multisoft
Systems

Solidity Training

COURSE CONTENT

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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

Solidity Training by Multisoft Systems is designed to equip aspiring blockchain developers, software engineers, and tech professionals with the skills required to build secure and efficient smart contracts on the Ethereum platform. As blockchain adoption accelerates across industries like finance, supply chain, healthcare, gaming, and Web3 applications, the demand for Solidity expertise continues to rise.

Module 1: Introduction to Blockchain & Ethereum

- ✓ Overview of blockchain technology
- ✓ Public, private, and consortium blockchains
- ✓ Ethereum ecosystem and architecture
- ✓ Understanding nodes, miners, gas, and transactions
- ✓ What are smart contracts and why they matter

Module 2: Introduction to Solidity

- ✓ Role of Solidity in Ethereum development
- ✓ Solidity syntax and structure
- ✓ Data types, variables, and operators
- ✓ Functions, function types, and visibility
- ✓ State variables and local variables

Module 3: Control Structures & Advanced Data Handling

- ✓ Conditionals – if, else, require, revert, assert
- ✓ Loops and control flow
- ✓ Arrays, mappings, structs, enums
- ✓ Memory vs storage
- ✓ Events and logging

Module 4: Building Smart Contracts

- ✓ Writing your first smart contract
- ✓ Contract structure and best practices
- ✓ Constructors and modifiers
- ✓ Error handling and exceptions
- ✓ Working with timestamps and global variables

Module 5: Object-Oriented Programming in Solidity

- ✓ Contract inheritance and polymorphism
- ✓ Abstract contracts and interfaces
- ✓ Libraries and reusable code
- ✓ Importing and organizing contracts

Module 6: Ether, Tokens & Payments

- ✓ Handling Ether in smart contracts
- ✓ Payable functions
- ✓ Creating ERC-20 tokens
- ✓ Creating ERC-721 (NFT) tokens
- ✓ Token standards and real-world use cases

Module 7: Security in Smart Contracts

- ✓ Common vulnerabilities: reentrancy, overflow, underflow
- ✓ Secure coding best practices
- ✓ SafeMath and OpenZeppelin libraries
- ✓ Smart contract auditing basics
- ✓ Gas optimization techniques

Module 8: Tools for Development & Testing

- ✓ Remix IDE – writing and deploying contracts
- ✓ Using Truffle Suite
- ✓ Hardhat development environment
- ✓ Ganache for local blockchain simulations
- ✓ Mocha/Chai testing frameworks

Module 9: Deploying Smart Contracts

- ✓ Test networks (Goerli, Sepolia, Localhost)

- ✓ Deployment using Hardhat and Truffle
- ✓ Interacting with deployed contracts
- ✓ Working with MetaMask and Web3.js
- ✓ CI/CD workflow for smart contract deployment

Module 10: Building Decentralized Applications (DApps)

- ✓ Smart contract integration with frontend
- ✓ Using Web3.js and Ethers.js
- ✓ Building a simple DApp: step-by-step
- ✓ Connecting UI with Ethereum blockchain
- ✓ Wallet integration and user transactions