

CLAIMS

What is claimed is:

1. A method for reading data structures, comprising the following:

5 obtaining, by a blockchain node in a blockchain network, an invocation request for a smart contract;

in response to the invocation request, running, by the blockchain node, contract code comprised in the smart contract, to parse a data structure described by metadata comprised in the smart contract, and use a computer programming language to specify the data structure; and

10 returning, by the blockchain node, the data structure specified by the computer programming language to an initiator of the invocation request.

2. The method according to claim 1, wherein the metadata is used to describe data comprised in the smart contract.

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 invocation request.

~~4. A method for updating data structures, comprising the following:~~

~~obtaining, by a blockchain node in a blockchain network, an invocation request for a smart contract;~~

20 ~~obtaining, by the blockchain node, an updated data structure that is based on a computer programming language; and~~

~~in response to the invocation request, running, by the blockchain node, contract code comprised in the smart contract, wherein the contract code is used to parse the updated data structure and specify the updated data structure as updated metadata that is based on a definition description language, to update pre-update metadata comprised in the smart contract.~~

~~5. The method according to claim 4, wherein the metadata comprised in the smart contract is used to describe data comprised in the smart contract.~~

30 ~~6. The method according to claim 4, wherein the 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 the consistency of the updated data structure; and~~

~~when the consistency of the updated data structure passes the verification, the updated metadata is used to update the pre-update metadata.~~

~~74. An apparatus for reading data structures, comprising the following:~~

5 ~~an acquisition unit, configured to enable a blockchain node in a blockchain network to obtain an invocation request for a smart contract;~~

~~a responding unit, configured to respond to the invocation request, so that the blockchain node runs contract code comprised in the smart contract, to parse a data structure described by metadata comprised in the smart contract, and use a computer programming language to specify the data structure; and~~

10 ~~a return unit, configured to enable the blockchain node to return the data structure specified by the computer programming language to an initiator of the invocation request.~~

~~85. The apparatus according to claim 74, wherein the metadata is used to describe data comprised in the smart contract.~~

15 ~~96. The apparatus according to claim 74, wherein the computer programming language comprises a language of a predetermined type or a language of a type indicated in the invocation request.~~

~~10. An apparatus for updating data structures, comprising the following:~~

20 ~~a request acquisition unit, configured to enable a blockchain node in a blockchain network to obtain an invocation request for a 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~~

25 ~~a request responding unit, configured to respond to the invocation request, so that the blockchain node runs contract code comprised in the smart contract, wherein the contract code is used to parse the updated data structure and specify the updated data structure as updated metadata that is based on a definition description language, to update pre-update metadata comprised in the smart contract.~~

~~11. The apparatus according to claim 10, wherein the metadata comprised in the smart contract is used to describe data comprised in the smart contract.~~

30 ~~12. The apparatus according to claim 10, wherein the 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 the consistency of the updated data structure; and when the consistency of the updated data structure passes the verification, the updated metadata is used to update the pre-update metadata.~~

~~13~~7. An electronic device, comprising the following:
a processor; and
a memory configured to store a processor-executable instruction, wherein
the processor is configured to perform the method for reading data structures
5 according to any one of claims 1 to 3.

~~14. An electronic device, comprising the following:
a processor; and
a memory configured to store a processor-executable instruction, wherein
the processor is configured to perform the method for updating data structures
10 according to any one of claims 4 to 6.~~