CLAIMS

1. A digital certificate verification method, performed by an authentication center, the method comprising:

receiving a verification request for verifying a target digital certificate;

obtaining a target transaction record corresponding to the target digital certificate from a blockchain, the target digital certificate being stored in the blockchain as a transaction resource, and the target transaction record being a latest transaction record corresponding to the target digital certificate; wherein if the target digital certificate is in an inserted state or an updated state, a target recipient account type in the latest transaction record is a certificate issuing account type, and if the target digital certificate is in a revoked state, the target recipient account type in the latest transaction record is a certificate recovery account type;

obtaining a target account type corresponding to the target transaction record, different account types corresponding to different certificate operation states; wherein the target account type corresponding to the target transaction record is determined according to an operation type of an operation request for operating the target digital certificate, the target account type is a type of an account receiving the target digital certificate, a correspondence between an account type and an account is preset, the target recipient account is an account corresponding to the target account type that is obtained according to the correspondence, and the target recipient account in the blockchain has the target digital certificate; and

determining a verification result corresponding to the target digital certificate according to the target account type; wherein if the target account type is the certificate recovery account type, determining that the verification result fails; and wherein if the target account type is the certificate issuing account type, determining that the verification result succeeds.

2. The method according to claim 1, further comprising:

receiving the operation request for operating the target digital certificate;

determining the target recipient account type corresponding to the target digital certificate according to the operation type of the operation request; and

generating a certificate transaction record corresponding to the operation request, and writing the certificate transaction record into the blockchain, the transaction resource in the certificate transaction record being the target digital certificate, the recipient account in the certificate transaction record being the account corresponding to the target recipient account type.

3. The method according to claim 2, wherein the determining the target recipient account type corresponding to the target digital certificate according to the operation type of the operation request comprises:

determining that the target recipient account type is the certificate issuing account type if the operation type corresponding to the operation request is an update operation type or an insertion operation type.

4. The method according to claim 2, wherein the determining the target recipient account type corresponding to the target digital certificate according to the operation type of the operation request comprises:

determining that the target recipient account type is the certificate recovery account type if the operation type corresponding to the operation request is a revocation operation type.

5. The method according to claim 1, wherein the obtaining the target account type corresponding to the target transaction record comprises:

obtaining a current recipient account type as the target account type, the current recipient account type corresponding to the latest transaction record and belonging to the account receiving the target digital certificate; and

the determining the verification result corresponding to the target digital certificate according to the target account type comprises:

determining, if the current recipient account type is the certificate issuing account type, that the verification result corresponding to the target digital certificate is that the verification succeeds.

6. The method according to claim 1, wherein the obtaining the target account type corresponding to the target transaction record comprises:

obtaining a current recipient account type as the target account type, the current recipient account type corresponding to the latest transaction record and belonging to the account receiving the target digital certificate; and

the determining the verification result corresponding to the target digital certificate according to the target account type comprises:

determining, if the current recipient account type is the certificate recovery account type, that the verification result corresponding to the target digital certificate is that the verification fails.

7. The method according to claim 5 or 6, wherein the verification request carries a transaction identifier corresponding to the target digital certificate, and the obtaining the target transaction

record corresponding to the target digital certificate from a blockchain comprises:

obtaining a transaction chain corresponding to the target digital certificate according to the transaction identifier, and identifying a transaction record at an end of the transaction chain as the latest transaction record, transaction records in the transaction chain being sequentially arranged in a transaction order.

8. The method according to claim 1, further comprising:

obtaining a root certificate corresponding to the target digital certificate from the blockchain according to the verification request;

verifying the target digital certificate according to the root certificate to obtain a root verification result; and

determining, if the root verification fails, that the verification result corresponding to the target digital certificate is that the verification fails; and obtaining a target transaction record corresponding to the target digital certificate from the blockchain if the root verification succeeds.

9. A digital certificate verification apparatus, applied to an authentication center, the apparatus comprising:

a verification request receiving module, configured to receive a verification request for verifying a target digital certificate;

a target transaction record obtaining module, configured to obtain a target transaction record corresponding to the target digital certificate from a blockchain, the target digital certificate being stored in the blockchain as a transaction resource, and the target transaction record being a latest transaction record corresponding to the target digital certificate; wherein if the target digital certificate is in an inserted state or an updated state, a target recipient account type in the latest transaction record is a certificate issuing account type, and if the target digital certificate is in a revoked state, the target recipient account type in the latest transaction record is a certificate recovery account type;

a target account type obtaining module, configured to obtain a target account type corresponding to the target transaction record, different account types corresponding to different certificate operation states; wherein the target account type corresponding to the target transaction record is determined according to an operation type of an operation request for operating the target digital certificate, the target account type is a type of an account receiving the target digital certificate, a correspondence between an account type and an account is preset, the target recipient account is an account corresponding to the target account type that is obtained according to the

correspondence, and the recipient account in the blockchain has the target digital certificate; and

a verification result determination module, configured to determine a verification result corresponding to the target digital certificate according to the target account type; wherein if the target account type is the certificate recovery account type, determining that the verification result fails; and wherein if the target account type is the certificate issuing account type, determining that the verification result succeeds.

10. The apparatus according to claim 9, further comprising:

an operation request receiving module, configured to receive the operation request for operating the target digital certificate;

a recipient account type determination module, configured to determine the target recipient account type corresponding to the target digital certificate according to the operation type of the operation request; and

a certificate transaction record generation module, configured to: generate a certificate transaction record corresponding to the operation request, and write the certificate transaction record into the blockchain, the transaction resource in the certificate transaction record being the target digital certificate, the recipient account in the certificate transaction record being the account corresponding to the target recipient account type.

11. The apparatus according to claim 10, wherein the recipient account type determination module is configured to:

determine that the target recipient account type is the certificate issuing account type if the operation type corresponding to the operation request is an update operation type or an insertion operation type.

12. The apparatus according to claim 10, wherein the recipient account type determination module is configured to:

determine that the target recipient account type is the certificate recovery account type if the operation type corresponding to the operation request is a revocation operation type.

13. The apparatus according to claim 9, wherein the target account type obtaining module is configured to:

obtain a current recipient account type as the target account type, the current recipient account type corresponding to the latest transaction record and belonging to the account receiving the target digital certificate; and

the verification result determination module is configured to:

determine, if the current recipient account type is the certificate issuing account type, that the verification result corresponding to the target digital certificate is that the verification succeeds.

14. A computer device, comprising a memory and a processor, the memory storing a computer program, the computer program, when executed by the processor, causing the processor to perform operations of the digital certificate verification method according to any one of claims 1 to 8.

15. A computer-readable storage medium, storing a computer program, the computer program, when executed by a processor, causing the processor to perform operations of the digital certificate verification method according to any one of claims 1 to 8.