12 - Cryptocurrencies

Goals

Wat aangeduid is, staat in deze samenvatting. Andere dingen zul je uit het boek moeten halen omdat het niet nuttig is dit samen te vatten

- [ ] write an argumentative essay in which you support your argument with evidence
- [ ] formulate a good statement
- [ ] create good visuals for a presentation
- [ ] deliver a strong presentation
- [x] explain the concepts of money, the blockchain and mining
- [x] explain the difference between digital currency and cryptocurrency (incl. examples)
- [x] explain the difference between cryptocurrencies and NFTs
- [x] explain what fiat money is
- [x] discuss some of the positive and negative aspects of cryptocurrencies

money, the blockchain and mining

Money

Money serves three functions

- unit of amount (measure of prices and goods)
- medium of exchange
- has a stable store of value over time

The Blockchain:

- **What it is**: A blockchain is a decentralized, digital ledger that records transactions across multiple computers. It ensures security and transparency because every transaction is permanently stored and cannot be altered without consensus from the entire network.
- **How it works**: Transactions are grouped into blocks, and each block is linked to the previous one using cryptography. This creates a secure chain of records.
- **Uses beyond money**: Blockchain can also be used for tracking supply chains, managing contracts, and securing voting systems.

Mining:

- **What it is**: Mining is the process of verifying transactions and adding them to the blockchain in cryptocurrency systems like Bitcoin.
- **How it works**:
  1. **Miners** (computers or specialized hardware) solve complex mathematical problems to validate a transaction block.
  2. Once solved, the block is added to the blockchain, and the miner is rewarded with cryptocurrency.
- **Purpose**: Mining ensures that transactions are legitimate, prevents fraud (like double-spending), and adds new cryptocurrency to circulation.
- **Energy concern**: Mining can require significant computational power and electricity, which has raised environmental concerns.

In Summary:

- **Money** is the system we use to exchange value.

- **Blockchain** is the technology that secures and tracks cryptocurrency transactions transparently.
- **Mining** is the process of maintaining the blockchain while earning cryptocurrency as a reward.

difference between digital currency and cryptocurrency (incl. examples)

	digital currency	cryptocurrency
Definition	A broad term for money in electronic form. It exists digitally and is backed by a central authority, such as a government or central bank.	A type of digital currency that uses cryptographic technology and operates on decentralized networks like blockchain. It's not typically controlled by a central authority.
Control and Regulation	Controlled by centralized entities like central banks or governments. Examples include **Central Bank Digital Currencies (CBDCs)**, like China's **Digital Yuan** or Sweden's **e-Krona**.	Decentralized and maintained by distributed networks. There's no single entity in control, and transactions rely on peer-to-peer systems. Examples include **Bitcoin**, **Ethereum**, and **Litecoin**.
Transparency and Security	Transactions are generally private between the user and the issuing authority. They may not be as transparent and rely on traditional security measures.	Transactions are secured with cryptography and recorded on public blockchains, ensuring transparency and immutability.
Usage	Used much like traditional money for transactions, payments, and savings, often integrated with existing banking systems.	Used for digital payments, investments, and specific applications like smart contracts (e.g., Ethereum). It's also popular for speculative trading.
Examples	Central Bank Digital Currencies (CBDCs) like **Digital Dollar** or **Digital Euro**.	**Bitcoin (BTC)**: The first and most well-known cryptocurrency.
	Online banking funds, digital wallets, and PayPal balances.	**Ethereum (ETH)**: Known for its smart contract capabilities.

Key Difference:

The primary difference is **control**: digital currencies are centrally controlled by governments or banks, while cryptocurrencies operate on decentralized, blockchain-based systems.

fiat money

Fiat money is currency that has no intrinsic value and isn't backed by a physical commodity like gold. Its value comes from the trust people have in the government that issues it. Fiat money is declared legal tender, meaning it must be accepted for payments.

Examples:

- US Dollar (USD)
- Euro (EUR)

Fiat money is flexible for governments to manage but can be affected by inflation if over-issued.

+ and − aspects of cryptocurrency

Advantages of Cryptocurrency:

1. **Decentralization**: No central authority controls cryptocurrency, giving users more autonomy.
2. **Security**: Transactions are encrypted and recorded on blockchain, making them tamper-resistant.
3. **Low Transaction Fees**: Compared to traditional financial systems, cryptocurrency transactions often have lower fees.
4. **Global Accessibility**: Cryptocurrencies can be accessed and used worldwide, regardless of local banking systems.
5. **Transparency**: Blockchain records are public, allowing anyone to verify transactions.

**** Disadvantages of Cryptocurrency**:**

1. **Volatility**: Prices of cryptocurrencies can fluctuate widely, making them risky for investments.
2. **Regulatory Uncertainty**: Governments are still figuring out how to regulate cryptocurrencies, leading to legal and tax complications.
3. **Limited Acceptance**: Not all merchants accept cryptocurrencies as payment yet.
4. **Security Risks**: While blockchain is secure, cryptocurrency wallets and exchanges can still be hacked.
5. **Environmental Impact**: Cryptocurrency mining, especially for coins like Bitcoin, requires significant energy resources.