

Block Chain Foundations



The Course

Blockchain Online Course is designed to introduce you to the concept of Blockchain and explain the fundamentals of Blockchain and its implementation. As a beginner, you will be learning the importance of consensus in transactions, how transactions are stored on Blockchain, the history of Bitcoin and how it's used. In addition, you will be taught about the Ethereum development platform and be able to setup your own private Blockchain environment using Ethereum. Furthermore, you will develop and deploy smart contracts from web and console. Consecutively, you will learn to deploy a business network using Hyperledger Composer and learn to set up a private Blockchain using Multichain platform. Towards the end of the course, we will be discussing various practical use cases of Blockchain to enhance your learning experience

The Eligibility

Passionate Technology Enthusiasts with a minimal knowledge on IT and Operating Systems.

Good to have basic knowledge on Windows, OS & IT Infrastructure.

The Rulepaper Promise

Our training methodologies promises to give the students hands on art enterprise skills to delve deeper into the technologies from a practical and enterprise point of view. Extreme Hands-on-Lab with a self doable on the fly practical based training approaches makes transformation of the student from a no vice to a capable experienced cloud computing engineer.



The Instructor

Enterprise Architect with huge experience on Private and Public Cloud Technologies. The trainers are advisors and members of larger Cloud Computing Forums and seasoned integrators of IT Cloud Computing technologies with more than 12+ years in global large enterprise giants.

Course Contents

Module 1

Cryptocurrency & Blockchain

In this module, you will learn Blockchain and its working, its underlying network, and the types of Cryptocurrencies as well.

Topics:

- Transformation in trading units
- Cryptography and Cryptocurrency
- Anonymity and Pseudonymity in Cryptocurrencies
- Digital Signatures
- Cryptocurrency Hash Codes
- Distributed networks

Module 2

Delving into Blockchain

In this module, you will understand the structure and mechanisms of Blockchain, the several types of Cryptography and consensus algorithms. Also, you will brainstorm on the several types of Blockchains.

Topics:

- Introduction to Blockchain
- Why Blockchain is crucial?
- Key vocabulary while discussing Blockchain
- Distinction between databases and blockchain
- Explaining distributed ledger
- Blockchain ecosystem
- Blockchain structure
- Working of Blockchain technology
- Permissioned and permission-less Blockchain

Module 3

Bitcoin & Blockchain

In this module, you will learn about Bitcoin, its network structure, and the working of Bitcoin transaction system. You will setup your own bitcoin wallet to infer the buying and selling of Bitcoins.

Topics:

- Bitcoin and its history
- Why use Bitcoins?
- Where and how to buy Bitcoins
- How to store Bitcoins?
- How and where to spend Bitcoins?
- Selling Bitcoins
- Bitcoin transactions
- How Bitcoin transactions work
- What happens in case of invalid transactions
- Parameters that invalidate the transactions
- Scripting language in Bitcoin
- Applications of Bitcoin script
- Nodes and network of Bitcoin
- Various roles you can play in Bitcoin ecosystem

Course Contents

Module 4

Bitcoin Mining

In this module, you will learn more about Bitcoins and its mechanisms. You will understand why transactions with Bitcoins is secure and efficient. Also, you will learn how Bitcoin mining works and the methods of mining.

Topics:

- Purpose of mining
- Algorithm used in mining
- Mining hardware
- How does Bitcoin mining work?
- Bitcoin mining pools
- How cloud mining of Bitcoin works?
- Mining incentives
- Security and centralizations

Module 5

Ethereum

In this module, you will learn Ethereum, its ecosystem and develop smart contracts using Solidity programming language.

Topics:

- What is Ethereum?
- What is Ether?
- How to use Ethereum?
- The Ethereum ecosystem, DApps and DAOs
- How Ethereum mining works?

- Contract classes, functions, and conditionals
- Inheritance & abstract contracts
- Libraries
- Types & optimization of Ether
- Global variables
- Debugging
- Future of Ethereum

Module 6

Setting up a private blockchain environment using Ethereum

In this module, you will learn about public and private Blockchain. You will be able to setup your private Blockchain environment. Also, you will be developing a smart contract on Ethereum and will be deploying it on web and console.

Topics:

- Private and public Blockchain
- Various Blockchain setup platforms
- Using Ethereum to setup private Blockchain
- Steps to build a Blockchain solution
- Smart Contracts on Ethereum
- Compile, deploy and instantiate contracts
- Configuring, running and working with the go-Ethereum client
- Account management and mining
- Understand the different stages of a contract deployment
- How to interact with a contract once deployed

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Module 7

Hyperledger

In this module, you will learn about Hyperledger project to develop an enterprise-grade and open-source distributed ledger framework. You will be taught the Hyperledger architecture and the consensus mechanism applied in the Hyperledger. Also, you will learn four major Hyperledger frameworks.

Topics:

- Introduction to Hyperledger
- Hyperledger Architecture
- Consensus
- Consensus & its interaction with architectural layers
- Application programming interface
- Application model
- Network topology
- Exploring Hyperledger frameworks

Module 8

Setting up a development environment using Hyperledger composer

In this module you will learn about Hyperledger Fabric. You will be taught to develop business networks using Hyperledger Composer. Also, you will be deploying & testing your business network.

Topics:

- Setting up a development environment using Composer
- Developing business networks
- Testing business networks
- Introduction to Hyperledger Fabric
- Hyperledger Fabric model
- Various ways to create Hyperledger Fabric Blockchain network

Module 9

Create and deploy your private Blockchain on Multi chain

In this module, you will learn about the MultiChain platform. You will also be able to setup your private Blockchain environment and be able to customize your Blockchain parameters as per your requirements.

Topics:

- Introduction to MultiChain
- Privacy & permissions in MultiChain
- Mining in MultiChain
- Multiple configurable Blockchains using MultiChain
- Setting up a private Blockchain
- Creating a Blockchain
- Connecting to a Blockchain
- Some commands in interactive mode
- Using native assets
- Transaction metadata
- Streams
- Round robin mining

Module 10

Prospects of Blockchain

In this module,, you will understand how Blockchain is shaping economy of tomorrow. Discussions on various use-cases of Blockchain will clear the missing segment of the picture.

Topics:

- How Blockchain is helping our world
- Blockchain transforming business and professions
- Discussing practical use-cases of Blockchain
- How can we bring Aadhaar Card system onto Blockchain?
- How Blockchain can be used to remove corruption

The Duration

Duration of the Course is 40 hours.

The Lab Requirements

Students must bring their own laptops with basic configuration

The cost of the Training

Please send an email or contact us at enquiry@rulepaper.com to know more about the cost and next batch schedules.