EDUXLABS
edu's Xpert (Esoir Solution)

10-days (30-Hours)
Instructor-led live online
FDP / Short Training
on

BLOCKCHAIN TECHNOLOGY & FULL STACK DAPP

DURATION – 30 Hours

Training Highlights:

5+ Hands-on Blockchain Projects covered during the training.

Total 30+ Hours live online Instructor-led Training.

Training includes:
Projects, Training PPT's & Recording.

FDP/ Training **certificate of completion** will be provided to each participant.

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LIST OF PROJECTS WILL BE COVERED DURING TRAINING

Project 1: Smart Contract:
Development of smart block-based contact for project development

Project 2: Crowd Funding
Smart Contract (ICO)

Project 3: Setting up a Private Blockchain Network

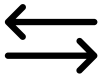
Project 4: Crypto-wallet:
Creating Crypto wallet for handling cryptocurrency

Project 5: Ethereum Wallet
Testing Platforms / Local Platform

Project 6: Cryptocurrency: ERC-20 tokens & creating own cryptocurrency using solidity for Ethereum

Project 7: Full Stack Blockchain App for Voting
for Candidate Application with WebAPP (Front End UI) & Blockchain Application (Decentralized Network)

Project 8: Building a Banking Full Stack
Decentralized Application for Current Balance, Making Transactions with Front End UI & Blockchain Application (Decentralized Network)



Project 9: ERC20 Token Deploying
on Real Ethereum Test Network & Making Transaction all across Globe.

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30+ HOURS COURSE CONTENT

BLOCKCHAIN: INTRODUCTION

- What is Blockchain
- Blockchain Technology Mechanisms & Networks
- Blockchain Origins
- Blockchain Objectives
- Blockchain Users And Adoption
- Blockchain Challenges
- Transactions And Blocks
- P2P Systems
- Keys As Identity
- Digital Signatures
- Hashes As Addresses
- Hash Pointers and Data Structures
- Blockchain Transactions

BITCOIN & CRYPTOCURRENCY

- What is Bitcoin
- The Bitcoin Network
- The Bitcoin Mining Process
- Mining Developments
- Bitcoin Wallets
- Decentralization and Hard Forks
- Alternative Blockchains/Altchains
- Ethereum Consensus Mechanisms
- How Smart Contracts Work
- Difference Between Private Consortium And Public Networks
- Ethereum Virtual Machine (EVM)
- Merkle Tree
- Double-Spend Problem
- New Developments In Blockchain
- Ethereum’s Ecosystem And Dapps
- Blockchain And Digital Currency
- Transactional Blocks
- Impact Of Blockchain Technology On Cryptocurrency
- Cryptography

ETHEREUM

- What is Ethereum?
- Introduction
- A Short History Lesson
- Interfacing with Ethereum Networks
- Metamask Setup
- Ethereum Accounts
- Receiving Ether
- What's a Transaction?
- Smart Contracts
- Our First Contract
- Contract Structure
- Function Declarations
- Testing with Remix
- Redeploying Contracts
- Behind the Scenes of Deployment
- More on Running Functions Than You Want to Know
- Gas and Transactions
- Mnemonic Phrases
- Getting More Ether

Solidity Programming

- Solidity - Language of Smart Contracts
- Installing Solidity & Ethereum Wallet
- Basics of Solidity by Example: Subcoin Smart Contract
- Layout of a Solidity Source File & Structure of Smart Contracts
- General Value Types (Int, Real, String, Bytes, Arrays, Mapping, Enum, address)
- Ether Units, Time Units

Ethereum Coding for Blockchain

- Globally Available Variables & Functions
- Operators: Arithmetic, Logical & Bitwise Operators
- Control Structure (if-else, for, while, Do-While)
- Scoping and Declarations
- Input Parameters and Output Parameters
- Function Calls & Return Types
- Function Modifiers
- Fallback Function
- Abstract Contract
- Creating Contracts via "new" Operator
- Inheriting Smart Contracts
- Importing Smart Contracts & Compiling Contracts
- Events & Logging
- Exceptions

Contract Deployment for Blockchain Environment

- Boilerplate Requirements
- Project File Walkthrough
- Syntax Highlighters
- Compiling Solidity
- The Compile Script
- Testing Architecture
- Fetching Accounts from Ganache
- Deployment with Web3
- Deployed Inbox Overview
- Asserting Deployment
- Web3 Version Fix
- Verifying the Initial Message
- Testing Message Updates
- Deployment with Infura
- Wallet Provider Setup
- Deployment to Rinkeby
- Observing Deployment on Etherscan
- Deployed Contracts in Remix
- Complete Example: Crowd Funding Smart Contract
- Complete Example: Voting Ballot Smart Contract

ADVANCED SMART CONTRACTS

- The Lottery Contract
- Lottery Design
- Basic Solidity Types
- Starting the Lottery Contract
- The Message Global Variable
- Overview of Arrays
- Overview of Mappings and Structs
- Entering the Lottery
- Validation with Require Statements
- The Remix Debugger
- Sending Ether from Contracts
- Resetting Contract State
- Requiring Managers
- Function Modifiers
- Returning Players Array
- Contract Review

Full Stack Blockchain – Web3, HTML

- Web3 JS
- Ganache CLI
- Blockchain Setup on Windows for Development
- UI Design – HTML, CSS
- Web3 Programming

Introduction to Hyperledger

- What is Hyperledger?
- Distributed Ledger Technology & its Challenges
- Hyperledger & Distributed Ledger Technology
- Hyperledger Fabric
- Hyperledger Composer

PROJECT

- Smart Contract: Development of smart block-based contact for project development
- Crowd Funding Smart Contract (ICO)
- Setting up Private Blockchain Network
- Crypto-wallet: Creating Crypto wallet for handling cryptocurrency
- Ethereum Wallet – Testing Platforms / Local Platform
- **Cryptocurrency:** ERC-20 tokens & creating own crypto currency using solidity for Ethereum.
- ERC20 Token Deploying on Real Ethereum Test Network & Making Transaction all across Globe.
- **Blockchain Application:** Building a Banking Full Stack Decentralized Application for Current Balance, Making Transactions with Front End UI & Blockchain Application (Decentralized Network)
- **Blockchain Application:** Full Stack Blockchain App for Voting for Candidate Application with WebAPP (Front End UI) & Blockchain Application (Decentralized Network)

Who can attend?

- Training is best suitable for Engineering college faculty, Research scholar, Student & Working IT Professional.

The requirement for the live online Training

- Computer system with internet
- System Configuration: 4GB RAM, i3 / i5 Processor

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