

Blockchain Application Development

Length : 3 days
Delivery Method : Instructor-led (classroom)

Course Overview

Blockchain Application Development prepares participants to design and develop end-to-end decentralized applications (Dapps) – which provide anyone with access to the blockchain’s features and services. Participants will use Truffle IDE, smart contracts, a simple web client and a MetaMask client. Participants will learn about the architecture of a Dapp: the front-end client interface, backed by the blockchain and smart contracts. The course covers the basic design of a Dapp, Truffle development process and commands (init, develop, test and migrate), testdriven development of Dapp, Dapp application models and emerging standards.

Audience Profile

This course is designed for existing programmers and developers who wish to develop Blockchain Applications. It is also suitable for software developers who are looking for move into Blockchain.

Java Script / JSP/ PHP / JAVA developers/ students with 1 year of minimum experience.
Microsoft .NET/ ASP.NET developers /students with 2 years of minimum experience.

At Course Completion

Upon successful completion of this course, participants will be able develop their own Blockchain based applications.

Participants will:

- Understand the why engineers would want to create an app with Ethereum
- Build compelling blockchain applications using the Ethereum Blockchain
- Design, test, and deploy secure Smart Contracts
- Learn the true purpose and capabilities of Ethereum and Solidity
- Use the latest version of Ethereum development tools

Pre-Requisites

It is required to have previous knowledge and experience of Java or C# or Swift programming language.

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Course Outline

Module 1: Blockchain Basics

- Distributed systems
- The history of blockchain
- Introduction to blockchain
- Types of blockchain
- Benefits and limitations of blockchain

Module 2: Decentralization

- Decentralization using blockchain
- Methods of decentralization
- Blockchain and full ecosystem decentralization
- Smart contract
- Decentralized applications
- Platforms for decentralization

Module 3: Ethereum basics

- Introduction
- Ethereum blockchain
- Elements of the Ethereum blockchain
- Ether
- Mining
- Clients and wallets
- The Ethereum network
- Applications developed on Ethereum
- Scalability and security issues

Module 4: Smart Contract Programming Basics

- Advantages and Drawbacks of Smart Contracts
- Smart Contracts with Solidity
- The Layout of a Solidity File
- Writing simple smart contract
- Creating contracts
- Using new keyword

Module 5: Ethereum Development

- Setting up a development environment
- Algorithms & Techniques
- Development tools and clients
- Introducing solidity
- Decentralized Applications

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Module 6: Understanding Deployment and Costs

- Understand Development and Deployment Cycles
- Understanding Solidity Compilation and Deployment
- Gas and Gas-Costs
- Upgradeability and Data Migration Techniques

Module 7: Hyperledger

- Hyperledger as a protocol
- Hyperledger Fabric

Module 8: Alternative Blockchains

- Platforms
- Blockchain Usage
- Best Practices

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