

# Blockchain Introduction

What is Blockchain?  
How It Changes the Economy?



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Software University  
<http://softuni.bg>



# About Svetlin Nakov

- Software engineer, trainer, entrepreneur, author of books, blockchain enthusiast

[www.nakov.com](http://www.nakov.com)

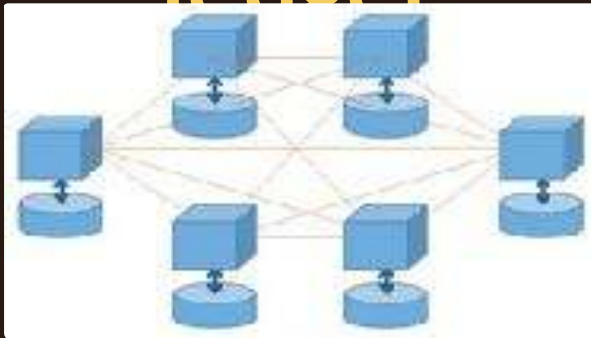
- Portfolio of 3 successful training initiatives:
  - National Academy for Software Development (NASD)
  - Telerik Software Academy
  - SoftUni (the Software University)





# What is Blockchain?

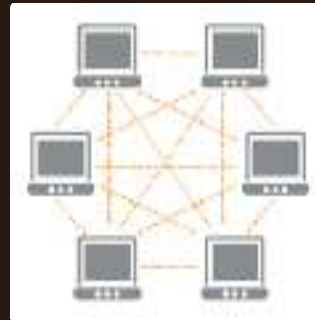
**Distributed  
ledger**



**Secure**

Transactions  
are verified by  
the entire  
network

**Peer-to-Peer  
network**



Nodes hold  
ledger of facts +  
history of  
updates

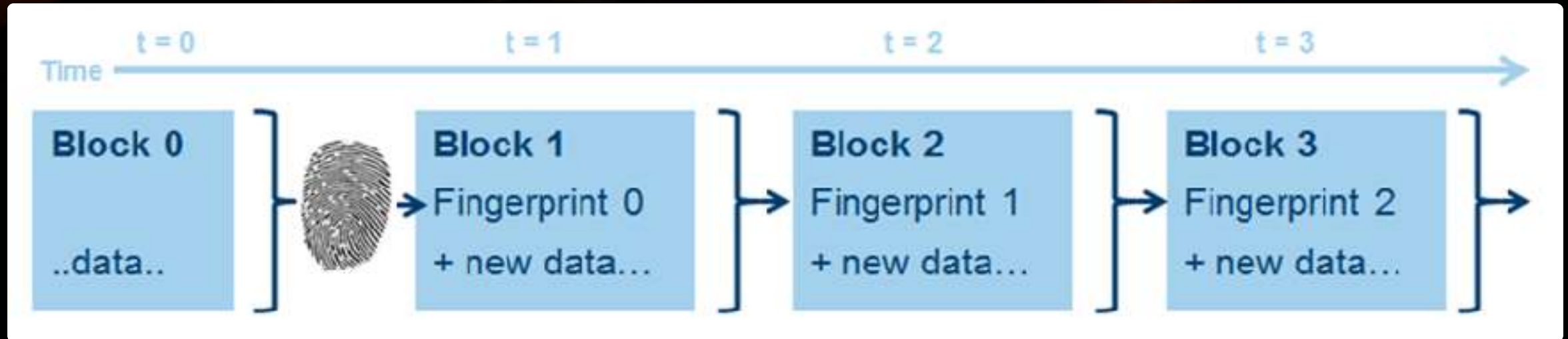
**Decentraliz  
ed  
(no owner)**



**Immutable**



# Blockchain == Chain of Data Blocks



Demo: <https://etherscan.io>

<https://blockchain.info>

# Blockchain Applications

## Cryptocurrencies



Digital money with  
no central bank

## Decentralized applications



Removing the  
middlemen

## Digital investments



Fund raising /  
ICO / token  
sales



# Blockchain Platforms

## Bitcoin



The first famous  
blockchain  
cryptocurrency

## Ethereum



The first famous  
smart contracts  
platform

 **Litecoin**

 **Ripple**

 **Dash**

 **Monero**

<https://coinmarketcap.com>

# Mining Farms

## Mining pools

**Mining farms:**  
validate  
transactions  
+ mine coins





# Traditional Money (Fiat Money)

## Traditional (fiat) money:

Guaranteed by the real  
economy + central bank  
+ government + army



## Example: USD

Guaranteed by the US  
economy + the US  
army



If a country rejects  
accepting USD, the  
"democracy" comes



# Cryptocurrencies

## Crypto-money:

Not guaranteed, virtual,  
highly risky, changeable



## Example: Bitcoin

A bubble, driven by  
the people  
expectations



Some day the Bitcoin  
bubble will burst

# Wallets

## Cryptocurrency wallets:

Store securely public and private keys of your blockchain



Hold multiple addresses + private keys  
May hold BTC, ETH, ERC20 tokens, etc.

## Software wallets



## Hardware wallets

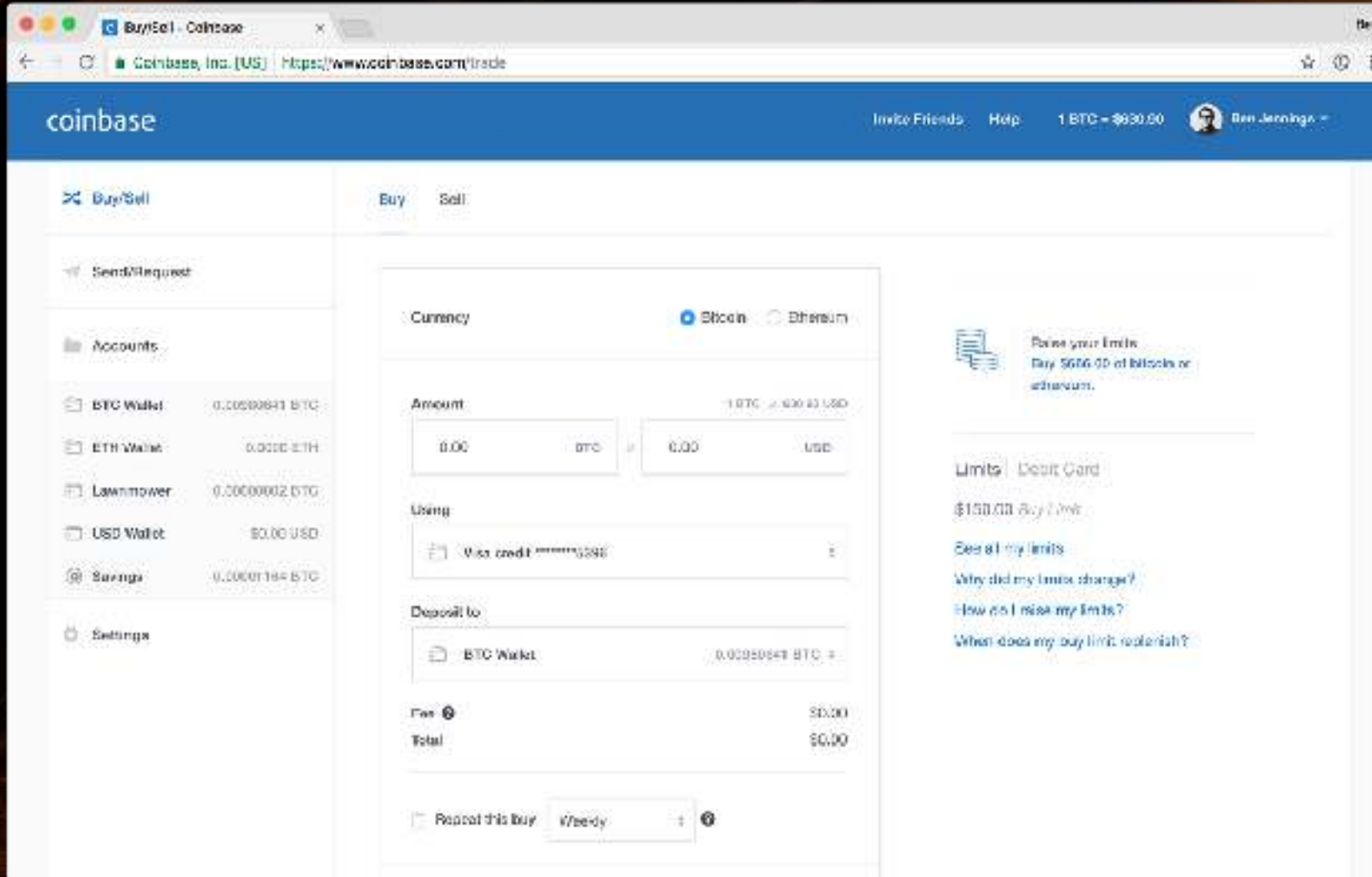


## Online wallets





# Cryptocurrency Exchange Services



# Smart Contracts

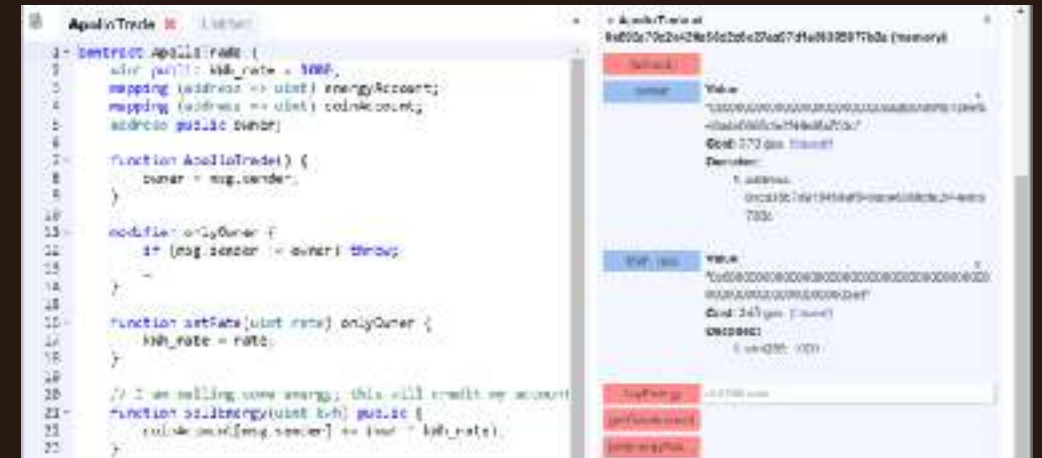
## Smart Contracts

Code (custom logic)  
running in the blockchain  
network



## Solidity

Blockchain programming  
language for the Ethereum  
network, running on EVM

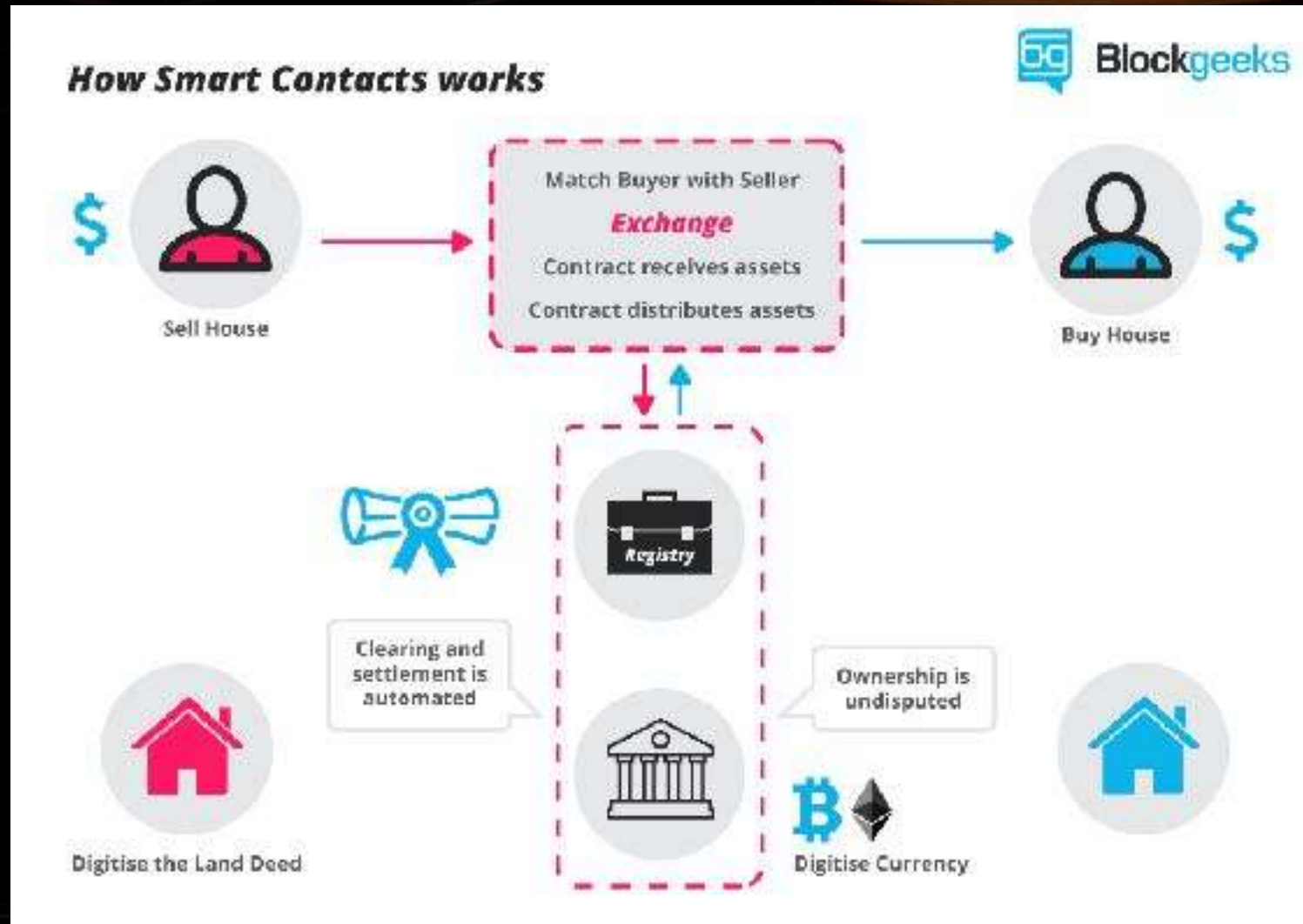


```
1- contract ApolloTrade {
2-   uint public kWh_rate = 1000;
3-   mapping (address => uint) energyAccount;
4-   mapping (address => uint) coinAccount;
5-   address public owner;
6-
7-   function ApolloTrade() {
8-     owner = msg.sender;
9-   }
10-
11-   modifier onlyOwner {
12-     if (msg.sender != owner) throw;
13-   }
14-
15-   function setRate(uint rate) onlyOwner {
16-     kWh_rate = rate;
17-   }
18-
19-   // I am selling some energy; this will credit my account
20-   function sellEnergy(uint kWh) public {
21-     coinAccount[msg.sender] += kWh * kWh_rate;
22-   }
23- }
```

Contract	Value
owner	0x00
kWh_rate	1000
energyAccount	0x00
coinAccount	0x00
owner	0x00



# How Smart Contracts Work?



# ICO / Token Sale Events

## ICO (Initial Coin Offering)

Funds raised for a new cryptocurrency venture



## Token Sale Events

Digital tokens raised through a smart contract



Example:  
LockChain



# Corporate Blockchains

## Hyperledger



<https://www.hyperledger.org/members>

## Azure Blockchain



<https://azure.microsoft.com/solutions/blockchain>

## Why Corporate Blockchain?

Public immutable ledger: trust  
between businesses + b2b smart  
contracts

# The Future of Blockchain

## Blockchain Future

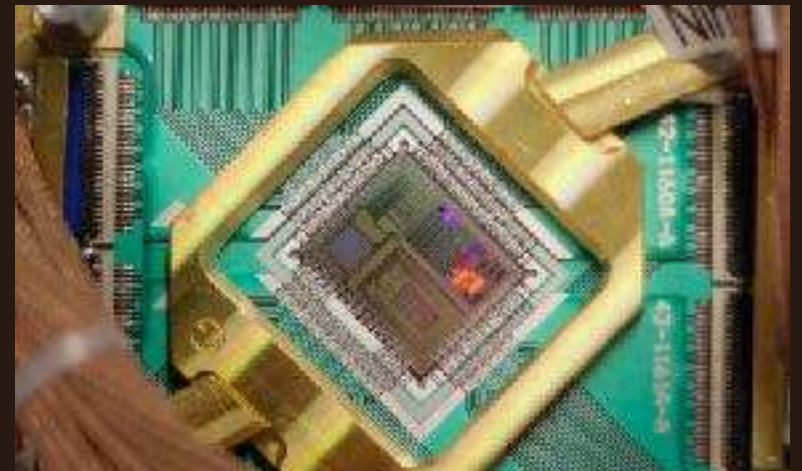
Democratization and  
decentralization

Remove middlemen

Disrupt many industries



Quantum  
Computers?  
Blockchain will  
need a major  
transformation!





# Blockchain Introduction



Questions?



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# Trainings @ Software University (SoftUni)

- Software University - High-Quality Education, Profession and Job for Software Developers
  - [softuni.bg](http://softuni.bg)
- Software University Foundation
  - <http://softuni.foundation/>
- Software University @ Facebook
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