



This is a draft/review version.

It will be replaced with the final version by end of day on the day prior to the associated session.

This slide will be removed from the final version.

# **Cryptocurrency**

**Tour of the World Wide Web – Session 5**

**Duke OLLI Fall 2023**

**David Shamlin**

# Definition

Bitcoin is a **decentralized** digital currency that enables **instant payments** to anyone, anywhere in the world. Bitcoin uses **peer-to-peer** technology to operate with **no central authority**: transaction management and money issuance are carried out collectively by the network.

Bitcoins have all the desirable **properties of a money**-like good. They are portable, durable, divisible, recognizable, fungible, scarce and difficult to counterfeit.

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## **Bitcoins**

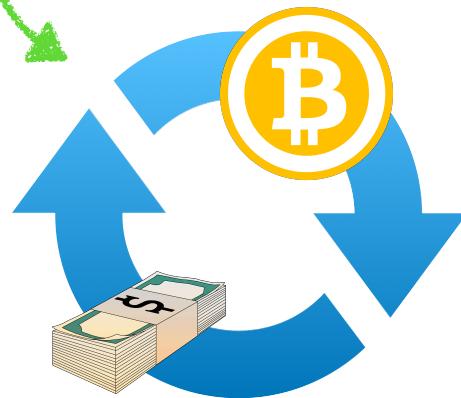
- Cannot be printed or debased
- Have no storage costs
- Are easy to protect and hide
- No counterparty risk
- Can be under divided possession with multi-signature

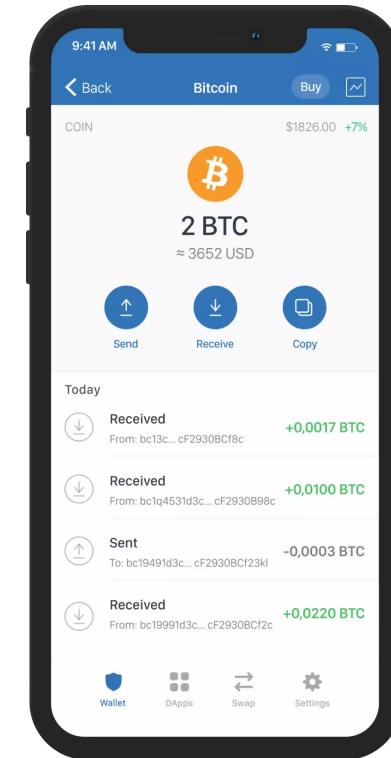
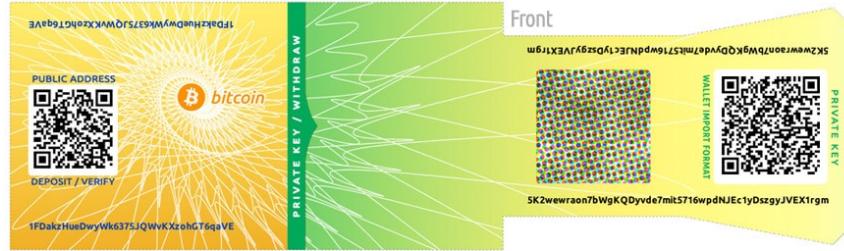
## **Transactions**

- Permissionless and borderless
- Anonymous
- Private
- Censorship-resistant
- Fast
- Cheap
- Irreversible
- Online and available 24 x 365

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 **BINANCE**  
 **GEMINI**  
 **coinbase**  
 **Kraken**





# Transaction

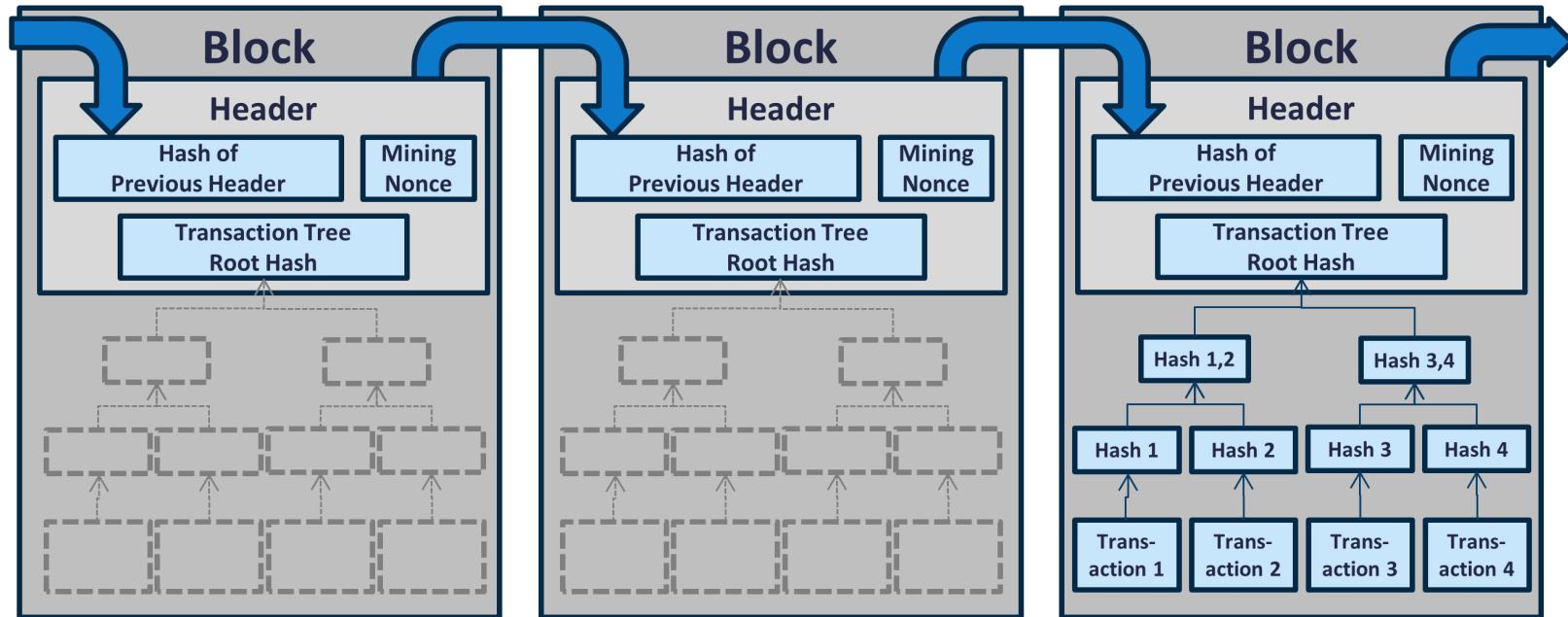
Transaction Hash [0627052b6f28912f2703066a912ea577f2ce4da4caa5a5fb8a57286c345c2f2](#) 

## Summary

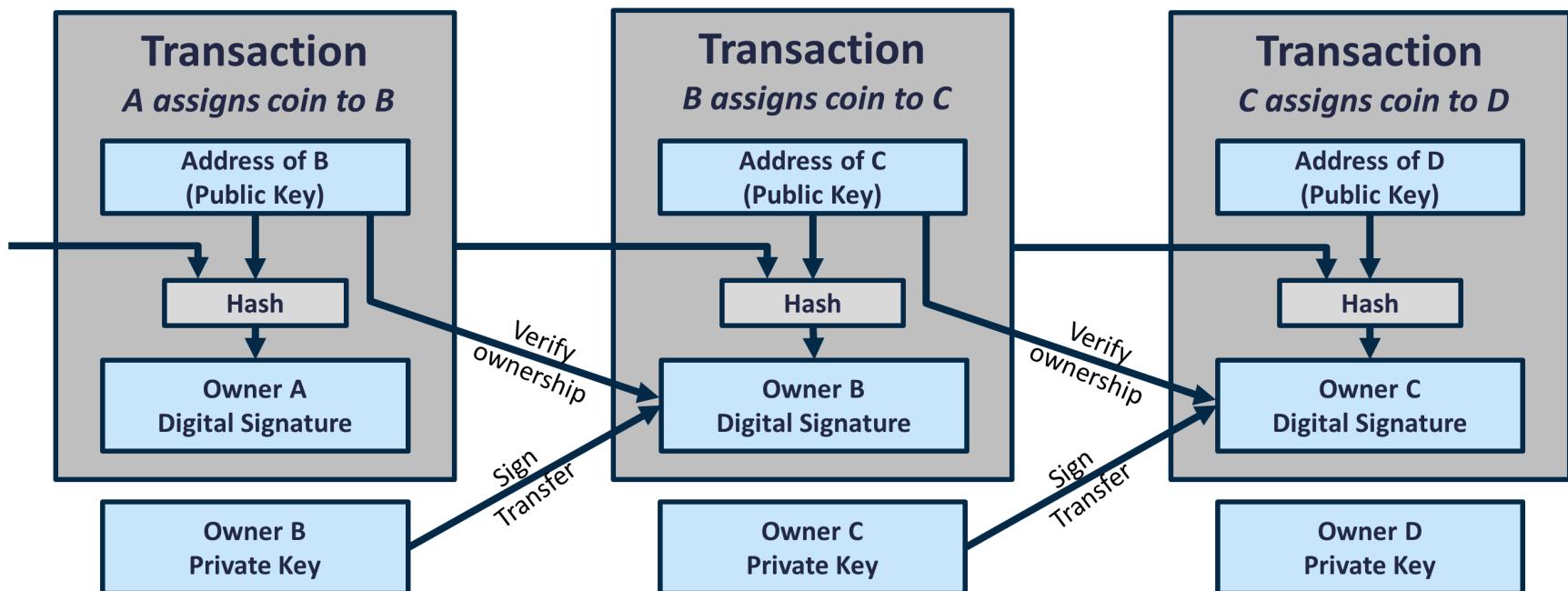
Size	258 (bytes)
Fee Rate	193.80 sats/bytes
Received Time	12/27/2013, 6:11:54 PM
Included in block	0000000000000001b6b9a13b095e96db41c4a928b97ef2d944a9b31b...

## Details

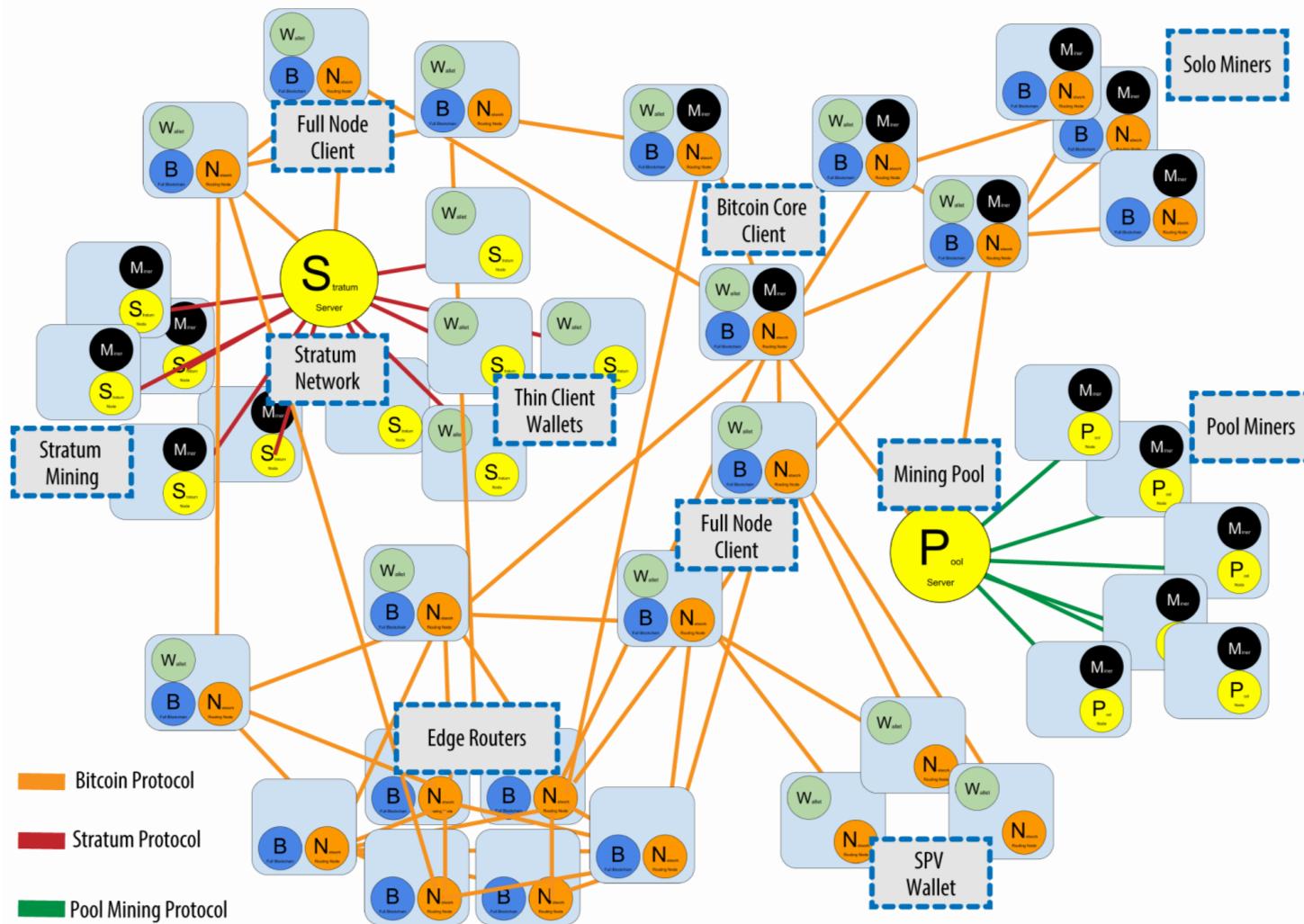
 <a href="#">0627052b6f28912f2703066a912ea577f2ce4da4caa5a5fb8a5...</a>	Mined on: 12/27/2013, 6:11:54 PM
<a href="#">1Cdid9KFAaatwczBwBt...</a>	0.1 BTC
	>
<a href="#">1GdK9UzpHBzqzX2A9JFP3Di...</a>	0.015 BTC (U)
<a href="#">1Cdid9KFAaatwczBwBttQcw...</a>	0.0845 BTC (U)
FEE: 0.0005 BTC	520027 Confirmations
	0.0995 BTC



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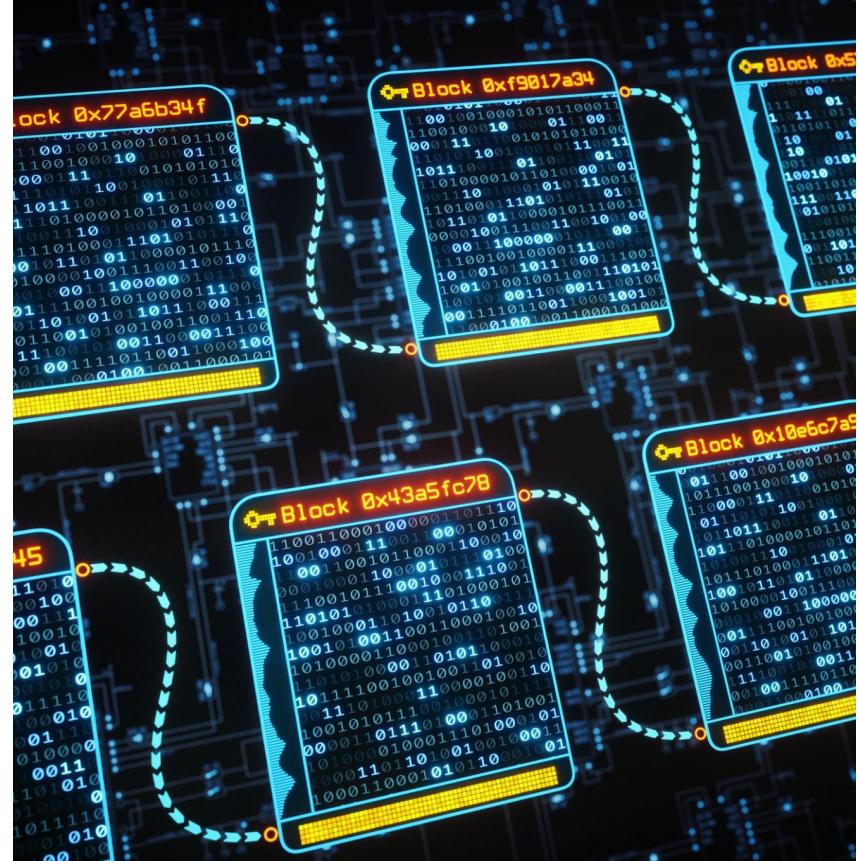


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# Blockchain Use Cases

- Banco Santander: international money transfer
- DHL, UPS, FedEx: shipping logistics
- Dole, Kroger, Nestle, WalMart: food traceability
- Home Depot, Target: supply chain management
- State Farm: claim subrogation



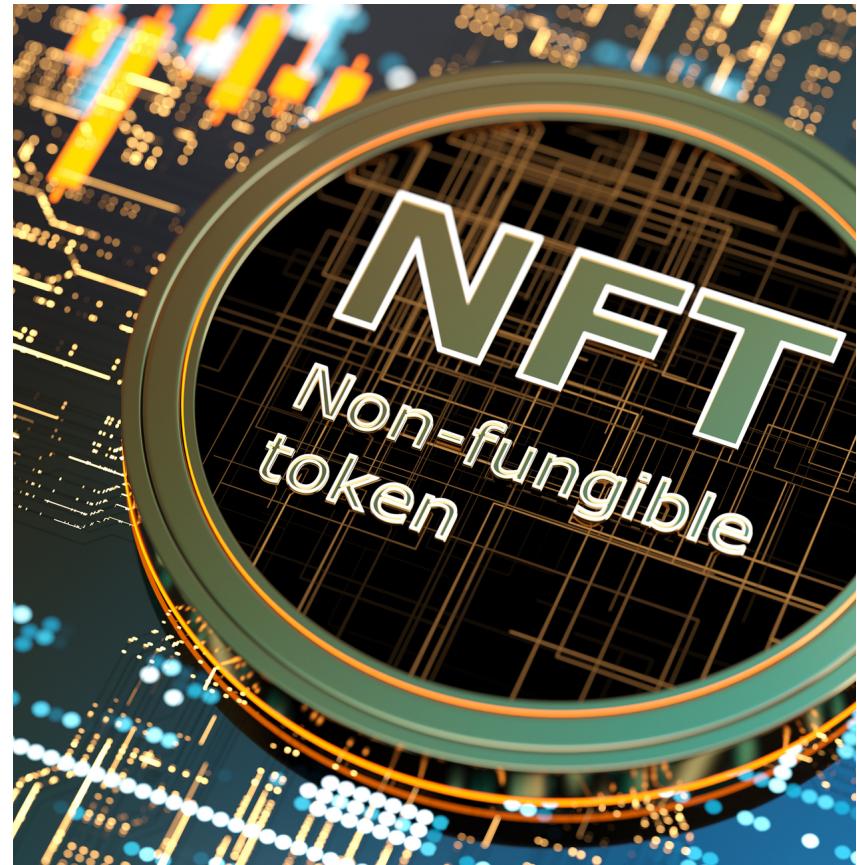
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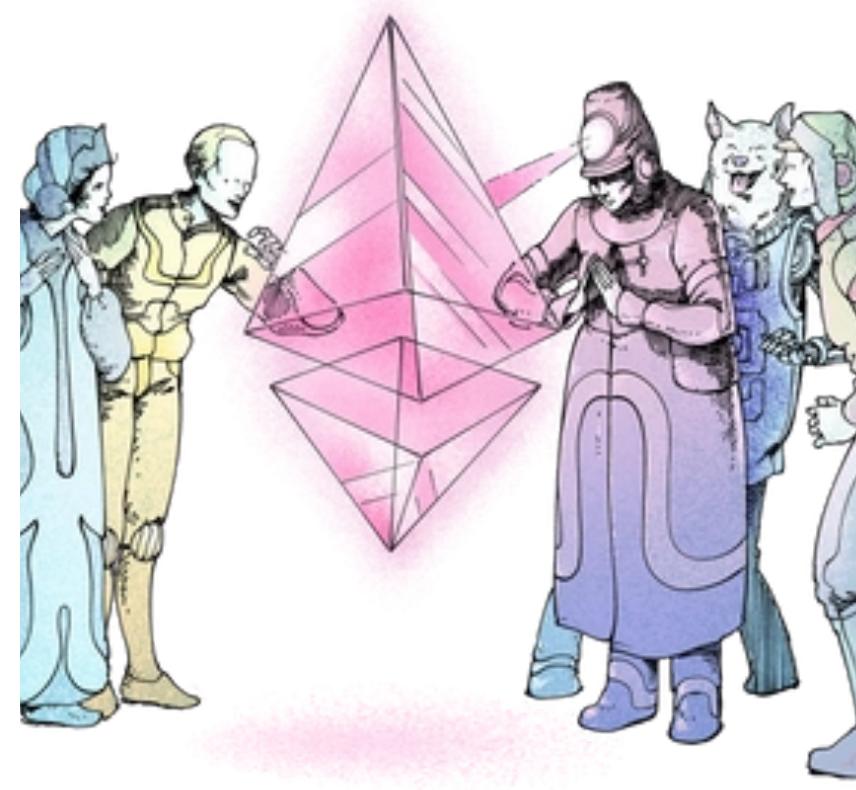
# NFT

A **unique digital identifier** that is recorded on a blockchain, and is used to **certify ownership and authenticity**. It cannot be copied, substituted, or subdivided. The ownership of an NFT is recorded in the blockchain and can be transferred by the owner, allowing NFTs to be sold and traded. NFTs typically contain references to digital files such as artworks, photos, videos, and audio.



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# Ethereum



# Pros & Cons

- User protection and privacy
- Not affected by inflation
- Eases international trade
- “You are in charge”
- Passive income through mining/staking
- Innovation
- Reduced transaction fees
- “Instant” payments
- Fraud & Theft
- Illegal in some countries
- Extreme volatility
- Limited vendor acceptance
- Mining energy consumption
- Attracts criminal activity
- Lack of total anonymity
- Can be permanently lost



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# Bitcoin Price History



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# Regulation

- Bitcoin is legal tender
  - Sep 2021: El Salvador
  - Apr 2022: Central African Republic
- Legalized use of cryptocurrency
  - Australia
  - Germany
  - Finland
  - Japan
  - Italy
  - Sweden
  - US
- Banning cryptocurrency
  - Nepal
  - Bolivia
  - China
  - Algeria
  - Macedonia
  - Qatar
  - Bangladesh
  - Ghana



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# Prompts

