

CLAIMS

1. A computer-implemented method, comprising:

receiving, by a blockchain node, a service request, the service request comprising one or more data types and respective service data corresponding to the one or more data types that are stored in a blockchain;

~~determining at least one of a service type or identification information corresponding to the service request;~~

parsing the service request to obtain each data type of the service request and service data corresponding to each data type; ~~and~~

storing, based on a mapping relationship between data types and service data, the service data that is obtained through parsing in a relational database corresponding to the blockchain node;

receiving a service data query request comprising at least one of a service type and identification information;

determining that a data table corresponding to the at least one of the service type and the identification information has not been created in the relational database; and

in response to determining that the data table corresponding to the at least one of the service type and the identification information has not been created in the relational database, querying the blockchain using the service data query request.

2. The computer-implemented method of claim 1, further comprising:

determining at least one of a service type or an identification information corresponding to the service request;

converting, based on a predetermined data format, the one or more data types and the respective service data corresponding to the one or more data types to obtain a data sequence, wherein the predetermined data format comprises at least one of a service type field or an identification information field, wherein the data sequence comprises the at least one of the service type or the identification information;

performing consensus procedure on the service request by using a consensus network; and

storing the data sequence in the blockchain corresponding to the blockchain node after a consensus is achieved on the service request.

3. The computer-implemented method of claim 2, wherein a data field is specified in the predetermined data format, wherein the data field indicates the mapping relationship, and wherein each data type is equivalent to a key, the service data corresponding to each data type is equivalent to a value, and the data field is a key-value data mapping set.

4. The computer-implemented method of claim 1, further comprising:

determining at least one of a service type or an identification information corresponding to the service request; and

converting, based on a predetermined statement format, the one or more data types, the respective service data corresponding to the one or more data types, and the at least one of the service type or the identification information to obtain a data storage statement for the relational database, wherein storing the service data in the relational database comprises executing the data storage statement.

5. The computer-implemented method of claim 1, wherein parsing the service request comprises parsing the service request according to a data storage format specified by a smart contract of the blockchain.

6. The computer-implemented method of claim 1, further comprising:

determining at least one of a service type or an identification information corresponding to the service request; and

creating, in the relational database, a database table corresponding to the at least one of the service type or the identification information, wherein the database table comprises one or more columns corresponding respectively to the one or more data types.

7. The computer-implemented method of claim 1, further comprising:

receiving a request for information about service data having a particular data type stored in the blockchain;

querying the relational database to obtain service data matching the particular data type;

and

providing the service data matching the particular data type in response to the request.

8. The computer-implemented method of claim 1, comprising:
determining at least one of a service type or an identification information corresponding to the service request;
identifying, in the relational database, a data table corresponding to the at least one of the service type or the identification information;
determining that the data table does not comprise at least one data type of the one or more data types;
in response, creating at least one of a row or a column in the data table corresponding to the at least one data type; and
storing the service data that is obtained through parsing in the data table.

9. The computer-implemented method of claim 1, comprising:
determining a user public key corresponding to the service request; and
storing the service data that is obtained through parsing in a data table matching the user public key, wherein the data table is comprised in the relational database, and wherein the relational database comprises a plurality of data tables, each data table of the plurality of data tables corresponding to a respective user public key.

8.10. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:

receiving, by a blockchain node, a service request, the service request comprising one or more data types and respective service data corresponding to the one or more data types that are stored in a blockchain;

~~determining at least one of a service type or identification information corresponding to the service request;~~

parsing the service request to obtain each data type of the service request and service data corresponding to each data type; ~~and~~

storing, based on a mapping relationship between data types and service data, the service data that is obtained through parsing in a relational database corresponding to the blockchain node;

receiving a service data query request comprising at least one of a service type and identification information;

determining that a data table corresponding to the at least one of the service type and the identification information has not been created in the relational database; and

in response to determining that the data table corresponding to the at least one of the service type and the identification information has not been created in the relational database, querying the blockchain using the service data query request.

~~9.11.~~ The non-transitory, computer-readable medium of claim ~~810~~, the operations further comprising:

determining at least one of a service type or an identification information corresponding to the service request;

converting, based on a predetermined data format, the one or more data types and the respective service data corresponding to the one or more data types to obtain a data sequence, wherein the predetermined data format comprises at least one of a service type field or an identification information field, wherein the data sequence comprises the at least one of the service type or the identification information;

performing consensus procedure on the service request by using a consensus network; and

storing the data sequence in the blockchain corresponding to the blockchain node after a consensus is achieved on the service request.

~~1012.~~ The non-transitory, computer-readable medium of claim ~~911~~, wherein a data field is specified in the predetermined data format, wherein the data field indicates the mapping relationship, and wherein each data type is equivalent to a key, the service data corresponding to each data type is equivalent to a value, and the data field is a key-value data mapping set.

~~1113.~~ The non-transitory, computer-readable medium of claim ~~810~~, the operations further comprising:

determining at least one of a service type or an identification information corresponding to the service request; and

converting, based on a predetermined statement format, the one or more data types, the respective service data corresponding to the one or more data types, and the at least one of the service type or the identification information to obtain a data storage statement for the relational database, wherein storing the service data in the relational database comprises executing the data storage statement.

~~42~~14. The non-transitory, computer-readable medium of claim ~~8~~10, wherein parsing the service request comprises parsing the service request according to a data storage format specified by a smart contract of the blockchain.

~~43~~15. The non-transitory, computer-readable medium of claim ~~8~~10, the operations further comprising:

determining at least one of a service type or an identification information corresponding to the service request; and

creating, in the relational database, a database table corresponding to the at least one of the service type or the identification information, wherein the database table comprises one or more columns corresponding respectively to the one or more data types.

~~44~~16. The non-transitory, computer-readable medium of claim ~~8~~10, the operations further comprising:

receiving a request for information about service data having a particular data type stored in the blockchain;

querying the relational database to obtain service data matching the particular data type; and

providing the service data matching the particular data type in response to the request.

~~45~~17. A computer-implemented system, comprising:

one or more computers; and

one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform one or more operations comprising:

receiving, by a blockchain node, a service request, the service request comprising one or more data types and respective service data corresponding to the one or more data types that are stored in a blockchain;

~~determining at least one of a service type or identification information corresponding to the service request;~~

parsing the service request to obtain each data type of the service request and service data corresponding to each data type; ~~and~~

storing, based on a mapping relationship between data types and service data, the service data that is obtained through parsing in a relational database corresponding to the blockchain node;

receiving a service data query request comprising at least one of a service type and identification information;

determining that a data table corresponding to the at least one of the service type and the identification information has not been created in the relational database; and

in response to determining that the data table corresponding to the at least one of the service type and the identification information has not been created in the relational database, querying the blockchain using the service data query request.

~~16~~18. The computer-implemented system of claim ~~15~~17, the operations further comprising:

determining at least one of a service type or an identification information corresponding to the service request;

converting, based on a predetermined data format, the one or more data types and the respective service data corresponding to the one or more data types to obtain a data sequence, wherein the predetermined data format comprises at least one of a service type field or an identification information field, wherein the data sequence comprises the at least one of the service type or the identification information;

performing consensus procedure on the service request by using a consensus network; and

storing the data sequence in the blockchain corresponding to the blockchain node after a consensus is achieved on the service request.

~~17~~19. The computer-implemented system of claim ~~16~~18, wherein a data field is specified in the predetermined data format, wherein the data field indicates the mapping relationship, and wherein each data type is equivalent to a key, the service data corresponding to each data type is equivalent to a value, and the data field is a key-value data mapping set.

~~18~~20. The computer-implemented system of claim ~~15~~17, the operations further comprising:

determining at least one of a service type or an identification information corresponding to the service request; and

converting, based on a predetermined statement format, the one or more data types, the respective service data corresponding to the one or more data types, and the at least of one the service type or the identification information to obtain a data storage statement for the relational database, wherein storing the service data in the relational database comprises executing the data storage statement.

~~1921~~. The computer-implemented system of claim ~~1517~~, wherein parsing the service request comprises parsing the service request according to a data storage format specified by a smart contract of the blockchain.

~~2022~~. The computer-implemented system of claim ~~1517~~, the operations further comprising:
determining at least one of a service type or an identification information corresponding to the service request; and

creating, in the relational database, a database table corresponding to the at least one of the service type or the identification information, wherein the database table comprises one or more columns corresponding respectively to the one or more data types.