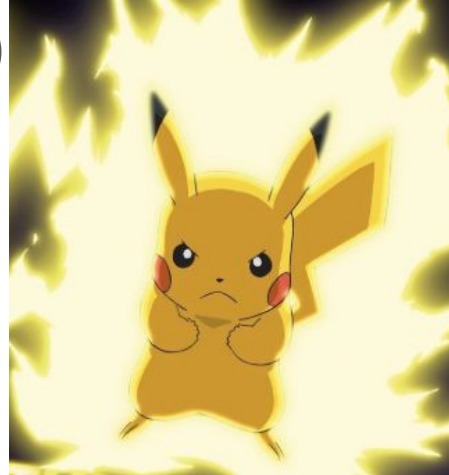# Understanding Lightning Network

(To save ourselves from shocks)

Lightning Features

- Transactions will be almost instant

- Meant only for micro-payments

- Adds another layer to Bitcoin's blockchain

- Create payment channels on that extra layer

Transactions per second

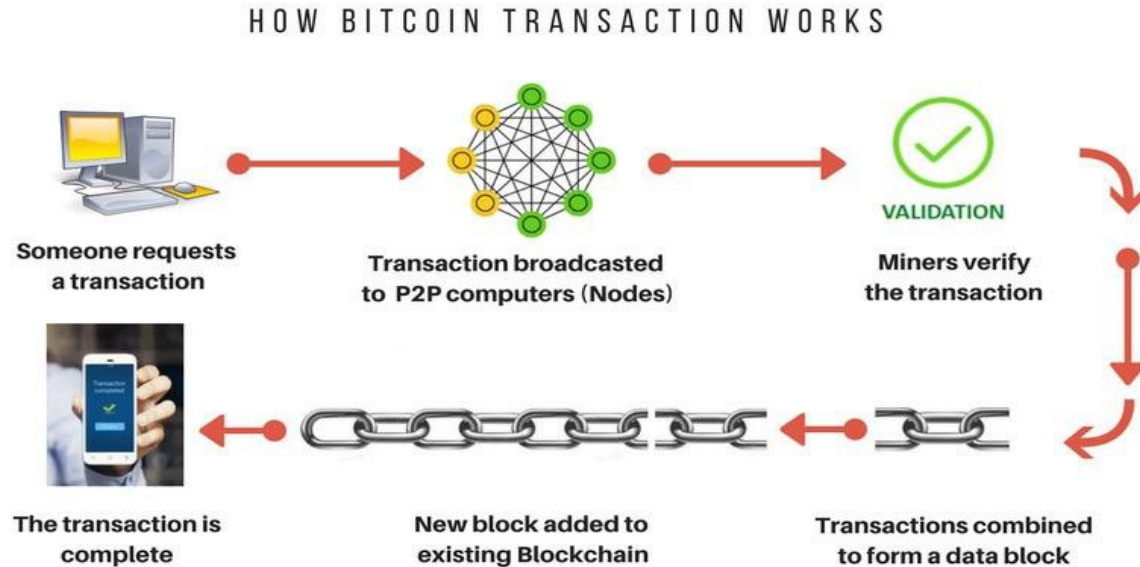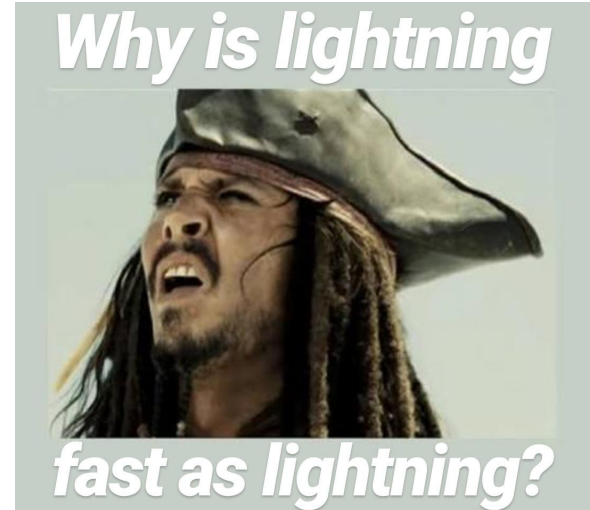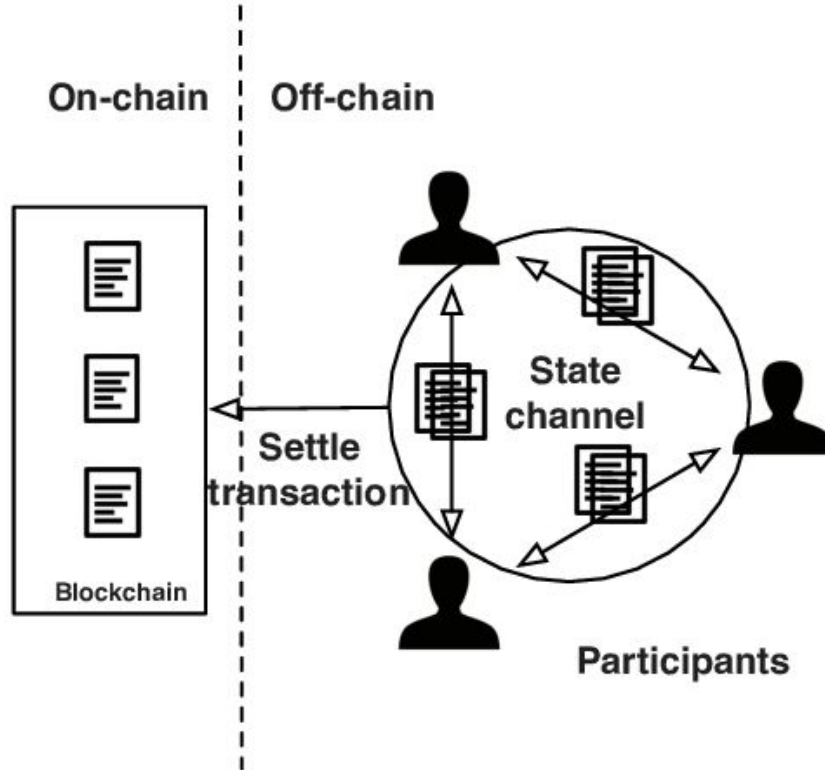|	
Visa	24,000 tps
Bitcoin	7 tps
Bitcoin Cash	61 tps

Blockchain transaction v/s Lightning transaction

Life cycle of Blockchain (Non-Lightning) transaction

HOW BITCOIN TRANSACTION WORKS

Someone requests a transaction

Transaction broadcasted to P2P computers (Nodes)

VALIDATION

Miners verify the transaction

The transaction is complete

New block added to existing Blockchain

Transactions combined to form a data block

Life cycle of Lightning transaction

On-chain | Off-chain

Blockchain

Settle transaction

State channel

Participants

Why is lightning fast as lightning?
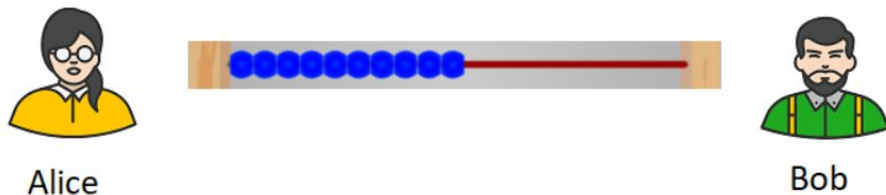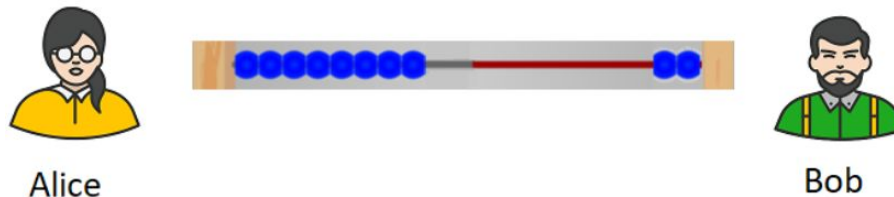
Why only Micro-Payments allowed?

- Alice opens a channel with Bob. Alice owns 10 satoshis and Bob zero.

- Alice decides to send 2 satoshis to Bob.

- Bob also opens a channel with Carol with initial amount of 10 satoshis. So, Bob owns: 10 satoshis (channel-Carol) and 2 satoshis (channel-Alice)

- One day Alice wants to send 2 satoshis to Carol. She need not open a new channel with Carol and can in-turn pay via Bob.

What is Invoice?

*ln*tb1u1pwz5w78pp5e8w8cr5c30xzws92v36sk45znhjn098rtc4pea6ertnmvu25ng3sdpywd6
hyetyvf5hgueqv3jk6meqd9h8vmmfvdjsxqrrssy29mzkzjfq27u67evzu893heqex737dhcapvcu
antkztg6pnk77nrm72y7z0rs47wzc09vcnugk2ve6sr2ewvcrtqnh3yttv847qqvqpvv398x

Contains:

Receiver (Payee) Details - Node-ID (Address)

Amount

Description (Message) : Eg. Payment for a cup of coffee [Optional]

Expiry Time: Validity of invoice

Thank You