

QUESTION RECOMMENDATION METHOD AND SYSTEM, KNOWLEDGE BASE GENERATION METHOD AND SYSTEM, AND STORAGE MEDIUM

TECHNICAL FIELD

5 **[0001]** This specification relates to the field of Internet technologies, and in particular, to a question recommendation method and system, a knowledge base generation method and system, and a storage medium.

BACKGROUND

10 **[0002]** Usually, to prevent risks in transactions, a reviewer needs to perform risk review on the transactions. A risk review procedure is as follows: A plurality of review questions are displayed to the reviewer, and these review questions reflect information to which attention needs to be paid in a risk review process. The reviewer answers these review questions based on related data of a current transaction, and then summarizes answer information of these review questions, to obtain a review result of the current transaction. The review result indicates whether there is a risk in the
15 current transaction.

20 **[0003]** In the above-mentioned risk review process, design properness of the review questions directly affects the accuracy and efficiency of risk control. Usually, the review questions are determined based on a preset operation guide. For example, an operation guide document for risk review is formed based on types and features of risks to be prevented. The operation guide document records a full question set to be considered by the reviewer during review of a transaction. In this way, all questions in the full question set can be displayed to the reviewer during review of all transactions.

25 **[0004]** However, in the above-mentioned risk review manner, the reviewer needs to answer all the questions in the full question set for all the transactions, and therefore inevitably answers some questions not related to the current transaction. This results in low transaction review efficiency. In addition, the operation guide document is preset and is difficult to quickly iterate and update.

Therefore, for an emerging transaction risk, the transaction risk possibly cannot be accurately identified in the above-mentioned risk review manner. This results in an unsatisfactory transaction risk control effect.

[0005] Content in the background is merely information known to the inventor, and neither means that the information has entered the public domain before the application date of this disclosure, nor means that the information can become the existing technology of this disclosure.

SUMMARY

[0006] This specification provides a question recommendation method and system, a knowledge base generation method and system, and a storage medium. A target question set for reviewing a target transaction is determined through a large model based on operation guide data, historical review data of a historical transaction, and transaction description information of the target transaction, to improve transaction review efficiency and improve a transaction risk control effect.

[0007] According to a first aspect, this specification provides a question recommendation method, including: in response to detecting that a target transaction is triggered for review, obtaining transaction description information corresponding to the target transaction; obtaining operation guide data, where the operation guide data is used to indicate an alternative question set involved in a transaction review process and a jump relationship between questions; obtaining historical review data corresponding to at least one historical transaction from a knowledge base, where the historical review data includes at least transaction description information corresponding to the historical transaction and a historical question set corresponding to the historical transaction; and determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, a target question set for reviewing the target transaction, and outputting the target question set.

[0008] According to a second aspect, this specification further provides a knowledge base generation method, including: obtaining transaction information of a historical transaction, and generating transaction description information corresponding to the historical transaction based on the transaction information of the historical transaction, where the historical transaction is a

reviewed transaction; obtaining a historical question set corresponding to the historical transaction; generating historical review data corresponding to the historical transaction based on at least the transaction description information and the historical question set that correspond to the historical transaction; and adding the historical review data corresponding to the historical transaction to a knowledge base.

[0009] According to a third aspect, this specification further provides a question recommendation system, including: at least one storage medium that stores at least one instruction set for recommending a transaction review question; and at least one processor that is communicatively connected to the at least one storage medium. When the question recommendation system for transaction review runs, the at least one processor reads the at least one instruction set, and performs the following operations based on an indication of the at least one instruction set: in response to detecting that a target transaction is triggered for review, obtaining transaction description information corresponding to the target transaction; obtaining operation guide data, where the operation guide data is used to indicate an alternative question set involved in a transaction review process and a jump relationship between questions; obtaining historical review data corresponding to at least one historical transaction from a knowledge base, where the historical review data includes at least transaction description information corresponding to the historical transaction and a historical question set corresponding to the historical transaction; and determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, a target question set for reviewing the target transaction, and outputting the target question set.

[0010] According to a fourth aspect, this specification further provides a knowledge base generation system, including: at least one storage medium that stores at least one instruction set for generating a knowledge base question; and at least one processor that is communicatively connected to the at least one storage medium. When the knowledge base generation system runs, the at least one processor reads the at least one instruction set, and performs the following operations based on an indication of the at least one instruction set: obtaining transaction information of a historical transaction, and generating transaction description information corresponding to the historical transaction based on the transaction information of the historical transaction, where the historical transaction is a reviewed transaction; obtaining a historical

specification;

[0019] FIG. 6 is a flowchart of a knowledge base generation method according to an embodiment of this specification;

5 [0020] FIG. 7 is a schematic diagram of generating historical review data corresponding to a historical transaction according to an embodiment of this specification;

[0021] FIG. 8 is a flowchart of obtaining a target question set through a large model by using an example learning method according to an embodiment of this specification;

[0022] FIG. 9 is a flowchart of obtaining a target question set through a fine-tuned large model according to an embodiment of this specification; and

10 [0023] FIG. 10 is a schematic diagram of a plurality of rounds of recommendation according to an embodiment of this specification.

DESCRIPTION OF EMBODIMENTS

[0024] Specific application scenarios and requirements of this specification are provided in the following descriptions, so that a person skilled in the art can manufacture and use content of this specification. Various local modifications to the disclosed embodiments are clear to a person skilled in the art. In addition, the general principles defined herein can be applied to other embodiments and applications without departing from the spirit and scope of this specification. Therefore, this specification is not limited to the shown embodiments, but has a widest scope consistent with that of the claims.

20 [0025] The terms used herein are merely intended to describe specific example embodiments, and impose no limitation. For example, unless otherwise explicitly stated in the context, the singular forms "one", "an", and "the" used herein can include plural forms. When being used in this specification, the terms "include", "comprise", and/or "have" mean existence of an associated integer, step, operation, element, and/or component, but do not preclude existence of one or more other features, integers, steps, operations, elements, components, and/or groups or addition of other features, integers, steps, operations, elements, components, and/or groups to the system/method.

25 [0026] In consideration of the following descriptions, these and other features of this specification, operations and functions of related components of the structure, and economy of combination and manufacturing of components can be significantly improved. With reference to

the accompanying drawings, all of these form a part of this specification. However, it should be clearly understood that the accompanying drawings are merely used for the purpose of illustration and description, and are not intended to limit the scope of this specification. It should be further understood that the accompanying drawings are not drawn to scale.

5 **[0027]** The flowchart used in this specification shows operations implemented by a system according to some embodiments of this specification. It should be clearly understood that the operations in the flowchart may not be sequentially implemented. On the contrary, the operations can be implemented in a reverse order or simultaneously. In addition, one or more other operations can be added to the flowchart, and one or more operations can be removed from the flowchart.

10 **[0028]** For ease of description, the terms that appear below in this specification are first explained.

[0029] Term 1: Knowledge base: The knowledge base is a systematic knowledge management tool for storing, organizing and retrieving information and knowledge. The knowledge base includes a large amount of information, usually organized in a structured manner. In this
15 specification, the knowledge base is used to store historical review data corresponding to a historical transaction.

[0030] Term 2: Closing statement: The closing statement is data obtained by a reviewer by summarizing, after the reviewer completes review of a transaction, questions used in a transaction review process, answers given to the questions, and external information used in a process of
20 answering the questions. The external information can be information other than transaction information, for example, information obtained by the reviewer by searching an external data source, or information obtained in another manner. This is not limited in this specification. The closing statement can be considered as a review result of the transaction, that is, the closing statement can include a question used to review the transaction, an answer given to the question,
25 and external information used in a process of answering the question.

[0031] Term 3: Guidance instruction: The guidance instruction (prompt) is an input text provided to a large model, and is used to direct the large model to generate a required output. The guidance instruction usually needs to be clear and specific, providing example information for reference (which can be a path to the example information), constraints, requirements, and the like.

30 **[0032]** An application scenario of this specification is described below.

[0033] The technical solutions provided in this specification can be applied to a transaction

system. The transaction system can provide transaction services, for example, can provide transaction services between an individual and a merchant and between a company and a merchant. In a process of providing transaction services, there may be risky transactions such as false transactions, cash laundering, and transaction frauds. Therefore, the transaction system needs to review transactions, to prevent risks that may occur in the transactions.

[0034] This specification provides a question recommendation method and a knowledge base generation method. The method can be used in a transaction review scenario. In this scenario, when detecting that a target transaction is triggered for review, a transaction system can perform inference through a large model based on transaction description information corresponding to the target transaction, operation guide data, and historical review data that corresponds to a historical transaction and is obtained from a knowledge base, to obtain a target question set for reviewing the target transaction. The knowledge base is generated based on the knowledge base generation method.

[0035] FIG. 1 is a schematic diagram of a transaction review scenario according to an embodiment of this specification. As shown in FIG. 1, the scenario 100 can include a knowledge base generation system 11 (briefly referred to as a generation system 11 below) and a question recommendation system 12. The scenario 100 can relate to a knowledge base generation phase and a knowledge base-based large model inference phase.

[0036] In the knowledge base generation phase, the generation system 11 can be a system for performing the knowledge base generation method. The generation system 11 can be a computing system with a specific computing capability. The generation system 11 can include one or more computing devices. In some embodiments, the generation system 11 can generate historical review data based on transaction information of a historical transaction and a closing statement, and store the historical review data of the historical transaction in a knowledge base, to generate a knowledge base for transaction review. That is, the knowledge base can store historical review data respectively corresponding to a plurality of historical transactions. The generation system 11 can store data or instructions for performing the knowledge base generation method described in this specification, and can execute or be configured to execute the data or the instructions. In some embodiments, the generation system 11 can include a hardware device with a data information processing function and a program needed to drive the hardware device to work.

[0037] The question recommendation system 12 can be a computing system with a specific

computing capability. As shown in FIG. 1, a large model can be deployed in the question recommendation system 12. The question recommendation method provided in this specification can be performed on the question recommendation system 12. The question recommendation system 12 can perform inference through the large model based on transaction information of a target transaction, historical review data in a knowledge base (a knowledge base generated by the generation system 11 in the knowledge base generation phase), and operation guide data, to obtain a target question set for reviewing the target transaction. The question recommendation system 12 can store data or instructions for performing the question recommendation method described in this specification, and can execute or be configured to execute the data or the instructions. In some embodiments, the question recommendation system 12 can include a hardware device with a data information processing function and a program needed to drive the hardware device to work. The question recommendation system 12 can be communicatively connected, through a network, to the knowledge base generated by the generation system 11, and obtain the historical review data from the knowledge base.

15 **[0038]** In some embodiments, the question recommendation system 12 can include a terminal device and a server. The terminal device can provide a man-machine interaction interface to facilitate an operation by a user (for example, a reviewer). For example, a target app (for example, an app used to perform transaction review) can be deployed in the terminal device. The target app provides a man-machine interaction interface, and the user can select the to-be-reviewed target transaction from the man-machine interaction interface. The target app can trigger, in response to an operation instruction of the user, execution of the question recommendation method described in this specification, to obtain the target question set for reviewing the target transaction. Further, the terminal device can further display the target question set in the man-machine interaction interface, so that the user can answer a question in the target question set.

25 **[0039]** The terminal device can include a mobile device, a tablet computer, a notebook computer, a server or similar content, or any combination thereof. In some embodiments, the mobile device can include a smart home device, a smart mobile device, a virtual reality device, an augmented reality device or a similar device, or any combination thereof. In some embodiments, the smart home apparatus can include a smart television, a desktop computer, or any combination.

30 In some embodiments, the smart mobile device can include a smartphone, a personal digital assistant, a game device, a navigation device, or any combination thereof. In some embodiments,

the virtual reality device or the augmented reality device may include a virtual reality helmet, virtual reality glasses, a virtual reality patch, an augmented reality helmet, augmented reality glasses, an augmented reality patch or similar content, or any combination thereof. For example, the virtual reality device or the augmented reality device may include Google glasses, a head
5 mounted display, or VR. In some embodiments, the built-in apparatus in the motor vehicle can include a vehicle-mounted computer, a vehicle-mounted television, or the like.

[0040] The server can be an electronic device that provides a service to the terminal device. For example, a large model can be deployed in the server. When performing the question recommendation method described in this specification, the terminal device can invoke the large
10 model in the server to perform an inference process. For example, in response to detecting that the target transaction is triggered for review, the terminal device can obtain transaction description information corresponding to the target transaction, obtain the operation guide data, and obtain historical review data corresponding to at least one historical transaction from the knowledge base. Further, the terminal device sends the data in the above-mentioned three aspects to the server, so
15 that the server performs inference through the large model based on the data in the above-mentioned three aspects, to obtain the target question set for reviewing the target transaction. The server returns the target question set to the terminal device, so that the terminal device displays the target question set through the man-machine interaction page.

[0041] It should be understood that a quantity of generation systems 11 and a quantity of
20 question recommendation systems 12 in FIG. 1 are merely examples. Based on an implementation requirement, for example, when the question recommendation method is implemented through a server group, there can be any quantity of question recommendation systems 12; or when a database is generated through a distributed device group, there can be any quantity of question recommendation systems 12.

[0042] It should be noted that the generation system 11 and the question recommendation
25 system 12 can correspond to a same physical device or can correspond to different physical devices. This is not limited in this specification.

[0043] FIG. 2 is a diagram of a hardware structure of a computing system 200 according to an
embodiment of this specification. In some embodiments, the computing system 200 can be used
30 as the generation system 11 in FIG. 1, and is configured to perform the knowledge base generation method described in this specification. In some embodiments, the computing system 200 can be

used as the question recommendation system 12 in FIG. 1, and is configured to perform the question recommendation method described in this specification.

[0044] As shown in FIG. 2, the computing system 200 can include at least one storage medium 230 and at least one processor 220. In some embodiments, the computing system 200 can further include a communication port 250 and an internal communication bus 210. The computing system 200 can further include an I/O component 260.

[0045] The internal communication bus 210 can be connected to different system components. For example, the internal communication bus 210 can be connected to the storage medium 230, the processor 220, the communication port 250, the I/O component 260, and the like.

[0046] The I/O component 260 supports an input/output between the computing system 200 and another component.

[0047] The communication port 250 is used for data communication between the computing system 200 and the outside. For example, the communication port 250 can be used for data communication between the computing system 200 and a network. The communication port 250 can be a wired communication port, or can be a wireless communication port.

[0048] The storage medium 230 can include a data storage apparatus. The data storage apparatus can be a non-transitory storage medium, or can be a transitory storage medium. For example, the data storage apparatus can include one or more of a disk 232, a read-only storage medium (ROM) 234, or a random access storage medium (RAM) 236. The storage medium 230 further includes at least one instruction set stored in the data storage apparatus. The instruction set can include computer program code. The computer program code can include a program, a routine, an object, a component, a data structure, a process, a module, and the like.

[0049] When the computing system 200 is used as the generation system 11 in FIG. 1, the at least one processor 220 can be communicatively connected to the at least one storage medium 230.

When the computing system 200 runs, the at least one processor 220 reads the at least one instruction set, and performs, based on an indication of the at least one instruction set, the knowledge base generation method provided in this specification. The at least one processor 220 can perform the steps included in the knowledge base generation method.

[0050] When the computing system 200 is used as the question recommendation system 12 in FIG. 1, the at least one processor 220 can be communicatively connected to the at least one storage medium 230. When the computing system 200 runs, the at least one processor 220 reads the at

least one instruction set, and performs, based on an indication of the at least one instruction set, the question recommendation method provided in this specification. The at least one processor 220 can perform the steps included in the question recommendation method.

[0051] The processor 220 can be in a form of one or more processors. In some embodiments, the processor 220 can include one or more hardware processors, for example, a microcontroller, a microprocessor, a reduced instruction set computer (RISC), an application-specific integrated circuit (ASIC), an application-specific instruction set processor (ASIP), a central processing unit (CPU), a graphics processing unit (GPU), a physical processing unit (PPU), a microcontroller unit, a digital signal processor (DSP), a field programmable gate array (FPGA), an advanced RISC machine (ARM), a programmable logic device (PLD), any circuit, processor, or the like that can perform one or more functions, or any combination thereof.

[0052] To merely describe a problem, only one processor 220 is shown in the computing system 200 in the accompanying drawings. However, it should be noted that the computing system 200 in this specification can further include a plurality of processors. Therefore, the operations and/or method steps disclosed in this specification can be performed by one processor, or can be jointly performed by a plurality of processors. For example, if the processor 220 in the computing system 200 described in this specification performs step A and step B, it should be understood as that step A and step B can be jointly or separately performed by two different processors 220 (for example, a first processor performs step A and a second processor performs step B, or a first processor and a second processor jointly perform step A and step B).

[0053] FIG. 3 is a flowchart of a question recommendation method according to an embodiment of this specification. As described above, the question recommendation system 12 can perform the question recommendation method described in this specification.

[0054] S310: In response to detecting that a target transaction is triggered for review, obtain transaction description information corresponding to the target transaction.

[0055] In some embodiments, that the question recommendation system detects that a target transaction is triggered for review can be that the target transaction is automatically triggered for review when it is detected that a user or a merchant initiates the target transaction. The user or the merchant can be preset, can be a user or a merchant in a gray list, or the like. The target transaction can be a transaction type that may be risky, for example, a cross-border transaction, a large transaction, or a frequent transaction.

[0056] In some embodiments, that the question recommendation system detects that a target transaction is triggered for review can alternatively be that the question recommendation system receives a review instruction, where the review instruction is used to indicate to review the target transaction. For example, the review instruction can be sent by a reviewer or automatically sent by a risk control system when it is detected that there is a risk in the target transaction. This is not limited in this application.

[0057] The transaction description information is information describing the target transaction in a natural language. In some embodiments, the question recommendation system can obtain the transaction description information corresponding to the target transaction in the following manner: obtaining transaction information corresponding to the target transaction, where the transaction information includes a plurality of attributes and an attribute value of each attribute; and describing the transaction information based on a natural language description specification, to obtain the transaction description information. With reference to FIG. 4, descriptions are provided below by using an example.

[0058] FIG. 4 is a schematic diagram of generating transaction description information according to an embodiment of this specification.

[0059] In some embodiments, with reference to FIG. 4, the question recommendation system can first obtain the transaction information corresponding to the target transaction, where the transaction information includes a plurality of attributes and an attribute value of each attribute.

[0060] For example, with reference to FIG. 4, the transaction information includes n attributes (n is an integer greater than or equal to 1), and each attribute corresponds to one attribute value.

[0061] It is assumed that the transaction information is "Contract time: July 15, 2024; Buyer name: Company A; Seller name: Company B; Buyer address: A street in City B in Country A; Seller address: A street in City D in Country C; Product name: Tablet computer; Product unit price: X; Product quantity: Y; Total product amount: M; Product industry classification: Digital products; Payer name: Company A; Payment bank: Bank C; Incoming transfer time: 15:32:51 on July 16, 2024; Incoming transfer amount: M; Remarks: None".

[0062] The transaction information includes a plurality of attributes such as "contract time", "buyer name", "seller name", "buyer address", "seller address", "product name", "product unit price", "product quantity", "total product amount", "product industry classification", "payer name", "payment bank", "incoming transfer time", "incoming transfer amount", and "remarks" and an

attribute value corresponding to each attribute.

[0063] In some embodiments, the question recommendation system can input the attribute and the attribute value in the transaction information into a preset description template, to obtain the transaction description information described in the natural language; or input the attribute and the attribute value in the transaction information into a large language model, a pre-trained machine learning model, or the like, to obtain the transaction description information described in the natural language.

[0064] Herein, obtaining of the transaction description information based on the transaction information is described by using an example in which the attribute and the attribute value in the transaction information are input into the preset description template, to obtain the transaction description information described in the natural language.

[0065] In some embodiments, with reference to FIG. 4, the plurality of attributes in the transaction information can be grouped into a plurality of groups of related attributes. For example, attributes 1 to 4 correspond to one group of related attributes, and attributes 5 and 6 correspond to one group of related attributes. The question recommendation system can describe one group of related attributes by using one description template, to obtain a description segment.

[0066] In some embodiments, a template library is preset, a plurality of preset description templates are stored in the template library, and each preset description template corresponds to one group of related attributes. The question recommendation system can obtain a preset description template through matching from the template library based on a group of related attributes, and fill the matched preset description template with an attribute value of the group of related attributes, to obtain a description segment described in the natural language.

[0067] With reference to FIG. 4, in an example, for a first group of related attributes, the question recommendation system can obtain a preset description template 1 through matching from the template library based on the attribute 1, the attribute 2, the attribute 3, and the attribute 4. The question recommendation system fills corresponding locations in the preset description template 1 with an attribute value 1, an attribute value 2, an attribute value 3, and an attribute value 4, to obtain a description segment 1 described in the natural language.

[0068] Still with reference to FIG. 4, for a second group of related attributes, the question recommendation system can obtain a preset description template 2 through matching from the template library based on the attribute 5 and the attribute 6. The question recommendation system

fills corresponding locations in the preset description template 2 with an attribute value 5 and an attribute value 6, to obtain a description segment 2 described in the natural language.

[0069] Based on the example manner in FIG. 4, the question recommendation system can obtain a plurality of preset description templates through matching based on the plurality of attributes in the transaction information. After the plurality of preset description templates are respectively filled with attribute values of the plurality of attributes, m (m is an integer greater than or equal to 1) description segments can be obtained. Then, the question recommendation system can concatenate the m description segments to obtain the transaction description information corresponding to the transaction information.

[0070] A process of generating the transaction description information is further described below with reference to FIG. 4 and the above-mentioned example. In some embodiments, the question recommendation system can obtain a preset description template 1 through matching based on a plurality of attributes such as "contract time", "buyer name", "seller name", "product name", "product unit price", "product quantity", and "total product amount": "{buyer name} purchases {product quantity} {product name} from {seller name} on {contract time}, a price of each {product name} is {product unit price}, and a total amount of this transaction is {total product amount}."

[0071] After filling a corresponding location in the preset description template 1 with an attribute value corresponding to each attribute, the question recommendation system can obtain a description segment 1: "Company A purchased Y tablet computers from Company B on July 15, 2024, the price of each tablet computer is X, and the total amount of this transaction is M."

[0072] In some embodiments, the question recommendation system can obtain a preset description template 2 through matching based on a plurality of attributes such as "seller address", "buyer address", and "product industry classification": "A contact address of the seller is {seller address}, a contact address of the buyer is {buyer address}, and according to the contract, the product attribute of the transaction between the two parties belongs to the {product industry classification} category."

[0073] After filling a corresponding location in the preset description template 2 with an attribute value corresponding to each attribute, the question recommendation system can obtain a description segment 2: "The contact address of the seller is a street in City D in Country C, the contact address of the buyer is a street in City B in Country A, and according to the contract, the

product attribute of the transaction between the two parties belongs to a digital product category."

[0074] In some embodiments, the question recommendation system can obtain a preset description template 3 through matching based on a plurality of attributes such as "payer name", "payment bank", "received amount", "incoming transfer time", and "remarks": "The payer {payer name} remits {incoming transfer amount} to a bank account specified in the contract through {payment bank}, a remittance date is {incoming transfer time}, and remittance remarks are {remarks}."

[0075] After filling a corresponding location in the preset description template 3 with an attribute value corresponding to each attribute, the question recommendation system can obtain a description segment 3: "The payer Company A remits M to the bank account specified in the contract through Bank C, the remittance date is 15:32:51 on July 16, 2024, and the remittance remarks are none."

[0076] In some embodiments, the question recommendation system can sequentially concatenate the description segment 1 to the description segment 3, to obtain the transaction description information corresponding to the transaction information: "Company A purchased Y tablet computers from Company B on July 15, 2024, the price of each tablet computer is X, and the total amount of this transaction is M. The contact address of the seller is a street in City D in Country C, the contact address of the buyer is a street in City B in Country A, and according to the contract, the product attribute of the transaction between the two parties belongs to a digital product category. The payer Company A remits M to the bank account specified in the contract through Bank C, the remittance date is 15:32:51 on July 16, 2024, and the remittance remarks are none."

[0077] The question recommendation system generates, based on the plurality of attributes and the attribute value of each attribute included in transaction information, the transaction description information described in the natural language. The transaction description information generated in this way is more accurate, and can fully describe the target transaction. This facilitates understanding of the target transaction by a large model, and helps the large model infer a target question set that is more suitable for reviewing the target transaction.

[0078] S320: Obtain operation guide data, where the operation guide data is used to indicate an alternative question set involved in a transaction review process and a jump relationship between questions.

[0079] The operation guide data can be data that is obtained through pre-organization based on types and features of risks to be prevented and that is used to standardize and direct a review procedure of the reviewer. The operation guide data can indicate the alternative question set involved in the transaction review process and the jump relationship between questions. The
5 alternative question set can be a relatively full and complete question set. In some embodiments, the operation guide data can be recorded in a form of a question tree. FIG. 5 is a schematic diagram of a question tree according to an embodiment of this specification.

[0080] With reference to FIG. 5, the question tree shown in FIG. 5 displays the alternative question set related to the target transaction and the jump relationship between questions in the
10 operation guide data, and parts not related to the target transaction are not displayed. It should be noted that the operation guide data can further include more alternative questions and a jump relationship between more complex questions. Other forms of diagrams, tables, or data structures can alternatively be used for recording. Specific content and a specific form of the operation guide data are not limited in this specification.

[0081] In some embodiments, as shown in FIG. 5, the question tree corresponding to the target transaction includes three questions and a jump relationship between the three questions. When a withdrawal transaction is triggered for review, a default question, that is, a question a,
15 corresponding to the withdrawal transaction can be obtained first. When an answer to the question a is yes, the review can be directly passed without a further jump, that is, "the target transaction is allowed".
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[0082] When an answer to the question a is no, a jump can be made to answer a question b. If the answer to the question b is no, the review is directly stopped without a further jump, that is, "the target transaction is rejected". When the answer to the question b is yes, a jump can continue to be made to answer a question c. If the answer to the question c is no, the review is stopped, that
25 is, "the target transaction is rejected". If the answer to the question 3 is yes, the review is passed, that is, "the target transaction is allowed".

[0083] S330: Obtain historical review data corresponding to at least one historical transaction from a knowledge base, where the historical review data includes at least transaction description information corresponding to the historical transaction and a historical question set corresponding
30 to the historical transaction.

[0084] In this specification, the knowledge base can be a database used to store historical

review data corresponding to a historical transaction. The knowledge base can be generated based on the knowledge base generation method provided in this specification. For ease of understanding, the knowledge base generation method is first described below.

[0085] FIG. 6 is a flowchart of a knowledge base generation method according to an embodiment of this specification. As described above, the generation system 11 can perform the question recommendation method in this specification.

[0086] S410: Obtain transaction information of a historical transaction, and generate transaction description information corresponding to the historical transaction based on the transaction information of the historical transaction, where the historical transaction is a reviewed transaction.

[0087] Similar to the transaction information of the target transaction, the transaction information of the historical transaction also includes a plurality of attributes and an attribute value of each attribute. Details are not described herein again.

[0088] A manner in which the generation system 11 generates the transaction description information corresponding to the historical transaction is similar to the manner in which the question recommendation system 12 generates the transaction description information corresponding to the target transaction. References can be made to the steps in S310. Details are not described herein again.

[0089] It should be noted that the historical transaction can be a real reviewed transaction, for example, a real transaction that is reviewed by the reviewer at a historical moment and for which a closing statement (a transaction review result) is generated.

[0090] S420: Obtain a historical question set corresponding to the historical transaction.

[0091] In some embodiments, the generation system can obtain the corresponding historical question set based on a closing statement of the historical transaction. The closing statement includes some questions in the historical question set, and the historical question set can be inferred based on these questions.

[0092] For example, the generation system can input the questions in the closing statement and operation guide data into a large model, obtain upstream questions of these questions by using an inference capability of the large model based on these questions, and obtain the historical question set based on the questions in the closing statement and the upstream questions of these questions.

[0093] Alternatively, in some other examples, the generation system can obtain the historical question set based on a received manual mark. For example, based on the questions in the closing statement, upstream questions related to these questions in operation guide data can be marked in advance through manual marking. Then, the generation system obtains the upstream questions
5 based on the manual mark and the operation guide data, and obtains the historical question set based on the upstream questions and the questions in the closing statement.

[0094] S430: Generate historical review data corresponding to the historical transaction based on at least the transaction description information and the historical question set that correspond to the historical transaction.

10 [0095] FIG. 7 is a schematic diagram of generating historical review data corresponding to a historical transaction according to an embodiment of this specification.

[0096] In some embodiments, with reference to FIG. 7, the generation system can perform feature extraction on the transaction description information corresponding to the historical transaction, to obtain a transaction feature corresponding to the historical transaction. Then, the
15 generation system can obtain answer information corresponding to the historical question set corresponding to the historical transaction. Finally, the generation system can generate the historical review data corresponding to the historical transaction based on the transaction description information, the transaction feature, the historical question set, and the answer information that correspond to the historical transaction.

20 [0097] In some embodiments, the transaction feature can include key information in the transaction description information. For example, the key information can include a transaction amount, whether the transaction is a cross-border transaction, a settlement method, a payer type, a transaction consistency comparison result, and the like.

[0098] In some embodiments, the generation system can perform feature extraction on the
25 transaction description information corresponding to the historical transaction by using a preset filtering rule or a pre-trained model, to obtain the key information, and then concatenate the selected key information to obtain the transaction feature.

[0099] For example, the transaction description information corresponding to the historical transaction is the transaction description information shown in S310: "Company A purchased Y
30 tablet computers from Company B on July 15, 2024, the price of each tablet computer is X, and the total amount of this transaction is M. The contact address of the seller is a street in City D in

Country C, the contact address of the buyer is a street in City B in Country A, and according to the contract, the product attribute of the transaction between the two parties belongs to a digital product category. The payer Company A remits M to the bank account specified in the contract through Bank C, the remittance date is 15:32:51 on July 16, 2024, and the remittance remarks are none."

[0100] In this case, the key information obtained after the generation system performs feature extraction on the transaction description information is "large amount", "cross-border", "foreign exchange settlement", and "business account payment". After the generation system concatenates the key information, the obtained transaction feature is "large amount, cross-border, foreign exchange settlement, and business account payment".

[0101] In some embodiments, the answer information corresponding to the historical question set can include answer information corresponding to each question in the historical question set. In an example, for a determining question, the answer information can be "yes" or "no"; and for a non-determining question, the answer information can include a text description, an image, a video, audio, or the like.

[0102] In some embodiments, with reference to the above-mentioned example of obtaining the historical question set, the historical question set can include the questions in the closing statement and the upstream questions of these questions. The answer information corresponding to the historical question set includes answer information of the questions in the closing statement and answer information of the upstream questions of these questions. For the upstream question of the question in the closing statement, an answer to each question can be determined during obtaining. For the question in the closing statement, each question has corresponding answer information.

[0103] S440: Add the historical review data corresponding to the historical transaction to a knowledge base.

[0104] In some embodiments, when the historical review data corresponding to the historical transaction is added to the knowledge base, if a similarity between the transaction feature corresponding to the historical transaction and a transaction feature corresponding to each historical transaction in the knowledge base is less than a preset threshold, the historical review data corresponding to the historical transaction is added to the knowledge base. That is, if the knowledge base already stores historical review data of a historical transaction with a similar feature, the current historical transaction is no longer added to the knowledge base. In this way, a

case in which historical review data of a plurality of historical transactions with similar features is stored in the knowledge base can be avoided. The knowledge base is made as lightweight as possible while the knowledge base can effectively direct the large model, thereby improving question recommendation efficiency.

5 **[0105]** In some embodiments, with reference to the example in S430, if the transaction feature corresponding to the historical transaction is "large amount, cross-border, foreign exchange settlement, and business account payment", the generation system can calculate the similarity between the transaction feature and the transaction feature of each historical transaction in the knowledge base.

10 **[0106]** For example, in this embodiment, the transaction feature is a text segment. In a method for calculating a similarity between two text segments, the similarity can be calculated through a deep learning model. The deep learning model can include bidirectional encoder representations from transformers (BERT), a generative pre-trained transformer (GPT), or the like.

[0107] Alternatively, the similarity can be calculated by using a word embedding-based
15 algorithm. The word embedding-based algorithm includes word to vector (Word2Vec), fast text, or the like.

[0108] Alternatively, the similarity can be calculated by using a sentence embedding-based algorithm. The sentence embedding-based algorithm includes Sentence-BERT, a universal sentence encoder, or the like.

20 **[0109]** In the knowledge base generation method and system provided in this specification, historical review data of a historical transaction is obtained, and the historical review data is added to the knowledge base, so that the knowledge base can have a large quantity of historical transactions for reference. When the target question set for the target transaction is recommended through the large model based on historical review data of these historical transactions, the large
25 model can more accurately provide the target question set for the target transaction with reference to the historical review data, to more accurately review the target transaction.

[0110] When the similarity is less than the preset threshold, it indicates that there is no sample similar to the current historical transaction in the knowledge base. In this case, the historical transaction is relatively highly representative. The historical transaction is added to the knowledge
30 base to enrich samples in the knowledge base, so that the knowledge base is more comprehensive. In this way, the target transaction can be more accurately reviewed based on the knowledge base

and the target question set for the target transaction recommended by the large model.

[0111] S340: Determine, through the large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, the target question set for reviewing the target transaction, and output the target question set.

[0112] In some embodiments, the question recommendation system can use the large model to determine the target question set for reviewing the target transaction from the operation guide data in an example learning manner based on a historical transaction similar to the target transaction in the knowledge base. Alternatively, the question recommendation system can fine-tune the large model based on the historical review data of the historical transaction in the knowledge base, and then determine the target question set for reviewing the target transaction from the operation guide data based on the target transaction by using a fine-tuned large model.

[0113] In some embodiments, the question recommendation system can choose, based on an inference capability of the large model, whether to use the example learning manner for question recommendation or use the fine-tuned large model for question recommendation. In an example, the inference capability of the large model can be represented by a parameter quantity. For example, for a large model with a parameter quantity of 5 billion to 20 billion, the large model can be fine-tuned first, and then a fine-tuned large model is used for question recommendation. For a large model with a parameter quantity greater than 20 billion, the example learning manner can be used for question recommendation.

[0114] FIG. 8 is a flowchart of obtaining a target question set through a large model by using an example learning method according to an embodiment of this specification.

[0115] In some embodiments, when the question recommendation system obtains the target question set through the large model by using the example learning method, the historical transaction is similar to the target transaction. When obtaining the historical review data corresponding to the at least one historical transaction from the knowledge base, the question recommendation system can first perform feature extraction on the transaction description information corresponding to the target transaction, to obtain a transaction feature corresponding to the target transaction.

[0116] It should be noted that a manner in which the question recommendation system calculates a similarity between the transaction feature corresponding to the target transaction and

a transaction feature corresponding to the historical transaction is the same as the manner, shown in S440, in which the generation system calculates a similarity between transaction features corresponding to two historical transactions. Details are not described herein again.

[0117] Then, the question recommendation system obtains the historical review data
5 corresponding to the at least one historical transaction from the knowledge base based on a similarity between the transaction feature corresponding to the target transaction and a transaction feature corresponding to each historical transaction in the knowledge base.

[0118] In an example, the question recommendation system can obtain historical review data corresponding to at least one historical transaction whose similarity is greater than a preset
10 threshold from the knowledge base. Alternatively, the question recommendation system can sort calculated similarities, and obtain historical review data corresponding to at least one historical transaction with a highest similarity in the sorted similarities based on a preset quantity.

[0119] With reference to FIG. 8, that the question recommendation system determines, through the large model based on the operation guide data, the historical review data corresponding to the
15 at least one historical transaction, and the transaction description information corresponding to the target transaction, the target question set for reviewing the target transaction includes: generating a guidance instruction based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, where the guidance instruction is used to direct the large model to perform
20 inference under guidance of the operation guide data, by using the historical review data corresponding to the at least one historical transaction as a reference example, and based on the transaction description information corresponding to the target transaction, to obtain the target question set.

[0120] In some embodiments, the question recommendation system can generate reference
25 example information based on the historical review data corresponding to the at least one historical transaction. For example, the question recommendation system can package the historical review data corresponding to the at least one historical transaction, to obtain a dataset that includes the historical review data corresponding to the at least one historical transaction. The dataset can be used as the reference example information.

[0121] Alternatively, for historical review data corresponding to a historical transaction, transaction description information, a historical question set, and answer information can be
30

extracted. Then, the transaction description information, the historical question set, and the answer information are described in the natural language, to obtain review description information corresponding to the historical transaction. Finally, review description information corresponding to at least one historical transaction is concatenated to obtain the reference example information.

5 **[0122]** In some embodiments, the question recommendation system can generate task information based on the transaction description information corresponding to the target transaction and the operation guide data. Further, the question recommendation system concatenates the reference example information and the task information based on a preset syntax format, to obtain the guidance instruction.

10 **[0123]** In an example, the task information can include an objective, a constraint, a requirement, and the like. For example, the objective can be "generate a question set". The constraint can be used to specify a range, for example, "use the reference example information as a reference example", "in the operation guide data", and "for reviewing the target transaction". The requirement can be used to indicate specific details, for example, "in the example learning manner".

15 **[0124]** In some embodiments, a template for the guidance instruction can be provided by presetting the syntax format. For example, the template for the guidance instruction can be "Please generate, under guidance of the operation guide data and by using {reference example information} as a reference example, a question set for reviewing the following transaction. Transaction description information of the transaction is as follows: {transaction description information of the target transaction}."

20 **[0125]** Herein, "{reference example information}" can be the reference example information obtained by concatenating the review description information corresponding to the at least one historical transaction in the above-mentioned example, and "{transaction description information of the target transaction}" can be a result of describing the transaction information of the target transaction in the natural language.

25 **[0126]** In some embodiments, when the reference example information is the dataset obtained by packaging the historical review data corresponding to the at least one historical transaction, the question recommendation system can first name the dataset, for example, a dataset 1. Then, the question recommendation system inputs the dataset 1 into the large model. In this case, the template for the guidance instruction can further be "Please generate, under the guidance of the operation guide data and by using an input {dataset name} as a reference example, the question

set for reviewing the following transaction. The transaction description information of the transaction is as follows: {transaction description information of the target transaction}."

[0127] Alternatively, the question recommendation system can upload the dataset to a storage location that can be obtained by the large model through a network, and generate a storage path corresponding to the dataset. In this case, the template for the guidance instruction can further be "Please generate, under the guidance of the operation guide data and by obtaining the dataset at the {storage path of the dataset} location as a reference example, the question set for reviewing the following transaction. The transaction description information of the transaction is as follows: {transaction description information of the target transaction}."

[0128] In some embodiments, after generating the guidance instruction, the question recommendation system can input the guidance instruction into the large model, and obtain the target question set based on an output result of the large model.

[0129] In some embodiments, after determining the target question set for reviewing the target transaction and outputting the target question set, the question recommendation system can obtain review data corresponding to the target transaction. For example, the question recommendation system can generate the review data corresponding to the target transaction based on at least the transaction description information corresponding to the target transaction and the target question set. In some embodiments, the question recommendation system can generate the review data corresponding to the target transaction based on the transaction description information corresponding to the target transaction, the target question set, and answer information corresponding to the target question set. Further, the question recommendation system adds the review data corresponding to the target transaction to the knowledge base.

[0130] In an example, after determining the target question set, the question recommendation system can display the target question set to the reviewer, and receive, in response to an operation of the reviewer, a closing statement sent by the reviewer. Then, with reference to the steps displayed in S410 to S440, the question recommendation system can obtain the review data corresponding to the target transaction, and add the review data corresponding to the target transaction to the knowledge base. In some embodiments, the generation system can update the operation guide data at an interval of preset duration (for example, 12 hours, 24 hours, or 36 hours) based on review data newly added to the knowledge base.

[0131] By updating the knowledge base and the operation guide data, review data

corresponding to a risk type that has not been encountered can be added to the knowledge base, so that the question recommendation system can better cope with an emerging risk type when recommending a question based on the knowledge base, to improve risk control accuracy.

[0132] In the above-mentioned solution, the question recommendation system can obtain historical review data of a similar historical transaction from the knowledge base based on the transaction feature of the target transaction, and infer the target question set applicable to the target transaction through the large model based on the example learning manner. Because there is similar review logic for the similar transaction, when a question is recommended based on the similar historical transaction, a more accurate and targeted review question can be provided for the transaction feature of the target transaction, to improve a risk control effect.

[0133] FIG. 9 is a flowchart of obtaining a target question set through a fine-tuned large model according to an embodiment of this specification.

[0134] In some embodiments, the question recommendation system can perform fine-tuning training on the large model based on the historical review data corresponding to the at least one historical transaction and the operation guide data, to obtain a fine-tuned large model. The fine-tuned large model has a capability of predicting, under guidance of the operation guide data and based on transaction description information corresponding to a transaction, a question set for reviewing the transaction. Further, the question recommendation system can input the transaction description information corresponding to the target transaction and the operation guide data into the fine-tuned large model, and obtain the target question set based on an output of the fine-tuned large model.

[0135] In some embodiments, when fine-tuning the large model, the question recommendation system can input the historical review data in the knowledge base into the large model, and indicate the large model to perform fine-tuning based on the historical review data, to learn a feature of the historical review data in the knowledge base.

[0136] In some embodiments, the fine-tuned large model can match at least one preset historical review data based on the input transaction description information, perform context learning based on the input transaction description information and the operation guide data and by using the matched historical review data as an example, and output the target question set corresponding to the transaction description information.

[0137] The large model is fine-tuned by using the historical review data in the knowledge base,

so that a large model with a relatively poor inference capability can also output the target question set based on the transaction description information corresponding to the target transaction and the operation guide data. An application scope of the question recommendation method provided in this specification is extended.

5 **[0138]** In some embodiments, the target question set can include a plurality of questions. After the large model in the question recommendation system runs for one round, all questions in the target question set can be output. Alternatively, after the large model in the question recommendation system runs for one round, some questions can be output. Then, the question recommendation system obtains answer information of the some output questions, and inputs the
10 output some questions and the answer information into the large model again, to continue a next round of recommendation.

[0139] In some embodiments, when performing a plurality of rounds of recommendation, the question recommendation system can first determine, through the large model based on the operation guide data, the historical review data corresponding to the at least one historical
15 transaction, and the transaction description information corresponding to the target transaction, a first target question subset for reviewing the target transaction, and output the first question subset.

[0140] The question recommendation system can repeatedly perform the following steps until a preset end condition is met, where i sequentially increases from 1:

 obtaining answer information corresponding to an i^{th} target question subset;
20 determining, through the large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, the transaction description information corresponding to the target transaction, the i^{th} target question subset, and the answer information corresponding to the i^{th} target question subset, an $(i+1)^{\text{th}}$ target question subset for reviewing the target transaction; and outputting the $(i+1)^{\text{th}}$ question subset.

25 **[0141]** In some embodiments, when $i=1$, the question recommendation system determines, through the large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, the first target question subset for reviewing the target transaction, and outputs the first question subset.

30 **[0142]** Then, the question recommendation system displays the first question subset, and obtains answer information corresponding to the first question subset. Further, the question recommendation system inputs the first target question subset, the answer information

corresponding to the first target question subset, and the transaction description information corresponding to the target transaction into the large model, so that the large model determines, based on the input first target question subset, the answer information corresponding to the first target question subset, the transaction description information corresponding to the target transaction, the operation guide data remaining in the large model, and the historical review data corresponding to the at least one historical transaction, a second target question subset for reviewing the target transaction, and outputs the second question subset.

[0143] One question subset can include one question, or can include a plurality of questions. This is not limited in this specification.

[0144] In some embodiments, the preset end condition can include one or more of the following: A review result (indicating a risk/no risk) of the target transaction can be determined based on first *i* output question subsets, the review data that corresponds to the target transaction and that is sent by the reviewer is received, an instruction for indicating to stop recommendation is received, a quantity of recommended target question subsets reaches a preset value, and so on.

[0145] FIG. 10 is a schematic diagram of a plurality of rounds of recommendation according to an embodiment of this specification.

[0146] In some embodiments, with reference to FIG. 10, the question recommendation system performs a first round of question recommendation through the large model based on the operation guide data, at least one piece of historical review data, and the transaction description information corresponding to the target transaction, to obtain a first question subset. The first question subset includes four questions: a "question 1", a "question 2", a "question 3", and a "question 4". The question recommendation system can output the first question subset to the reviewer, and receive answer information sent by the reviewer for the first question subset. The received answer information can include answer information corresponding to each question, for example, can include answer information 1 corresponding to the question 1, answer information 2 corresponding to the question 2, answer information 3 corresponding to the question 3, and answer information 4 corresponding to the question 4.

[0147] Then, the question recommendation system inputs the transaction description information corresponding to the target transaction, the first question subset, and the corresponding answer information (the answer information 1, the answer information 2, the answer information 3, and the answer information 4) into the large model again, and the large model performs a second

round of question recommendation based on the input data, to obtain a second question subset. The second question subset includes two questions: a "question 5" and a "question 6". The question recommendation system can output the second question subset to the reviewer, and receive answer information sent by the reviewer for the second question subset, for example, answer information 5 corresponding to the question 5 and answer information 6 corresponding to the question 6.

[0148] Finally, the question recommendation system inputs the transaction description information corresponding to the target transaction, the second question subset, and the corresponding answer information (the answer information 5 and the answer information 6) into the large model again, and the large model performs a third round of recommendation based on the input data, to obtain a third question subset. The third question subset includes four questions: a "question 7", a "question 8", a "question 9", and a "question 10". The question recommendation system can output the third question subset to the reviewer, and receive answer information sent by the reviewer for the third question subset, for example, answer information 7 corresponding to the question 7, answer information 8 corresponding to the question 8, answer information 9 corresponding to the question 9, and answer information 10 corresponding to the question 10.

[0149] The large model can determine, based on the three question subsets and the corresponding answer information, that the review result of the target transaction is a low risk. Therefore, recommendation is stopped and the review result of the target transaction is output.

[0150] A plurality of rounds of recommendation are performed by using the large model, so that a problem that a single round of recommendation occupies an excessively large quantity of computing power resources of the large model can be alleviated. In addition, in each round of recommendation, references are made to answer information in a previous round. Therefore, accuracy of an intermediate round of question recommendation can be effectively improved, thereby improving a risk control effect.

[0151] In conclusion, in the question recommendation method and system provided in this specification, in response to detecting that a target transaction is triggered for review, a target question set for reviewing the target transaction is determined through a large model based on transaction description information corresponding to the target transaction, operation guide data, and historical review data that corresponds to at least one historical transaction and that is obtained from a knowledge base, and the target question set is output. In the above-mentioned solution, the large model can recommend, based on the historical review data corresponding to the historical

transaction, the target question set suitable for reviewing the target transaction. There is no need to answer a full question set in a review process of the target transaction. Therefore, transaction review efficiency can be improved. In addition, the target question set recommended by the large model is applicable to the review process of the target transaction and is targeted. Therefore, question recommendation accuracy is improved, and a transaction risk control effect can be improved.

[0152] The historical review data corresponding to the historical transaction is obtained from the knowledge base, and the knowledge base can be continuously updated and iterated based on a review result of the target transaction. Therefore, the historical review data corresponding to the historical transaction is obtained from the knowledge base as a reference, to better cope with an emerging risk type and improve risk control accuracy.

[0153] According to another aspect of this specification, a computer-readable non-transitory storage medium is provided and stores at least one instruction set for recommending a question. When the at least one instruction set is executed by a processor, the at least one instruction set instructs the processor to implement the steps in the question recommendation method or the knowledge base generation method described in this specification. In some possible implementations, various aspects of this specification can be further implemented in a form of a program product, including program code. When the program product is run on the computing system 200, the program code is used to enable the computing system 200 to perform the steps in the question recommendation method or the knowledge base generation method described in this specification. The program product used to implement the above-mentioned method can be a portable compact disk read-only memory (CD-ROM) including program code, and can run on the computing system 200. However, the program product in this specification is not limited thereto. In this specification, a readable storage medium can be any tangible medium that includes or stores a program, and the program can be used by or in combination with an instruction execution system. The program product can be any combination of one or more readable media. The readable medium can be a readable signal medium or a readable storage medium. For example, the readable storage medium can be but is not limited to an electrical system, apparatus, or device, a magnetic system, apparatus, or device, an optical system, apparatus, or device, an electromagnetic system, apparatus, or device, an infrared system, apparatus, or device, or a semiconductor system, apparatus, or device, or any combination thereof. More specific examples of the readable storage

medium include an electrical connection including one or more conducting wires, a portable disk, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or flash memory), an optical fiber, a portable compact disc read-only memory (CD-ROM), an optical storage device, a magnetic storage device, or any proper combination thereof. The computer-readable storage medium can include a data signal propagated in a baseband or as part of a carrier, and carries readable program code. The propagated data signal can be in a plurality of forms, and includes but is not limited to an electromagnetic signal, an optical signal, or any proper combination thereof. The readable storage medium can alternatively be any readable medium other than the readable storage medium, and the readable medium can send, propagate, or transmit a program used by or in combination with an instruction execution system, apparatus, or device. The program code included in the readable storage medium can be transmitted by using any proper medium, including but not limited to a wireless medium, a wired medium, an optical cable, an RF medium, or any proper combination thereof. Program code for performing the operations in this specification can be written in any combination of one or more program design languages. The program design language includes an object-oriented program design language, for example, Java or C++, and further includes a conventional procedural program design language, for example, a "C" language, or a similar program design language. The program code can be completely executed on the computing system 200, partially executed on the computing system 200, executed as an independent software package, partially executed on the computing system 200 and partially executed on a remote computing device, or completely executed on a remote computing device.

[0154] Specific embodiments of this specification are described above. Other embodiments fall within the scope of the appended claims. In some cases, the actions or steps described in the claims can be performed in an order different from that in the embodiments and desired results can still be achieved. In addition, the process depicted in the accompanying drawings does not necessarily need a particular order or consecutive order to achieve the desired results. In some implementations, multitasking and parallel processing are possible or may be advantageous.

[0155] In conclusion, after reading the detailed disclosure, a person skilled in the art can understand that the detailed disclosure can be presented only by using an example, and can impose no limitation. Although it is not explicitly stated herein, a person skilled in the art can understand that the requirements of this specification include various proper changes, improvements, and

modifications to the embodiments. These changes, improvements, and modifications are intended to be provided in this specification, and fall within the spirit and scope of the example embodiments of this specification.

5 [0156] In addition, some terms in this specification are used to describe the embodiments of this specification. For example, "one embodiment", "embodiments", and/or "some embodiments" mean/means that specific features, structures, or characteristics described with reference to the embodiment can be included in at least one embodiment of this specification. Therefore, it can be emphasized and understood that two or more references to "embodiments", "one embodiment", or "alternative embodiments" in various parts of this specification do not necessarily refer to a same
10 embodiment. In addition, specific features, structures, or characteristics can be properly combined in one or more embodiments of this specification.

[0157] It should be understood that in the above-mentioned descriptions of the embodiments of this specification, to help understand a feature, for the purpose of simplifying this specification, various features are combined in a single embodiment, accompanying drawing, or description
15 thereof in this specification. However, this does not mean that the combination of these features is necessary. It is entirely possible for a person skilled in the art to mark some devices and understand the devices as separate embodiments when reading this specification. That is, the embodiments of this specification can also be understood as an integration of a plurality of secondary embodiments. Content of each secondary embodiment is also true when a quantity of features is less than a
20 quantity of all features in one of the above disclosed embodiments.

[0158] Each patent, patent application, publication of a patent application, and other materials, for example, articles, books, instructions, publications, documents, and products, that are cited in this specification and that are other than any document that is inconsistent or conflict with this document or that imposes limiting impact on the widest scope of the claims can be incorporated
25 herein by reference and used for all purposes now or later associated with this document. In addition, the terms in this document shall prevail if there is any inconsistency or conflict between the descriptions, definitions, and/or use of the related terms in any material and the descriptions, definitions, and/or use of the related terms in this document.

[0159] Finally, it should be understood that the principles of the implementation solutions of
30 this specification are described in the implementation solutions of the application disclosed in this specification. Other modified embodiments also fall within the scope of this specification.

Therefore, the embodiments disclosed in this specification are merely examples and not limitations. A person skilled in the art can use an alternative configuration according to the embodiments of this specification to implement the application in this specification. Therefore, the embodiments of this specification are not limited to the embodiments accurately described in the application.

CLAIMS

What is claimed is:

1. A question recommendation method, comprising:

in response to detecting that a target transaction is triggered for review, obtaining transaction

5 description information corresponding to the target transaction;

obtaining operation guide data, wherein the operation guide data is used to indicate an alternative question set involved in a transaction review process and a jump relationship between questions;

obtaining historical review data corresponding to at least one historical transaction from a
10 knowledge base, wherein the historical review data comprises at least transaction description information corresponding to the historical transaction and a historical question set corresponding to the historical transaction; and

determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description
15 information corresponding to the target transaction, a target question set for reviewing the target transaction, and outputting the target question set.

2. The method according to claim 1, wherein the historical transaction is similar to the target transaction, and the determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction
20 description information corresponding to the target transaction, a target question set for reviewing the target transaction comprises:

generating a guidance instruction based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, wherein the guidance instruction is used to direct the large
25 model to perform inference under guidance of the operation guide data, by using the historical review data corresponding to the at least one historical transaction as a reference example, and based on the transaction description information corresponding to the target transaction, to obtain the target question set; and

inputting the guidance instruction into the large model, and obtaining the target question set
30 based on an output result of the large model.

3. The method according to claim 2, wherein the generating a guidance instruction based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction comprises:

5 generating reference example information based on the historical review data corresponding to the at least one historical transaction;

 generating task information based on the transaction description information corresponding to the target transaction and the operation guide data; and

 concatenating the reference example information and the task information based on a preset
10 syntax format, to obtain the guidance instruction.

4. The method according to claim 2, wherein the historical review data further comprises a transaction feature corresponding to the historical transaction; and the obtaining historical review data corresponding to at least one historical transaction from a knowledge base comprises:

 performing feature extraction on the transaction description information corresponding to the
15 target transaction, to obtain a transaction feature corresponding to the target transaction; and

 obtaining the historical review data corresponding to the at least one historical transaction from the knowledge base based on a similarity between the transaction feature corresponding to the target transaction and a transaction feature corresponding to each historical transaction in the knowledge base.

20 5. The method according to claim 1, wherein the determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, a target question set for reviewing the target transaction comprises:

 performing fine-tuning training on the large model based on the historical review data
25 corresponding to the at least one historical transaction and the operation guide data, to obtain a fine-tuned large model, wherein the fine-tuned large model has a capability of predicting, under guidance of the operation guide data and based on transaction description information corresponding to a transaction, a question set for reviewing the transaction; and

 inputting the transaction description information corresponding to the target transaction and
30 the operation guide data into the fine-tuned large model, and obtaining the target question set based on an output of the fine-tuned large model.

6. The method according to claim 1, wherein after the determining a target question set for reviewing the target transaction, and outputting the target question set, the method further comprises:

generating review data corresponding to the target transaction based on at least the transaction description information corresponding to the target transaction and the target question set; and
5 adding the review data corresponding to the target transaction to the knowledge base.

7. The method according to claim 1, wherein the obtaining transaction description information corresponding to the target transaction comprises:

obtaining transaction information corresponding to the target transaction, wherein the transaction information comprises a plurality of attributes and an attribute value of each attribute;
10 and

describing the transaction information based on a natural language description specification, to obtain the transaction description information.

8. The method according to claim 1, wherein the historical review data further comprises answer information corresponding to the historical issue set, and the determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, a target question set for reviewing the target transaction, and outputting the target question set comprises:
15

determining, through the large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, a first target question subset for reviewing the target transaction, and outputting the first target question subset; and
20

repeatedly performing the following steps until a preset end condition is met, wherein i sequentially increases from 1:
25

obtaining answer information corresponding to an i^{th} target question subset;

determining, through the large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, the transaction description information corresponding to the target transaction, the i^{th} target question subset, and the answer information corresponding to the i^{th} target question subset, an $(i+1)^{\text{th}}$ target question subset for reviewing the target transaction; and
30

outputting the (i+1)th question subset.

9. A knowledge base generation method, comprising:

obtaining transaction information of a historical transaction, and generating transaction description information corresponding to the historical transaction based on the transaction information of the historical transaction, wherein the historical transaction is a reviewed transaction;

obtaining a historical question set corresponding to the historical transaction;

generating historical review data corresponding to the historical transaction based on at least the transaction description information and the historical question set that correspond to the historical transaction; and

adding the historical review data corresponding to the historical transaction to a knowledge base, wherein the knowledge base is used by a large model for a review process of a target transaction.

10. The method according to claim 9, wherein the obtaining transaction information of a historical transaction, and generating transaction description information corresponding to the historical transaction based on the transaction information of the historical transaction comprises:

obtaining the transaction information corresponding to the historical transaction, wherein the transaction information comprises a plurality of attributes and an attribute value of each attribute; and

describing the transaction information based on a natural language description specification, to obtain the transaction description information.

11. The method according to claim 9, wherein the generating historical review data corresponding to the historical transaction based on at least the transaction description information and the historical question set that correspond to the historical transaction comprises:

performing feature extraction on the transaction description information corresponding to the historical transaction, to obtain a transaction feature corresponding to the historical transaction;

obtaining answer information corresponding to the historical question set corresponding to the historical transaction; and

generating the historical review data corresponding to the historical transaction based on the transaction description information, the transaction feature, the historical question set, and the answer information that correspond to the historical transaction.

12. The method according to claim 11, wherein the adding the historical review data corresponding to the historical transaction to a knowledge base comprises:

adding the historical review data corresponding to the historical transaction to the knowledge base if a similarity between the transaction feature corresponding to the historical transaction and a transaction feature corresponding to each historical transaction in the knowledge base is less than a preset threshold.

13. A question recommendation system, comprising:

at least one storage medium that stores at least one instruction set for recommending a transaction review question; and

at least one processor that is communicatively connected to the at least one storage medium, wherein when the question recommendation system runs, the at least one processor reads the at least one instruction set, and performs the following operations based on an indication of the at least one instruction set:

in response to detecting that a target transaction is triggered for review, obtaining transaction description information corresponding to the target transaction;

obtaining operation guide data, wherein the operation guide data is used to indicate an alternative question set involved in a transaction review process and a jump relationship between questions;

obtaining historical review data corresponding to at least one historical transaction from a knowledge base, wherein the historical review data comprises at least transaction description information corresponding to the historical transaction and a historical question set corresponding to the historical transaction; and

determining, through a large model based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information corresponding to the target transaction, a target question set for reviewing the target transaction, and outputting the target question set.

14. The system according to claim 13, wherein the historical transaction is similar to the target transaction, and to determine the target question set for reviewing the target transaction, the at least one processor performs the following operations:

generating a guidance instruction based on the operation guide data, the historical review data corresponding to the at least one historical transaction, and the transaction description information

corresponding to the target transaction, wherein the guidance instruction is used to direct the large model to perform inference under guidance of the operation guide data, by using the historical review data corresponding to the at least one historical transaction as a reference example, and based on the transaction description information corresponding to the target transaction, to obtain
5 the target question set; and

inputting the guidance instruction into the large model, and obtaining the target question set based on an output result of the large model.

15. The system according to claim 14, wherein to generate the guidance instruction, the at least one processor performs the following operations:

10 generating reference example information based on the historical review data corresponding to the at least one historical transaction;

generating task information based on the transaction description information corresponding to the target transaction and the operation guide data; and

concatenating the reference example information and the task information based on a preset
15 syntax format, to obtain the guidance instruction.

16. The system according to claim 14, wherein the historical review data further comprises a transaction feature corresponding to the historical transaction; and to obtain the historical review data corresponding to the at least one historical transaction from the knowledge base, the at least one processor performs the following operations:

20 performing feature extraction on the transaction description information corresponding to the target transaction, to obtain a transaction feature corresponding to the target transaction; and

obtaining the historical review data corresponding to the at least one historical transaction from the knowledge base based on a similarity between the transaction feature corresponding to the target transaction and a transaction feature corresponding to each historical transaction in the
25 knowledge base.

17. The system according to claim 13, wherein to determine the target question set for reviewing the target transaction, the at least one processor performs the following operations:

performing fine-tuning training on the large model based on the historical review data corresponding to the at least one historical transaction and the operation guide data, to obtain a
30 fine-tuned large model, wherein the fine-tuned large model has a capability of predicting, under guidance of the operation guide data and based on transaction description information

corresponding to a transaction, a question set for reviewing the transaction; and

inputting the transaction description information corresponding to the target transaction and the operation guide data into the fine-tuned large model, and obtaining the target question set based on an output of the fine-tuned large model.

5 18. The system according to claim 13, wherein after determining the target question set for reviewing the target transaction, and outputting the target question set, the at least one processor performs the following operations:

generating review data corresponding to the target transaction based on at least the transaction description information corresponding to the target transaction and the target question set; and

10 adding the review data corresponding to the target transaction to the knowledge base.

19. A knowledge base generation system, comprising:

at least one storage medium that stores at least one instruction set for generating a knowledge base; and

at least one processor that is communicatively connected to the at least one storage medium,
15 wherein when the knowledge base generation system runs, the at least one processor reads the at least one instruction set, and performs the following operations based on an indication of the at least one instruction set:

obtaining transaction information of a historical transaction, and generating transaction description information corresponding to the historical transaction based on the transaction
20 information of the historical transaction, wherein the historical transaction is a reviewed transaction;

obtaining a historical question set corresponding to the historical transaction;

generating historical review data corresponding to the historical transaction based on at least the transaction description information and the historical question set that correspond to the
25 historical transaction; and

adding the historical review data corresponding to the historical transaction to the knowledge base, wherein the knowledge base is used by a large model for a review process of a target transaction.

20. A computer-readable nonvolatile storage medium, wherein the computer-readable
30 nonvolatile storage medium stores at least one instruction set, and when the at least one instruction set is executed by at least one processor, the method according to any one of claims 1 to 8 is

implemented, or the method according to any one of claims 9 to 12 is implemented.