



**HYPERLEDGER**  
**FABRIC**

## Course Content

Module 1: Blockchain Introduction

Module 2: Hyperledger Fabric

Module 3: Hyperledger Fabric Setup and Network

Module 4: Chaincode Development Using Go Lang

Module 5: Chaincode Lifecycle

Module 6: Fabric Node SDK



# Module 1: Blockchain Introduction

## Blockchain Introduction

- Distributed Ledger Technology
- Blockchain introduction
- Blockchain architecture
- Blockchain Vs. Databases
- Benefits of blockchain

## Blockchain Types

- Public blockchain
- Permissioned blockchain
- Private blockchain

## Public Blockchain

- Bitcoin and Ethereum
- Bitcoin introduction
- Bitcoin transaction flow
- Ethereum introduction
- Ethereum smart contracts
- Ethereum solidity language
- Bitcoin & Ethereum wallets
- Bitcoin & Ethereum explorers



## Module 2: Hyperledger Fabric

### Enterprise Blockchain

- Enterprise blockchain introduction
- Why enterprise blockchain is needed
- Enterprise blockchain properties

### Hyperledger

- Hyperledger Umbrella project
- Hyperledger different projects
- Hyperledger Sawtooth, Indy, Iroha, Burrows, Fabric

### Hyperledger Fabric Introduction

- Fabric components
  - Ordering service
  - Channel
  - Membership service provider
  - ACL
  - Endorsing peers
  - Committing peers
- Fabric Transaction flow



# Module 3: Hyperledger Fabric Setup and Network

## Hyperledger Fabric Setup

- Identify & setup prerequisites
  - Python
  - Git
  - Docker
  - NodeJs
  - Curl
- Download fabric samples
- Setup hyperledger fabric

## Hyperledger Fabric Networks

- Development network
  - Understand the network
  - Start & stop network
  - Create channel
- Test network
  - Understand the network
  - Start & stop network
  - Create channel



# Module 4: Chaincode Development Using Go lang

## Chaincode

- Chaincode introduction
- Smart contract vs chaincode
- Types of chaincode language

## Go Language

- Go lang introduction
- Setup go lang
- Go lang syntax

## Chaincode Development using go lang

- Setup Visual code editor
- Understand chaincode interfaces
- Chaincode low level api
- Chaincode high level api
- Develop chaincode using contract api
  - Create chaincode
  - Define functions
  - Add required logic



## Module 5: Chaincode Lifecycle

### Chaincode Life-cycle

- Compile and build chaincode
- Package chaincode from one organization
- Install chaincode package on all the organizations
- Approve chaincode definition for all the organizations
- Commit chaincode definition to channel
- Access chaincode functions from cli



## Module 5: Fabric Node SDK

### Fabric SDK

- SDK introduction
- Different types of fabric sdk's

### Node SDK

- Node sdk introduction
- Node sdk modules
- Node sdk high level steps

### Setup

- Create node project
- Install required modules
- Connection profile

### Enroll users

- Enroll admin user
- Register client user
- Enroll client user

### Fabric Rest API

- Expose chaincode functions over rest api
- Access chaincode functions over rest api

