

Data Processing Method and Apparatus

The present application claims priority from Chinese patent application with an application number 201610630555.3 and invention title "Data Processing Method and Apparatus" filed on August 04, 2016, the entirety of which is hereby incorporated by reference into this application.

Technical Field

The present invention relates to the technical field of the Internet, particularly to a data processing method and apparatus.

Background

With the development of Internet technology, more and more users publish their comments on specific matters through networks, such as a newspaper reporter commenting on a ball game and a financial enthusiast commenting on a stock market.

Many of the articles commenting on a matter are articles predicting the future trend of a matter. Therefore, from these articles, users not only can obtain the summary of the authors on the present situation of a matter but also can know the judgments of the authors on the future development situation of the matter. However, when a user browses some articles that have been published for some time, if the user wants to know whether the prediction of an author is correct or whether the mentioned situation has changed, the user needs to spend a lot of time in searching for the trend chart of the matter commented on by the author on the current website or on other websites, find the point corresponding to the publishing time of the article in the trend chart, and view the subsequent trend situation based on this point, thus determining whether the prediction published by the author is correct or whether the matter has changed since the article was published. The operation is very tedious. Therefore, how to quickly obtain the trend situation of a matter since an article was published while browsing the article is a major difficulty at present.

Summary

In light of the above, the present invention provides data processing methods and apparatus, which enable a user to quickly obtain the trend situation of a matter since an article is published when the user browses the article.

In one aspect, the present invention provides a data processing method, comprising:

Obtaining, after receiving a link request sent by a client, a trend chart corresponding to a matter name carried in the link request, wherein the link request is generated after a link in an article is triggered and is used for requesting a trend chart of a matter described in the article;

determining a publishing time of the article;

annotating information related to the publishing time in the trend chart;

sending the processed trend chart to the client.

In another aspect, the present invention provides a data processing apparatus, comprising:

an obtaining unit, for obtaining, after receiving a link request sent by a client, a trend chart corresponding to a matter name carried in the link request, wherein the link request is generated after a link in an article is triggered and is used for requesting a trend chart of a matter described in the article;

a determining unit, for determining a publishing time of the article;

a processing unit, for annotating information related to the publishing time in the trend chart;

a sending unit, for sending the processed trend chart to the client.

By dint of the foregoing technical solutions, the data processing method and apparatus provided by the present invention can set a link in an article for viewing the trend of a matter. After a server receives a link request sent by a client, it first obtains a trend chart corresponding to a matter name carried in the link request, then obtains the publishing time of the article, and lastly annotates information related to the publishing time in the trend chart, and sends the processed trend chart to the client. Thus it can be seen, compared with current technologies, the present invention not only can provide users with a link for viewing the trend chart of a matter, but also can annotate, in the trend chart, information related to the publishing time of an article. Thus when a user browses the article, the user can quickly obtain the trend situation of the matter since the article was published, hence raising the efficiency of the user in analysis of the article.

The foregoing descriptions are only summary of the technical solutions of the present invention. In order to more clearly understand the technical means of the present invention for implementation according to the content of the specification and to make the foregoing and other objectives, features, and advantages evident and easy to understand, the present invention will now be described below by referring to embodiments of the invention.

Brief Description of the Drawings

The reading of the following detailed description of the preferred implementation manners will make all other advantages and benefits of the present invention evident to those skilled in the art. The accompanying drawings are intended to illustrate the objectives of the preferred implementation manners only and not to limit the present invention. In all the accompanying drawings, same reference symbols are used to stand for same components. In the drawings:

FIG. 1 shows a flow chart of a data processing method according to some embodiments of the present invention.

FIG. 2 shows a flow chart of an alternative data processing method according to some embodiments of the present invention.

FIG. 3 shows a schematic diagram of a trend chart according to some embodiments of the present invention.

FIG. 4 shows a schematic diagram of an alternative trend chart according to some embodiments of the present invention.

FIG. 5 shows a schematic diagram of a trend detail page according to some embodiments of the present invention.

FIG. 6 shows a block diagram of the composition of a data processing apparatus according to some embodiments of the present invention.

FIG. 7 shows a block diagram of the composition of an alternative data processing apparatus according to some embodiments of the present invention.

Detailed Description

Below exemplary embodiments of the present disclosure will be described in more detail by referring to accompanying drawings. Although the accompanying drawings display the exemplary embodiments of the present disclosure, it should be understood that the present disclosure may be achieved in various forms and should not be limited by the embodiments described herein. Conversely, the provision of these embodiments is for enabling a clearer understanding of the present disclosure and the complete conveyance of the scope of the present disclosure to those skilled in the art.

The embodiments of the present invention provide a data processing method, which is mainly applied on the server side, as shown in FIG. 1, and mainly comprises:

101. After receiving a link request sent by a client, obtaining a trend chart corresponding to a matter name carried in the link request.

Here, the link request is generated after a link in an article is triggered and is used for requesting a trend chart of a matter described in the article. The matter name may be a stock code, financial product code, sports team code, TV code, and other name codes in various fields. Here, an article containing a TV name may be comments on the audience ratings of a TV channel or TV content, and the corresponding trend chart may be audience ratings trends.

For example, when a user browses an article based on a client, in order to obtain the actual development situation of a matter since the publishing time of the article, the user may click on a link in the article for requesting a trend chart. After the link for requesting the trend chart is triggered, the client may obtain the matter name of a matter to be requested and the publishing time of the article at first, and then send the link request carrying the matter name and publishing time to a server. After the server receives the link request sent by the client, it may obtain the matter name from the link request, and then search in the database for a trend chart corresponding to the matter name so as to proceed to steps 102-103 based on this trend chart subsequently.

It should be noted that a matter name may correspond to one or a plurality of trend charts. When a matter name corresponds to a plurality of trend charts, these trend charts may be used to describe the trend situation of a matter in different time periods. For example, there are four trend charts of a stock, namely: a trend chart for the past month, a trend chart for the past three months, a trend chart for the past six months, and a trend chart for the past year.

102. Determining a publishing time of the article.

The above step 101 mentions that after a client becomes aware that a link for requesting a trend chart has been triggered, the client can send a link request carrying the matter name and publishing time to a server. Therefore, after the server receives the link request, it may determine that the time carried in the link request is the publishing time of the article.

Further, a client may obtain the publishing time of an article by the following method: (1) As most articles will indicate the publishing time of the article in the starting part and the ending part, the publishing time may be extracted from the starting part of the article or the ending part of the article. (2) Ordinary URLs (Uniform Resource Locator) will carry a web page creation time, and the web page creation time is the publishing time of the article, so the publishing time may be extracted from the URL of the web page where the article is located.

103. Annotating information related to the publishing time in the trend chart.

If the matter name corresponds to a plurality of trend charts, after a server obtains the trend charts and publishing time of the article, the server may select trend charts containing the

publishing time by filtering the obtained trend charts, and then annotate information related to the publishing time in these trend charts respectively so that the subsequent users may intuitively obtain, from the trend charts, information related to the publishing time as well as the trend situation of the matter since the publishing time. Here, information related to the publishing time includes without limitation: a trend point corresponding to the publishing time and the cumulative change in the trend of the matter during a period from the publishing time to a most recent point of time.

104. Sending the processed trend chart to the client.

In actual application, the trend charts corresponding to different time periods may be arranged in a trend detail page, so when trend charts are fed back to a client, the annotated trend charts may be fed back to the client by themselves, or the trend detail page containing the annotated trend charts may be fed back to the client so that the user not only may intuitively view the trend situation of the matter since the publishing time but also may view the trend situations in other time periods.

The data processing method provided by the embodiments of the present invention can set a link in an article for viewing the trend of a matter. After a server receives a link request sent by a client, it first obtains a trend chart corresponding to a matter name carried in the link request, then obtains a publishing time of the article, and lastly annotates information related to the publishing time in the trend chart, and sends the processed trend chart to the client. Thus it can be seen, compared with current technologies, the present invention not only can provide users with a link for viewing the trend chart of a matter, but also can annotate, in the trend chart, information related to the publishing time of an article. Thus when a user browses the article, the user can quickly obtain the trend situation of the matter since the article was published, hence raising the efficiency of the user in analysis of the article.

Further, according to the foregoing embodiment, another embodiment of the present invention further provides a data processing method, as shown in FIG. 2. The method mainly comprises:

201. After receiving a link request sent by a client, obtaining a trend chart corresponding to a matter name carried in the link request.

202. Determining a publishing time of the article.

203. Annotating information related to the publishing time in the trend chart.

To enable a user, when viewing a trend chart, to intuitively see which coordinate point in the chart is the trend point corresponding to the publishing time, and thus quickly look up, in the

trend chart, which part pertains to the trend of a matter since the publishing time of the article, the server may annotate the trend point corresponding to the publishing time in the trend charts that contain the publishing time.

As an example, when a user browses an article about comments on fund A on a finance website, the user learns from the article that fund A has been in a constant falling trend recently and the author of the article predicts that fund A will continue to fall. Now, if the user wants to know the actual development situation of fund A since the article was published, the user may click on a link in the article for viewing a trend chart. For example, the link is arranged in the ending part of the article and the name of the link is "Trend Chart of Fund A". Then the server will return a trend detail page to the user, and the trend detail page contains a trend chart as shown in FIG. 3 (or the server only returns the trend chart). From FIG. 3, the user may intuitively know which point the publishing time of the article (i.e., January 05, 2016) corresponds to in the curve, thus quickly obtaining the trend of fund A after January 05, 2016. After checking the trend chart from January 05, 2016 to April 10, 2016, the user may know that fund A was not in a downward trend all the time, but had an ascending period, thus determining that the prediction of the author is not absolutely correct. Hence the user may consider whether to buy fund A.

Further, to enable a user to more intuitively obtain from the trend chart the trend situation of a matter since the publishing time of an article, after the trend point corresponding to the publishing time is found, the curve before the trend point and the curve after the trend point may be processed in a differentiating manner. For example, the curve after the trend point is thickened, colored, or given a different grayscale so that the user can quickly obtain the trend chart of the matter after the publishing time of the article.

Further, in actual application, a user often needs to know the difference from the publishing time of an article to the latest time, but in order to know the difference between the two, the user first needs to find the trend point corresponding to the publishing time and the trend point corresponding to the most recent point of time in the trend chart, and then needs to calculate the difference value between the two, thus obtaining the difference between the two. The operation is very tedious. Therefore, to enable a user to quickly obtain the difference from the publishing time of an article to the most recent time, this embodiment of the present invention makes the following modification to the foregoing solution: the server may first determine the trend point corresponding to the publishing time in the trend chart that contains the publishing time and the trend point corresponding to the most recent point of time in the current trend chart, and then annotate the degree of difference between the trend point corresponding to the publishing time and the trend point corresponding to the most recent point of time in the current trend chart.

Here, the degree of difference may be the difference value obtained by subtracting the trend corresponding to the latest time in the current trend chart from the trend corresponding to the publishing time, or a percentage difference calculated based on the difference value between the two. The degree of difference between the two may be calculated according to other formulae for calculating difference. Further, to enable a user to quickly know whether the cumulative change from the publishing time to the latest time is upwards or downwards, an arrow standing for up or down may be annotated when the degree of difference is annotated.

For example, if FIG. 3 is changed into FIG. 4, a user can directly and quickly know that the cumulative net value has fallen 7.31% from the publishing time of the article to the present without having to find the net value corresponding to January 05, 2016 and the net value corresponding to April 10, 2016 in the chart first, and then calculate the difference and obtain the change in net value.

204. In the trend chart, adding a link for going back to the article.

In actual application, it often happens that a user closes a previously opened article by accident after the user enters a trend chart or a trend detail page. In this case, if the user wants to return and continue to browse the article, the user needs to re-find this article through site search or search by search engine. It is time consuming. In order to solve the foregoing technical problem, this embodiment of the present invention makes the following modification to the foregoing solution: in the trend detail page, the server may add a link for going back to the article in a trend chart containing the publishing time, or may add a link for going back to the article in a trend chart not containing the publishing time, or may add a link for going back to the article in an area of a trend detail page not for a trend chart.

Here, the name of a link for going back to the article may be the title of the article, or may be other text. There is no limitation to its content.

205. Sending the processed trend chart to the client.

The foregoing embodiment mentions that a matter name may correspond to one or a plurality of trend charts. When a matter name corresponds to a plurality of trend charts, these trend charts may be arranged at a trend detail page, and the entire trend detail page is fed back to the client, for the reference of the user if needed. When only some of the trend charts at the trend detail page contain the publishing time, there is the case that information related to the publishing time is annotated in only some of the trend charts. However, in actual application, the trend charts in a trend detail page often are not displayed on the same page, and are viewed by pressing corresponding buttons, and the trend charts displayed first are the trend charts corresponding to a

default time period. However, the trend charts that are displayed first by default may be trend charts not containing the publishing time. In this case, when a user wants to view a trend chart containing the publishing time, a corresponding button needs to be pressed in order to display the trend chart. The operation is relatively tedious. In order that the trend charts seen by a user first are processed trend charts (i.e., trend charts containing the publishing time), the following modification may be made based on step 205: the server sends a trend detail page for displaying processed trend charts with priority to the client, i.e., the server first adjusts the page data first displayed in the trend detail page based on annotated trend charts, and then feeds back the adjusted trend detail page to the client so that the user can quickly obtain the trend situation of the matter since the publishing time.

When there are a plurality of trend charts containing the publishing time, any of them may be selected as a trend chart displayed first in the trend detail page, or a trend chart with the shortest time period may be selected as a trend chart displayed first in the trend detail page. There is no limitation to this. For example, if there are a plurality of corresponding trend detail pages in the foregoing example about fund A, the page first displayed to a user may be as shown in FIG. 5, i.e., the trend chart first displayed is an annotated trend chart, rather than a trend chart not annotated and corresponding to time period “past month” at the leftmost of the trend detail page.

Further, based on the foregoing method embodiment, another embodiment of the present invention further provides a data processing apparatus, as shown in FIG. 6, mainly comprising: an obtaining unit 31, a determining unit 32, a processing unit 33, and a sending unit 34. Here,

obtaining unit 31, for obtaining, after receiving a link request sent by a client, a trend chart corresponding to a matter name carried in the link request, wherein the link request is generated after a link in an article is triggered and is used for requesting a trend chart of a matter described in the article;

determining unit 32, for determining a publishing time of the article;

processing unit 33, for annotating information related to the publishing time in the trend chart;

sending unit 34, for sending the processed trend chart to the client.

The data processing apparatus provided by embodiments of the present invention can set a link in an article for viewing the trend of a matter. After the server receives a link request sent by a client, it first obtains a trend chart corresponding to a matter name carried in the link request, then obtains a publishing time of the article, and lastly annotates information related to the publishing time in the trend chart, and sends the processed trend chart to the client. Thus it can be

seen, compared with current technologies, the present invention not only can provide users with a link for viewing the trend chart of a matter, but also can annotate, in the trend chart, information related to the publishing time of an article. Thus when a user browses the article, the user can quickly obtain the trend situation of the matter since the article was published, hence raising the efficiency of the user in analysis of the article.

Further, as shown in FIG. 7, the processing unit 33 comprises:

a first annotating module 331, for annotating a trend point corresponding to the publishing time in the trend chart.

Further, as shown in FIG. 7, the processing unit 33 further comprises:

a second annotating module 332, for annotating a degree of difference between the trend point corresponding to the publishing time and the trend point corresponding to the most recent point of time in the trend chart.

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

an adding unit 35, for adding a link for going back to the article in the trend chart after annotation of the information related to the publishing time.

Further, the sending unit 34 is used to send a trend detail page for displaying processed trend charts with priority to the client when trend charts are included in the trend detail page, and the trend charts corresponding to the matter name include trend charts containing the publishing time and trend charts not containing the publishing time.

Of the foregoing embodiments, different embodiments have different emphases of description and the part not described in an embodiment may be seen in relevant descriptions of other embodiments.

It may be understood that the features of the foregoing method and apparatus may be mutually referred to. "First", "second", etc. in the foregoing embodiments are for differentiating the embodiments and do not represent the order of superiority of the embodiments.

Those skilled in the art may clearly understand that for the convenience and concision of description, the working processes of the apparatus and units described above may refer to the corresponding processes in the foregoing method embodiments and will not be described again.

The algorithms and displays provided herein are not inherently correlated to any specific computer, virtual system, or other equipment. Various kinds of general systems may also be used together with the teaching herein. According to the above description, the structure required to constitute such a system is obvious. Further, the present invention is not specific to any specific programming language. It should be understood that various programming languages may be

used to achieve the content of the present invention described herein, and the foregoing description on specific languages is for disclosing optimum implementation manner of the present invention.

The specification provided herein describes many details. However, it can be understood that the embodiments of the present invention can be practiced in absence of these details. In some examples, known methods, structures, and technologies are not shown in detail in order not to blur the understanding of this specification.

Similarly, it should be understood that in order to simplify the present disclosure and help understand one or a plurality of invention aspects, in the foregoing descriptions on exemplary embodiments of the present invention, the features of the present invention sometimes are grouped to a single embodiment, diagram, or its description. However, the method disclosed should not be interpreted as reflecting the following intention: the present invention to be protected has more features than the features expressly recorded in every claim. More exactly speaking, as reflected in the following claims, the features the invention may include are fewer than all the features of all the individual embodiments disclosed above. Therefore, the claims of implementation manners are hence expressly included in the implementation manner, and every claim per se is a separate embodiment of the present invention.

Those skilled in the art may understand that the modules in a device in an embodiment may be subject to adaptive changes and arranged in one or a plurality of devices different from the embodiment. The modules or units or components in an embodiment may be combined into a module, unit, or component, and further, they may be divided into a plurality of submodules, or subunits, or subcomponents. Unless at least some of such features and / or processes or units are mutually exclusive, any combination may be adopted to combine all the features disclosed in the specification (including the accompanying claims, abstract, and drawings) as well as all the processes or units of any method or device thus disclosed. Unless otherwise expressly stated, every feature disclosed in this specification (including the accompanying claims, abstract, and drawings) may be replaced with alternative features providing a same, equivalent or similar object.

Further, those skilled in the art can understand that although some embodiments described herein include some features included in other embodiments but not other features, the combinations of the features of different embodiments mean that they are within the scope of the present invention and form different embodiments. For example, in the following claims, any of the embodiments claimed for protection may be used in any combined manner.

The embodiments of the components of the present invention may be achieved by hardware, or by a software module operated on one or a plurality of processors, or by their combinations. Those skilled in the art should understand that in practice, microprocessors or digital signal processors (DSP) may be used to achieve some or all of the functions of some or all components of the data processing method and apparatus according to the embodiments of the present invention. The present invention may further achieve some or all device or apparatus programs (such as computer programs and computer program products) for performing the method described herein. Such programs for achieving the present invention may be stored on computer-readable media, or may have a form of one or a plurality of signals. Such signals may be obtained through downloading from the Internet, or provided on carrier signals, or provided in any other form.

It should be noted that the foregoing embodiments are intended to illustrate the present invention and not to limit the present invention, and those skilled in the art may design alternative embodiments under the condition of not departing from the scope of the accompanying claims. In claims, no reference symbol between brackets should constitute a limitation to a claim. Word “include” or “comprise” does not exclude the existence of elements or steps not set out in the claims. Word “one” in front of an element does not exclude the existence of a plurality of elements. The present invention may be achieved with the help of hardware comprising a number of different elements and an appropriately programmed computer. In the claims enumerating several units of the apparatus, the several units may be achieved through a same hardware. The use of words “first”, “second”, “third”, etc. do not stand for any sequence. These words may be interpreted as names.

Claims

What is claimed is:

1. A data processing method, wherein the method comprises:

obtaining, after receiving a link request sent by a client, a trend chart corresponding to a matter name carried in the link request, wherein the link request is generated after a link in an article is triggered and is used for requesting a trend chart of a matter described in the article;

determining a publishing time of the article;

annotating information related to the publishing time in the trend chart;

sending the processed trend chart to the client.

2. The method according to claim 1, wherein annotating the information related to the publishing time in the trend chart comprises:

annotating a trend point corresponding to the publishing time in the trend chart.

3. The method according to claim 2, wherein annotating the information related to the publishing time in the trend chart further comprises:

annotating a degree of difference between the trend point corresponding to the publishing time and a trend point corresponding to a most recent point of time in the trend chart.

4. The method according to claim 1, wherein after annotating the information related to the publishing time, the method further comprises:

adding a link for going back to the article in the trend chart.

5. The method according to any of claim 1 ~ claim 4, wherein if trend charts are included in trend detail pages, and trend charts corresponding to the matter name include trend charts containing the publishing time and trend charts not containing the publishing time, then sending the processed trend chart to the client comprises:

sending a trend detail page for displaying a processed trend chart with priority to the client.

6. A data processing apparatus, wherein the apparatus comprises:

an obtaining unit, for obtaining, after receiving a link request sent by a client, a trend chart corresponding to a matter name carried in the link request, wherein the link request is generated after a link in an article is triggered and is used for requesting a trend chart of a matter described in the article;

a determining unit, for determining a publishing time of the article;

a processing unit, for annotating information related to the publishing time in the trend chart;

a sending unit, for sending the processed trend chart to the client.

7. The apparatus according to claim 6, wherein the processing unit comprises:

a first annotating module, for annotating a trend point corresponding to the publishing time in the trend chart.

8. The apparatus according to claim 7, wherein the processing unit further comprises:

a second annotating module, for annotating a degree of difference between the trend point corresponding to the publishing time and a trend point corresponding to a most recent point of time in the trend chart.

9. The apparatus according to claim 6, wherein the apparatus further comprises:

an adding unit, for adding a link for going back to the article in the trend chart after annotating the information related to the publishing time.

10. The apparatus according to any of claim 6 to claim 9, wherein the sending unit is used for sending a trend detail page for displaying a processed trend chart with priority to the client if trend charts are included in trend detail pages, and trend charts corresponding to the matter name include trend charts containing the publishing time and trend charts not containing the publishing time.