Quality Thought ®

Blockchain

Mode of Training: Online, Classroom, Corporate

Faculty: Mr.

Course Duration: Days

Course Curriculum

BLOCKCHAIN

Blockchain Basics:

1. Blockchain Introduction

- Distributed Systems

- The history of blockchain

- Introduction to blockchain

- Types of blockchain

- CAP theorem and blockchain

- Benefits and limitations of blockchain

2. Decentralization

- Decentralization using blockchain

- Methods of decentralization

- Routes to decentralization

- Blockchain and full ecosystem decentralization

- Smart contract

- Decentralized organizations

- Decentralized autonomous organizations

- Decentralized autonomous corporations

- Decentralized autonomous societies

- Decentralized applications

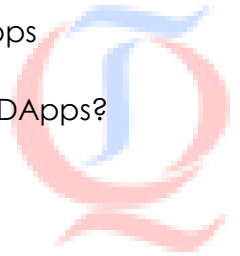- Platforms for decentralization

3. Cryptography and Technical Foundations

- Introduction

- Cryptographic primitives

- Asymmetric cryptography

- Public and private keys

- Financial markets and trading

4. Understanding Decentralized Applications

- What is a DApp?

- Decentralized autonomous organization

- User identity in DApps

- User accounts in DApps

- Accessing the centralized apps

- Internal currency in DApps

- What are permissioned DApps?

- Popular DApps
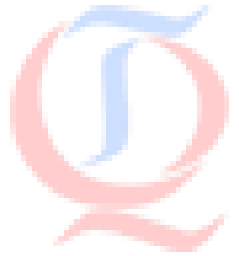
Bitcoin and Alternative Coins:

5. Bitcoin

- Bitcoin definition

- Transactions

  - The transaction lifecycle

  - The transaction structure

  - Types of Transaction

- Blockchain

  - Structure of block & block header

- The genesis block

- The bitcoin network

- Wallets

- Bitcoin Payments

    - Bitcoin investment and buying and selling bitcoins

    - Bitcoin installation

    - Bitcoin programming and the command-line interface

    - Bitcoin improvement proposals (BIPs)

6. Alternative Coins

- Theoretical foundations

- Bitcoin limitations

- Namecoin

- Litecoin

- Primecoin

- Zcash

Smart Contracts & Ethereum:

7. Smart Contracts

- History

- Definition

- Ricardian contracts

8. Ethereum Introduction

- Ethereum blockchain

- Elements of the Ethereum blockchain

- Precompiled contracts

- Accounts

- Block

- Ether

- Messages

- Mining

- Clients and wallets

- Trading and investment

- The yellow paper

- The Ethereum network

- Applications developed on Ethereum

- Scalability and security issues

9. Understanding How Ethereum Works

- Ethereum accounts

- Transactions

- Consensus

- Timestamp

- Nonce

- Block time

- Forking

- Genesis block

- Ether denominations

- Ethereum virtual machine

- Gas

- Peer discovery

- Whisper and Swarm

- Geth

- Ethereum Wallet

- Mist

- Weaknesses

- Serenity

Ethereum Development:

10. Ethereum Development

- Setting up a development environment

- Development tools and clients

- Introducing solidity

- Introducing Web3

11. Writing Smart Contracts

- Solidity source files

- The structure of a smart contract

- Data location

- What are the different data types?

- Control structures

- Creating contracts using the new operator

- Exceptions

- External function calls

- Features of contracts

- Libraries

- Returning multiple values

- Importing other Solidity source files

- Globally available variables

- Ether units

- Proof of existence, integrity, and ownership contract

- Compiling and deploying contracts

12. Getting Started with web3.js

- Introduction to web3.js

- Building a client for an ownership contract

Implementations/Projects:

13. Building a Wallet Service

- Difference between online and offline wallets

- hooked-web3-provider and ethereumjs-tx libraries

- What is a hierarchical deterministic wallet?

- Introduction to key derivation functions

- Introduction to LightWallet

- Building a wallet service

14. Building a Smart Contract Deployment Platform

- Calculating a transaction's nonce
- Introducing solcjs
- Building a contract deployment platform

15. Building a Betting App

- Introduction to Oraclize
- Working with strings
- Building the betting contract
- Building a client for the betting contract

16. Building Enterprise Level Smart Contracts

- Exploring ethereumjs-testrpc
- What are event topics?
- Getting started with truffle-contract
- Introduction to truffle

17. Building a Consortium Blockchain

- What is a consortium blockchain?
- What is Proof-of-Authority consensus?
- Introduction to parity

18. Microsoft Blockchain as a service

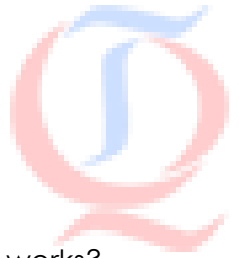- Creating the ethereum block chain in Azure
- Deploying an Dapp

Hyperledger and other Blockchains:

19. Hyperledger

- Projects

- Hyperledger as a protocol

- Fabric

- Hyperledger Fabric

- Sawtooth lake

- Corda

20. Hyperledger Fabric

- Introduction to Hyperledger and Hyperledger fabric

- Architecture

- Components

- Features

- How hyperledger fabric works?

21. Chaincode

- What is Chaincode

- Dev Environment

- Structure of chaincode

- Data models

- Storing and retrieving data

- Access control and permissions

- Events & logging

- Chaincode lifecycle

- Packaging

- System Chaincode

- Build and start the chaincode

22. Hyperledger Fabric in IBM BlueMix

- Deploy your network

- Write Chaincode

- Write client apps

- Monitor network

23. Alternative Blockchains

- Blockchains

- Platforms

24. Blockchain-Outside of Currencies

- Internet of Things

- Government

- Health

- Finance

- Media

25. Scalability and Other Challenges

- Scalability

- Privacy

- Security

Supporting Enterprises around the Globe

Our Other Courses

DevOps & Cloud Computing

- AWS Admin Training
- Devops Training
- Azure Admin Training

Artificial Intelligence & IOT

- Artificial Intelligence Training
- IOT Training

Big data

- Hadoop Development Training
- Spark And Scala Training

Data Science & Blockchain

- Data Science Training
- Blockchain Training

QA and Testing

- Manual Testing
- Big data Testing Training
- Selenium Training
- Appium Training
- Web services Testing Training
- Security Testing Training
- Performance Testing Training
- TOSCA Training
- ETL Testing Training

RPA and Automation

- Automation Anywhere Training
- Blueprism Training
- Uipath Training

Programming & Framework

- Core Python
- Advanced Python Training
- Django Training
- C,C++Programming Training

Others courses

- Digital Marketing Training
- Spoken English Training
- Chat Bot Making Training
- BI Reporting Tools Training
- Sail Point IIQ

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