

Blockchain in Education

Bakhtiyor Yokubov

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- Overview of blockchain
- Traditional database vs blockchain in Higher Education Institutions (HEIs)
- Practical implementation
- Blockchain ethics in HEIs
- Conclusion

What is the blockchain ?

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“The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value.” – **Don & Alex Tapscott, authors Blockchain Revolution (2016).**

The types of blockchains

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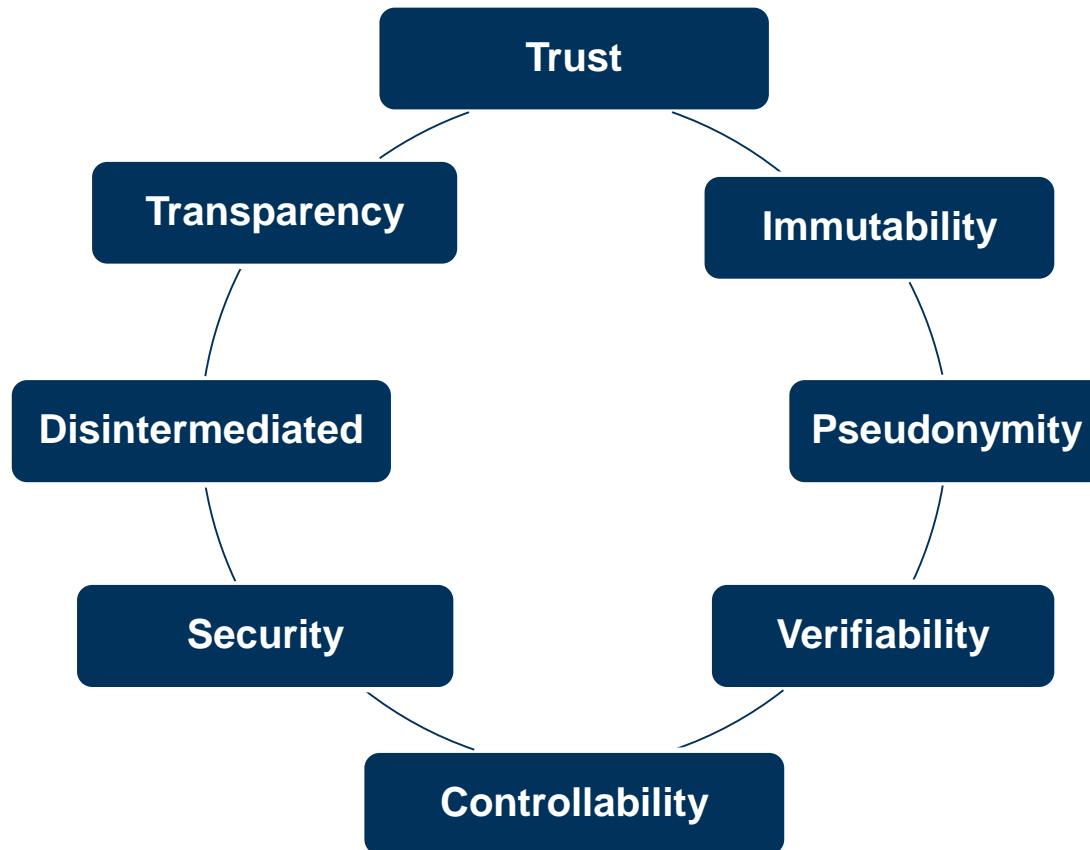
Public – permissionless

Private – permissioned

Consortium

The key attributes of blockchain

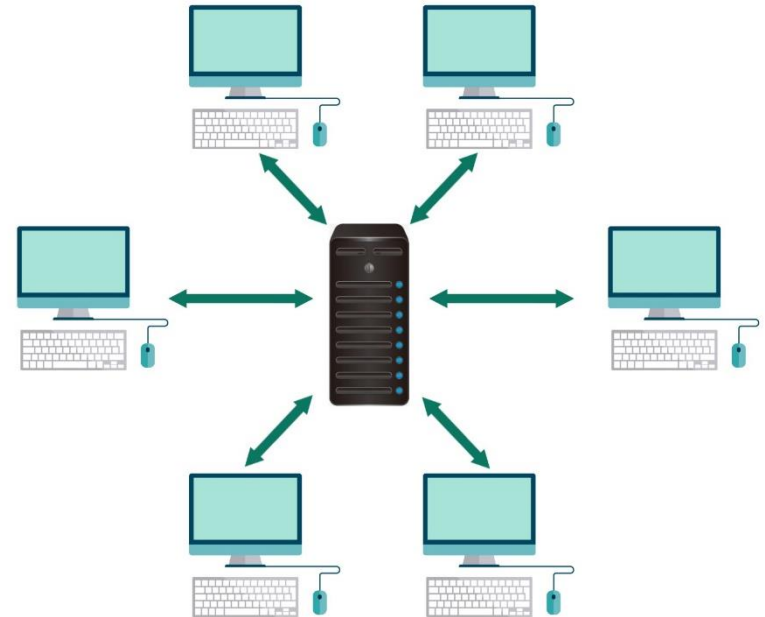
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Restrictions of traditional databases in HEIs

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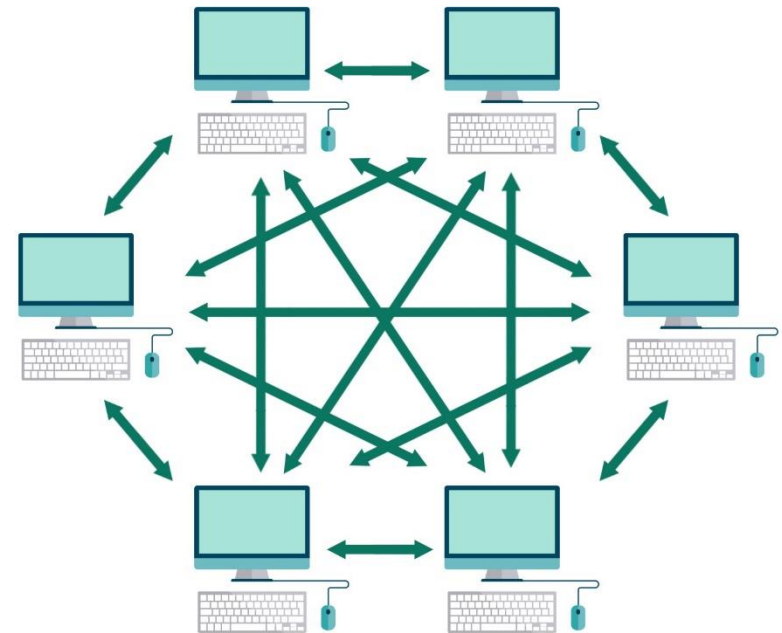
- Client – Server architecture
- Restricted access
- Data can be updated or deleted
- Password protected authorization
- Difficulties transferring to another HEI
- Standardization of data



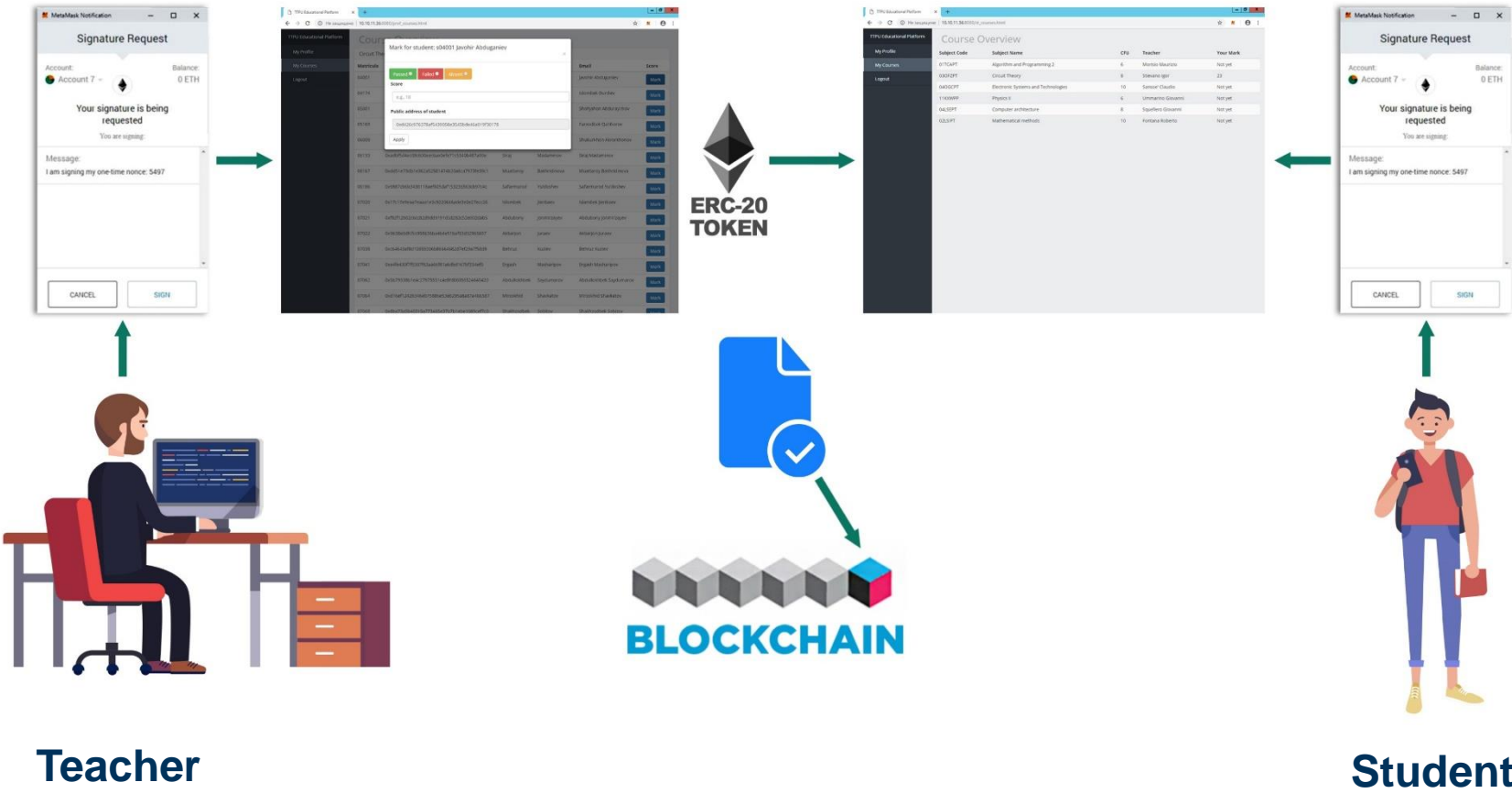
Benefits of blockchain based solution in HEIs

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- **Students:** single and transparent view
- **HEIs:** up to date information regardless of a student's educational origins
- **Employers:** directly validate the information provided by students.



Practical Implementation



Blockchain design consequences

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- Reliance on Private Keys
- The Limited Lifespan of Encryption
- Environmental Impacts

The ethical and social impact of blockchain in HEIs

- Digital Identity
 - One of the most important things blockchain can do is create a digital identity
 - These identities are linked to a unique individual and can be used in a variety of contexts to prove identity or credentials.

Conclusion

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- Blockchain will have an impact on millions of people.
- Blockchain's potential can literally change the world.
- However, the realization of this potential to improve lives requires an ethical approach that recognizes the relationship between design and human outcomes.

Thank you

Bakhtiyor Yokubov

PhD student

**“Blockchain based secure system using
post-quantum cryptography”**

**Electronic and Computer Engineering
Department**

Brunel university London

Email: bakhtiyor.yokubov@brunel.ac.uk

