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Ethereum: Introduction, Expectation, and Implementation

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Abstract

As the Blockchain technology develops, more and more cryptocurrencies were invented after Bitcoin. This paper introduces the technology of Blockchain, including the basic concept of Blockchain and how Blockchain works to allow decentralization of trades; The system of Ethereum and the cryptocurrency Ether (ETH), how it was invented, what was the central mission of its invention, as well as how it differs from Bitcoin and how can it allow more decentralized application to be developed, which in turn illustrates what it means and where its values lie. As all cryptocurrency markets have a huge fall in value in the year 2022, as shown in figure 1, many people are losing faith in cryptocurrency. Many believe that since it is entirely digital and non-government based, it has no actual value, that the entire cryptocurrency market is a bubble. Meanwhile, cryptocurrencies introduce a very revolutionary concept, which is the decentralization of applications, and this decentralization can apply to many things, leading to a great technological structure modification, even for social structures. Because of its anonymous and democratic nature, there is also always going to be demand for cryptocurrencies. Thus, this paper also analyzes the expectations of cryptocurrency, mainly Ether, and the predictions of its future development.

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Highlights in Science, Engineering and Technology

Volume 41 (2023)

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Ethereum: Introduction, Expectation, and Implementation

Qichen Huang

Abstract. As the Blockchain technology develops, more and more cryptocurrencies were invented after Bitcoin. This paper introduces the technology of Blockchain, including the basic concept of Blockchain and how Blockchain works to allow decentralization of trades; The system of Ethereum and the cryptocurrency Ether (ETH), how it was invented, what was the central mission of its invention, as well as how it differs from Bitcoin and how can it allow more decentralized application to be developed, which in turn illustrates what it means and where its values lie. As all cryptocurrency markets have a huge fall in value in the year 2022, as shown in figure 1, many people are losing faith in cryptocurrency. Many believe that since it is entirely digital and non-government based, it has no actual value, that the entire cryptocurrency market is a bubble. Meanwhile, cryptocurrencies introduce a very revolutionary concept, which is the decentralization of applications, and this decentralization can apply to many things, leading to a great technological structure modification, even for social structures. Because of its anonymous and democratic nature, there is also always going to be demand for cryptocurrencies. Thus, this paper also analyzes the expectations of cryptocurrency, mainly Ether, and the predictions of its future development.

Keywords: Ethereum, Ether, Blockchain, cryptocurrency, decentralization.

1. Introduction

In the Ethereum website, the official definition of Ethereum is "the community-run technology powering the cryptocurrency Ether (ETH) and thousands of decentralized applications." [1] According to Ethereum: Platform Review, The Ethereum platform was conceived to create a more generalized platform in November 2013. It uses proof of work to combine the notion of public economic consensus. With the power of a stateful Turing-complete virtual machine, it allows application developers to create applications that benefit from the decentralized and secure Blockchains with convenience, without needing to create a new Blockchain for every new application [2].

As Ethereum: A Secure Decentralised Generalised Transaction Ledger EIP-150 Revision pointed out, Ethereum is a project that aims to build the generalized technology, which all transaction-based state machine concepts may be built, as well as providing to the end-developer "a tightly integrated end-to-end system for building software on a hitherto unexplored compute paradigm in the mainstream: a trustful object messaging compute framework" [3].

As figure 1 shows, the price of the cryptocurrency market rose at a surprisingly high speed, and also crashed within a very short amount of time. This led people to rethink their perception and understanding of cryptocurrencies, as well as what to expect from them in the future.

Figure 1. The Ethereum Price from Ref [4]

Citations (0)

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Blockchain Projects Ecosystem: A Review of Current Technical and Legal Challenges

April 2019

Jorge Lopes ·  José Luís Mota Pereira

Blockchain is a decentralized transaction and data management technology developed first for Bitcoin cryptocurrency. The interest in Blockchain technology has been increasing since the idea was presented in 2008. The reasons for all the interest around Blockchain comes from its decentralized nature, while providing security, anonymity and data integrity. All these features without any third-party ...

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August 2021 · Asian Journal of Management

 Abhishek Kumar

Payment systems form an integral part of any emerging economy. A payment system should be safe, secure, reliable, and accessible. It will help in expanding financial inclusion and bringing financial stability. An efficient payment system helps in the smooth flow of payments and mitigation of risks and smooth functioning of the economy. It helps in fostering confidence in individuals about the use ...

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Recent Developments In Blockchain

August 2021

Angkita Bardhan

The purpose of this paper is to provide an overview in the recent developments of Blockchain in various fields. In this paper, the storage structure of Blockchain is considered and how it differs from a database is discussed. Decentralization, transparency, Blockchain security, the relation of Bitcoin and Banks with Blockchain are all to consider. Uses of Blockchain, the advantages and ...

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Blockchain, Smart Contracts and Intellectual Property. Using distributed ledger technology to protec...

May 2021 · Legal Issues in the Digital Age

Ronny Hauck

For several years, almost everyone has been talking about blockchain. The underlying distributed ledger technology has become (in)famous as the technology behind cryptocurrencies such as Bitcoin and Ether. But what about blockchain and intellectual property like patents and copyright? Could this technology be used for the protection and enforcement of such rights? Which role can smart contracts ...

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Design of Real-Time Transaction Monitoring System for Blockchain Abnormality Detection

June 2019

Jiwon Bang ·  Mi-Jung Choi

Due to the recent popularity of Bitcoin, interest in the blockchain which is the basic technology of Bitcoin, has also increased. Blockchain is a distributed ledger technology that stores transaction information that occurs in P2P (Peer-to-Peer) networks on the ledger of all nodes in a different way than centralized method and verifies whether they are stored correctly. Blockchain features ...
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