

Blockchain Concepts



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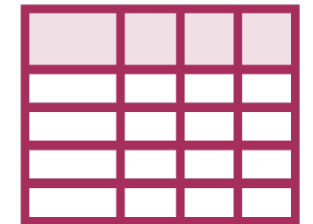
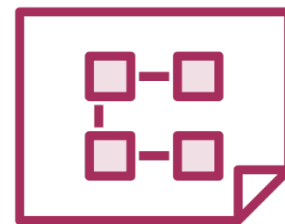
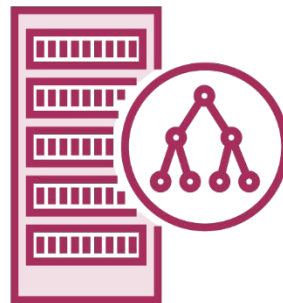
COO

www.jan-erik.com





What is Blockchain?



Bitcoin = Blockchain?



Bitcoin = Crypto currency



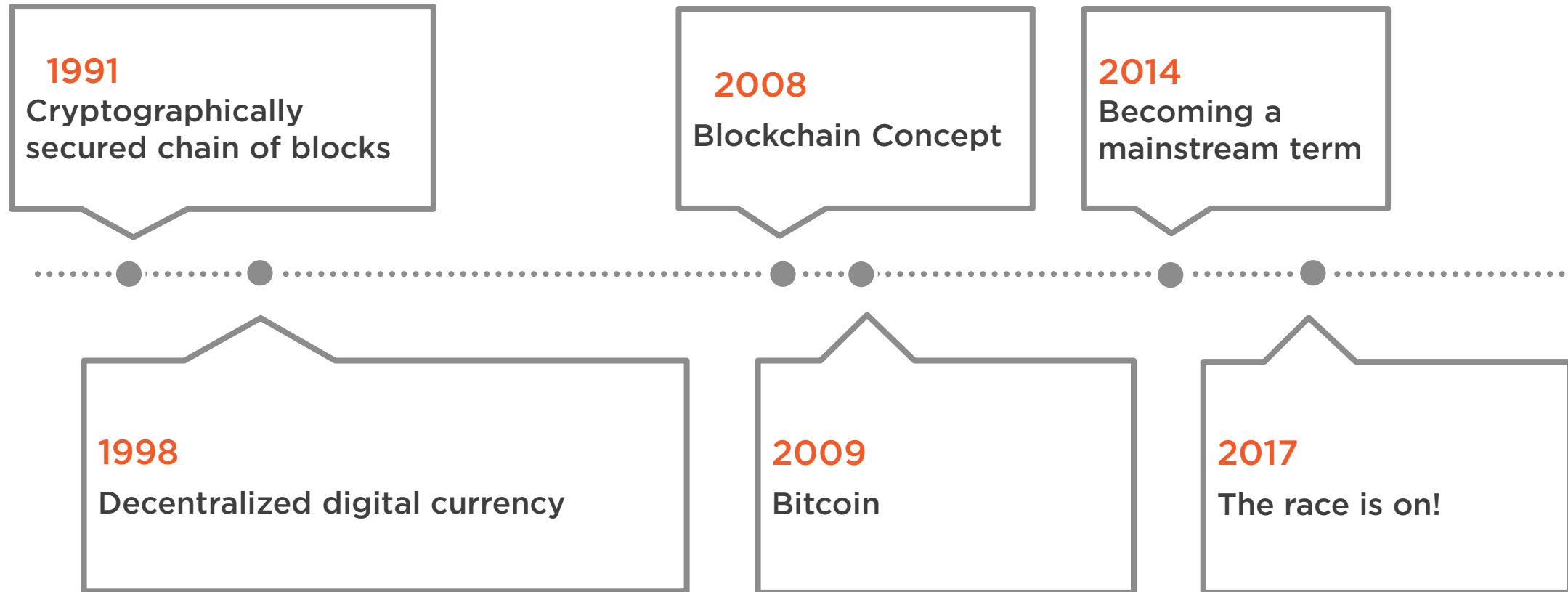
Secure ledger



Transparent and anonymous



The Brief History of Blockchain



The Characteristics of Blockchain

Global Singelton

Accessible

Non-stoppable

Verifyable

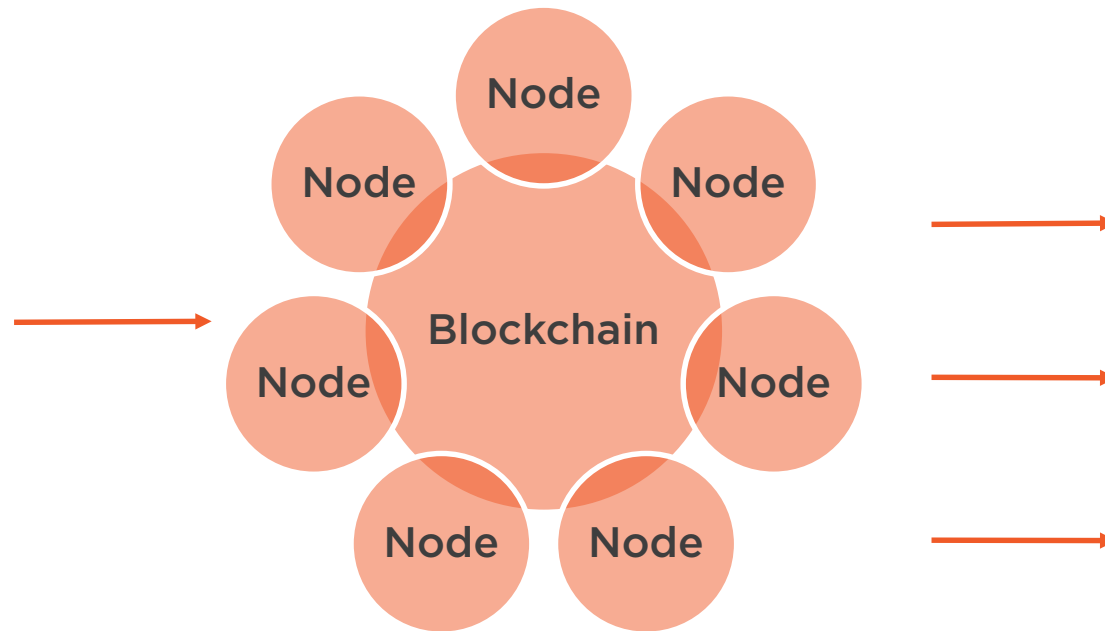


How Does It Work?

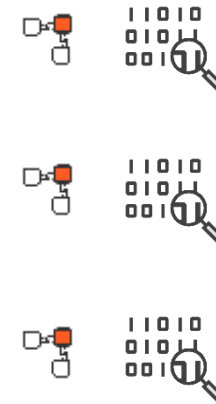
Transactions



Pier network of computers



Execution and validation



Transactions in the Blockchain

Atomic, full operation run or not at all

Inspectable

Run independently

Immortal



Hashing

**Length of output
always the same**

Digital fingerprint

One-way



Hashing

```
{Output= (input )}
```

input=5 gives output=10

input=4 gives output=10

input=3 gives output=10

input=9 gives output=20



SHA 256

Original text

*The Vikings were seafaring
Scandinavians engaged in exploring,
raiding and trading in waters and lands
outside of Scandinavia from the eighth
to eleventh centuries.*

SHA-256 Result

5f21bfa66f27e8449122e4bd838ddb19a3
6a76f3daa6d326450f77f12b1cb0f7



Common Uses for Hashing Algorithms

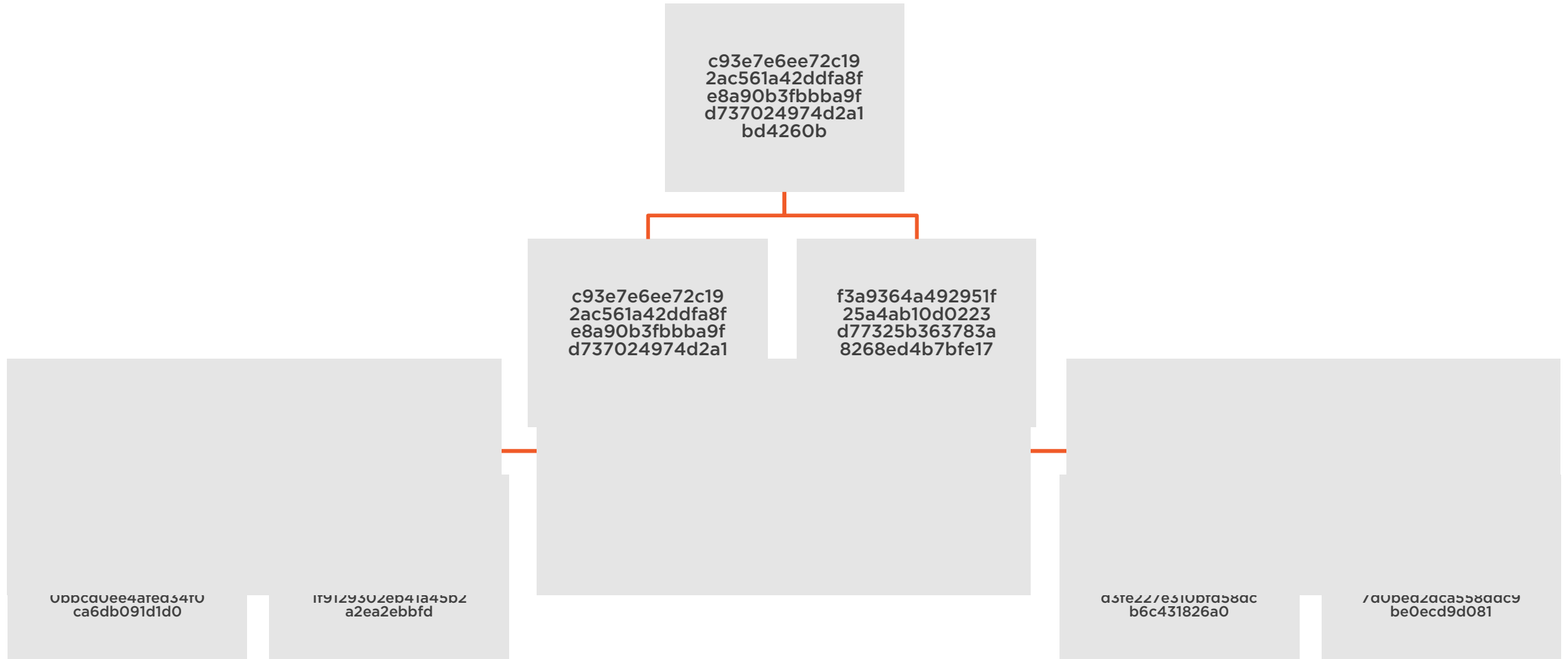
Storing passwords

Verify consistency

Security



Merkel Tree



The Block

Message:

“Peter is certified”

Hash:

00004575ae3e1d026f612
6130b38b8934623ecf13be
20d58d5b50a2b5722c4f7

Nounce:

314115



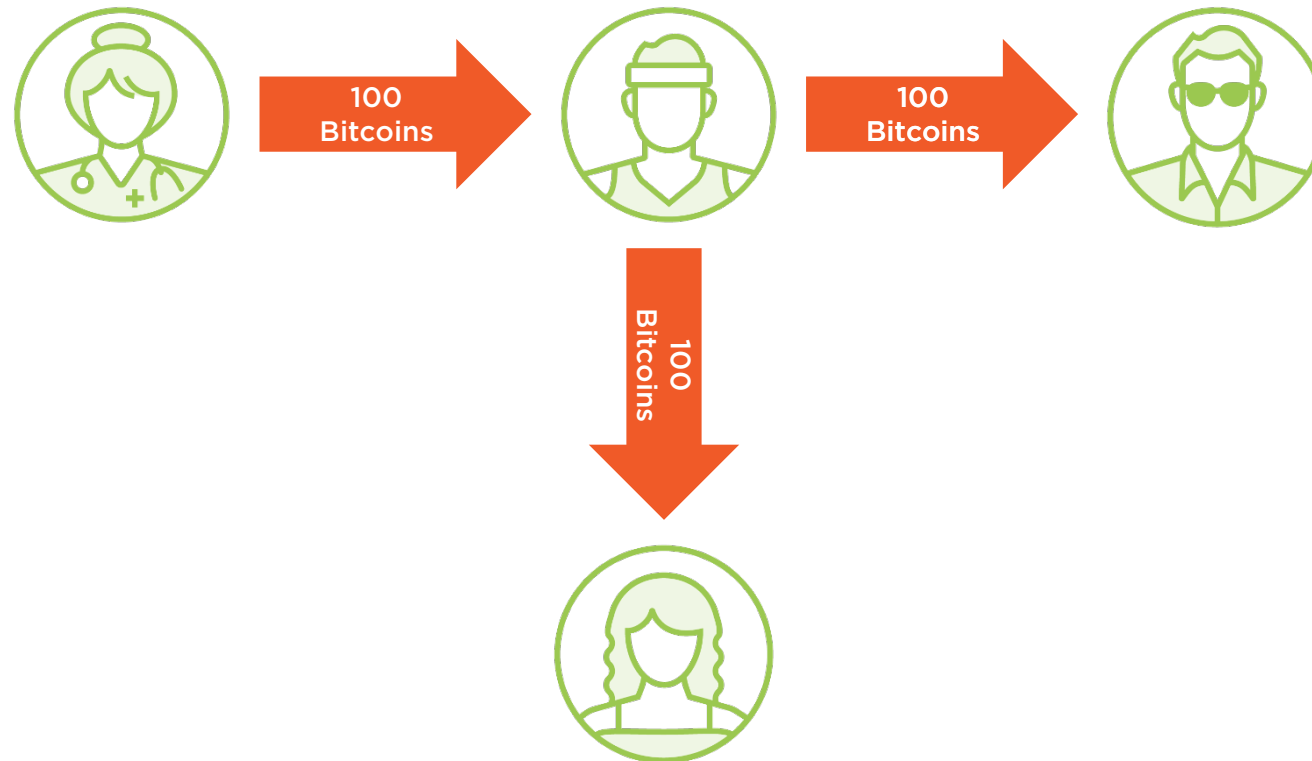
A Chain of Blocks



A Distributed Chain of Blocks



Forks



Securing Your Data

Obfuscation

Encryption



Encrypting a Message



Public vs. Private

Public

Available to everyone with an internet connection

Expensive transactions and storage

No given point of attack

Rely on community

Democratic

Private

Similarities to traditional databases

Cost controlled

Known entities

Controlled storage

Transition to blockchain

Fewer points of attack



The Major Offerings



Usages for Blockchain

Digital currencies

Internet of things

Product lifecycle

Certifications

**Secure
information
sharing**

Virtual products



Summary



Basics of blockchain

Hashing

The Block

Security

Implementations and usages

