CLAIMS

1. A blockchain-based data processing method performed by a computer device, comprising:

transmitting a first resource acquisition request of an object identification for a target virtual resource to a blockchain network to make the blockchain network query a target ticket identification associated with the object identification and the target virtual resource based on the first resource acquisition request, and acquire metadata having a binding relationship with the target ticket identification, the target ticket identification is used for characterizing that the object identification has ownership of the target virtual resource;

acquiring the target virtual resource according to the metadata returned by the blockchain network; and

controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource;

wherein the acquiring the target virtual resource according to the metadata returned by the blockchain network comprises:

acquiring the metadata transmitted by the blockchain network in the digital asset application logged in through the object identification;

parsing the metadata to acquire a storage path corresponding to the target virtual resource, and transmitting a second resource acquisition request to a storage device corresponding to the storage path; and

acquiring resource data for the target virtual resource returned by the storage device, and displaying the target virtual resource according to the resource data;

wherein the displaying the target virtual resource according to the resource data comprises:

parsing the resource data to acquire resource data to be rendered; and

calling a physics engine, and rendering the resource data to be rendered through a rendering pipeline in the physics engine to obtain the target virtual resource for displaying in a presentation interface.

2. The method according to claim 1, wherein the transmitting a first resource acquisition request of an object identification for a target virtual resource to a blockchain network

comprises:

acquiring a ticket identification to be verified for the target virtual resource in response to a resource acquisition instruction in a digital asset application logged in through the object identification;

generating the first resource acquisition request according to the ticket identification to be verified and the object identification, and signing the first resource acquisition request to obtain signature information; and

transmitting the first resource acquisition request carrying the signature information to the blockchain network, wherein

the signature information is used for indicating validity of the blockchain network verifying the object identification;

the object identification is used for indicating the blockchain network to acquire a ticket identification set having a binding relationship with the object identification when determining the object identification having a legal permission, wherein the ticket identification set includes the target ticket identification;

the ticket identification to be verified is used for indicating the blockchain network to determine a holding permission of the object identification for the target virtual resource according to the ticket identification set; and

the holding permission is used for characterizing that the ticket identification to be verified is the same as the target ticket identification.

3. The method according to claim 1, wherein the rendering the resource data to be rendered to obtain the target virtual resource for displaying in a presentation interface comprises:

acquiring a three-dimensional vertex coordinate of a vertex of the target virtual resource in a three-dimensional space in the resource data to be rendered;

acquiring a target projection position, calling a vertex shader, and mapping the three-dimensional vertex coordinate to a two-dimensional space according to the target projection position to obtain a two-dimensional vertex coordinate of the vertex of the target virtual resource under the target projection position;

drawing a two-dimensional line corresponding to the two-dimensional vertex coordinate and a two-dimensional plane generated by the two-dimensional line in the two-dimensional

space according to a connection relationship between vertices of the target virtual resource; and

displaying the target virtual resource under the target projection position in the presentation interface according to the two-dimensional line and the two-dimensional plane.

4. The method according to claim 3, wherein data to be rendered comprises a target color corresponding to the target virtual resource; and

the displaying the target virtual resource under the target projection position in the presentation interface according to the two-dimensional line and the two-dimensional plane comprises:

determining a geometric primitive of the target virtual resource in the two-dimensional space according to the two-dimensional line and the two-dimensional plane;

rasterizing the geometric primitive to acquire a fragment to be shaded comprising the target virtual resource displayed in the target projection position; and

rendering the target virtual resource in the fragment to be shaded through a fragment shader, and displaying the target virtual resource having the target color in the presentation interface based on a rendering result.

5. The method according to claim 1, wherein the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

acquiring interaction input data in a digital asset application logged in through the object identification in response to the triggering operation for interacting with the target virtual resource;

determining an interaction type corresponding to the interaction input data through an interaction distribution component, and synchronizing the interaction input data to a data processing component corresponding to the interaction type;

performing interaction logic in the data processing component according to the interaction input data to obtain interaction output data; and

outputting the interaction output data in the target virtual resource.

6. The method according to claim 1, wherein the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

acquiring angular motion data through an angular motion detection component in a digital asset application logged in through the object identification in response to a triggering operation for performing motion interaction with the target virtual resource, and synchronizing the angular motion data to an interaction distribution component;

determining, in the interaction distribution component, that an interaction type corresponding to the angular motion data is a motion interaction type, and synchronizing the angular motion data to a physics engine component corresponding to the motion interaction type; and

outputting a motion trajectory of the target virtual resource in the physics engine component according to the angular motion data.

7. The method according to claim 1, wherein the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

acquiring multimedia input data through a multimedia collection component in a digital asset application logged in through the object identification in response to a triggering operation for performing multimedia interaction with the target virtual resource;

determining, through an interaction distribution component, that an interaction type corresponding to the multimedia input data is a multimedia interaction type, and synchronizing the multimedia input data to a multimedia control component corresponding to the multimedia interaction type; and

determining multimedia output data corresponding to the multimedia input data through the multimedia control component, and playing the multimedia output data in the target virtual resource.

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

creating the target virtual resource, generating the metadata corresponding to the target virtual resource, and generating a resource abstract corresponding to the target virtual resource;

generating a resource issue request according to the metadata, the resource abstract, and the object identification, transmitting the resource issue request to the blockchain network to make the blockchain network perform a consensus on the resource issue request, and creating the target ticket identification having a binding relationship with the resource issue request in a case that the consensus passes; and

acquiring the target ticket identification issued to the object identification returned by the blockchain network.

9. The method according to claim 8, wherein the generating the metadata corresponding to the target virtual resource comprises:

acquiring a name corresponding to the target virtual resource, a description text corresponding to the target virtual resource, and X pieces of property information corresponding to the target virtual resource, wherein X is a positive integer;

generating resource basic information corresponding to the target virtual resource according to the name, the description text, and the X pieces of property information;

transmitting a resource storage request carrying the target virtual resource to a storage device to make the storage device write the target virtual resource; and

acquiring a storage path for the target virtual resource returned by the storage device, and generating the metadata according to the storage path and the resource basic information.

10. A blockchain-based data processing method performed by a computer device, comprising:

a terminal device displaying a target virtual resource in a digital asset application logged in through an object identification, wherein the target virtual resource is obtained according to metadata returned by a blockchain network, the metadata is acquired by a terminal device transmitting a first resource acquisition request for the target virtual resource to the blockchain network through the object identification, the first resource acquisition request is used for: indicating the blockchain network, querying a target ticket identification associated with the object identification and the target virtual resource, and acquiring the metadata having a binding relationship with the target ticket identification; and the target ticket identification is used for characterizing that the object identification has ownership of the target virtual resource; and

controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource;

wherein the target virtual resource comprises a three-dimensional model; and

the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

acquiring a rotation indication direction in response to a triggering operation for rotating the

three-dimensional model, and controlling the three-dimensional model to rotate according to the rotation indication direction; and

acquiring a scaling ratio in response to a triggering operation for scaling the three-dimensional model, and controlling the three-dimensional model to scale according to the scaling ratio.

11. The method according to claim 10, wherein the target virtual resource comprises a virtual role and Y direction controls having a binding relationship with the virtual role, the Y direction controls comprise a target direction control, and Y is a positive integer; and

the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

outputting a motion trajectory to be confirmed for the virtual role in response to a triggering operation for activating a target area, wherein the motion trajectory to be confirmed is generated based on the target area and an initial area for displaying the virtual role, and the target area referring to an area other than the initial area in an interface for presenting the target virtual resource;

controlling the virtual role to move according to a confirmed motion trajectory in response to a triggering operation for confirming the motion trajectory to be confirmed; and

controlling the virtual role to move according to a direction indicated by the target direction control in response to a triggering operation on the target direction control.

12. The method according to claim 10, wherein the target virtual resource comprises a virtual role; and

the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

updating an interaction suspended state of the virtual role to an interaction activated state in response to a triggering operation for activating the virtual role; and

controlling the virtual role to output feedback audio data during audio interaction in the interaction activated state in response to a triggering operation for performing the audio interaction with the virtual role.

13. The method according to claim 12, wherein the controlling the virtual role to output feedback audio data during audio interaction in response to a triggering operation for performing

the audio interaction with the virtual role comprises:

acquiring audio input data inputted for the virtual role in response to the triggering operation for performing the audio interaction with the virtual role, and acquiring position information and environment information;

inputting both the position information and the environment information into audio interaction logic, and determining feedback audio data associated with the position information and the environment information through the audio interaction logic; and

controlling the virtual role to play the feedback audio data.

14. The method according to claim 10, wherein the target virtual resource comprises Z audio data playing controls, the Z audio data playing controls comprise a first audio data playing control and a second audio data playing control, and Z is a positive integer greater than 1; and

the controlling the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource comprises:

acquiring first audio data corresponding to the first audio data playing control in response to a triggering operation on the first audio data playing control at a first moment;

acquiring second audio data corresponding to the second audio data playing control in response to a triggering operation on the second audio data playing control at a second moment, wherein the second moment is later than the first moment, and a time interval between the second moment and the first moment is less than a duration threshold; and

controlling the target virtual resource to play the first audio data and the second audio data in sequence in a case that there is no response to a triggering operation on the Z audio data playing controls at a third moment, wherein the third moment is later than the second moment, and a time interval between the third moment and the second moment is greater than or equal to the duration threshold.

15. A blockchain-based data processing apparatus, comprising:

a request acquisition module, configured to transmit a first resource acquisition request of an object identification for a target virtual resource to a blockchain network to make the blockchain network query a target ticket identification associated with the object identification and the target virtual resource based on the first resource acquisition request, and acquire metadata having a binding relationship with the target ticket identification, the target ticket identification is used for characterizing that the object identification has ownership of the target

virtual resource;

a first acquisition module, configured to acquire the target virtual resource according to the metadata returned by the blockchain network; and

an interaction output module, configured to control the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource;

wherein the first acquisition module comprises:

a second acquisition unit, configured to acquire the metadata transmitted by the blockchain network in the digital asset application logged in through the object identification;

a second transmitting unit, configured to parse the metadata to acquire a storage path corresponding to the target virtual resource, and transmit a second resource acquisition request to a storage device corresponding to the storage path; and

a third acquisition unit, configured to acquire resource data for the target virtual resource returned by the storage device, and display the target virtual resource according to the resource data;

wherein the third acquisition unit comprises:

a data parsing subunit, configured to parse the resource data to acquire resource data to be rendered; and

a data rendering subunit, configured to call a physics engine, and render the resource data to be rendered through a rendering pipeline in the physics engine to obtain the target virtual resource for displaying in a presentation interface.

16. A blockchain-based data processing apparatus, the blockchain-based data processing apparatus running on a terminal device, comprising:

a resource display module, configured to display a target virtual resource in a digital asset application logged in through an object identification, wherein the target virtual resource is obtained according to metadata returned by a blockchain network, the metadata is acquired by a terminal device transmitting a first resource acquisition request for the target virtual resource to the blockchain network through the object identification, the first resource acquisition request is used for: indicating the blockchain network, querying a target ticket identification associated with the object identification and the target virtual resource, and acquiring the metadata having a

binding relationship with the target ticket identification; and the target ticket identification is used for characterizing that the object identification has ownership of the target virtual resource; and

an interaction output module, configured to control the target virtual resource to perform an interaction output in response to a triggering operation for interacting with the target virtual resource;

wherein the target virtual resource comprises a three-dimensional model; and

the interaction output module comprises:

a first acquisition unit, configured to acquire a rotation indication direction in response to a triggering operation for rotating the three-dimensional model, and control the three-dimensional model to rotate according to the rotation indication direction; and

a second acquisition unit, configured to acquire a scaling ratio in response to a triggering operation for scaling the three-dimensional model, and control the three-dimensional model to scale according to the scaling ratio.

17. A computer device, comprising:

a processor, a memory, and a network interface, wherein

the processor is connected to the memory and the network interface,

the network interface is configured to provide a data communication function,

the memory is configured to store a computer program, and

the processor is configured to call the computer program to cause the computer device to perform the method according to any one of claims 1 to 14.

18. A computer-readable storage medium having stored therein a computer program, the computer program is adapted to be loaded and executed by a processor to cause a computer device having the processor to perform the method according to any one of claims 1 to 14.

19. A computer program product comprising computer instructions stored in a computer-readable storage medium, the computer instructions are adapted to be read and executed by a processor to cause a computer device having the processor to perform the method according to any one of claims 1 to 14.