

CLAIMS

What is claimed is:

1. A method, comprising:

5 identifying a payment process corresponding to a payment service, the payment process including a first plurality of operations, the payment service including a second plurality of states;

determining a correspondence between the second plurality of states to the first plurality of operations, a state of the second plurality of states corresponding to one or more operations of the first plurality of operations;

10 determining a transition relationship between states of the second plurality of states based on an association relationship between operations of the first plurality of operations that correspond to the states;

determining a condition for transition between the states based on a trigger condition corresponding to an operation of the operations; and

15 executing the payment process through a finite state machine based on the states, the transition relationship between the states, and the condition for transition between the states.

2. The method according to claim 1, wherein the second plurality of states
20 include at least one state that corresponds to two or more operations of the first plurality of operations.

3. The method according to claim 1, wherein the executing the payment process through the finite state machine includes configuring the finite state machine based on
25 the states, the transition relationship between the states, and the condition for transition between the states.

4. The method of claim 3, wherein the configuring the finite state machine includes:

30 generating a state transition table based on the states, the transition relationship between the states, and the condition for transition between the states, the state transition table being queried in the executing the payment process.

5. The method according to claim 4, wherein the configuring the finite state machine includes one or more of:

writing the state transition table to a configuration file of an electronic payment system for the electronic payment system to retrieve the state transition table from the

5 configuration file of the electronic payment system at a startup; and

writing the state transition table into a cache of the electronic payment system for the electronic payment system to retrieve the state transition table from the cache at a runtime

10 6. The method of claim 1, comprising:

determining, through the finite state machine, a first state of the payment service;

determining that a first transition condition for triggering a transition from the first state to a second state is met;

in response to the determining that the first transition condition is met,

15 transitioning the payment service from the first state to the second state using the finite state machine; and

performing an operation corresponding to the second state.

7. The method according to claim 6, wherein the determining that the first transition condition is met includes querying a state transition table to retrieve the first transition condition.

8. The method according to claim 7, wherein the determining that the first transition condition is met includes at least one of:

25 retrieving, by an electronic payment system, the state transition table from a configuration file of the electronic payment system at a startup; and

retrieving, by the electronic payment system, the state transition table from a cache of the electronic payment system at a runtime.

30 9. An apparatus, comprising:

a first determining module, operable to determine a state of a payment service corresponding to one or more operations of a payment process, the payment process including a first plurality of operations, the payment service including a second

plurality of states;

a second determining module, operable to determine a transition relationship between states of the second plurality of states based on an association relationship between operations of the first plurality of operations, and determine a condition for transition between the states based on a trigger condition corresponding to an operation in the operations; and

a configuration module, operable to configure a finite state machine corresponding to the payment process based on the states, the transition relationship between the states, and the condition for transition between the states, so as to execute the payment process through the finite state machine.

10. The apparatus according to claim 9, wherein the second plurality of states includes at least one state that corresponds to two or more operations of the first plurality of operations.

11. The apparatus according to claim 9, wherein the configuration module generates a state transition table corresponding to the finite state machine based on the states, the transition relationship between the states, and the condition for transition between the states, for an electronic payment system to query the state transition table in executing the payment process.

12. The apparatus according to claim 11, comprising:

a writing module, configured to write the state transition table to one or more of:

a configuration file of an electronic payment system, for the electronic payment system to retrieve the state transition table from the configuration file at a startup; and

a cache of the electronic payment system, for the electronic payment system to retrieve the state transition table from the cache at a runtime.

13. The apparatus according to claim 9, comprising:

a third determining module, configured to determine, by using the finite state machine, a first state of the payment service; and

a processing module, configured to, determine that a first transition condition for

triggering a transition from the first state to a second state is met, and in response to the determining that the first transition condition is met, perform an operation corresponding to the second state, and transition the payment service from the first state to the second state using the finite state machine.

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14. The apparatus according to claim 13, wherein the processing module is operable to query a state transition table to retrieve the first transition condition.

10 15. The apparatus according to claim 13, wherein before the querying the state transition table, the processing module is operable to retrieve the state transition table from one or more of:

a configuration file of a device when the device is started; or
a cache of the device when the device is running.

15 16. A device, comprising one or more processors and a memory storing executable instructions of a program executable by the one or more processors to perform acts including:

identifying a payment process corresponding to a payment service, the payment process including a first plurality of operations, the payment service including a
20 second plurality of states;

determining a correspondence between the second plurality of states to the first plurality of operations, a state of the second plurality of states corresponding to one or more operations of the first plurality of operations;

25 determining a transition relationship between states of the second plurality of states based on an association relationship between operations of the first plurality of operations that correspond to the states;

determining a condition for transition between the states based on a trigger condition corresponding to an operation of the operations; and

30 executing the payment process through a finite state machine based on the states, the transition relationship between the states, and the condition for transition between the states.

17. The device according to claim 16, wherein the second plurality of states

include at least one state that corresponds to two or more operations of the first plurality of operations.

18. The device according to claim 16, wherein the executing the payment process
5 through the finite state machine includes configuring the finite state machine based on the states, the transition relationship between the states, and the condition for transition between the states.

19. The device of claim 18, wherein the configuring the finite state machine
10 includes:

generating a state transition table based on the states, the transition relationship between the states, and the condition for transition between the states, the state transition table being queried in the executing the payment process.

15 20. The device of claim 16, wherein the acts include:

determining, through the finite state machine, a first state of the payment service;
determining that a first transition condition for triggering a transition from the first state to a second state is met;

in response to the determining that the first transition condition is met,
20 transitioning the payment service from the first state to the second state using the finite state machine; and

performing an operation corresponding to the second state.