

# € TRAINING

Build A Blockchain And A Cryptocurrency  
From Scratch





# Build A Blockchain And A Cryptocurrency From Scratch

## Introduction

Build a blockchain and cryptocurrency. Discover the engineering ideas behind technologies like Bitcoin and Ethereum, A blockchain's operating protocol is also known as its consensus mechanism, Build a Blockchain in the object-oriented programming style, and Generate hashes for blocks in the chain.

## Course Objectives

At the end of the course, participants will be able to:

- Discuss the implementation of Blockchain and cryptocurrencies.
- Understand main blockchain concepts like Proof-of-Work, mining, peer-to-peer connections, etc.
- Build their own blockchain and cryptocurrency.
- Create a NodeJS application with real-time WebSocket connections.
- Build an API with NodeJS and Express.

## Targeted Audience

- Familiarity with using a code editor and the command line.
- Some JavaScript experience will help, but every line is explained. This is not a course on advanced JS, but uses JS to build the concepts. By focusing on the concepts, the JS will become clear.
- Some programming experience will definitely help. If you've never coded before, then this course will probably move too quickly.

## Course Outline

### Unit 1:

- Build the Blockchain Class
- Test the Blockchain
- Multiple Chain Validation
- Chain Validation

### Unit 2:

- Create an API around the Blockchain.
- Create a real-time connected peer-to-peer server.
- Implement a proof-of-work algorithm.
- Sign Transactions with cryptography and digital signature.
- Create a Transaction Pool for a real-time list of incoming data.
- Include transactions in core blocks of the chain.

#### Unit 3:

- The Blockchain engineers of the future.
- Anyone wanting to understand how cryptocurrencies are built.
- Cryptocurrency holders, so that way they can understand the underlying system.
- Anyone who wants to build a huge project in NodeJS, and it to their repertoire.

#### Unit 4:

- Design your blockchain architecture. ...
- Audit your new blockchain and its code. ...
- Verify legal compliance.