BLOCKCHAIN TECHNOLOGY INTERNSHIP (BTI)

8 Days 70* hours Intensive Certified Internship

India's First ever course work based Internship Focuses on

Blockchain, BitCoin, Crypto currencies, Hyper Ledger, Smart Contracts Technologies, Tools and Techniques

LEARN THE EMERGING TECH THIS WINTER & GET REWARDING CAREER IN FUTURE

Internship Structure

No of Days: 8

No of Hours: Total 70 (50 Hands-On Training Hours) + (20 Hands-On Hours on Project/Case Assigned)

What is BLOCKCHAIN & Why I Need to Learn?

Blockchain is the technology the underpins digital currency (Bitcoin, Litecoin, Ethereum, and the like). The tech allows digital information to be distributed, but not copied. That means each individual piece of data can only have one owner.

You may hear it described as a "digital ledger" stored in a distributed network.

The information is constantly reconciled into the database, which is stored in multiple locations and updated instantly. That means the records are public and verifiable. Since there's no central location, it harder to hack since the info exists simultaneously in millions of places.

A block is record of a new transactions. When a block is completed, it's added to the chain. Bitcoin owners have the private password (a complex key) to an address on the chain, which is where their ownership is recorded. Crypto-currency proponents like the distributed storage without a middle man—you don't need a bank to verify the transfer of money or take a cut of the transaction.

"The demand for blockchain professionals has grown significantly and by 2025, 18 per cent of the world's GDP will be on Blockchain technologies (Source: World Economic Forum)."

"Demand for blockchain engineers has increased by 400 percent since late 2017 and Blockchain engineers are making between $150,000 and $175,000 on average. (Source: CNBC)"

Top industries in which Blockchain has huge potential for implementation include:

- **Financial and banking services, Insurance, Cloud storage, Travel and transportation, Energy, Media and entertainment, Automotive,**
- **Government and public sector, Healthcare and life sciences, Retail and e-commerce**

Technologies & Tools you learn

- Ethereum
- Hyper ledger
- Go Language Programming
- Solidity Programming
- Multichain
- Front end tools – Web3. JS, JavaScript, HTML5, CSS, Bootstrap
- IPFS, Bigchain DB

Day 1: Basics of Blockchain and how it works and Various Applications.

- How Block chain works
- Various Industries that uses Blockchain
- Case Study

Team Formation - Problem Statement Allocation

Blockchain related (Hyper Ledger, Smart contracts, Multichain) industrial problems/Opportunity area will be allocated to participants. Participants will work in a team and present the solution in the form of Product to Industry panelists.

DAY 2: Ethereum

- Overview of Centralized, Decentralized and Distributed Systems
- How are the Transactions done in Blockchain and How to initiate Transactions in a network
- Introduction to Crypto currency
- Blockchain vs Conventional Databases
- Crypto Wallets and how it works
- Hash Functions & Merkle Trees
- What is mining and why it is done in Blockchain and concept of mining
- Ethereum Introduction
- Case study on Ethereum
- Innovations in Financial Industry Using Ethereum
- Hands-on - Solidity Programming

Day 3: Ethereum (Cont..)

- Ethereum Virtual Machine
- Ethereum Languages
- Gas and Ether
- Ethereum Accounts
- Developing Smart Contracts
- Ethereum Tools
  - Parity
  - Metamask
  - Mist wallet
  - Swarm
  - IPFS
  - Whisper

- Ethereum framework
  - Web3.js
  - Eth,js
  - Ethereum Development Environment
- Hands-on - Solidity Programming

Day 4: Hyper Ledger

- Introduction to Hyperledger
- Hyperledger Architecture
- Application Programming Interfaces (API's)
- Hyperledger Projects
- Introduction to Go Programming
- Chain code development using Golang Programming

Day 5: Hyperledger Composer – Hands-on with Golang

- Hyperledger Fabric
- Hyperledger Fabric Model
- Issues in Hyperledger Fabric
- Creating Fabric Blockchain network
- Hyperledger Composer
- Developing Business Networks
- Testing Business Networks

Day 6: Front end Tools & Integration Techniques

- Javascript framework to create simple web apps
- Programming with HTML 5 & CSS for creating Front end UI
- How to use Bootstrap UI templates.
- Integration of backend with Front End to create complete application

Day 7: Introduction to Multichain & Project Execution

- Introduction to Multichain
- Privacy and Permissions in Multichain
- Features of Assets in Multichain
- Multichain Streams
- Mining in Multichain

Second half of this day is dedicated to Teams to work extensively on tools and technologies taught throughout the program and apply their learning to create a product and get clarify all their doubts from experts and present the same among their peers and jury panel.

Day 8 - Project Day - Presentation

Solution/Project presentation – Peer to Peer learning Day – Learn from your other fellow participants about the projects they are working on and vice versa.

- Best Teams will be selected and awarded "Winner of Blockchain Summer'19" with prizes.
- Best Students who perform well throughout the Program will get "Best Intern Award" and certificate of Excellence.

Program Benefits

After the program the students should be able to:

- Understand Blockchain landscape and all emerging areas to develop products.
- Understand and build Blockchain applications.
- Familiar with various computing techniques and tools.
- Learn to program in Solidity and Go programming languages.
- Familiarity with Various blockchain Tools and implement it in Projects.
- Understand Ethereum, Smart contracts, Hyper Ledger in detail.
- Integration techniques of connecting front and back end applications.
- Learn and understand about Multi chain technology.
- Conceptualize and develop products using Blockchain tools and technologies
- Develop confidence of presenting their project/Product
- Inclination towards entrepreneurship and business opportunities

Note: Expertshub has all rights to change the structure of the program based upon expert's availability, equipment's availability & lab conditions available at host institutions without prior notification to anybody.

*no of hours mentioned are calculated by both class room training & the time student spend outside the class room for their project work