

CLAIMS

What is claimed is:

1. A data structure reading method, comprising:
obtaining, by a blockchain node in a blockchain network, an invoking request for
5 a first smart contract;
in response to the invoking request, running, by the blockchain node, contract code
comprised in the first smart contract to parse a data structure described by metadata
comprised in a second smart contract and to characterize the data structure by using a
computer programming language; and
10 returning, by the blockchain node, the data structure characterized by the computer
programming language to an initiator of the invoking request, wherein the first smart
contract is a system contract provided by a system function of the blockchain network.
2. The method according to claim 1, wherein the metadata is used to describe data
comprised in the second smart contract.
15 3. The method according to claim 1, wherein the computer programming language
comprises a language of a predetermined type or a language of a type indicated in the
invoking request.
~~4. The method according to claim 1, wherein the first smart contract is a system
contract provided by a system function of the blockchain network.~~
20 54. A data structure update method, comprising:
obtaining, by a blockchain node in a blockchain network, an invoking request for
a first smart contract;
obtaining, by the blockchain node, an updated data structure that is based on a
computer programming language; and
25 in response to the invoking request, running, by the blockchain node, first contract
code comprised in the first smart contract, wherein the first contract code is used to
parse the updated data structure, and characterize the updated data structure as updated
metadata that is based on a definition description language, so as to update pre-update
metadata comprised in a second smart contract, wherein the first smart contract is a
30 system contract provided by a system function of the blockchain network.
~~65.~~ The method according to claim 54, wherein metadata comprised in the second
smart contract is used to describe data comprised in the second smart contract.

76. The method according to claim 54, wherein the second smart contract comprises second contract code, and the second contract code is used to parse the updated metadata to update a data structure of ~~the~~ data comprised in the second smart contract.

5 ~~8. The method according to claim 5, wherein the first smart contract is a system contract provided by a system function of the blockchain network.~~

97. The method according to claim 54, wherein the first contract code is further used to compare a pre-update data structure corresponding to the pre-update metadata with the updated data structure to verify rationality of the updated data structure, wherein when the rationality of the updated data structure is successfully verified, the
10 updated metadata is used to update the pre-update metadata.

108. A data structure reading apparatus, comprising:

an acquisition unit, configured to enable a blockchain node in a blockchain network to obtain an invoking request for a first smart contract;

15 a response unit, configured to, in response to the invoking request, enable the blockchain node to run contract code comprised in the first smart contract to parse a data structure described by metadata comprised in a second smart contract and to characterize the data structure by using a computer programming language; and

a returning unit, configured to enable the blockchain node to return the data structure characterized by the computer programming language to an initiator of the invoking request, wherein the first smart contract is a system contract provided by a system function of the blockchain network.

149. The apparatus according to claim 108, wherein the metadata is used to describe data comprised in the second smart contract.

25 1210. The apparatus according to claim 108, wherein the computer programming language comprises a language of a predetermined type or a language of a type indicated in the invoking request.

~~13. The apparatus according to claim 10, wherein the first smart contract is a system contract provided by a system function of the blockchain network.~~

30 1411. A data structure update apparatus, comprising:

a request acquisition unit, configured to enable a blockchain node in a blockchain network to obtain an invoking request for a first smart contract;

a structure acquisition unit, configured to enable the blockchain node to obtain an updated data structure that is based on a computer programming language; and

a request response unit, configured to, in response to the invoking request, enable the blockchain node to run first contract code comprised in the first smart contract, wherein the first contract code is used to parse the updated data structure, and characterize the updated data structure as updated metadata that is based on a definition description language, so as to update pre-update metadata comprised in a second smart contract, wherein the first smart contract is a system contract provided by a system function of the blockchain network.

~~1512.~~ The apparatus according to claim ~~1411~~, wherein metadata comprised in the second smart contract is used to describe data comprised in the second smart contract.

10 ~~1613.~~ The apparatus according to claim ~~1411~~, wherein the second smart contract comprises second contract code, and the second contract code is used to parse the updated metadata to update a data structure of the data comprised in the second smart contract.

15 ~~17. The apparatus according to claim 14, wherein the first smart contract is a system contract provided by a system function of the blockchain network.~~

~~1814.~~ The apparatus according to claim ~~1411~~, wherein the first contract code is further used to compare a pre-update data structure corresponding to the pre-update metadata with the updated data structure to verify rationality of the updated data structure, wherein when the rationality of the updated data structure is successfully verified, the updated metadata is used to update the pre-update metadata.

20 ~~1915.~~ An electronic device, comprising:
a processor; and
a memory, configured to store an instruction executable by the processor, wherein the processor is configured to implement the data structure reading method
25 according to any one of claims 1 to ~~43~~.

~~2016.~~ An electronic device, comprising:
a processor; and
a memory, configured to store an instruction executable by the processor, wherein the processor is configured to implement the data structure update method
30 according to any one of claims ~~54~~ to ~~97~~.