CLAIMS

What is claimed is:

1. A method for performing resource deduction for execution of a smart contract, wherein the method is performed by a processor in a computing device, the processor comprises a first general purpose register, a second general purpose register, and a special purpose register, the special purpose register stores a first resource balance for executing the smart contract, and the method comprises:

before the smart contract is executed, reading a second extended instruction, wherein the second extended instruction comprises an identifier of the first general purpose register, and performing the following operations based on the second extended instruction:

reading, from the first general purpose register, a third resource balance for executing the smart contract; and

storing the third resource balance in the special purpose register;

reading a first extended instruction, wherein the first extended instruction comprises a resource deduction quota corresponding to a predetermined code set in the smart contract, and executing the first extended instruction, wherein executing the first extended instruction comprises performing the following operations based on the first extended instruction:

reading the first resource balance from the special purpose register;

comparing the first resource balance with the resource deduction quota;

if the comparison result is that the first resource balance is greater than or equal to the resource deduction quota, subtracting the resource deduction quota from the first resource balance to obtain a second resource balance; and

storing the second resource balance in the special purpose register;

after the smart contract is executed, reading a third extended instruction, wherein the third extended instruction comprises an identifier of the second general purpose register, and performing the following operations based on the third extended instruction:

reading a current fourth resource balance from the special purpose register; and

storing the fourth resource balance in the second general purpose register.

2. The method according to claim 1, wherein the processor further comprises a status register, and the method further comprises: if the comparison result is that the first resource balance is less than the resource deduction quota, terminating execution of the smart contract, and recording a state of balance insufficiency in the status register.

3. The method according to claim 1, wherein the reading a first extended instruction comprises: before executing the predetermined code set in the smart contract, reading the first extended instruction.

4. A processor, comprising a first logic circuit, a second logic circuit, and a third logic circuit, wherein the first logic circuit comprises: a special purpose register configured to store a first resource balance for executing a smart contract; and a comparator and an adder, wherein

the first logic circuit is configured to perform the following operations after receiving a first digital signal, wherein the first digital signal comprises a resource deduction quota corresponding to a predetermined code set in the smart contract:

reading the first resource balance from the special purpose register;

comparing the first resource balance with the resource deduction quota by using the comparator;

if the comparison result is that the first resource balance is greater than or equal to the resource deduction quota, subtracting the resource deduction quota from the first resource balance by using the adder, to obtain a second resource balance; and

storing the second resource balance in the special purpose register;

wherein the second logic circuit comprises a first general purpose register and the special purpose register, the first general purpose register is configured to store, before the smart contract is executed, a third resource balance for executing the smart contract, and the second logic circuit is configured to perform the following operations after receiving a second digital signal, wherein the second digital signal comprises an identifier of the first general purpose register:

reading the third resource balance from the first general purpose register; and

storing the third resource balance in the special purpose register; and

wherein the third logic circuit comprises a second general purpose register and the special purpose register, and the third logic circuit is configured to perform the following operations after receiving a third digital signal, wherein the third digital signal comprises an identifier of the second general purpose register:

reading a current fourth resource balance from the special purpose register; and

storing the fourth resource balance in the second general purpose register.

5. The processor according to claim 4, wherein the first logic circuit further comprises a status register, and the first logic circuit is further configured to terminate execution of the smart contract and record a state of balance insufficiency in the status register if the comparison result is that the first resource balance is less than the resource deduction quota.

6. A computing device, comprising the processor according to any one of claims 4 to 5.

7. A computer digital signal, comprising a resource deduction quota corresponding to a predetermined code set in a smart contract, wherein the computer digital signal is used to indicate use of the first logic circuit according to claim 4 or 5.

8. A computer digital signal, comprising an identifier of a first general purpose register in a processor, wherein the computer digital signal is used to indicate use of the second logic circuit according to claim 4.

9. A computer digital signal, comprising an identifier of a second general purpose register in a processor, wherein the computer digital signal is used to indicate use of the third logic circuit according to claim 4.