Blockchain 2 Days Workshop

Blockchain technology is changing how business is executed. It’s important to understand why blockchain is different and how it works in comparison with technologies of the past.

The first segment covers all the main concepts of what blockchain is. It discusses how it began as a triple ledger system first introduced for the administration of the crypto currency Bit coin, and how it is now applied to all aspects of business including government, banking, supply chains, and a host of other industries.

It also analyzes the concept of transparent ledgers, both public and permissioned, and focuses on using cryptography to achieve consensus, immutability, and governance of transactions. This is all part of blockchain’s ability to provide “trusted data from untrusted sources”, disrupting traditional accounting methodologies and international trade.

The course then dives into the various methods of blockchain governance that currently exist in the marketplace as well as how consensus fits into governance. It explores how to reach consensus through proof-of-work or proof-of-stake.

Other aspects of the course include examining the very specific features of blockchain that solve problems that have been difficult to overcome in the past with more centralized architectures.

The final part of the course takes a deep dive into the various use cases of blockchain, complete with analyzing real examples of how different industries are executing the technology and improving their business. Examining a problem, and then depicting a blockchain use case that solves the problem, will help gain an understanding of how blockchain is applied to real world situations.

Course Instructors

Nagesh B: 13+ years of experience in IT.

Venkat M: 8+ years of experience in IT

Course Learning Objectives By the end of this course, you should be able to:

- Understand what blockchain is.
- Understand blockchain’s impact and potential for change around the world.
- Understand how blockchain is applied to all aspects of business.
- Demonstrate some of the immediate blockchain use cases in technology, business, and enterprise products and institutions.
Day 1:

**Background Information**
- Server architecture
- Database (CURD)
- Security
- Use cases/Problem Solving
- Blockchain Background Information
- Centralized /Distributed /Decentralized.
- Games/Activity
- Queries?

**Introduction to Blockchain**
- Benefit/Job Orientation/ Future of blockchain
- Blockchain definition
- Document sharing methodologies.
- Centralized /Distributed /Decentralized systems more details
- Current Banking Ledger Examples.
- Crypto currency introduction
- Blockchain introduction.
- Hash Functions
- SHA256
- Activity Examples
- Introduction to Blockchain
- Distributed Ledgers
- Cryptography
- Transparency
- Immutability
- Smart Contracts
- Blockchain Security
- Public and Permissioned Blockchains
- Blockchain Flow
- Consensus and Fault Tolerance
- Governance and Blockchain
- Identity and Anonymity on Blockchain
- Trust and Trustless
- Knowledge Check Summary
Governance and Consensus

- Learning Objectives
- Standard vs. Blockchain
- Governance Consensus
- Governance with Autonomy
- Governance for Enterprise
- Knowledge Check
- Summary

Blockchain Problem Solving

- Learning Objectives
- Immutability
- Transparency
- Autonomy
- Multi-Party Transactions
- Double Spend
- Knowledge Check
- Summary

Blockchain Use Cases

- Learning Objectives
- Blockchain Use Cases
- Healthcare
- Voting Identity Management
- Land Records and Government
- Blockchain with Supply Chain
- Internet of Things (IoT)
- Energy
- Future of Blockchain
- Knowledge Check
Day 2

Discovering Blockchain Technologies

- Bitcoin and Ethereum Blockchains
- Exploring Permissionless Blockchains
- Consensus Algorithms
- Hyperledger
- Other Open Source Permissioned Distributed Ledgers
- Challenges in the Adoption/Deployment of Distributed Ledger Technologies
- Knowledge Check

Introduction to Hyperledger

- Hyperledger
- Hyperledger Frameworks
- Hyperledger Modules

Technical Requirements

- Introduction and Learning Objectives
- Installation Instructions for Linux
- Installation Instructions for Windows

Introduction to Hyperledger Composer

- Introduction and Learning Objectives
- Scenario
- Hyperledger Composer Architecture
- Installing Hyperledger Composer
- Writing and Deploying a Business Network
- Joining the Hyperledger Composer Community

Introduction to Hyperledger Fabric

- Introduction and Learning Objectives
- Key Components and Transaction Flow
- Installing Hyperledger Fabric
- Understanding Chaincode
- Chaincode Walkthrough (Demonstrated Scenario)
- Writing an Application
- Joining the Hyperledger Fabric Community