

**(19) AUSTRALIAN PATENT OFFICE**

(54) Title  
User interface for providing task management and calendar information

(51)<sup>6</sup> International Patent Classification(s)  
**G06F** 3/033 (2006.01) 20060101AFI2006022  
**G06Q** 10/00 4BHAU **G06Q**  
(2006.01) 10/00  
G06F 3/033 20060101ALI2006022  
4BHAU

(21) Application No: 2005202717 (22) Application Date: 2005 .06 .22

(30) Priority Data

(31) Number	(32) Date	(33) Country
10/955,928	2004 .09 .30	US

(43) Publication Date : 2006 .04 .13

(43) Publication Journal Date : 2006 .04 .13

(71) Applicant(s)  
Microsoft Corporation

(72) Inventor(s)  
Williams, Cheryl L.; Savastano, Hernan I.; Leukart, Richard H.; Frankel, Glenn L.; Jensen, Stephen D.

(74) Agent/Attorney  
Davies Collison Cave, 1 Nicholson Street, Melbourne, VIC, 3000

(56) Related Art  
US 5855006 A (HUEMOELLER et al.) 29 December 1998

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#### Abstract

- 5       An electronic "To-Do" bar is provided in which displayed upcoming tasks, meetings, appointments and the like. The electronic To-Do bar is displayed in a lightweight menu of tasks, meetings and appointments and is displayed persistently in addition to other software functionality or user interfaces displayed on a user's computer display screen according to other software applications or other software
- 10       functionality in use. A user is presented with an always-visible list of upcoming tasks, meetings and appointments without the need to launch a separate tasks application or calendar application to view upcoming tasks, meetings or appointments.

4/5

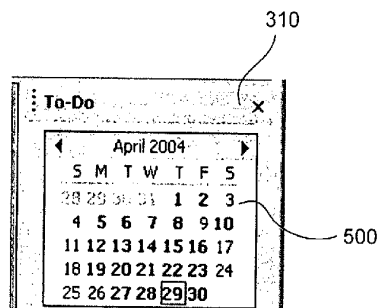


Fig. 5

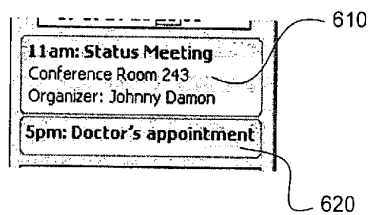


Fig. 6

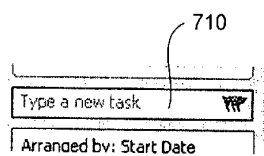


Fig. 7

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**AUSTRALIA**  
**PATENTS ACT 1990**  
**COMPLETE SPECIFICATION**

NAME OF APPLICANT(S)::

**Microsoft Corporation**

ADDRESS FOR SERVICE:

**DAVIES COLLISON CAVE**  
Patent Attorneys  
1 Nicholson Street, Melbourne, 3000, Australia

INVENTION TITLE:

User interface for providing task management and calendar information

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

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**Field of the Invention**

The present invention generally relates to calendar, scheduling and time management systems. More particularly, the present invention relates to an improved user interface for providing task management and calendar information.

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**Background of the Invention**

With the advent of the computer age, computer and software users have grown accustomed to user-friendly software applications that help them write, calculate, organize, prepare presentations, send and receive electronic mail, make music, and the like. For example, electronic mail systems allow users to send, receive, respond to and store a variety of mail messages and related information. Electronic calendar applications allow users to store, organize and view meeting dates and appointments. Electronic task management applications allow users to store, organize and view a variety of tasks that a user must complete or desires to complete according to various time schedules.

20

However, even with the available functionality of such systems, some users desire a short list of upcoming meetings, appointments or tasks. Indeed, many users of modern electronic calendar systems and task management applications often create paper "to-do" lists that they stick onto their computer monitors or place in a conspicuous location to remind them of upcoming meetings, appointments or tasks because of a tendency they have to prepare exhaustive calendars or task lists only to forget to review the calendars or task lists at a necessary frequency. Other users use paper calendar or time management systems for the same purpose.

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Accordingly, there is a need in the art for an electronic user interface for providing an electronic "To-Do" list of upcoming events or tasks that may be populated

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from an electronic calendar application or task management application separately by a user. It is desired to address the shortcomings of the prior art, or at least provide a useful alternative.

#### Summary of the Invention

The present invention provides a method for providing task information and calendar information in a to-do user interface, comprising:

- 5           searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked
- 10          for addition to the to-do user interface;
- populating the to-do user interface with an appointments view pane for containing the at least one calendar object;
- populating the to-do user interface with a task list for containing the at least one task object;
- 15          organizing at least one task object contained in the task list into at least one logical grouping, where the at least one task object included in a given logical grouping belongs to an arrangement type associated with the given logical grouping;
- displaying the to-do user interface as a component of a larger user interface,
- 20          wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the
- 25          at least one first software application is not dependent on the information populating the to-do user interface; and
- persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated with the at
- 30          least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by

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functionality and information associated with at least one second software application.

The present invention also provides a computer implemented method for providing  
5 an improved user interface, the method comprising:

searching at least one memory storage for at least one calendar object  
marked for addition to the to-do user interface and at least one task object marked  
for addition to the to-do user interface;

10 displaying, by the computer, an appointments view pane disposed in an  
upper portion of the to-do user interface for containing the at least one calendar  
object;

displaying, by the computer, a task list disposed in a lower portion of a to-  
do user interface for containing the at least one task object;

15 displaying, by the computer, the to-do user interface as a component of a  
larger user interface, wherein the larger user interface comprises a main user  
interface comprising the to-do user interface component and at least one other user  
interface component, where an area of the larger user interface not consumed by  
the to-do user interface is available for displaying functionality and information  
20 associated with at least one first software application not related to the to-do user  
interface, wherein the functionality and information associated with the at least one  
first software application is not dependent on the information populating the to-do  
user interface; and

25 persistently displaying, by the computer, the to-do user interface, the to-do  
user interface comprising the appointments view pane and the task list, as a  
component of the larger user interface if functionality and information associated  
with the at least one first software application that is displayed in the area of the  
larger user interface not consumed by the to-do user interface is replaced by  
functionality and information associated with at least one second software  
application.

30 The present invention also provides a computer-readable storage medium

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containing computer-executable instructions which when executed by a computer perform a method for providing task information and calendar information in a to-do user interface, comprising:

- 5           searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;
- populating the to-do user interface with an appointments view pane for containing the at least one calendar object;
- 10          populating the to-do user interface with a task list for containing the at least one task object;
- organizing the at least one task object contained in the task list into at least one logical grouping, where any of the at least one task object included in a given logical grouping belongs to an arrangement type associated with the given logical
- 15          grouping;
- displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be
- 20          used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface; and
- persisting displaying of the to-do user interface, the to-do user interface
- 25          being populated with the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.



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The present invention also provides a method for providing task information and calendar information in a to-do user interface, comprising:

- 5        searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;
- populating the to-do user interface with an appointments view pane for containing the at least one calendar object;
- populating the to-do user interface with a task list for containing the at least one task object;
- 10       displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the
- 15       at least one first software application is not dependent on the information populating the to-do user interface; and
- persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component
- 20       of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.

- 25       The present invention also provides a computer-readable storage medium containing computer-executable instructions which when executed by a computer perform a method for providing task information and calendar information in a to-do user interface, comprising:

- 30       searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;

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retrieving the at least one calendar object from a memory of calendar objects;

populating the to-do user interface with an appointments view pane for containing the at least one calendar object, whereby populating the appointments view pane of the to-do user interface with at least one calendar object includes populating the appointments view pane of the to-do user interface with a plurality of appointments objects;

retrieving the at least one task object from a memory of task objects;

populating the to-do user interface with a task list for containing the at least one task object;

populating the to-do user interface with a date picker control for showing a selected calendar view;

populating the to-do user interface with a task input panel for inputting a new task object into the task list;

displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface;

organizing the at least one task object into at least one logical grouping, where any of the at least one task object included in a given logical grouping belongs to an arrangement type associated with the given logical grouping; and

persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.

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**Brief Description of the Drawings**

Preferred embodiments of the present invention are hereinafter described, by way of example only, with reference to the accompanying drawings, wherein:

Fig. 1 is a block diagram showing the architecture of a personal computer that  
5 provides an illustrative operating environment for embodiments of the present invention.

Fig. 2 illustrates a computer screen display showing an electronic To-Do bar or list according to embodiments of the present invention.

Fig. 3 is a computer screen display illustrating an example selectable control for opening or closing a To-Do bar according to embodiments of the present invention.

10 Figs. 4 illustrates a computer screen display of a view menu and view menu fly-out user interface for assigning view properties to a To-Do bar according to embodiments of the present invention.

Fig. 5 illustrates a computer screen display showing a date picker control in a To-Do bar according to embodiments of the present invention.

15 Fig. 6 illustrates a computer screen display showing an appointments/meetings view component of a To-Do bar according to embodiments of the present invention.

Fig. 7 illustrates a computer screen display showing a task input panel of a To-Do bar according to embodiments of the present invention.

20 Fig. 8 illustrates a computer screen display of a task list of a To-Do bar according to embodiments of the present invention.

Fig. 9 illustrates a computer screen display showing an alternate display of a To-Do bar according to embodiments of the present invention.

**Detailed Description**

25 Embodiments of the present invention are directed to an improved user interface for providing task management and calendar information in a persisted computer-generated To-Do list or bar. The electronic To-Do bar of the present invention provides a list of upcoming tasks, meetings and appointments populated from a separately maintained electronic calendar and/or task management application.

30 Embodiments of the present invention solve the above and other problems by providing an electronic "To-Do" bar or list (hereinafter "To-Do bar") in which a user may

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be presented a display of upcoming tasks, meetings, appointments and the like. According to aspects of the invention, the electronic To-Do bar may be utilized in association with a multi-functionality software application, or the electronic To-Do bar may be used independently of other software applications. The electronic To-Do bar is a user interface pane in which may be displayed tasks, meetings and appointments. The To-Do bar is displayed persistently in addition to other software functionality or user interfaces displayed on a user's computer display screen according to other software applications or other software functionality in use. Thus, the user is presented with an always-visible list of upcoming tasks, meetings and appointments without the need to launch a separate tasks application or calendar application to view upcoming tasks, meetings or appointments.

According to aspects of the invention, the To-Do bar includes an appointment view component in which is displayed one or more upcoming meetings or appointments. The To-Do bar also includes a task list in which may be displayed upcoming tasks. The task list may be displayed according to a variety of arrangement criteria, and a scroll bar may be provided to allow a user to see tasks that will not fit into available display space for the task list. The To-Do bar may also include a date picker control for selectively launching a separate calendar application, or onto which task items may be dropped for inclusion in the task list according to a date in the date picker control onto which a give task item is dropped. A task input field or panel may be included in the To-Do bar to allow the user to enter new tasks directly into the To-Do bar.

The meetings and appointments information displayed in the appointment view component are imported from a memory location populated via a separate calendar application. The task list may be populated from tasks stored by and entered through a separate tasks application, or from other data including electronic mail items that are flagged as tasks items. In addition, tasks may be added to the task list via the aforementioned task input panel.

In the following detailed description, references are made to the accompanying drawings that form a part hereof, and in which are shown by way of illustrations specific embodiments or examples. These embodiments may be combined, other embodiments may be utilized, and structural changes may be made without departing from the spirit or scope of the present invention. The following detailed description is therefore not to be taken in a

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limiting sense and the scope of the present invention is defined by the appended claims and their equivalents.

Referring now to the drawings, in which like numerals represent like elements through the several figures, embodiments of the present invention and the exemplary  
5 operating environment will be described. Fig. 1 and the following discussion are intended to provide a brief, general description of a suitable computing environment in which embodiments of the invention may be implemented. While embodiments of the invention will be described in the general context of program modules that execute in conjunction with an application program that runs on an operating system on a personal computer,  
10 those skilled in the art will recognize that embodiments of the invention may also be implemented in combination with other program modules.

Generally, program modules include routines, programs, components, data structures, and other types of structures that perform particular tasks or implement particular abstract data types. Moreover, those skilled in the art will appreciate that the  
15 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. 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.

Turning now to Fig. 1, an illustrative computer architecture for a personal computer 2 for practicing the various embodiments of the invention will be described. The computer architecture shown in Fig. 1 illustrates a conventional personal computer, including a central processing unit 4 ("CPU"), a system memory 6, including a random access memory 8 ("RAM") and a read-only memory ("ROM") 10, and a system bus 12 that couples the memory to the CPU 4. A basic input/output system containing the basic routines that help to transfer information between elements within the computer, such as during startup, is stored in the ROM 10. The personal computer 2 further includes a mass storage device 14 for storing an operating system 16, application programs, such as the application program 205, and data.

The mass storage device 14 is connected to the CPU 4 through a mass storage controller (not shown) connected to the bus 12. The mass storage device 14 and its associated computer-readable media, provide non-volatile storage for the personal computer 2. Although the description of computer-readable media contained herein refers to a mass storage device, such as a hard disk or CD-ROM drive, it should be appreciated by those skilled in the art that computer-readable media can be any available media that can be accessed by the personal computer 2.

By way of example, and not limitation, computer-readable media may comprise computer storage media and communication media. Computer storage media includes volatile and non-volatile, 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. Computer storage media includes, but is not limited to, RAM, ROM, EPROM, EEPROM, flash memory or other solid state memory technology, CD-ROM, 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 the desired information and which can be accessed by the computer.

According to various embodiments of the invention, the personal computer 2  
5 may operate in a networked environment using logical connections to remote computers through a TCP/IP network 18, such as the Internet. The personal computer 2 may connect to the TCP/IP network 18 through a network interface unit 20 connected to the bus 12. It should be appreciated that the network interface unit 20 may also be utilized to connect to other types of networks and remote computer systems. The personal  
10 computer 2 may also include an input/output controller 22 for receiving and processing input from a number of devices, including a keyboard or mouse (not shown). Similarly, an input/output controller 22 may provide output to a display screen, a printer, or other type of output device.

As mentioned briefly above, a number of program modules and data files may  
15 be stored in the mass storage device 14 and RAM 8 of the personal computer 2, including an operating system 16 suitable for controlling the operation of a networked personal computer, such as the WINDOWS operating systems from Microsoft Corporation of Redmond, Washington. The mass storage device 14 and RAM 8 may also store one or more application programs. In particular, the mass storage device 14  
20 and RAM 8 may store an application 105 for providing a variety of functionalities to a user. For instance, the application 105 may comprise many types of programs such as a word processing application program, a spreadsheet application, a desktop publishing, and the like. According to an embodiment of the present invention, the application 105 comprises a multiple functionality software application for providing a user calendar  
25 functionality, electronic tasks functionality, electronic mail functionality, contacts information functionality, electronic notes functionality, electronic journal functionality and the like. Some of the individual program modules comprising the multiple functionality application 105 include a calendar application 125, an electronic mail application 130, a contacts application 135, a tasks application 140, a notes application

145 and a journal application (not shown). An example of such a multiple functionality application 105 is OUTLOOK® manufactured by Microsoft Corporation.

Fig. 2 illustrates a computer screen display of an electronic mail application user interface according to embodiments of the present invention. The user interface 200 is illustrative of an electronic mail application 130 user interface for displaying electronic mail items received, sent or stored in a variety of storage folders. An example electronic mail application user interface illustrated in Fig. 2 is provided by OUTLOOK® manufactured and marketed by Microsoft Corporation of Redmond, Washington.

The user interface 200, illustrated in Fig. 2, includes an inbox 210 with which a user may view a listing of electronic mail items that have been received by the user, that have been sent by the user, or which have been stored in one or more user-established storage folders. As illustrated in Fig. 2, a number of electronic mail items are listed in the inbox pane 210. To the right of the inbox 210, a reading pane or preview 230 is illustrated for displaying the contents of a selected mail item.

Along the lower left-hand corner of the user interface 200 is an application selection pane 225 containing selectable functionality controls for selecting other types of functionality provided by the multiple functionality software application 105 (described above) through which the user's electronic mail application is provided. For example, the display of the electronic mail user interface 200 is in response to selection of the "Mail" control. If the user wishes to launch a user interface associated with a tasks application 140, the user may select the "Tasks" control to launch the functionality of the tasks application 140 including presentation of a user interface 200 associated with the tasks application. Likewise, the user may select the "Contacts" control to launch the functionality of a contacts application 135 and an associated user interface 200 for displaying information and functionality for a contacts application 135.

Referring still to Fig. 2, a To-Do bar 240 is illustrated. According to embodiments of the invention, functionality of the To-Do bar 240 is provided by the multiple functionality application 105. As described below, according to one displayed embodiment of the present invention, the To-Do bar 240 includes a date picker control,



an appointments/meetings view, a task input panel, and a task list. According to embodiments, the To-Do bar 240 is displayed along the right-hand side of the user interface 200 by default. However, as described below with respect to Fig. 9, the display of the To-Do bar 240 may be altered to accommodate different display screen sizes and configurations and to accommodate the particular requirements of other software application user interfaces.

According to embodiments of the present invention, the To-Do bar 240 is always displayed in the user interface 200 so that a user has a quick and easy view of upcoming meetings, appointments and tasks without the need to launch specific applications, for example, calendar applications and tasks applications, for obtaining that information. For example, if the "Contacts" control is selected from the control pane 225 to launch the functionality of a contacts application 135, along with an associated user interface 200, the To-Do bar 240 remains displayed in the user interface 200. Likewise, if the user then selects yet another application, for example, a tasks application 140, the display of the To-Do bar 240 remains persisted in the user interface. As described below, the user may dismiss the To-Do bar 240 from display if desired. However, according to embodiments of the present invention, a default setting for the To-Do bar 240 prescribes that the To-Do bar 240 remains displayed regardless of the displayed information or functionality displayed in other portions of the user interface 200 so that the user has a readily available listing of upcoming meetings, appointments and tasks.

According to embodiments of the invention, components of the To-Do bar 240 (task list, appointments/meetings view) may be populated with a number of appointments, meetings, tasks and task-like items that are aggregated by the To-Do bar from a variety of sources. That is, any data item that is marked for recognition by the To-Do bar may be retrieved by the To-Do bar from any memory source accessible by the To-Do bar. Once the To-Do bar retrieves such marked data items, the To-Do bar 240 aggregates the data items and displays them in one or more components of the To-Do bar. For example, any number of data items, including electronic mail items, meeting requests, meeting request responses, tasks, titles of reports, data items in

spreadsheets, etc. may be marked for treatment as tasks. Once marked for treatment as tasks, the To-Do bar may search for the data items, aggregate the data items, and then display the data items in the task list of the To-Do bar. Likewise, the To-Do bar may search for items marked for treatment as meetings or appointments from sources such as electronic calendars. The To-Do bar may then aggregate and display the retrieved meetings or appointments items in the appointments/meetings view of the To-Do bar as described below. Example memory areas that may be searched by the To-Do bar include areas associated with other applications, for example, electronic mail applications, calendar applications, tasks applications, and the like.

Referring to Fig. 3, the To-Do bar 240 may be selectively hidden from view based on a variety of user actions. For example, the close control 310 in the upper right-hand corner of the To-Do bar may be selected for hiding or dismissing To-Do bar 240. Alternatively, a To-Do bar button 305 may be disposed in a tool bar of functionality controls disposed along an upper edge or other location in the user interface 200 for selectively opening and closing the To-Do bar 240. Alternatively, a view menu may be provided where a user may select or deselect the To-Do bar 240 for/from display. According to yet another alternative, a function control, for example, ALT+F2, may be selected to toggle the To-Do bar 240 into an off position. Similarly, the To-Do bar 240 may be launched for display, as illustrated in Fig. 2, by selecting a To-Do bar button 305 in a tool bar of selectable functionality controls. A To-Do bar menu item may be selected from a view menu. Or, as described above, a function key such as ALT+F2 may be selected to toggle the To-Do bar 240 into an on (display) position.

Referring to Fig. 4, a view menu 400 is illustrated which may be launched according to embodiments of the present invention for selectively displaying the To-Do bar 240. Upon selection of the To-Do bar control 420 from the view menu 400, a fly-out menu 460 is provided to allow the user to set display properties with which information contained in the To-Do bar 240 will be displayed. As illustrated in Fig. 4, in the fly-out menu 460, the "Show To-Do Bar" control has been selected so that the To-Do bar 240 will be displayed in the user interface 200. A "Start Date" property 430

has been selected so that information contained in the To-Do bar 240 will be sorted according to start date. For example, other sorting categories for tasks and other information contained in To-Do bar 240 may be selected, for example, "Assigned To," "Created By," etc.

5 In a lower portion of the fly-out menu 460, controls are displayed for selecting various components for display (or, removal from display) in the To-Do bar 460. For example, a "Show Date Picker" control 440 has been selected so that the date picker user interface will be displayed in the To-Do bar 240. On the other hand, if the user has the To-Do bar 240 turned on while the user is viewing functionality and information associated with the user's calendar application 125, the user may turn off the meetings/appointments view from the To-Do bar 240 to make additional space in the To-Do bar 240 for additional tasks information. A "Show Appointments" control 445 has been selected so that the appointments/meetings view portion of the To-Do bar 240 will be displayed for showing upcoming meetings and appointments. A "Show task input panel" control has also been selected so that the task input panel of the To-Do bar 240 will be displayed in the To-Do bar 240. As should be understood, other controls from the fly-out menu 460 may be selected for applying other properties to the To-Do bar 240. As should be appreciated from the fly-out menu 460 and the associated description, the date picker control, the appointments/meetings view, and the task input panel may be selectively displayed or not displayed in the To-Do bar 240. In any case, by default, the tasks list of the To-Do bar 240 is always displayed. Thus, a user may customize the display of components of the To-Do bar 240, as described.

Having described general aspects of the To-Do bar 240 in association with the user interface 200 with respect to Figs. 2, 3 and 4, Figs. 5-9 illustrate different components of the To-Do bar 240 and describe population and maintenance of data in the To-Do bar 240. Referring now to Fig. 5, the date picker control 500 is illustrated. According to embodiments of the present invention, regardless of the user's currently displayed application user interface, for example, contacts application user interface, electronic mail user interface, and the like, the To-Do bar 240 displays at least one date picker control 500 unless the control is turned off by the user. The date picker control

500 functions not only as a visible calendar, but additional information is provided based on the application of properties to the date numerals contained in the control 500. For example, a date containing a meeting or appointment is boldfaced, the current date is outlined in a red square. And, selection of a given date allows a user to navigate to information associated with that date. That is, according to one embodiment, by selection of a particular date, meetings, appointments or tasks associated with that date are populated into the To-Do bar 240. In addition, as described below, selection of a particular date may automatically launch the calendar application user interface into the user interface 200 to show calendar information associated with the date selected from the date picker control 500.

If the width of the To-Do bar 240 is increased, or if the height of the area of the To-Do bar 240 containing the date picker control 500 is increased, additional date pickers may be displayed as space permits. According to a preferred embodiment, unless the date picker control 500 is turned off by the user, at least one date picker control 500 is displayed in the To-Do bar 240. According to embodiments of the present invention, tasks from the task list in the To-Do bar 240 and tasks from the tasks application 140 may be dragged and dropped onto a particular date in the date picker control 500. Dropping a task onto a specific date in the date picker control 500 causes the start date for the dropped task to be changed to the date upon which the task is dropped. Similarly, electronic mail items from an electronic mail application may be dropped onto specific dates in the date picker control 500. Dropping an electronic mail item from an electronic mail inbox onto a particular date in the date picker control flags the mail item as a task, establishes a task in the task list in the To-Do bar 240 and sets as a start date for the task the date in the control 500 onto which the electronic mail item was dropped.

According to one embodiment, if the primary application in use by the user is a calendar application 125, the date picker control 500 will not appear in the To-Do bar 240. For non-calendar applications, for example, the tasks application 140, the contacts application 135, and the electronic mail application 130, selecting a day in the date picker control 500 immediately switches the displayed user interface to the calendar

application user interface and selects the user's default calendar. The default calendar is changed to a day view and the calendar is moved to the day selected by the user in the date picker control 500. If a user changes the month displayed for the date picker control 500 in the To-Do bar 240, the calendar application 125 is not automatically  
5 launched unless the user selects a particular date in the displayed month in the date picker control 500.

Referring now to Fig. 6, the appointments/meetings component of the To-Do Bar 240 is illustrated. A first appointment 610 and a second appointment 620 are illustrated in the appointments/meetings view. According to a preferred embodiment, and as illustrated in Fig. 6, a best-fit date is appended to the beginning of the  
10 appointment title. Double clicking on an appointment 610, 620 opens the full appointment item, and a secondary selection, for example, right-clicking on an appointment 610, 610, presents a context menu for the selected appointment for providing additional calendar and appointment functionality for the item. The  
15 appointments/meetings view area of the To-Do Bar 240 may be resized to add more appointments/meetings to the To-Do Bar 240. According to a preferred embodiment, a minimum of one appointment/meeting is displayed unless the user turns off the appointments/meetings view.

Referring now to Fig. 7 (and referring still to Fig. 2), a task input panel 710 is provided. A task input panel 710 is an edit box that allows a user to type the title of a  
20 new task the user wishes to add to the tasks list and to tasks memory associated with a separate tasks application 140. If the user enters a task title into the task input panel 710, a new task is immediately created with the specified title and is added to the bottom of the currently set day in the task list.

A flag icon is illustrated on the right side of the task input panel. As is known to those skilled in the art, flag icons may be utilized to identify an item as being flagged with certain properties. For example, a triple flag icon, as illustrated in the task input  
25 panel 710, may indicate that the flagged item has a start date of today. A double flag icon may indicate that the flagged item has a start date within the current week, and a  
30 single flag icon may indicate that the flagged item has a start date past the current week.

Additionally, a colored box may be utilized around the flagged icon such as the colored box 250, illustrated in Fig. 2, to indicate other properties such as a system-defined or user-defined category for the task. For example, all tasks having To-Do with a given work project may be associated with the color green, all tasks associated with a personal project may be associated with the color orange, and so on.

According to embodiments of the present invention, the user may edit the properties associated with a given task item by selecting the flagged icon or deploying a menu of properties that may be used for editing flagging associated with a given item. For example, a context menu launched in response to selecting the flagging icon may allow the user to change the start date of the associated task from this week to next week, for example. For another example, the user may selectively change a category associated with the task, for example, work project category to personal project category. For a detailed description of task flagging, see United States Patent Application, Attorney/Agent No. 60001.0419US01, Applicant Matter No. MS309466.01, entitled "Method and System For Improved Electronic Task Creation And Management," which is incorporated herein by reference as if fully set out herein.

Referring now to Fig. 8, the task list illustrated in the To-Do Bar 240 (illustrated in Fig. 2) is described. The task list 800 includes a field 810 identifying the sorting or arrangement property associated with the task list. According to embodiments of the present invention, tasks included in the task list 800 may be arranged by category, start date, due date, assigned to, created by, type, or custom. According to a custom arrangement, users may define a manner in which individual task items will be arranged or grouped. As should be appreciated, the sections and tasks illustrated in the task list 800 are for purposes of example only and are not restrictive of the variety of different tasks that may be displayed and the different sorting criteria that may be utilized in arranging tasks displayed in the task list 800.

The task list 800 illustrated in Fig. 8 is arranged by "Start Date." Accordingly, a "Today" section is illustrated at the top of the task list 800 under which is included tasks bearing a start date of today. A "Tomorrow" section 840 is illustrated under which are included tasks having a start date of tomorrow. Also illustrated in the task list 800 are a

"Friday" section and a "Later" section. According to embodiments of the present invention, task items grouped under such groupings are tracked and are moved to different groupings, as required. For example, a task item that is presently grouped under the heading "Tomorrow" will be moved to the "Today" grouping or section after 5 midnight of the present day. The grouping headings associated with a "Start Date" arrangement may include a number of headings such as "Today," "Tomorrow," "Monday," "Tuesday," "Wednesday," "Thursday," "Friday," "Saturday," "Sunday," "This Week," "Next Week," "Two Weeks Away," "Three Weeks Away," "Next Month," and "Beyond Next Month," and so on. As should be understood, the 10 foregoing list of potential headings is by way of example and is not limiting of the variety of headings that may be used by the To-Do bar for organizing items in the task list.

Individual task items may be placed in various arrangement groupings as decided by a user. According to embodiments of the present invention, individual task 15 items may be dragged and dropped from one grouping to another. For example, referring to Fig. 8, a task item that is currently under the "Tomorrow" heading 840 may be dragged and dropped to the grouping under the "Today" heading 815 if the user determines that the associated task needs to start today rather than tomorrow. If the user drops a task item into a different grouping, the task item is immediately moved to the 20 new grouping, and associated flag icons 845 are changed to reflect the new position of the affected task item. In addition, a user may manually reorder tasks within a particular grouping if desired. For example, referring to Fig. 8, a user may reorder the task items listed under the "Today" heading 815 to emphasize to the user a preferred order for initiating the tasks contained in the affected grouping.

25 For each task contained in the task list 800, a title 830 is included to identify the title and/or nature of the task. On the left-hand side of each of the individual tasks, icons may be provided to identify the source of a given task. For example, the icon 825 may be utilized to identify that the associated task has been retrieved from information input from a tasks application 140. The envelope icon 835 may be utilized to indicate 30 that the associated task is a task flagged from a received electronic mail item. The

flagging icon 845 illustrated on the right-hand side of individual tasks are for indicating information regarding the start dates for the associated task and the categories applied to the associated task, as described above.

Referring now to Fig. 9, an alternate display format for the To-Do Bar is illustrated. As should be appreciated, some shapes and sizes of computer display screens, and certain software application user interface layouts may require a different display layout for the To-Do Bar 240. Referring to Fig. 9, a display layout for the To-Do Bar is illustrated for displaying the To-Do Bar along an upper or lower edge of a computer screen display and/or user interface display. The To-Do Bar 900, illustrated in Fig. 9, includes a date picker control 920 disposed along a left side of the To-Do Bar 900. A task input panel 930 and an appointments/meetings view pane 940 are disposed horizontally adjacent to the date picker control 920. The task list 950 is disposed on the right side of the horizontally-oriented To-Do Bar 900. As should be appreciated, utilization of a To-Do Bar according to an alternate layout, such as illustrated in Fig. 9, may allow additional information to be displayed in the Task list or the appointments/meetings view. For example, given additional horizontal space available for Task items in the alternate display layout, illustrated in Fig. 9, additional text may be displayed for each of a number of task items.

As described herein, an improved user interface for providing task management and calendar information in a persisted computer-generated To-Do list or bar is provided. The electronic To-Do bar provides a list of upcoming tasks, meetings and appointments populated from a separately maintained electronic calendar and/or task management application. It will be apparent to those skilled in the art that various modifications or variations may be made in the present invention without departing from the scope or spirit of the invention. Other embodiments of the present invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein.

Throughout this specification and the claims which follow, unless the context requires otherwise, the word "comprise", and variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or step or



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group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

The reference to any prior art in this specification is not, and should not be taken as, an acknowledgment or any form of suggestion that that prior art forms part of the  
5 common general knowledge in Australia.

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## THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method for providing task information and calendar information in a to-do user interface, comprising:
  - 5 searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;
  - populating the to-do user interface with an appointments view pane for containing the at least one calendar object;
  - 10 populating the to-do user interface with a task list for containing the at least one task object;
  - organizing at least one task object contained in the task list into at least one logical grouping, where the at least one task object included in a given logical grouping belongs to an arrangement type associated with the given logical grouping;
  - 15 displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface; and
  - 20 persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.
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2. The method of claim 1, further comprising:  
prior to populating the to-do user interface with an appointments view pane  
for containing at least one calendar object, retrieving the at least one calendar  
object from a memory of calendar objects; and  
5 prior to populating the to-do user interface with a task list for containing at  
least one task object, retrieving the at least one task object from a memory of task  
objects.
3. The method of claim 1, further comprising populating the to-do user interface with  
10 a task input panel for inputting a new task object into the task list.
4. The method of claim 1, after populating the to-do user interface with an  
appointments view pane for containing at least one calendar object, retrieving at  
least one calendar object from at least one calendar object storage source; and  
15 displaying the retrieved at least one calendar object in the appointments view pane.
5. The method of claim 4, whereby retrieving at least one calendar object from at least  
one calendar object storage source includes retrieving at least one data object that is  
marked for recognition by the to-do user interface as a calendar object.  
20
6. The method of claim 1, prior to organizing at least one task object contained in the  
task list into at least one logical grouping, retrieving at least one task object from at  
least one task object source for populating into the task list.
- 25 7. The method of claim 6, whereby retrieving at least one task object from at least one  
task object source for populating into the task list includes retrieving at least one  
data item that is marked for recognition by the to-do user interface as a task object.
8. The method of claim 1, further comprising populating the to-do user interface with  
30 a date picker control for showing a selected calendar view.

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9. The method of claim 8, in response to a selection of a date contained in the date picker control, launching a calendar user interface in the area of the larger user interface not consumed by the to-do user interface, and setting the launched calendar user interface to the selected date.
- 5 10. The method of claim 9, upon receiving a task item applied to a date in the date picker control, populating the task list with the task item in a position in the task list associated with the date to which the task item is applied.
- 10 11. A computer implemented method for providing an improved user interface, the method comprising:
- searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;
- 15 displaying, by the computer, an appointments view pane disposed in an upper portion of the to-do user interface for containing the at least one calendar object;
- displaying, by the computer, a task list disposed in a lower portion of a to-do user interface for containing the at least one task object;
- 20 displaying, by the computer, the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface is available for displaying functionality and information associated with at least one first software application not related to the to-do user interface, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface; and
- 25 persistently displaying, by the computer, the to-do user interface, the to-do user interface comprising the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated
- 30

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with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.

5

12. The method of claim 11, further comprising displaying, by the computer, a task input panel above the task list for receiving an input of a new task object into the task list.

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13. The method of claim 12, further comprising displaying, by the computer, a date picker control above the appointments view pane for showing a selected calendar view.

15

14. A computer-readable storage medium containing computer-executable instructions which when executed by a computer perform a method for providing task information and calendar information in a to-do user interface, comprising:

searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;

20

populating the to-do user interface with an appointments view pane for containing the at least one calendar object;

populating the to-do user interface with a task list for containing the at least one task object;

25

organizing the at least one task object contained in the task list into at least one logical grouping, where any of the at least one task object included in a given logical grouping belongs to an arrangement type associated with the given logical grouping;

30

displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be

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used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface; and

5 persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.

15. The computer-readable storage medium of claim 14, further comprising:

15 prior to populating the to-do user interface with an appointments view pane for containing at least one calendar object, retrieving the at least one calendar object from a memory object, retrieving of calendar objects; and

prior to populating the to-do user interface with a task list for containing at least one task object from a memory of task objects.

16. The computer-readable storage medium of 14, further comprising populating the to-do user interface with a task input panel for inputting a new task object into the task list.

17. The computer-readable storage medium of 14, further comprising populating the to-do user interface with a date picker control for showing a selected calendar view.

18. The computer-readable storage medium of claim 17, in response to a selection of a date contained in the date picker control, launching a calendar user interface in the area of the larger user interface not consumed by the to-do user interface, and setting the launched calendar user interface to the selected date.

19. The computer-readable storage medium of claim 17, upon receiving a task item

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applied to a date in the date picker control, populating the task list with the task item in a position in the task list associated with the date to which the task item is applied.

- 5 20. The computer-readable storage medium of claim 14, after populating the to-do user interface with an appointments view pane for containing at least one calendar object:
- retrieving at least one calendar object from at least one calendar object storage source; and
- 10 displaying the retrieved at least one calendar object in the appointments view pane.
21. The computer-readable storage medium of claim 20, whereby retrieving at least one calendar object from at least one calendar object storage source includes
- 15 retrieving at least one data object that is marked for recognition by the to-do user interface as a calendar object.
22. The computer-readable storage medium of claim 14, prior to organizing at least one task object contained in the task list into at least one logical grouping, retrieving the
- 20 at least one task object from at least one task object source for populating into the task list.
23. The computer-readable storage medium of claim 22, whereby retrieving at least one task object from at least one task object source for populating into the task list
- 25 includes retrieving at least one data item that is marked for recognition by the to-do user interface as a task object.
24. A method for providing task information and calendar information in a to-do user interface, comprising:
- 30 searching at least one memory storage for at least one calendar object marked for addition to the to-do user interface and at least one task object marked

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for addition to the to-do user interface;

populating the to-do user interface with an appointments view pane for containing the at least one calendar object;

populating the to-do user interface with a task list for containing the at least one task object;

displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where an area of the larger user interface not consumed by the to-do user interface may be used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface; and

persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.

25. The method of claim 24, further comprising:

prior to populating the to-do user interface with an appointments view pane for containing at least one calendar object, retrieving the at least one calendar object from a memory of calendar objects; and

prior to populating the to-do user interface with a task list for containing at least one task object, retrieving the at least one task object from a memory of task objects.

26. The method of claim 24, further comprising organizing the at least one task object into at least one logical grouping, where any of the at least one task objects included in a given logical grouping belongs to an arrangement type associated



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with the given logical grouping.

27. The method of claim 26, further comprising receiving a selection of an arrangement type from a group of arrangement types consisting of task category, task start date, task due date, task assigned to, task created by, task type, and custom task arrangement.
28. The method of claim 24, further comprising populating the to-do user interface with a task input panel for inputting a new task object into the task list.
29. The method of claim 24, further comprising populating the to-do user interface with a date picker control for showing a selected calendar view.
30. The method of claim 29, in response to a selection of a date contained in the date picker control, launching a calendar user interface in the area of the larger user interface not consumed by the to-do user interface, and setting the launched calendar user interface to the selected date.
31. The method of claim 29, upon receiving a task item applied to a date in the date picker control, populating the task list with the task item in a position in the task list associated with the date to which the task item is applied.
32. The method of claim 25, whereby populating an appointments view pane of the to-do user interface with at least one calendar object includes populating the appointments view pane of the to-do user interface with at least one appointments object.
33. A computer-readable storage medium containing computer-executable instructions which when executed by a computer perform a method for providing task information and calendar information in a to-do user interface, comprising:
  - searching at least one memory storage for at least one calendar object

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marked for addition to the to-do user interface and at least one task object marked for addition to the to-do user interface;

retrieving the at least one calendar object from a memory of calendar objects;

5       populating the to-do user interface with an appointments view pane for containing the at least one calendar object, whereby populating the appointments view pane of the to-do user interface with at least one calendar object includes populating the appointments view pane of the to-do user interface with a plurality of appointments objects;

10       retrieving the at least one task object from a memory of task objects;

populating the to-do user interface with a task list for containing the at least one task object;

populating the to-do user interface with a date picker control for showing a selected calendar view;

15       populating the to-do user interface with a task input panel for inputting a new task object into the task list;

displaying the to-do user interface as a component of a larger user interface, wherein the larger user interface comprises a main user interface comprising the to-do user interface component and at least one other user interface component, where  
20       an area of the larger user interface not consumed by the to-do user interface may be used for displaying functionality and information associated with at least one first software application, wherein the functionality and information associated with the at least one first software application is not dependent on the information populating the to-do user interface;

25       organizing the at least one task object into at least one logical grouping, where any of the at least one task object included in a given logical grouping belongs to an arrangement type associated with the given logical grouping; and

persisting displaying of the to-do user interface, the to-do user interface being populated with the appointments view pane and the task list, as a component  
30       of the larger user interface if functionality and information associated with the at least one first software application that is displayed in the area of the larger user

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interface not consumed by the to-do user interface is replaced by functionality and information associated with at least one second software application.

- 5 34. The computer-readable storage medium of claim 33, further comprising receiving a selection of an arrangement type from a group of arrangement types consisting of task category, task start date, task due date, task assigned to, task created by, task type, and custom task arrangement.
- 10 35. The computer-readable storage medium of claim 33, in response to a selection of a date contained in the date picker control, launching a calendar user interface in the area of the larger user interface not consumed by the to-do user interface, and setting the launched calendar user interface to the selected date.
- 15 36. The computer-readable storage medium of claim 33, upon receiving a task item applied to a date in the date picker control, populating the task list with the task item in a position in the task list associated with the date to which the task item is applied.
- 20 37. The method of claim 1, wherein the first software application that is displayed in the area of the larger user interface not consumed by the to-do user interface is at least one of a calendar application, a task application, a mail application, and a contacts application.
- 25 38. The method of claim 1, wherein the second software application is at least one of a calendar application, a task application, a mail application, and a contacts application.

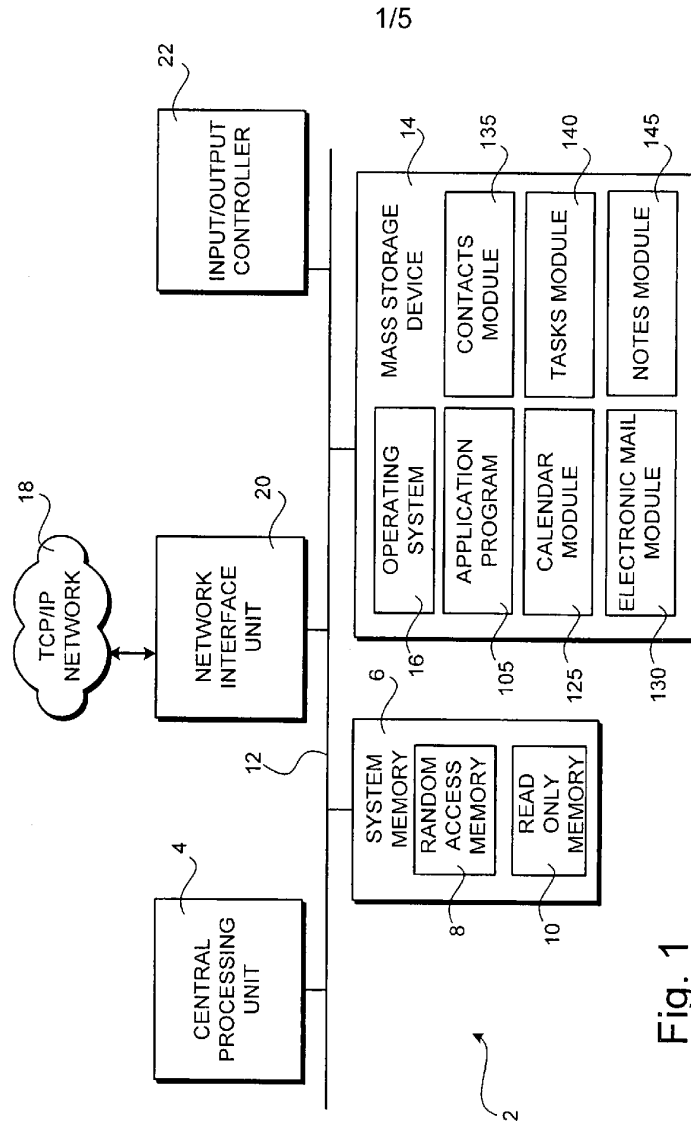


Fig. 1

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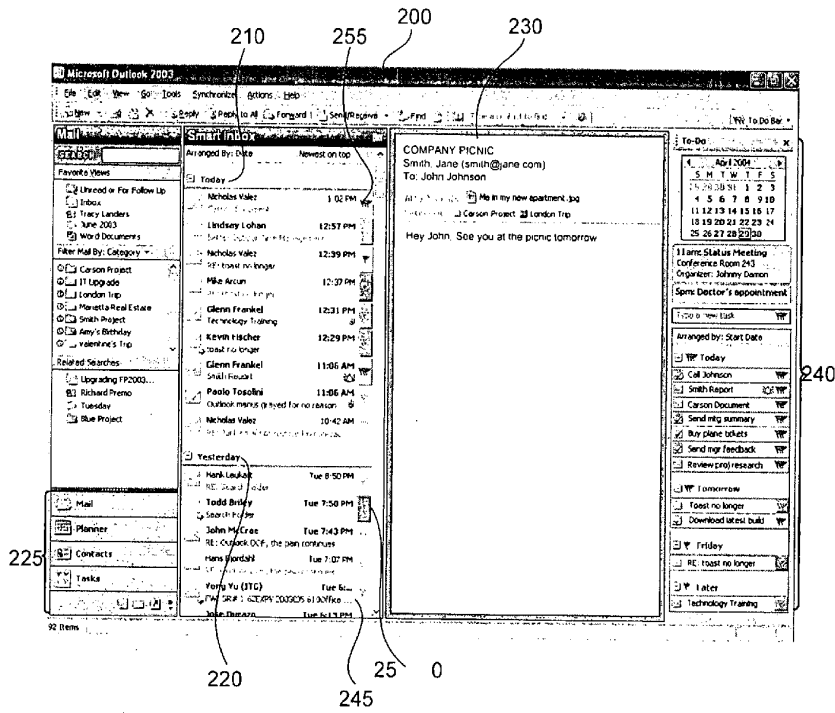


Fig. 2

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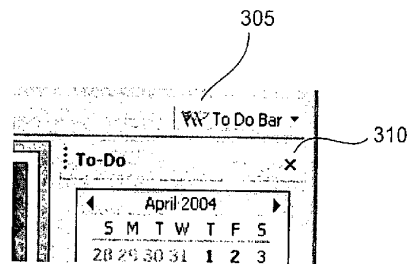


Fig. 3

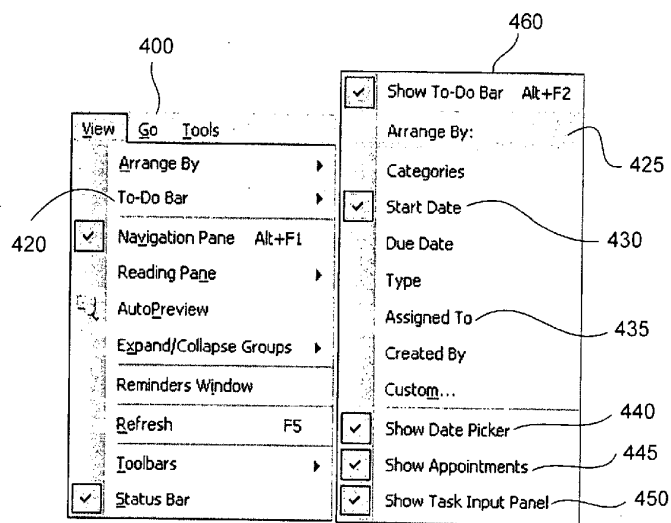


Fig. 4

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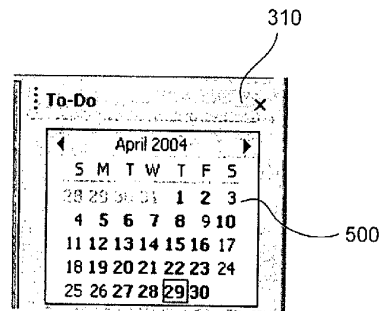


Fig. 5

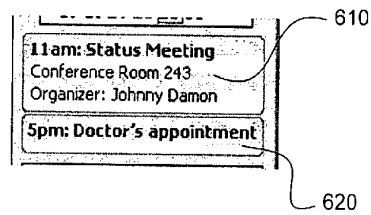


Fig. 6

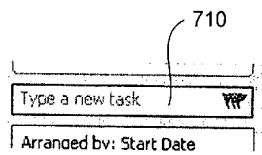


Fig. 7

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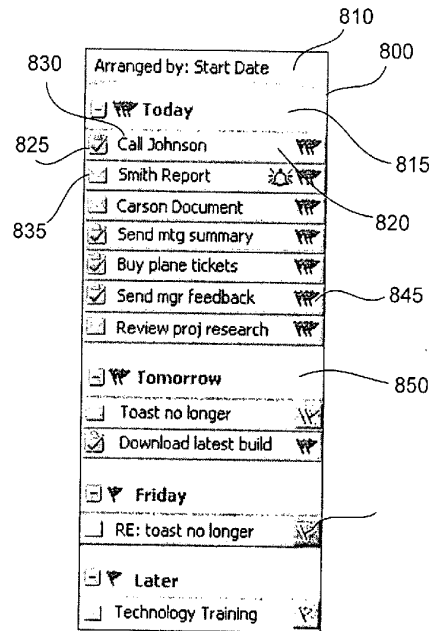


Fig. 8

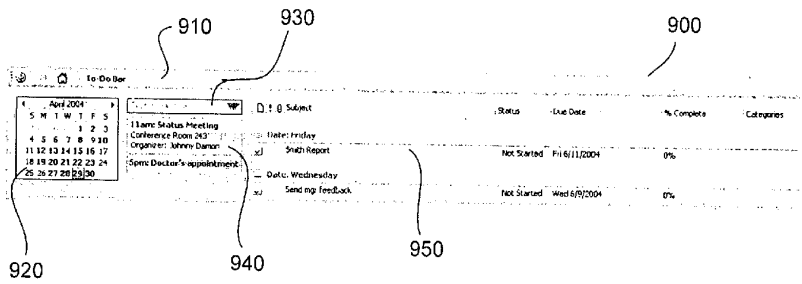


Fig. 9