such as inline, internal, and external styles, and understand the importance of using a consistent design language.
- Advanced topics include mastering the box model, implementing Flexbox and CSS Grid for layouts, and adding animations and transitions to create interactive experiences.

JavaScript: Adding Interactivity

- JavaScript is a programming language used to add dynamic and interactive features to websites, enhancing user engagement and functionality.
- Fundamental concepts include understanding variables, functions, loops, and conditional statements to build the logic behind web applications.
- Advanced topics cover working with APIs to fetch data, handling user events efficiently, and leveraging ES6+ features like arrow functions and template literals for cleaner and more efficient code.

Bootstrap 5: Rapid Styling

- Bootstrap is a powerful frontend framework that simplifies the development of responsive and modern web designs with pre-built components and utilities.
- Students will learn to use Bootstrap's grid system to create mobile-first designs and customize components like navbars, modals, and buttons to fit project requirements.
- The course will cover customizing Bootstrap styles using CSS and SASS for unique branding and design elements.

React.js: Building Dynamic Interfaces

- React.js is a popular JavaScript library for building reusable UI components and managing complex application states efficiently.
- Students will explore key concepts such as JSX, component-based architecture, and the use of props and state to create dynamic user interfaces.
- Advanced topics include integrating React Router for building single-page applications and utilizing hooks like useState & useEffect to manage component behavior effectively.

Frontend Tools and Deployment

- Version control systems, such as Git and GitHub, are crucial for managing code collaboratively and tracking changes throughout a project.
- Students will learn to deploy frontend projects using platforms like Netlify, Vercel, and GitHub Pages, enabling them to showcase their work online.
- This section will also cover strategies for optimizing web performance, including minimizing assets and implementing best practices for fast-loading websites.

Frontend Portfolio Project

- Students will develop a comprehensive frontend project that showcases their skills, such as building a responsive and interactive website using HTML, CSS, JavaScript, Bootstrap, and React.js.
- This project will include features such as dynamic navigation, user input forms, and API integrations to demonstrate practical knowledge.
- The completed project will be hosted online, with its source code organized and documented on GitHub for portfolio presentation.

Backend Development

Introduction to Backend Development

- Backend development focuses on server-side operations, enabling applications to store, process, and retrieve data while ensuring secure and efficient functionality.
- Students will learn the basics of server-client architecture and how backend systems interact with the frontend to deliver seamless user experiences.
- Tools and technologies, such as Node.js for server-side JavaScript execution and MongoDB for database management, will be introduced.

Core Concepts of Node.js

- Node.js is a JavaScript runtime environment that allows developers to execute JavaScript code on the server side. Topics include understanding the asynchronous nature of
- Node.js, working with built-in modules like the file system, and creating custom modules for reusable functionality.
- Advanced concepts, such as event-driven programming and utilizing Promises and async/await, will be covered to handle complex workflows.

Building Web Servers with Express.js

- Express.js is a lightweight web application framework that simplifies building robust server-side applications in Node.js.
- Students will learn to set up Express applications, define routes for handling different HTTP methods, and use middleware to process requests and responses.
- This section will also cover techniques for serving static files and implementing error-handling mechanisms.

Database Design and MongoDB

- MongoDB is a NoSQL database that stores data in a flexible, document-based format, making it ideal for modern web applications.
- Students will explore CRUD operations (Create, Read, Update, Delete) and learn to design efficient data models using collections and documents.
- Integration with Node.js using Mongoose will be introduced, including schema design, validation, and the use of middleware for data processing.

Authentication and Authorization

- Students will learn to implement secure authentication systems, enabling users to register, log in, and manage accounts.
- Topics include password hashing with Bcrypt, generating and validating JSON Web Tokens (JWT), and securing routes with role-based access control.
- Practical exercises will include creating secure login and registration systems and protecting sensitive endpoints.

Building RESTful APIs

- RESTful APIs enable seamless communication between the frontend and backend of an application, using standard HTTP methods and conventions.
- Students will design and build APIs that support CRUD operations, handle query parameters for data filtering and pagination, and validate inputs using tools like Joi or Express Validator.
- Advanced topics include API versioning, ensuring backward compatibility, and documenting APIs for developer collaboration.

Integrating the MERN Stack

- The MERN stack combines MongoDB, Express.js, React.js, and Node.js to build full-stack web applications with a consistent JavaScript environment.
- Students will learn to integrate the React frontend with the Node.js backend, handle API requests and responses, and manage application state efficiently.
- Hands-on projects will include building scalable and dynamic applications using the complete MERN stack.

  Packaging Design: Explore packaging design fundamentals, including dieline creation and visual branding for products.

Backend Deployment and Security

- Backend deployment topics include hosting Node.js applications on platforms like Heroku and AWS, as well as managing databases on MongoDB Atlas.
- Security best practices, such as implementing HTTPS, handling cross-origin resource sharing (CORS), and validating user input to prevent attacks, will be emphasized.
- Students will gain hands-on experience in deploying and securing real-world applications.

Backend Deployment and Security

- The final project will involve creating a full-scale MERN stack application, featuring user authentication, CRUD functionality, and seamless API integration.
- Students will document and host their project on GitHub, providing a professional portfolio piece that demonstrates their backend development expertise.

FINAL PROJECT
COMPREHENSIVE FULL STACK WEBSITE

The Final Project is a critical component of the Full Stack Web Development course, designed to integrate all the skills & technologies learned throughout the program.This project simulates a real-world development scenario, providing students with hands-on experience in designing, developing, and deploying a full-stack application from scratch.

Objectives

- To consolidate knowledge of frontend and backend development into a single project.
- To demonstrate proficiency in integrating the MERN (MongoDB, Express.js, React.js, Node.js) stack.
- To develop problem-solving skills by tackling real-world challenges in web development.
- To showcase the ability to deploy a fully functional and responsive application.

Project Requirements

Frontend Features

- Develop a responsive and user-friendly interface using React.js and Bootstrap.
- Implement dynamic components, such as forms, modals, and interactive elements..
- Utilize React Router to create a single-page application with multiple views.
- Integrate APIs for fetching and displaying real-time data..

Backend Features

- Create RESTful APIs using Node.js and Express.js to handle data requests and responses.
- Design and implement a secure user authentication system (e.g., JWT).
- Develop role-based access control (e.g., Admin and User roles).
- Use MongoDB for data storage, ensuring efficient schema design with Mongoose.

Integration

- Connect the React.js frontend to the Node.js backend via APIs.
- Handle API calls to fetch, create, update, and delete data from the MongoDB database.

Deployment

- Deploy the application to a live server (e.g., Heroku, AWS, or Vercel).
- Set up database hosting using MongoDB Atlas.
- Ensure the application is accessible online and optimized for performance.

Evaluation Criteria

- **Functionality**: The application should meet the specified requirements and run without errors.
- **User Experience**: The design should be intuitive, responsive, and visually appealing.
- **Code Quality**: The codebase should follow best practices for readability, maintainability, and performance.
- **Deployment**: The application must be successfully deployed and accessible online.

Examples of Project Ideas

- **E-Commerce Platform**: A shopping website with user authentication, product listings, a shopping cart, and order management.
- **Task Management Tool**: A web application for creating, updating, and organizing tasks, with user roles and deadlines.
- **Social Media Dashboard**: A platform for user registration, profile creation, and posting updates or messages.
- **Booking System**: A system for scheduling appointments or reservations with payment integrations.

Deliverables

- A fully functional and deployed web application.
- Documentation of the application, including a README file detailing features, setup, and usage.
- A GitHub repository with the complete codebase, organized and version-controlled.

Web Development Course Reviews

"Joining NS Training's Web Development program was one of the best decisions I've made. Now, I feel confident in my ability to build and deploy websites and even work on custom projects for clients." — Amna Zafar, Front-End Developer

"I always wanted to learn how to code but thought it was too complex. NS Training made web development feel accessible and exciting. Their instructors explained every concept in a clear, easy-to-follow manner. Thank you, NS Training!"
— Bilal Ahmed, Freelancer

"The Web Development course at NS Training was amazing! It wasn't just about coding—it was about understanding how to think like a developer and solve problems. I truly appreciate the mentorship and the opportunities this course has opened up for me."
— Hassan Qureshi, Junior Developer at TechPulse

FAQs

- **Q: Do I need prior Coding knowledge to join this course?**
  A: Not at all! This course is beginner-friendly and covers the basics before diving into advanced topics.
- **Q: Will I get a certification after completing this course?**
  A: Yes, upon successful completion, you'll receive a certificate recognized by industry experts.
- **Q: Can I work as a web developer after this course?**
  A: Definitely! Our course equips you with the skills to take on freelance projects or secure a position in a company.

NS TRAINING
(SMC-PRIVATE) LIMITED
TRAINING - DEVELOPMENT

IT TRAINING INSTITUTE

No1

INSTRUCTOR PROFILE

SUFYAN SAEED

FULL STACK WEB DEVELOPER

Meet Muhammad Sufyan, an accomplished Backend Developer with 4 years of experience designing and implementing scalable, secure, and efficient server-side solutions. With an MSCS degree from Information Technology University (ITU), Sufyan expertise lies in database management ,API development, and backend optimization, ensuring every project is not only functional but also efficient and reliable.

Contact us :
+92 311 4157076
Office # 413-414,

www.nstrainings.com

Al-Hafeez Business
Center,Gulberg 3, Lahore