MODIFYING A CHART

BACKGROUND

[0001] Modifying a chart is a process for assisting a user to create or modify a standard chart into a customized chart using a series of visual chart elements representing how the standard chart can be changed. In some situations, when creating a chart the user normally has a preconceived notion of how a chart should be displayed. For example, the user may desire to create a chart for graphing various plotted points on an X and Y axis with each axis labeled. The user may also desire that each set of points be displayed in a different color and with a name associated with each set. However, the user may not know how to create such a chart because the user may be unfamiliar with the intricacies of the charting software, which leads to frustration by the user. It is with respect to these and other considerations that the present invention has been made.

SUMMARY

[0002] Modifying a chart may be provided. This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter. Nor is this Summary intended to be used to limit the scope of the claimed subject matter.

[0003] In accordance with one embodiment, a method is provided for formatting a chart based on user preferences. The method receives a chart. The method also provides a plurality of chart elements to the user pictorially, wherein each picture represents a chart modification. Using the chart elements, the method modifies the

formatting of the standard chart according to user preferences. The modified document is then displayed to the user including the user desired formatting.

[0004] According to another embodiment, a system is provided for modifying a chart including memory storage, a display device for viewing the modified chart, and a processing unit coupled to the memory storage for receiving a document. The system also provides a plurality of chart elements to a user. The system also receives user input from the user in relation to user preferences to the presented chart elements. Using the user preferred input, the system modifies the standard chart. The modified chart is then displayed to the user.

[0005] In accordance with yet another embodiment, a computer-readable medium is provided which stores a set of instructions which when executed performs a method for modifying a chart by receiving a standard chart. The computer-readable medium also provides chart elements to a user for use with the standard chart. Using the chart elements, the user provides the computer-readable medium with user preferences for a chart. Using the user preferences, the computer-readable medium modifies the standard chart to reflect how the user desires the chart to be displayed. The modified chart is then displayed to the user.

[0006] Both the foregoing general description and the following detailed description provide examples and are explanatory only. Accordingly, the foregoing general description and the following detailed description should not be considered to be restrictive. Further, features or variations may be provided in addition to those set forth herein. For example, embodiments may be directed to various feature combinations and sub-combinations described in the detailed description.

DRAWINGS

[0007] The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate various embodiments of the present invention. In the drawings:

[0008] FIG. 1 illustrates a networked operating environment where embodiments may be practiced;

[0009] FIG. 2 is a block diagram of a system including a computing device;

[0010] FIG. 3 is a flow chart of a method for modifying a chart;

[0011] FIG. 4 is a screen shot illustrating a user interface for use with the computing device of FIG. 2; and

[0012] FIG. 5 is a screen shot further illustrating the user interface for use with the computing device of FIG. 2.

DETAILED DESCRIPTION

[0013] The following detailed description refers to the accompanying drawings. Wherever possible, the same reference numbers are used in the drawings and the following description to refer to the same or similar elements. While embodiments of the invention may be described, modifications, adaptations, and other implementations are possible. For example, substitutions, additions, or modifications may be made to the elements illustrated in the drawings, and the methods described herein may be modified by substituting, reordering, or adding stages to the disclosed methods. Accordingly, the following detailed description does not limit the invention. Instead, the proper scope of the invention is defined by the appended claims.

[0014] Modifying a chart may be provided. Consistent with embodiments of the present invention, a method and system for pictorially presenting to a user chart

elements used to modify a standard chart is disclosed. Often when creating or editing a chart, a user may be unable to determine how to alter a standard chart to present data in a desired format, which leads to frustration by the user. Accordingly, if the user is provided with a pictorial representation of how to modify a chart, the user may more readily utilize all charting capabilities to create a desired chart.

[0015] An embodiment consistent with the invention may include a system for modifying a chart. The system may comprise a memory storage and a processing unit coupled to the memory storage. The processing unit may be operative to receive a standard chart and provide a plurality of chart elements for use with the standard chart. The processing unit may also be operative to receive input from the user regarding charting preferences and modify the standard chart to reflect the user's charting preferences. The system may use a display device to display the modified chart to the user.

[0016] Referring to FIG. 1, a networked system 100 is illustrated where example embodiments may be implemented. The networked system 100 may include a server 102, a server 104 which manages a database 106, a document 108 which may be created, edited and displayed using a desktop computer 112, and a laptop computer 114 that may be used to create, edit and display chart 116.

[0017] The networked environment 100 may transmit and receive data to and from other computing devices such as the server 102, the desktop computer 112, and the laptop computer 114. Various types of data may be created, edited and processed within a chart associated with document 108 and chart 116. Exchanged data may include, for example, graphs, scheduling information, mathematical calculations or the like. Furthermore, networked environment 100 may transmit or receive data to a storage system 106, which is managed by server 104. Other computing devices may participate in this

networked system as well, and devices such as the desktop computer 112 may be used as a standalone device.

[0018] Computing devices connected to the networked environment 100 may communicate over network(s) 110. Network(s) 110 may include one or more networks. The network(s) 110 may include a secure network such as an enterprise network, or an unsecure network such as a wireless open network. By way of example, and not limitation, the network(s) may include wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media.

[0019] FIG. 2 is a block diagram of a system including a computing device 200, which may reside in server 102, server 104, desktop computer 112, and laptop computer 114. Consistent with an embodiment of the invention, any suitable combination of hardware, software, or firmware may be used to implement a memory storage and processing unit. For example, the memory storage and processing unit may be implemented with computing device 200 or any of the other computing devices in combination with computing device 200. The aforementioned system, device, and processors are examples and other systems, devices, and processors may comprise the aforementioned memory storage and processing unit, consistent with embodiments of the invention. Furthermore, the computing device 200 may comprise an operating environment for an associated system. The system may operate in other environments and is not limited to computing device 200.

[0020] With reference to FIG. 2, a system consistent with an embodiment of the invention may include a computing device, such as computing device 200. In a basic configuration, computing device 200 may include at least one processing unit 202

and a system memory 204. Depending on the configuration and type of computing device, system memory 204 may comprise, but is not limited to, volatile (e.g. random access memory (RAM)), non-volatile (e.g. read-only memory (ROM)), flash memory, or any combination. System memory 204 may include operating system 205, one or more programming modules 206, and may include a program data 207. Operating system 205, for example, may be suitable for controlling computing device 200's operation. In one embodiment, programming modules 206 may include a document management application 219 for receiving a document or chart. Programming modules 206 may include a chart formatting display application 220 for visually providing chart modifying elements to a user. Furthermore, embodiments of the invention may be practiced in conjunction with a graphics library, other operating systems, or any other application program and is not limited to any particular application or system. This basic configuration is illustrated in FIG. 2 by those components within a dashed line 208.

[0021] Computing device 200 may have additional features or functionality. For example, computing device 200 may also include additional data storage devices (removable and/or non-removable) such as, for example, magnetic disks, optical disks, or tape. Such additional storage is illustrated in FIG. 2 by a removable storage 209 and a non-removable storage 210. Computer storage media may include volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information, such as computer readable instructions, data structures, program modules, or other data. System memory 204, removable storage 209, and non-removable storage 210 are all computer storage media examples (i.e. memory storage.) Computer storage media may include, but is not limited to, RAM, ROM, electrically erasable read-only memory (EEPROM), flash memory or other memory

technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store information and which can be accessed by computing device 200. Any such computer storage media may be part of device 200. Computing device 200 may also employ input device(s) 212 such as a keyboard, a mouse, a pen, a sound input device, a touch input device, etc. Output device(s) 214 such as a display, speakers, a printer, etc. may also be included. The aforementioned devices are examples and others may be used.

[0022] Computing device 200 may also contain a communication connection 216 that may allow device 200 to communicate with other computing devices, such as over network 110 in a distributed computing environment, for example, an intranet or the Internet. Communication connection 216 is one example of communication media. Communication media may typically be embodied by computer readable instructions, data structures, program modules, or other data in a modulated data signal, such as a carrier wave or other transport mechanism, and includes any information delivery media. The term "modulated data signal" may describe a signal that has one or more characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media may include wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, radio frequency (RF), infrared, and other wireless media. The term computer readable media as used herein may include both storage media and communication media.

[0023] As stated above, a number of program modules and data files may be stored in system memory 204, including operating system 205. While executing on processing unit 202, programming modules 206 may perform processes including, for

example, one or more method 300's stages as described below. The aforementioned process is an example, and processing unit 202 may perform other processes. Other programming modules that may be used in accordance with embodiments of the present invention may include electronic mail and contacts applications, word processing applications, spreadsheet applications, database applications, slide presentation applications, drawing or computer-aided application programs, etc.

[0024] FIG. 3 is a flow chart setting forth the general stages involved in a method 300 consistent with an embodiment of the invention for modifying a chart using computing device 200 of FIG. 2. Ways to implement the stages of method 300 will be described in greater detail below. Method 300 may begin at starting block 305 and proceed to stage 310 where computing device 200 may receive a chart. Once the chart is received, the method 300 proceeds to stage 315 where computing device 200 may provide chart elements visually to a user for use in tailoring the chart. For example, the user may be presented with a ribbon toolbar having a chart element for selecting grid lines. Next, at stage 320, the computing device 200 may receive chart preference input from the user based on the presented chart elements. For example, the user may desire to create a chart having an X and Y axis with titles for displaying speed versus time.

[0025] Next, at stage 325, the computing device 200 may modify the standard chart using the user preferred chart elements. At stage 330, the computing device 200 may display the modified chart to the user.

[0026] Thus, the user is provided with visual representations of how a standard chart may be modified for use by the user. Upon selection by the user, the computing device 200 modifies the standard chart based on the selected chart elements.

Accordingly, a user may more fully utilize charting capabilities to tailor standard charts to the user's preference.

[0027] FIG. 4 illustrates an exemplary user interface 400 for use in conjunction with the computing device 200, according to one embodiment. The user interface 400 includes a chart ribbon toolbar 402. Within the chart ribbon toolbar 402 are displayed a series of chart element gallery commands 404 for use by a user to modify a standard chart, for example, a chart title tab. Also, within the chart ribbon toolbar 402 resides a series of art objects 406 for use by the user to add and edit drawing elements, text and pictures. In addition, the chart ribbon toolbar 402 provides the user with tooltips 408 for use by the user to receive help on chart formatting. Accordingly, the user is presented with a chart ribbon toolbar 402 having visual chart elements for showing how the user may modify the standard chart.

[0028] FIG. 5 illustrates an exemplary chart gallery structure 500 for use in conjunction with the chart ribbon toolbar 402, according to one embodiment. For instance, upon selecting a chart element gallery command 502, a gallery 504 representing possible modifications associated with a chart element (Axis Labels) may be presented to the user. For example, the gallery 504 presents the user with an option to modify a horizontal (X) Axis title, a vertical (Y) Axis title and depth (Z) Axis title. If the user selects, for example, the option to modify the horizontal (X) Axis title, the user is presented with a set of visual representations of how the horizontal (X) Axis title could be modified in a second stage gallery 506. Accordingly, the user may desire to place the title for the X Axis below the axis by selecting chart element 510. If the user does not see the desired option to modify the X Axis, the user may select a more selections option to display further options to modify the X Axis title. Thus, the user may utilize a plurality of galleries associated with a

variety of chart element gallery commands, for example, Titles, Legends, Data Labels, Gridlines, Axes, More elements, or the like.

[0029] Consistent with embodiments of the present invention, modifying a chart may be provided for modifying a standard chart to a user's desired preferences. Chart elements used to modify the standard chart are presented to the user in a visual display to reduce confusion by the user on how a chart may be modified. Consistent with embodiments of the present invention, the chart formatting display application may reside in the computing device 200, a server connected to computing device 200, or both the computing device 200 and server connected to computing device 200.

[0030] Generally, consistent with embodiments of the invention, program modules may include routines, programs, components, data structures, and other types of structures that may perform particular tasks or that may implement particular abstract data types. Moreover, embodiments of the invention may be practiced with other computer system configurations, including hand-held devices, multiprocessor systems, microprocessor-based or programmable consumer electronics, minicomputers, mainframe computers, and the like. Embodiments of the invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.

[0031] Furthermore, embodiments of the invention may be practiced in an electrical circuit comprising discrete electronic elements, packaged or integrated electronic chips containing logic gates, a circuit utilizing a microprocessor, or on a single chip containing electronic elements or microprocessors. Embodiments of the invention may

also be practiced using other technologies capable of performing logical operations such as, for example, AND, OR, and NOT, including but not limited to mechanical, optical, fluidic, and quantum technologies. In addition, embodiments of the invention may be practiced within a general purpose computer or in any other circuits or systems.

[0032] Embodiments of the invention, for example, may be implemented as a computer process (method), a computing system, or as an article of manufacture, such as a computer program product or computer readable media. The computer program product may be a computer storage media readable by a computer system and encoding a computer program of instructions for executing a computer process. The computer program product may also be a propagated signal on a carrier readable by a computing system and encoding a computer program of instructions for executing a computer process. Accordingly, the present invention may be embodied in hardware and/or in software (including firmware, resident software, micro-code, etc.). In other words, embodiments of the present invention may take the form of a computer program product on a computer-usable or computer-readable storage medium having computer-usable or computer-readable program code embodied in the medium for use by or in connection with an instruction execution system. A computer-usable or computer-readable medium may be any medium that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device.

[0033] The computer-usable or computer-readable medium may be, for example but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium. More specific computer-readable medium examples (a non-exhaustive list), the computer-readable medium may include the following: an electrical connection having one or more wires, a

portable computer diskette, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), an optical fiber, and a portable compact disc read-only memory (CD-ROM). Note that the computer-usable or computer-readable medium could even be paper or another suitable medium upon which the program is printed, as the program can be electronically captured, via, for instance, optical scanning of the paper or other medium, then compiled, interpreted, or otherwise processed in a suitable manner, if necessary, and then stored in a computer memory.

[0034] Embodiments of the present invention, for example, are described above with reference to block diagrams and/or operational illustrations of methods, systems, and computer program products according to embodiments of the invention. The functions/acts noted in the blocks may occur out of the order as show in any flowchart. For example, two blocks shown in succession may in fact be executed substantially concurrently or the blocks may sometimes be executed in the reverse order, depending upon the functionality/acts involved.

[0035] While certain embodiments of the invention have been described, other embodiments may exist. Furthermore, although embodiments of the present invention have been described as being associated with data stored in memory and other storage mediums, data can also be stored on or read from other types of computer-readable media, such as secondary storage devices, like hard disks, floppy disks, or a CD-ROM, a carrier wave from the Internet, or other forms of RAM or ROM. Further, the disclosed methods' stages may be modified in any manner, including by reordering stages and/or inserting or deleting stages, without departing from the invention.

[0036] While the specification includes examples, the invention's scope is indicated by the following claims. Furthermore, while the specification has been described

in language specific to structural features and/or methodological acts, the claims are not limited to the features or acts described above. Rather, the specific features and acts described above are disclosed as example for embodiments of the invention.

Claims:

1. A method for formatting a chart, the method comprising:

receiving (310) a standard chart;

providing (315) a plurality of chart elements pictorially, wherein each of the plurality of chart elements represents a chart modification for use in changing the standard chart;

modifying (325) the standard chart with one or more of the plurality of chart elements; and

displaying (330) the modified chart.

2. The method of claim 1 further comprising receiving input for selecting chart elements.

3. The method of claim 1 further comprising querying the standard chart to determine a current state of the chart.

4. The method of claim 1 further comprising querying the modified chart to determine a current state of the chart.

5. The method of claim 1, wherein the chart elements reside in a chart ribbon.

6. A system for modifying a chart, the system comprising:

a memory storage (204, 209, 210);

a processing unit (202) coupled to the memory storage, wherein the processing unit is operative to:

receive (310) a standard chart;

provide (315) a plurality of chart elements pictorially;

receive (320) input for selecting chart elements;

modify (325) the standard chart based on the received input; and

display (330) the modified chart; and

a display device (112, 114) for displaying the modified chart.

7. The system of claim 6, wherein the processing unit is associated with a server.

8. The system of claim 6, wherein the processing unit is associated with a client-side device.

9. A computer-readable medium which stores a set of instructions (219, 220) which when executed performs a method for modifying a chart, the method executed by the set of instructions comprising:

receiving (310) a standard chart;

providing (315) a plurality of chart elements pictorially;

modifying (325) the standard chart based on a selection of one or more of the plurality of chart elements; and

displaying (330) the modified chart.

10. The computer-readable medium of claim 9, wherein after the modified chart is created, further modifying the modified chart using the plurality of chart elements.

11. The computer-readable medium of claim 9 further comprising receiving input for selecting chart elements.

12. The computer-readable medium of claim 9 further comprising querying the standard chart to determine the current state of the standard chart.

13. The computer-readable medium of claim 9, wherein the plurality of chart elements reside in a chart ribbon.

14. The computer-readable medium of claim 13, wherein the chart ribbon displays a gallery of chart elements upon selection of one or more chart gallery commands.

15. The computer-readable medium of claim 14, wherein the gallery provides chart elements pictorially for chart modification.

16. The computer-readable medium of claim 13, wherein the chart ribbon is user controlled.

17. The computer-readable medium of claim 16 further comprising disabling the chart ribbon.

18. The computer-readable medium of claim 9, wherein the plurality of chart elements pictorially displays a current state of the standard chart.

19. The computer-readable medium of claim 9, wherein the plurality of chart elements pictorially displays a current state of the modified chart.

20. The computer-readable medium of claim 9 further comprising providing art objects for modifying the standard chart.