

# Data Governance raises data quality.

From Wikipedia, the free encyclopedia

**Data governance** is a term used on both a macro and a micro level. The former is a political concept and forms part of international relations and Internet governance; the latter is a data management concept and forms part of corporate data governance.

Part of a series on

## Governance

### Models

[Bad](#) · [Collaborative](#) · [Good](#) · [Multistakeholder](#)

### Micro level [edit]

Here the focus is on an individual company. Here **data governance** is a **data management** concept concerning the capability that enables an organization to ensure that high **data quality** exists throughout the complete lifecycle of the data, and data controls are implemented that support business objectives. The key focus areas of data governance include availability, usability, consistency,<sup>[2]</sup> **data integrity** and **data security** and includes establishing processes to ensure effective data management throughout the enterprise such as accountability for the adverse effects of poor data quality and ensuring that the data which an enterprise has can be used by the entire organization.

A **data steward** is a role that ensures that data governance processes are followed and that guidelines enforced, as well as recommending improvements to data governance processes.

Data governance encompasses the people, processes, and **information technology** required to create a consistent and proper handling of an organization's data across the **business enterprise**. It provides all data management practices with the necessary foundation, strategy, and structure needed to ensure that data is managed as an asset and transformed into meaningful information.<sup>[3]</sup> Goals may be defined at all levels of the enterprise and doing so may aid in acceptance of processes by those who will use them. Some goals include

- Increasing consistency and confidence in **decision making**
- Decreasing the risk of regulatory fines
- Improving **data security**, also defining and verifying the requirements for data distribution policies<sup>[4]</sup>
- Maximizing the income generation potential of data
- Designating accountability for information quality
- Enable better planning by supervisory staff
- Minimizing or eliminating re-work
- Optimize staff effectiveness
- Establish process performance baselines to enable improvement efforts
- Acknowledge and hold all gain

# **3 Protect Data**

## **- Protecting the Security & Integrity of Data**

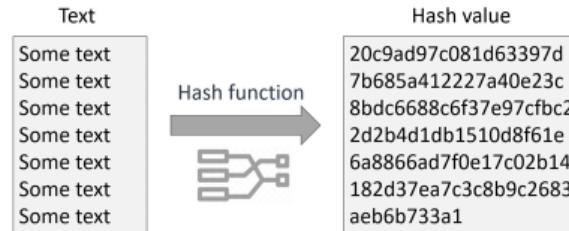
### **Content:**

- 1. Motivation**
- 2. Data Integrity**
- 3. Bitcoin Crypto Currency**
- 4. Blockchain Technology**
- 5. Bitcoin Miner**
- 6. Smart Contracts**
- 7. IOTA**
- 8. Crypto Currency Opinions**
- 9. Summary**

# 3 Protect Data

## - Protecting the Security & Integrity of Data (2) Data Integrity with Encryption

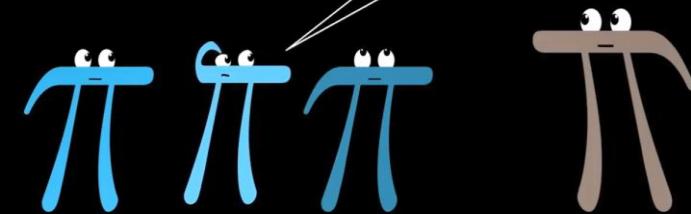
Eine **Hash-Funktion** erzeugt aus einem **beliebigen, langen Text** einen sog. **Hash-Wert fester Länge**.



Kleinste Änderungen am Text führen zu deutlichen Veränderungen des Hash-Wertes.  
Mit Hash-Funktionen kann man die Integrität von Texten prüfen.

19

Couldn't you just copy the signature?



# 3 Protect Data

## - Protecting the Security & Integrity of Data

### Content:

1. Motivation
2. Data Integrity
3. Bitcoin Crypto Currency
4. Blockchain Technology
5. Bitcoin Miner
6. Smart Contracts
7. IOTA
8. Crypto Currency Discussions
9. Summary



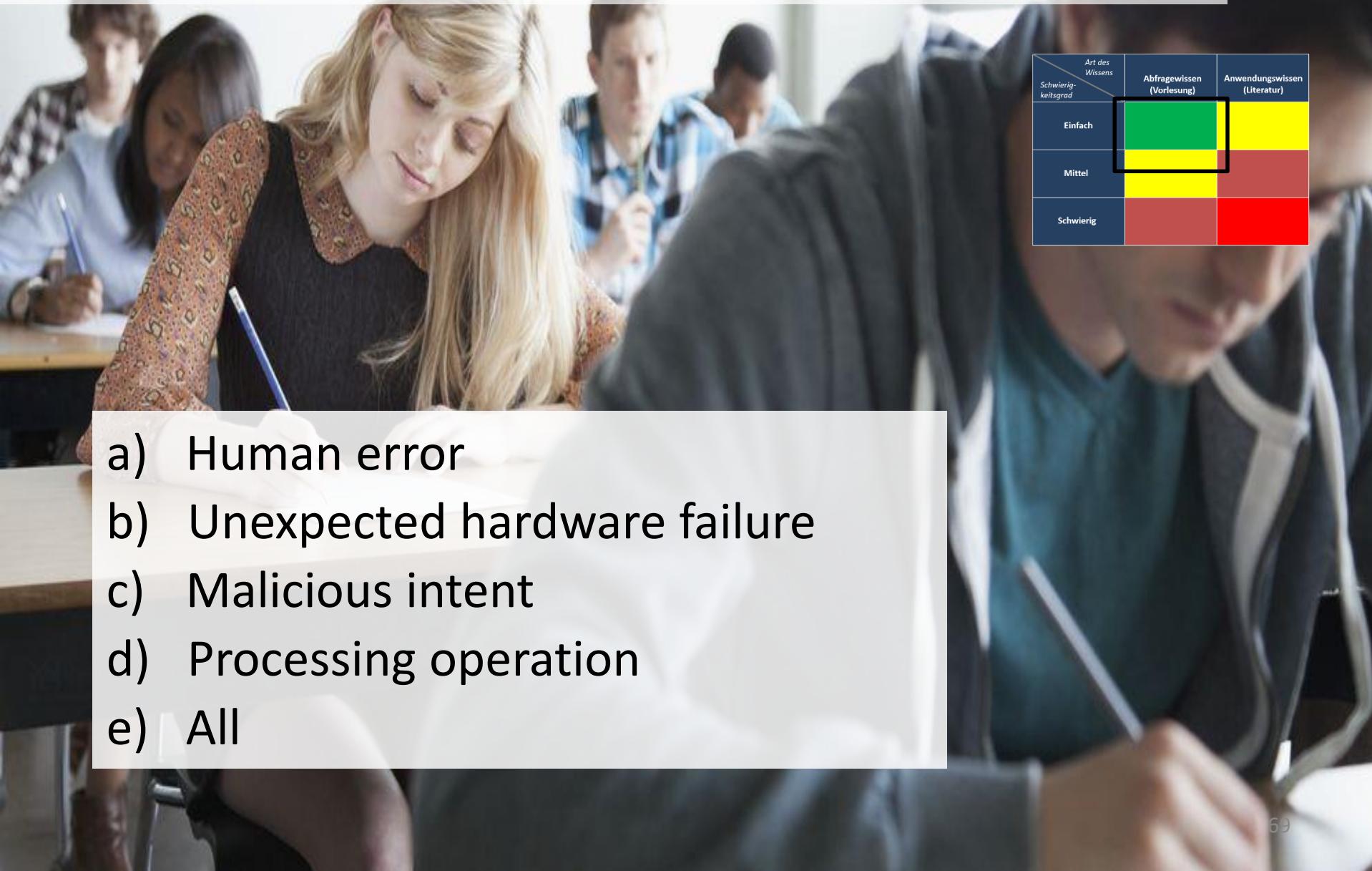
- Data is the new **Gold**.
- Encryption is key to **Data Integrity**.
- Blockchain helps in **applications** with **no trust in networks**.
- **Crypto Currencies** are on the rise.

# What is Not True about Data Integrity?

Schwierigkeitsgrad	Art des Wissens	Abfragewissen (Vorlesung)	Anwendungswissen (Literatur)
Einfach		Green	Yellow
Mittel		Yellow	Red
Schwierig		Red	Red

- 
- A photograph showing several students in a classroom setting, focused on their work at their desks.
- a) It aims to prevent Unintentional Changes to Information.
  - b) It maintains and assures the Accuracy and Consistency of data over its entire lifecycle.
  - c) It intends to protect data from unauthorized parties.
  - d) Data validation is a pre-requisite for data integrity.
  - e) Human error can lead to failure of data integrity.

# What causes an unintended change to data which can lead to failure of data integrity?



Schwierigkeitsgrad	Art des Wissens	Abfragewissen (Vorlesung)	Anwendungswissen (Literatur)
Einfach			
Mittel			
Schwierig			

- a) Human error
- b) Unexpected hardware failure
- c) Malicious intent
- d) Processing operation
- e) All



## 2. Data Integrity with Encryption (Verschlüsselung)

# Data Integrity (Wikipedia)

## Data integrity

---

From Wikipedia, the free encyclopedia

**Data integrity** is the maintenance of, and the assurance of, the accuracy and consistency of data over its entire life-cycle,<sup>[1]</sup> and is a critical aspect to the design, implementation and usage of any system which stores, processes, or retrieves data. The term is broad in scope and may have widely different meanings depending on the specific context – even under the same general umbrella of [computing](#). It is at times used as a proxy term for [data quality](#),<sup>[2]</sup> while [data validation](#) is a pre-requisite for data integrity.<sup>[3]</sup> Data integrity is the opposite of [data corruption](#).<sup>[4]</sup> The overall intent of any data integrity technique is the same: ensure data is recorded exactly as intended (such as a database correctly rejecting mutually exclusive possibilities), and upon later [retrieval](#), ensure the data is the same as it was when it was originally recorded. In short, data integrity aims to prevent unintentional changes to information. Data integrity is not to be confused with [data security](#), the discipline of protecting data from unauthorized parties.

Any unintended changes to data as the result of a storage, retrieval or processing operation, including malicious intent, unexpected hardware failure, and [human error](#), is failure of data integrity. If the changes are the result of unauthorized access, it may also be a failure of data security. Depending on the data involved this could manifest itself as benign as a single pixel in an image appearing a different color than was originally recorded, to the loss of vacation pictures or a business-critical database, to even catastrophic loss of human life in a [life-critical system](#).

# **Michael Amberg**

## **Todays Content:**

- 1. Motivation**
- 2. Data Integrity**
- 3. Bitcoin Cryptocurrency**
- 4. Blockchain Technology**
- 5. Bitcoin Miner**
- 6. Smart Contracts**
- 7. IOTA**
- 8. Crypto Currency Discussions**
- 9. Summary**



## TOP 5 BLOCKCHAIN BENEFITS



*ADVANTAGES OF BLOCKCHAIN TECHNOLOGY*



*BENEFITS OF BLOCKCHAIN IN DIFFERENT SECTORS*

- TRADE FINANCE**
  - Data integrity
  - Streamlines process
  - Programmable process
  - Market reactivity
  - Code reduction
- ENERGY SECTOR**
  - Environmental sustainability
  - Reduced costs
  - Improved transparency
- REAL ESTATE**
  - Tokenization
  - Proper tenant and investor identity
  - Property sale
  - Real-time accounting
- GOVERNMENT**
  - Proper identity management
  - Transparent elections
  - Finance management
- HEALTH CARE**
  - Universal patient profile
  - Drug traceability
  - Better clinical trials
  - Electronic health records (EHRs)