

METHOD AND APPARATUS FOR PRESENTING A CONVERSATION MESSAGE

The present disclosure claims priority to Chinese patent application No. 201910394376.8,
5 filed on May 13, 2019 and entitled “Method and apparatus for presenting a conversation message”,
which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

The present disclosure relates to a technical field of computers, and particularly to a method
10 and an apparatus for presenting a conversation message.

BACKGROUND

In life, the instant messaging software has become a conventional way for people to
communicate with each other. The instant messaging software realizes real-time conversation and
15 video through a network. The group function in the instant messaging software allows members
of a group to conduct meetings and communications online without geographical restrictions.
Nowadays, there are a large number of groups in everyone's instant messaging software account.
However, when these groups are used, a lot of repeated and useless conversation messages may
flood the screen, which causes the group members viewing later to turn up several screens to find
20 a useful conversation message when browsing the conversations. For example, in a working group,
when a boss says a sentence, dozens or hundreds of persons replies “received”, “like”, and the like
thereafter. At this time, the group members who just see the conversations need to scroll up for a
long time to find out what the boss said, which is very inconvenient.

In this regard, some instant messaging software provides a search function for chat records,
25 and screens and searches in different dimensions, such as time, characters, keywords, and the like.
However, when the conversation message is searched, the user needs to specify the search
dimension and the search content, which is very tedious. Moreover, when there are a large number
of search results, the user needs to make further identification and screening by himself, which
greatly degrades the interactive experience of the user in receiving the conversation messages.

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SUMMARY

In view of the above problems, the present disclosure provides a method and an apparatus for
presenting a conversation message, with a main objective to merge repeated and useless messages

and present the merged message, so that a user can quickly view useful conversation messages to improve a conversation interaction experience of the user.

In order to achieve the above objective, the present disclosure mainly provides the following technical solutions.

5 In a first aspect, the present disclosure provides a method for presenting a conversation message, which specifically includes:

receiving a to-be-presented conversation message;

judging whether the number of conversation messages with the same content as the to-be-presented conversation message in a presentation interface is larger than a threshold value;

10 merging the to-be-presented conversation message with the conversation messages with the same content and presenting the merged conversation message, if the number is larger than the threshold value.

In a second aspect, the present disclosure provides a method for presenting a conversation message, which is applied to an instant messaging client, the method specifically comprising:

15 receiving a to-be-presented conversation message;

judging whether a presentation interface of the client is in a presenting state;

prohibiting sending a prompt message indicating receipt of the to-be-presented conversation message, if the presentation interface is in a non-presenting state and the number of conversation messages with the same content as the to-be-presented conversation message is larger than a
20 threshold value.

In a third aspect, the present disclosure provides an apparatus for presenting a conversation message, which specifically comprises:

a receiving unit configured to receive a to-be-presented conversation message;

a judging unit configured to judge whether the number of conversation messages with the
25 same content as the to-be-presented conversation message received by the receiving unit in a presentation interface is larger than a threshold value;

a presenting unit configured to merge the to-be-presented conversation message with the conversation messages with the same content and present the merged conversation message, when the judging unit judges that the number of conversation messages is larger than the threshold value.

30 In a fourth aspect, the present disclosure provides an apparatus for presenting a conversation message, which specifically comprises:

a receiving unit configured to receive a to-be-presented conversation message;

a judging unit configured to judge whether a presentation interface of a client is in a presenting state;

a prompting unit configured to prohibit sending a prompt message indicating receipt of the to-be-presented conversation message, if the presentation interface is judged to be in a non-presenting state by the judging unit and the number of conversation messages with the same content as the to-be-presented conversation message received by the receiving unit is larger than
5 a threshold value.

In a fifth aspect, the present disclosure provides an instant messaging client configured to:
merge conversation messages with the same content and present a merged conversation
message in a presentation interface;

present an annotation information for the presented merged conversation message according
10 to a user's viewing operation in the presentation interface, wherein the annotation information comprises at least the number of users sending the conversation messages and/or user identifiers.

In a sixth aspect, the present disclosure provides a storage medium for storing a computer program which, when being executed, controls a device in which the storage medium resides to perform the above method for presenting a conversation message.

15 In addition, the present disclosure provides an electronic device comprising a processor and a memory, wherein the processor is configured to call program instructions in the memory to perform the above method for presenting a conversation message.

With the above technical solutions, the methods and apparatuses for presenting a conversation message provided by the present disclosure are mainly applied into a conversation presentation
20 interface of instant messaging software, and too many repeated conversation messages are merged into a single message and presented the merged message, and a presentation space required for presenting these conversation messages is reduced, thereby improving an efficiency of presenting effective conversation messages in unit area of the presentation interface, avoiding a situation that a large number of repeated messages flood the screen of the presentation interface of conversation
25 message, enabling a user to quickly read useful conversation messages, and improving the user's experience in conversation interactions.

Those described above are only an overview of the technical solutions of the present disclosure, which can be implemented according to the contents of the description in order to understand the technical means of the present disclosure more clearly. Moreover, in order to make
30 the above and other objectives, features and advantages of the present disclosure be more obvious and understandable, the specific embodiments of the present disclosure are given below.

BRIEF DESCRIPTION OF DRAWINGS

Various other advantages and benefits will become apparent to those of ordinary skill in the

art upon reading the following detailed description of the preferred embodiments. The drawings are only for the purpose of illustrating the preferred embodiments, rather than limitations to the present disclosure. In addition, throughout the drawings, the same components are denoted by the same reference signs. In the drawings:

5 FIG. 1 illustrates a flowchart of a method for presenting a conversation message provided by an embodiment of the present disclosure;

 FIG. 2 illustrates a schematic diagram of a presentation effect of a method for presenting a conversation message provided by an embodiment of the present disclosure in a presentation interface;

10 FIG. 3 illustrates a schematic diagram of a presentation effect of a method for presenting a conversation message provided by an embodiment of the present disclosure in a presentation interface;

 FIG. 4 illustrates a schematic diagram of a presentation effect of a method for presenting a conversation message provided by an embodiment of the present disclosure in a presentation
15 interface;

 FIG. 5 illustrates a flowchart of another method for presenting a conversation message provided by an embodiment of the present disclosure;

 FIG. 6 illustrates a composition block diagram of an apparatus for presenting a conversation message provided by an embodiment of the present disclosure;

20 FIG. 7 illustrates a composition block diagram of another apparatus for presenting a conversation message provided by an embodiment of the present disclosure;

 FIG. 8 illustrates a composition block diagram of still another apparatus for presenting a conversation message provided by an embodiment of the present disclosure;

 FIG. 9 illustrates a composition block diagram of yet another apparatus for presenting a
25 conversation message provided by an embodiment of the present disclosure.

DETAILED DESCRIPTION

The exemplary embodiments of the present disclosure will be described in more detail below with reference to the drawings. Although the exemplary embodiments of the present disclosure are
30 illustrated in the drawings, it should be understood that the present disclosure may be implemented in various forms and should not be limited by the embodiments set forth here. On the contrary, these embodiments are provided in order to understand the present disclosure more thoroughly and to fully convey the scope of the present disclosure to those skilled in the art.

A method for presenting a conversation message provided by an embodiment of the present

disclosure is mainly applied into a client of the instant messaging software, so as to avoid an influence of a large number of repeated messages flooding the screen on a user's reading of effective conversation messages. The specific steps to implement this solution are illustrated in FIG. 1, comprising:

5 Step 101: receiving a to-be-presented conversation message.

The to-be-presented conversation message comprises a conversation message to be presented sent by all users during a conversation, and for a local user, the to-be-presented conversation message is a conversation message edited and sent by the user in a conversation interface. A background of the client of the instant messaging software identifies the to-be-presented
10 conversation message and performs step 102.

It should be noted that the to-be-presented conversation message in the embodiment of the present disclosure is visual message content, which mainly includes text information and emoticon information.

Step 102: judging whether the number of conversation messages with the same content as the
15 to-be-presented conversation message in a presentation interface is larger than a threshold value.

In which, the presentation interface is not limited to a presentation page of a conversation content, or a prompt message for a conversation message displayed on a terminal screen, such as a message prompt box popped up in a screen locked interface of a mobile phone, or a message bubble popped up in an application minimized state.

20 In addition, when the messages with the same content are judged, the content of the conversation messages to be judged is not limited to a text or an emoticon. The judgement of a text content may be determining whether the conversation contents presented in the presentation interface are the same as a content of the to-be-presented conversation message based on a text similarity calculation. For the judgment of the emoticon, recognition and judgment are made based
25 on the text content associated with the emoticon.

The presentation mode of the to-be-presented conversation message is determined according to the number of the messages with the same content presented in the presentation interface. Step 103 is performed if the number is larger than the threshold value, otherwise step 104 is performed. In which, the threshold value may be user-defined according to the user's habits or needs.

30 Step 103: merging the to-be-presented conversation message with the conversation messages with the same content and presenting the merged conversation message.

In this step, after it is determined that there are a number of conversation messages with the same content in the presentation interface, the to-be-presented conversation message is merged with these conversation messages and the merged message is presented in a unified manner, i.e.,

only a single conversation message with the above content is presented in the presentation interface.

However, if there is no conversation message with the same content in the presentation interface, or if the number of the conversation messages with the same content is smaller than or equal to the threshold value, step 104 is performed to present the to-be-presented conversation message in the presentation interface.

As can be seen from the above embodiment, the method for presenting a conversation message provided by the embodiment of the present disclosure firstly identifies the conversation messages already presented in the presentation interface when the client of the instant messaging software receives the to-be-presented conversation message, to judge whether there are messages with the same content whose number is larger than the threshold value; and if there are, merges the to-be-presented conversation message with these messages with the same content and presents the merged conversation message, otherwise directly presents the to-be-presented conversation message in the presentation interface without any processing. After that, the repeated contents will be automatically identified and merged in the presentation interface for the conversation message, so as to avoid the repeated conversation messages from occupying a large amount of presentation space and disabling the user to view useful message contents in a timely manner. Meanwhile, because the presentation interface may also be a message prompt interface, it can also avoid too many repeated conversation prompt messages from being generated, thereby improving the user's application experience in using the instant messaging software.

Further, since there are conversation messages with a large time span in some chat groups, in order to avoid them from being presented as merged with conversation messages from a long time ago, in one preferred embodiment of the present disclosure, when step 102 in the above embodiment is performed, the identification criteria for the conversation messages with the same content will be limited, which is specifically as follows:

One way is to identify successive conversation messages with the same content, and count whether the number thereof is larger than the threshold value. The specific implementation logic is: to firstly acquire conversation messages with the same content as the to-be-presented conversation message in a presentation page; and if there are such conversation messages, continue to judge whether these conversation messages and the to-be-presented conversation message are successive in presentation, i.e., to determine whether the conversation messages with the same content are successively presented; if the conversation messages with the same content are successive in presentation, further judge whether the number of these conversation messages is larger than the threshold value; and if the conversation messages with the same content are not successive in presentation, a judgment is not required and it can be determined that the number of

the conversation messages is smaller than the threshold value. At this time, the to-be-presented conversation message can be directly presented.

Another way is to set a query time period, for example, to judge whether the conversation messages presented in the presentation interface within the first 10 minutes or the first 1 hour has a message with the same content as the to-be-presented conversation message, and if yes, further count whether the number of these conversation messages is larger than the threshold value. Similarly, the number of the conversation messages to be searched may also be set, for example, to search the contents of the first 50 or 100 presented conversation messages.

Through the identification criteria listed above, it is possible to effectively identify a large number of repeated conversation messages concerning the same topic in a group, and improve the accuracy of merging the conversation messages and presenting the merged conversation message.

Further, during the implementation of the present disclosure, not all of the to-be-presented conversation messages need to be presented as merged. For example, the message containing specific blessings such as the New Year's greeting message or birthday blessing message, needs to be presented individually. Therefore, in order to improve the identification and processing efficiency of the to-be-presented conversation message in the present disclosure, after being received, the to-be-presented conversation message is matched using a preset blacklist to determine whether the to-be-presented conversation message needs to be presented as merged; if yes, the subsequent identifying step is performed; and if no, the to-be-presented conversation message can be directly presented in the presentation interface. The specific execution logic is:

The content of the to-be-presented conversation message is matched using a preset blacklist. In which, the preset blacklist is configured to record words that need to be presented as merged, such as repetitive and meaningless response words "OK", "received", etc.

It should be noted that the preset blacklist may be general to all conversations, or dedicated to specific conversations, i.e., conversation groups with different properties, such as a work group, a family group, a friend group, etc. For this reason, there may be several preset blacklists for the user to selectively set according to the needs of specific scenarios.

Next, if there is a match with a word in the blacklist, step 103 is performed, i.e., to judge whether the number of messages with the same content as the to-be-presented conversation message in the presentation interface is larger than the threshold value; otherwise, if there is no match, the to-be-presented conversation message is presented individually.

Through the identification and filtering of the above to-be-presented conversation message, the message processing efficiency can be improved. During practical applications, being similar to setting of the blacklist, a white list may also be set to limit some words that cannot be presented

as merged. For example, some repeated blessing conversations, such as “Happy Birthday” and “Happy New Year”, generally appear in specific conversation scenarios, rather than appearing frequently, and then may be set by means of the white list. When there is a match of the content of the to-be-presented conversation message with a word in the whitelist, it can be presented directly without counting a repetition number of the content. Otherwise, when there is no match, the repetition number of the conversation content may be counted, or it may be firstly judged in combination with the black list whether the conversation content is in the black list, and when the conversation content is in neither the white list nor the blacklist, the repetition number of the content is counted.

The above embodiment lists a process of identifying and matching a conversation content in the form of text information, and identifying and judgment need to be performed for the text in the specific process. When two conversation messages with the same text content are determined, the judgment criterion may be that the text content is completely the same, or it can be determined by the semantic similarity, so that two pieces of text information with a semantic similarity larger than a threshold value may be determined as two conversation messages the same as each other.

When the conversation content is an emoticon, because the emoticon is generally composed of a picture, the emoticon in the conversation content may be determined by identifying an emoticon identifier. Thus, during matching, it is only necessary to search, according to the emoticon identifier, in the presentation interface for conversations with the same emoticon identifier, and count the number thereof. To be noted, during matching, when the conversation content merely contains an emoticon, there is a match when the emoticon is found to be contained in other conversation content, while when the conversation content contains an emoticon and a text, it is necessary to match other conversations that are the same as both the emoticon and text.

Further, in one preferred embodiment of the present disclosure, the specific execution mode for step 103 illustrated in FIG. 1 and the message presentation effect in the presentation interface are described as follows:

Firstly, the presented conversation messages with the same content are deleted from the presentation interface.

Next, the content of the to-be-presented conversation message is presented. Meanwhile, annotation information for the content of the to-be-presented conversation message is counted, and the identifier of the annotation information is presented.

In which, the annotation information comprises at least the number of users sending the conversation messages with the same content and user identifiers.

During this process, the deletion and the presenting are performed synchronously. In terms of

the presentation effect of the presentation interface, the conversations with the same content are merged into a single conversation, and an identifier of corresponding annotation information is presented next to this conversation message. When the identifier is operated, an expanded presenting can be performed, i.e., the identifiers of the users sending the conversation content are presented. In which, the specific manifestation of the operation on the identifier may be the user's click or hover (imitating a hover event: a mouse moves onto and away from an object), while the expanded presenting may be: expanding in the current presentation interface, or creating a new presenting window (an annotation window) at a location of the identifier to present details of the annotation information.

In addition, the above execution process of presenting as merged is mostly used when there is a plurality of conversation messages presented individually in the presentation interface, while when the conversation messages with the same content are a single conversation message that is presented as merged, the content of the conversation messages presented as merged may be kept, and meanwhile, the annotation information of the conversation messages is updated according to a user identifier corresponding to the to-be-presented conversation message as sent.

Further, the embodiment of the present disclosure provides a corresponding implementation for an application scenario in which a prompt message needs to be sent when a screen of an intelligent terminal in which the instant messaging software resides is locked or an application is minimized. In the existing prompt mode, every time a conversation message is received, a corresponding prompt message will be generated, the prompt message may be presented in a prompt box at a specified location, e.g., a mobile phone presents a prompt message through a drop-down menu, or minimizes a prompt bubble corresponding to an application icon. Further, each prompt message mostly corresponds to a prompt operation, such as a vibration, a generation of a prompt tone, etc. Through the embodiment of the present disclosure, prompt messages corresponding to conversation messages with the same content can be presented as merged, i.e., the prompt messages are merged and the merged prompt message is presented in a prompt box or bubble, and meanwhile, associated prompt operations are cancelled, in this way, repeated prompt operations of the intelligent terminal can be reduced, and the user's normal use can be prevented from being disturbed.

Further, the methods for presenting provided in the above embodiments are mainly applied to instant messaging applications. Due to different personal preferences of users, during implementation, the method for presenting may be set in an application by means of a presenting function for a user to select and enable. That is, the user may set the presenting function to realize a function of merging too many repeated conversation contents and presenting a merged content.

To this end, during implementation, after step 101 in the embodiment as illustrated in FIG. 1 is performed, one preferred embodiment of the present disclosure further comprises the following steps.

Firstly, it is judged whether a presenting-as-merged function is enabled for the presentation interface.

If the presenting-as-merged function is enabled, it is judged whether the number of conversation messages with the same content as the to-be-presented conversation message in the presentation interface is larger than the threshold value, and when the number is larger than the threshold value, the to-be-presented conversation message is merged with the conversation messages with the same content and the merged message is presented, i.e., steps 102 and 103 in the embodiment illustrated in FIG. 1 are performed.

If the presenting-as-merged function is not enabled, the received to-be-presented conversation message is presented individually. That is, the received to-be-presented conversation message is directly presented without any processing.

Based on the contents of the embodiment, the present disclosure describes the process and effects of presenting a conversation message in combination with a specific application scenario on a mobile phone as illustrated in Figs. 2, 3 and 4.

Figs. 2 to 4 illustrate a process of merging conversation messages of the same content and presenting the merged conversation message in a conversation group. Of course, the present disclosure may also be applied to a single-person conversation. The execution process of the embodiment of the present disclosure may be decomposed into a plurality of chat interfaces, and a threshold value for presenting as merged is set to 3. FIG. 2 illustrates a chat interface of a xx group, presenting conversation messages of A and B. A left interface in FIG. 3 shows that a conversation message of C is added to the interface illustrated in FIG. 2, and the conversation content of C is the same as that of B. When it is found by judgment that although the conversation content of C has a same conversation content, the number of messages is less than 3, thus, the conversation message of C is presented individually. After that, a middle interface in FIG. 3 shows that on the basis of the left interface, the conversation message of D with the same conversation content as that of presented B and C is received by the background. At this time, the application background will judge based on the to-be-presented conversation message sent by D, and the result is that the number of messages with the same content reaches the threshold value. At this time, the to-be-presented conversation message will be merged, and the presented interface is a right interface in FIG. 3, in which only the conversation message of A and a conversation message obtained by merging the conversation messages of B, C and D are presented. Meanwhile, an

identifier of the annotation information, i.e., a page control of “Three persons sent this content”, is also presented following this conversation message. FIG. 4 shows that when a user clicks or hovers the page control, a new window is generated, in which identifiers (user names or user avatars) of users sending the content are presented.

5 As can be seen from the interface illustrated in FIG. 2, after four conversation messages that are originally needed to be presented individually are presented as merged, only two conversation messages need to be presented, which saves the presentation space on the screen, so that the user can see more conversation messages on the screen with the same area, thereby quickly finding the conversation message that needs to be viewed without a flipping operation, and avoiding the user
10 from missing any key message due to a large number of repeated messages.

Further, the above embodiments mainly aim at a method for presenting a conversation message when a presentation interface is in a presenting state, i.e., a merging process of the conversation messages when a user can directly view a conversation content. When the instant messaging software is minimized or a device in which the instant messaging software resides is in
15 a screen locked state, the present disclosure specifically describes a processing process of conversation messages with the same content through the steps illustrated in FIG. 5, which specifically includes:

Step 201: receiving a to-be-presented conversation message.

Step 202: judging whether a presentation interface of a client is in a presenting state.

20 In which, the client is an instant messaging client that presents conversation messages. This presenting state is configured to determine whether a user can see the presentation interface of the client. If the user can see the presentation interface, the presentation interface is in the presenting state; and if the user cannot see the presentation interface, the presentation interface is in a non-presenting state.

25 When the presentation interface is in the presenting state, please refer to the specific contents illustrated in Figs. 1 to 4 for the presenting mode of the conversation messages, which will not be repeated here.

When the presentation interface is in the non-presenting state, it means that the conversation message is invisible to the user. At this time, it is generally necessary to prompt the user that there
30 is unread conversation message in the client through the prompt message, and step 203 is performed for the presenting of the prompt message.

Step 203: prohibiting sending a prompt message indicating receipt of the to-be-presented conversation message, if the presentation interface is in the non-presenting state and the number of conversation messages with the same content as the to-be-presented conversation message is

larger than a threshold value.

In this step, the content of to-be-presented conversation message is identified at the background of the client, to judge whether the number of messages with the same content is larger than the threshold value. If the number is larger than the threshold value, it means that there are too many repeated contents, and the prompt message is not sent at this time; otherwise, the prompt message is sent to prompt the user to inquire about the conversation message.

Further, with respect to the step 202, the process of judging whether the presentation interface is in the presenting state may be specifically implemented by the following steps:

Firstly, it is judged whether a screen of a terminal device in which the client resides is in the displaying state.

This step is to judge whether the terminal device is in a screen locked state. If the terminal device is in a screen locked state, i.e., the screen is not in the displaying state, it may be directly determined that the client is in the non-presenting state. If the screen is in the displaying state, it is necessary to further judge whether the presentation interface is presented on the screen.

Secondly, when the screen is in the displaying state, it is judged whether the presentation interface of the client is presented on the screen.

This step is to judge whether the client is in a minimized state; if the client is not in a minimized state, it means that the presentation interface of the client is in a user-visible state. At this time, please refer to the contents of Figs. 1 to 4 for the processing of the to-be-presented conversation content; and if the client is in a minimized state, i.e., the presentation interface is not presented on the screen, it is determined that the presentation interface at this time is in the non-presenting state.

Further, after the user opens the presentation interface of the client according to the prompt message, the client detects whether there are too many repeated conversation messages in the conversation messages to be detected, when presenting the conversation messages; if there are, the conversation messages are presented as merged, i.e., the embodiments illustrated in Figs. 1 to 4 are implemented; and if there aren't, the conversation message is presented normally. In addition, in the presentation interface, the user may perform an expanded presenting of the presented merged conversation contents through operations such as clicking, dragging and the like, and trigger a message expansion instruction based on the user's operation, while the client presents the conversation message specified by the user according to the message expansion instruction.

Further, as an implementation of the method illustrated in FIG. 1, an embodiment of the present disclosure provides an apparatus for presenting a conversation message, which is mainly used in an instant messaging software, so as to avoid an influence of a large number of repeated

messages flooding a screen on a user's reading of effective conversation messages. For the convenience of reading, the detailed contents in the foregoing method embodiments are not repeated seriatim in this apparatus embodiment, but it should be clear that the apparatus in this embodiment can correspondingly implement all the contents in the foregoing method
5 embodiments. As illustrated in FIG. 6, the apparatus specifically comprises:

a receiving unit 31 configured to receive a to-be-presented conversation message;

a judging unit 32 configured to judge whether the number of conversation messages with the same content as the to-be-presented conversation message received by the receiving unit 31 in a presentation interface is larger than a threshold value;

10 a presenting unit 33 configured to merge the to-be-presented conversation message with the conversation messages with the same content and present the merged conversation message, when the judging unit 32 judges that the number of conversation messages is larger than the threshold value.

Further, as illustrated in FIG. 7, the judging unit 32 comprises:

15 an acquiring module 321 configured to acquire conversation messages with the same content as the to-be-presented conversation message in a presentation interface;

a first judging module 322 configured to judge whether the conversation messages acquired by the acquiring module 321 and the to-be-presented conversation message are successive in presentation;

20 a second judging module 323 configured to judge whether the number of the conversation messages is larger than the threshold value, when the first judging module 321 determines that the conversation messages acquired by the acquiring module 321 and the to-be-presented conversation message are successive in presentation;

a determining module 324 configured to determine that the number of the conversation
25 messages is less than the threshold value, when the first determining module 321 determines that the conversation messages acquired by the acquiring module 321 and the to-be-presented conversation message are not successive in presentation.

Further, as illustrated in FIG. 7, the apparatus further comprises:

a matching unit 34 configured to match a content of the to-be-presented conversation message
30 using a preset blacklist after the receiving unit 31 receiving the to-be-presented conversation message, wherein the preset blacklist is configured to record conversation messages that need to be presented as merged;

if it is determined by the matching unit 34 that there is a match, the judging unit 32 judges whether the number of messages with the same content as the to-be-presented conversation

message in the presentation interface is larger than the threshold value;

if it is determined by the matching unit 34 that there is no match, the presenting unit 33 presents the to-be-presented conversation message individually.

Further, after receiving the to-be-presented conversation message, the matching unit 34 is
5 further configured to match a content of the to-be-presented conversation message using a preset white list, wherein the preset white list is configured to record the conversation messages that need to be presented individually;

if it is determined by the matching unit 34 that there is no match, the judging unit 32 judges whether the number of messages with the same content as the to-be-presented conversation
10 message in the presentation interface is larger than the threshold value;

if it is determined by the matching unit 34 that there is a match, the presenting unit 33 presents the to-be-presented conversation message individually.

Further, as illustrated in FIG. 7, the presenting unit 33 comprises:

a deletion module 331 configured to delete the presented conversation messages with the
15 same content from the presentation interface;

a presenting module 332 configured to present a content of the to-be-presented conversation message;

a counting module 333 configured to count annotation information for the content presented by the presenting module 332, wherein the annotation information comprises at least the number
20 of users sending the conversation message with the same content and user identifiers;

wherein the presenting module 332 is further configured to present an identifier of the annotation information acquired by the counting module 333.

Further, as illustrated in FIG. 7, the presenting unit 33 further comprises:

an expanding module 334 configured to create an annotation window to present details of the
25 annotation information when the identifier of the annotation information is clicked.

Further, the presenting unit 33 is further configured to keep, if the conversation messages with the same content is a single conversation message that is presented as merged, the conversation message and update the annotation information of the conversation message.

Further, as illustrated in FIG. 7, the apparatus further comprises:

30 a recognizing unit 35 configured to recognize a content of the to-be-presented conversation message acquired by the acquisition unit 31;

a matching unit 36 configured to recognize a text content, and search in the presentation interface for conversation messages that are same as the text content, when the recognizing unit 35 determines that the content of the conversation message is the text information;

a searching unit 37 configured to extract an emoticon identifier and search in the presentation interface for a conversation message with the emoticon identifier, when the recognizing unit 35 determines that the content of the conversation message is the emoticon information.

Further, as illustrated in FIG. 7, the apparatus further comprises:

5 a detection unit 38 configured to judge whether a presenting-as-merged function is enabled for the presentation interface;

when judging that the presenting-as-merged function is enabled, the detection unit 38 judges whether the number of messages with the same content as the to-be-presented conversation message in the presentation interface is larger than the threshold value, and merges the to-be-presented conversation message with the conversation messages with the same content and
10 presents the merged message, if the number is larger than the threshold value;

when judging that the presenting-as-merged function is not enabled, the detection unit 38 presents the received to-be-presented conversation message individually.

Further, the presenting unit 33 is further configured to, when the presentation interface is a
15 prompt box for a prompt message, merge prompt messages for the to-be-presented conversation messages acquired by the receiving unit and present the merged prompt message in a prompt box, and cancel an associated prompt operation.

Further, as an implementation of the method illustrated in FIG. 5, an embodiment of the present disclosure provides an apparatus for presenting a conversation message, which is mainly
20 used in instant messaging software, so as to avoid an influence of a large number of repeated messages flooding a screen on a user's reading of effective conversation messages. For the convenience of reading, the detailed contents in the foregoing method embodiments are not repeated seriatim in this apparatus embodiment, but it should be determined that the apparatus in this embodiment can correspondingly implement all the contents in the foregoing method
25 embodiments. As illustrated in FIG. 8, the apparatus specifically comprises:

a receiving unit 41 configured to receive a to-be-presented conversation message;

a judging unit 42 configured to judge whether a presentation interface of a client is in a presenting state;

a prompting unit 43 configured to prohibit sending a prompt message indicating receipt of
30 the to-be-presented conversation message, if the presentation interface is judged to be in a non-presenting state by the judging unit 42, and the number of conversation messages with the same content as the to-be-presented conversation message received by the receiving unit 41 is larger than a threshold value.

Further, as illustrated in FIG. 9, the judging unit 42 comprises:

a judging module 421 configured to judge whether a screen of a terminal device in which the client resides is in a displaying state;

a determining module 422 configured to determine that the presentation interface of the client is in non-presenting state, when the judging module 421 judges that the screen is not in the displaying state;

the determining module 422 is further configured to determine that the presentation interface is in the non-presenting state when the judging module 421 judges that the screen is in the displaying state and the presentation interface is in a minimized state.

Further, as illustrated in FIG. 9, the apparatus further comprises:

a presenting unit 44 configured to merge the to-be-presented conversation message with the conversation messages with the same content and present the merged conversation message, when the presentation interface of the client is changed into the presenting state;

the presenting unit 44 is further configured to receive a message expansion instruction, and expanding the merged conversation message and presenting the expanded conversation messages individually in the presentation interface according to the message expansion instruction.

Further, an embodiment of the present disclosure further provides an instant messaging client, which may be installed in an intelligent apparatus to merge conversation messages presented in a presentation interface of the client and present the merged conversation message. For specific conditions for presenting as merged, please refer to the embodiments illustrated in FIGs. 1 and 5, which will not be repeated here. The client is specifically configured to:

merge conversation messages with the same content and present a merged conversation message in a presentation interface;

present an annotation information for the presented merged conversation message according to a user's viewing operation in the presentation interface, wherein the annotation information comprises at least the number of users sending the conversation messages and/or user identifiers.

Further, when merging the conversation messages and presenting the merged conversation message, the instant messaging client sets an annotation identifier to present corresponding annotation information in the presentation interface when being triggered by a viewing operation. The viewing operation comprises an operation of the user clicking the annotation identifier or an operation of the user hovering a cursor over the annotation identifier.

Further, an embodiment of the present disclosure further provides a processor for running a program, wherein when being executed, the program performs the method for presenting a conversation message as illustrated in FIG. 1.

In addition, an embodiment of the present disclosure further provides an electronic device,

comprising a memory storing a program, and a processor coupled to the memory, wherein the processor runs the program to perform the method for presenting a conversation message as illustrated in FIG. 1.

In the above embodiments, the descriptions of the respective embodiments have their own
5 emphases. For parts that are not described in detail in an embodiment, references may be made to related descriptions in other embodiments.

It can be understood that the related features in the above methods and apparatuses can be referred to each other. In addition, “first”, “second”, and the like in the above embodiments are used to distinguish respective embodiments, rather than indicating the advantages and
10 disadvantages thereof.

It can be clearly understood by those skilled in the art that for the convenience and conciseness of description, the specific working processes of the systems, apparatuses and units described above may refer to the corresponding processes in the aforementioned method embodiments, and will not be described in detail here.

The algorithms and displaying provided here are not inherently related to any particular computer, virtual system, or other device. Various general-purpose systems may also be used together with the teachings given herein. According to the above descriptions, the structure required to construct such system is obvious. Further, the present disclosure is not directed to any particular programming language. It should be understood that the contents of the present
15 disclosure described here may be implemented with various programming languages, and the specific languages are described above to disclose the preferred embodiments of the present disclosure.

In addition, the memory may have a form such as a non-permanent memory, a random access memory (RAM) and/or a nonvolatile memory in the computer readable media, like a read-only
25 memory (ROM) or a flash RAM, and the memory comprises at least one memory chip.

It should be understood by those skilled in the art that the embodiments of the present disclosure may be provided as methods, systems, or computer program products. Therefore, the present disclosure may take a form of an entirely hardware embodiment, an entirely software embodiment, or an embodiment combining the software and hardware aspects. In addition, the
30 present disclosure may take a form of a computer program product embodied on one or more computer usable storage media (including, but not limited to, a disk memory, a CD-ROM, an optical memory, etc.) containing computer usable program codes therein.

The present disclosure is described with reference to a flow diagram and/or a block diagram of the method, device (system) and computer program product according to the embodiments of

the present disclosure. It shall be appreciated that each flow and/or block in the flow diagram and/or the block diagram and a combination of flows and/or blocks in the flow diagram and/or the block diagram can be realized by computer program instructions. Those computer program instructions can be provided to a general computer, a dedicated computer, an embedded processor or a processor of other programmable data processing device to produce a machine, so that the instructions executed by the processor of the computer or other programmable data processing apparatus produce means for realizing specified functions in one or more flows in the flow diagram and/or one or more blocks in the block diagram.

These computer program instructions may also be stored in a computer readable memory capable of guiding the computer or other programmable data processing devices to work in a particular manner, so that the instructions stored in the computer readable memory can produce manufacture articles including an instructing apparatus which realizes function(s) specified in one or more flows in the flow diagram and/or one or more blocks in the block diagram.

These computer program instructions may also be loaded onto the computer or other programmable data processing devices, so that a series of operation steps are performed on the computer or other programmable data processing devices to produce a processing implemented by the computer, thus the instructions executed on the computer or other programmable devices provide step(s) for realizing function(s) specified in one or more flows in the flow diagram and/or one or more blocks in the block diagram.

In a typical configuration, the computing device comprises one or more processors (CPUs), an input/output interface, a network interface and a memory.

The memory may have the form of a volatile memory, a Random-Access Memory (RAM) and/or a nonvolatile memory such as Read-Only Memory (ROM) or a flash RAM, etc. among the computer readable medium. The memory is an example of the computer readable medium.

The computer-readable medium includes permanent and non-permanent, removable and non-removable media, which can realize the message storage in any method or technique. The information can be computer readable instructions, data structures, program modules or other data. An example of the computer storage medium includes, but not limited to, a phase change memory (PRAM), a static random access memory (SRAM), a dynamic random access memory (DRAM), other types of random access memory (RAM), a read-only memory (ROM), an electrically-erasable programmable read-only memory (EEPROM), a flash memory or other memory techniques, a compact disk read only memory (CD-ROM), a digital versatile disc (DVD) or other optical storages, magnetic cassette tapes, magnetic diskettes or other magnetic storage device or any other non-transmission medium, which can be used for the storage of information accessible

to a computing device. According to the definitions herein, the computer readable medium does not include any temporary computer readable media (transitory media), such as modulated data signal and carrier wave.

Further to be noted, the term “comprise”, “contain” or any other variant intends to cover the
5 non-exclusive inclusions, so that a process, a method, a commodity or a device comprising a series of elements comprise not only those elements, but also other elements not explicitly listed, or further comprise inherent elements of such process, method, commodity or device. In a case where there is no further limitation, the elements defined by a sentence “comprising a ...” do not exclude other identical elements existing in the process, method, commodity or device comprising the
10 elements.

Those skilled in the art should appreciate that any embodiment of the present disclosure can be provided as a method, a system or a computer program product. Therefore, the present disclosure can take the form of a full hardware embodiment, a full software embodiment, or an embodiment combining software and hardware. Moreover, the present disclosure can take the form
15 of a computer program product implemented on one or more computer usable storage media (including, but not limited to, a magnetic disc memory, CD-ROM, optical storage, etc.) containing therein computer usable program codes.

The above descriptions are just embodiments of the present disclosure, rather than limitations to the present disclosure. For a person skilled in the art, the present disclosure is intended to cover
20 any amendment or variation. Any amendment, equivalent substitution, improvement, etc. made under the spirit and principle of the present disclosure shall fall within the scope of the claims of the present disclosure.

CLAIMS

WHAT IS CLAIMED IS:

1. A method for presenting a conversation message, comprising:
receiving a to-be-presented conversation message;
5 judging whether the number of conversation messages with the same content as the to-be-presented conversation message in a presentation interface is larger than a threshold value;
merging the to-be-presented conversation message with the conversation messages with the same content and presenting the merged conversation message, if the number is larger than the threshold value.
- 10 2. The method according to claim 1, wherein the to-be-presented conversation message comprises text information and emoticon information.
3. The method according to claim 1, wherein judging whether the number of conversation messages with the same content as the to-be-presented conversation message in a presentation interface is larger than a threshold value comprises:
15 acquiring conversation messages with the same content as the to-be-presented conversation message in the presentation interface;
judging whether the conversation messages and the to-be-presented conversation message are successive in presentation;
judging whether the number of the conversation messages is larger than the threshold value,
20 if the conversation messages and the to-be-presented conversation message are successive in presentation;
determining that the number of the conversation messages is smaller than the threshold value, if the conversation messages and the to-be-presented conversation message are not successive in presentation.
- 25 4. The method according to claim 1, wherein after receiving the to-be-presented conversation message, the method further comprises:
matching a content of the to-be-presented conversation message with a preset blacklist, wherein the preset blacklist is configured to record conversation messages that need to be presented as merged;
30 judging, if there is a match, whether the number of conversation messages with the same content as the to-be-presented conversation message in the presentation interface is larger than the threshold value;
presenting, if there is no match, the to-be-presented conversation message individually.
5. The method according to claim 1, wherein after receiving the to-be-presented conversation

message, the method further comprises:

matching a content of the to-be-presented conversation message with a preset white list, wherein the preset white list is configured to record conversation messages that need to be presented individually;

5 judging, if there is no match, whether the number of the conversation messages with the same content as the to-be-presented conversation message in the presentation interface is larger than the threshold value;

presenting, if there is a match, the to-be-presented conversation message individually.

6. The method according to claim 1, wherein merging the to-be-presented conversation
10 message with the conversation messages with the same content and presenting the merged conversation message comprises:

deleting presented conversation messages with the same content from the presentation interface;

presenting a content of the to-be-presented conversation message;

15 counting annotation information for the content and presenting an identifier of the annotation information, wherein the annotation information comprises at least the number of users sending the conversation messages with the same content and user identifiers.

7. The method according to claim 6, further comprising:

20 creating an annotation window to present details of the annotation information when the identifier of the annotation information is clicked.

8. The method according to claim 6, wherein merging the to-be-presented conversation message with the conversation messages with the same content and presenting the merged conversation message further comprises:

25 if the conversation messages with the same content is a single conversation message that is presented as merged, keeping the conversation message and updating the annotation information for the conversation message.

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

recognizing a content of the to-be-presented conversation message;

30 if the content is the text information, recognizing a text content, and searching in the presentation interface for conversation messages that are same as the text content;

if the content is the emoticon information, extracting an emoticon identifier, and searching in the presentation interface for a conversation message with the emoticon identifier.

10. The method according to any one of claims 1 to 9, further comprising:

judging whether a presenting-as-merged function is enabled for the presentation interface;

if the presenting-as-merged function is enabled, judging whether the number of conversation messages with the same content as the to-be-presented conversation message in the presentation interface is larger than the threshold value, and merging the to-be-presented conversation message with the conversation messages with the same content and presenting the merged message if the number is larger than the threshold value;

if the presenting-as-merged function is not enabled, presenting the received to-be-presented conversation message individually.

11. The method according to any one of claims 1 to 9, wherein when the presentation interface is a prompt box for a prompt message, the method further comprises:

merging prompt messages for the to-be-presented conversation message and presenting the merged message in the prompt box, and cancelling an associated prompt operation.

12. A method for presenting a conversation message, which is applied to an instant messaging client, comprising:

receiving a to-be-presented conversation message;

judging whether a presentation interface of the client is in a presenting state;

prohibiting sending a prompt message indicating receipt of the to-be-presented conversation message, if the presentation interface is in a non-presenting state and the number of conversation messages with the same content as the to-be-presented conversation message is larger than a threshold value.

13. The method according to claim 12, wherein judging whether a presentation interface of the client is in a presenting state comprises:

judging whether a screen of a terminal device in which the client resides is in a displaying state;

determining, if the screen is not in the displaying state, that the presentation interface of the client is in a non-presenting state;

determining, if the screen is in the displaying state, that the presentation interface is in the non-presenting state when the presentation interface is in a minimized state.

14. The method according to claim 12, further comprising:

merging the to-be-presented conversation message with the conversation messages with the same content and presenting the merged conversation message, when the presentation interface of the client is changed into the presenting state;

receiving a message expansion instruction, and expanding the merged conversation message and presenting expanded conversation messages individually in the presentation interface according to the message expansion instruction.

15. An apparatus for presenting a conversation message, comprising:

a receiving unit configured to receive a to-be-presented conversation message;

a judging unit configured to judge whether the number of conversation messages with the same content as the to-be-presented conversation message received by the receiving unit in a

5 presentation interface is larger than a threshold value;

a presenting unit configured to merge the to-be-presented conversation message with the conversation messages with the same content and present the merged conversation message, when the judging unit judges that the number is larger than the threshold value.

16. An apparatus for presenting a conversation message, comprising:

10 a receiving unit configured to receive a to-be-presented conversation message;

a judging unit configured to judge whether a presentation interface of a client is in a presenting state;

a prompting unit configured to prohibit sending a prompt message indicating receipt of the to-be-presented conversation message, if the presentation interface is judged to be in a non-presenting state by the judging unit and the number of conversation messages with the same content as the to-be-presented conversation message received by the receiving unit is larger than a threshold value.

17. An instant messaging client configured to:

merge conversation messages with the same content and present a merged conversation message in a presentation interface;

present an annotation information for the presented merged conversation message according to a user's viewing operation in the presentation interface, wherein the annotation information comprises at least the number of users sending the conversation messages and/or user identifiers.

18. The instant messaging client according to claim 17, wherein an annotation identifier is provided for the presented merged conversation message, so that a corresponding annotation information is presented in the presentation interface when the annotation identifier is triggered by the viewing operation;

the viewing operation comprises an operation of the user clicking the annotation identifier and an operation of the user hovering a cursor over the annotation identifier.

19. A storage medium for storing a computer program which, when being executed, controls a device in which the storage medium resides to perform the method according to any one of claims 1 to 7.

20. An electronic device comprising a processor and a memory, wherein the processor is configured to call program instructions in the memory to perform the method according to any one

of claims 1 to 7.