

BLOCKCHANE TECHNOLOGY USE FOR TOKENIZATION OF ASSETS RELATED TO THE EDUCATIONAL PROCESS

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The coronavirus pandemic and, in particular, the need to organize distance learning have significantly contributed to the spread of the IT technologies usage in the educational process around the world. Social networks and messengers, e-mail services, video conferencing software, file hosting - all this and many other IT technologies have already become an integral part of the modern educational process.

Recent studies [1-3] have discussed how blockchain concepts and technologies can be applied not only in cryptocurrency, but also in learning and educational processes with significant impact, such as decentralization of resources, open learning, tokenization of e-learning, reliability and security of information and resources. In this research educational components for tokenization of assets related to the educational process, based on a combination of blockchain technologies and microservices architecture are proposed. The basic concepts and mechanisms underlying blockchain technology are analyzed. A comparison of the basic concepts and characteristics of microservices, which are considered as a similar architectural template is given.

Blockchain relies on existing algorithms (such as cryptography) and distributed computing, which makes it possible to create new concepts such as distributed registers and smart contracts. Similarly, microservices are based on service-oriented architecture (SOA) and application programming interfaces (APIs). Microservices represent a new architectural template that can change the traditional way of software development based on the architecture of "monolithic applications". The use of SOA leads to real modularity through the composition of autonomous software components (microservices) that have clearly defined functionality. The use of standalone software components will increase the reliability of other microservices or applications.

Thus, paper proposes the implementation of software components that use blockchain [4], smart contract [5] and microservices to support open learning communities, unique identification of users and their assets based on tokens, secure storage and resource retrieval.

References:

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