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(54) **INFORMATION PROCESSING APPARATUS,
METHOD AND PROGRAM FOR
CONTROLLING THE SAME, AND STORAGE
MEDIUM**

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(57) **ABSTRACT**

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A method for controlling an information processing apparatus includes displaying an input screen including a plurality of items in which text data can be input; displaying a keyboard for inputting text data in one input item of the plurality of items so as to be superimposed on the input screen; displaying the name of the input item on the displayed keyboard; and performing control, in a case where an instruction to change the input item to a different item is received, with the keyboard superimposed on the display unit by the keyboard display unit, so as to change the input item to the different item, with the keyboard kept displayed on the display unit, and cause the display unit to display the name of the different item.

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101

The screenshot shows a graphical user interface titled "ITEM INPUT SCREEN". It contains several input fields and labels:

- DOCUMENT NAME** *REQUIRED: A text input field containing "WORK A". A callout line points to this field with the number "1010".
- INDEX** *REQUIRED: A text input field containing "PUBLIC".
- KEYWORD** *OPTIONAL: A text input field.
- SIGNIFICANCE** *REQUIRED: A text input field containing "NORMAL".
- COMMENT** *REQUIRED: A text input field.

Each input field is accompanied by a label and a requirement indicator (*REQUIRED or *OPTIONAL). The "INDEX" and "KEYWORD" labels are shaded. The "PUBLIC" and "NORMAL" labels are in dropdown menus.

FIG. 1

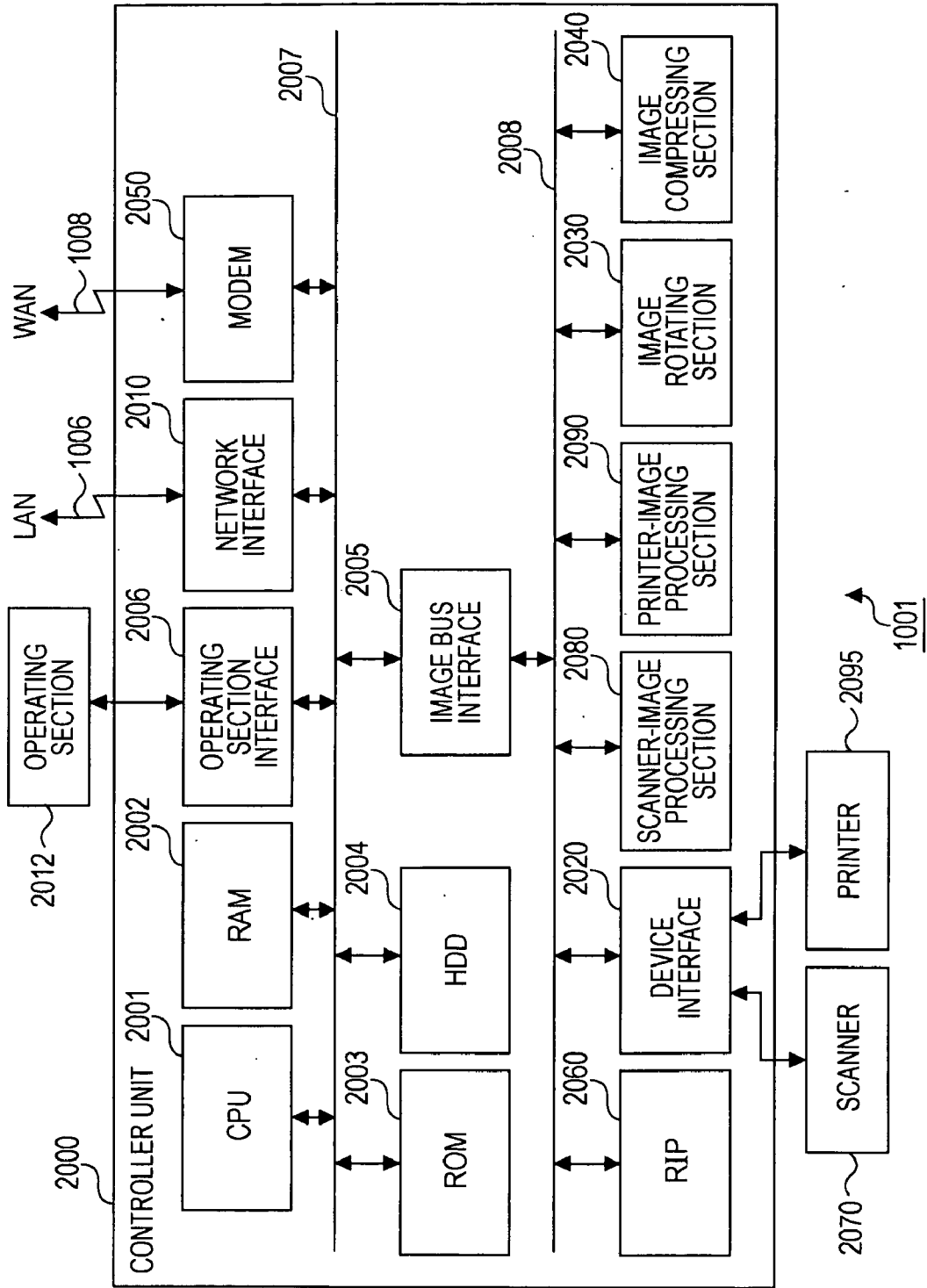


FIG. 2

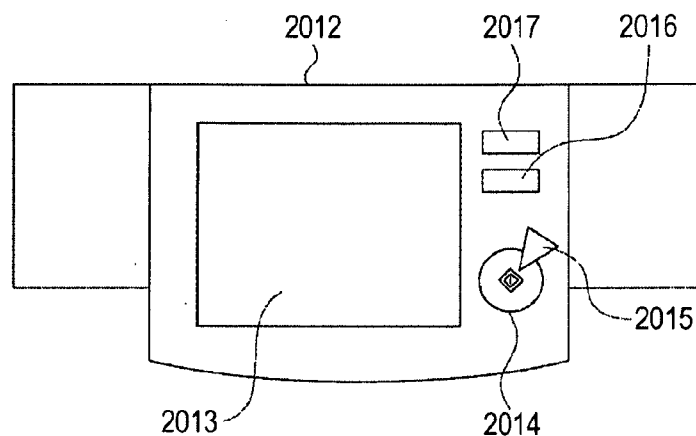


FIG. 3

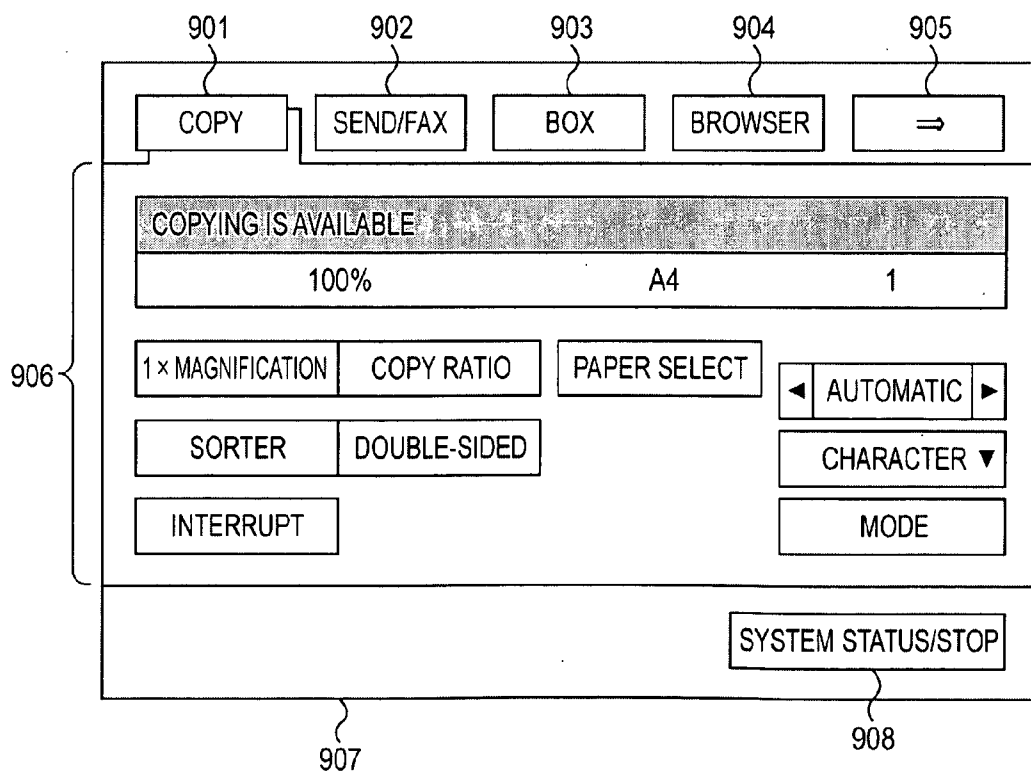


FIG. 4

101

ITEM INPUT SCREEN

DOCUMENT NAME *REQUIRED
WORK A 1010

INDEX *REQUIRED
PUBLIC ▼

KEYWORD *OPTIONAL

SIGNIFICANCE *REQUIRED
NORMAL ▼

COMMENT *REQUIRED

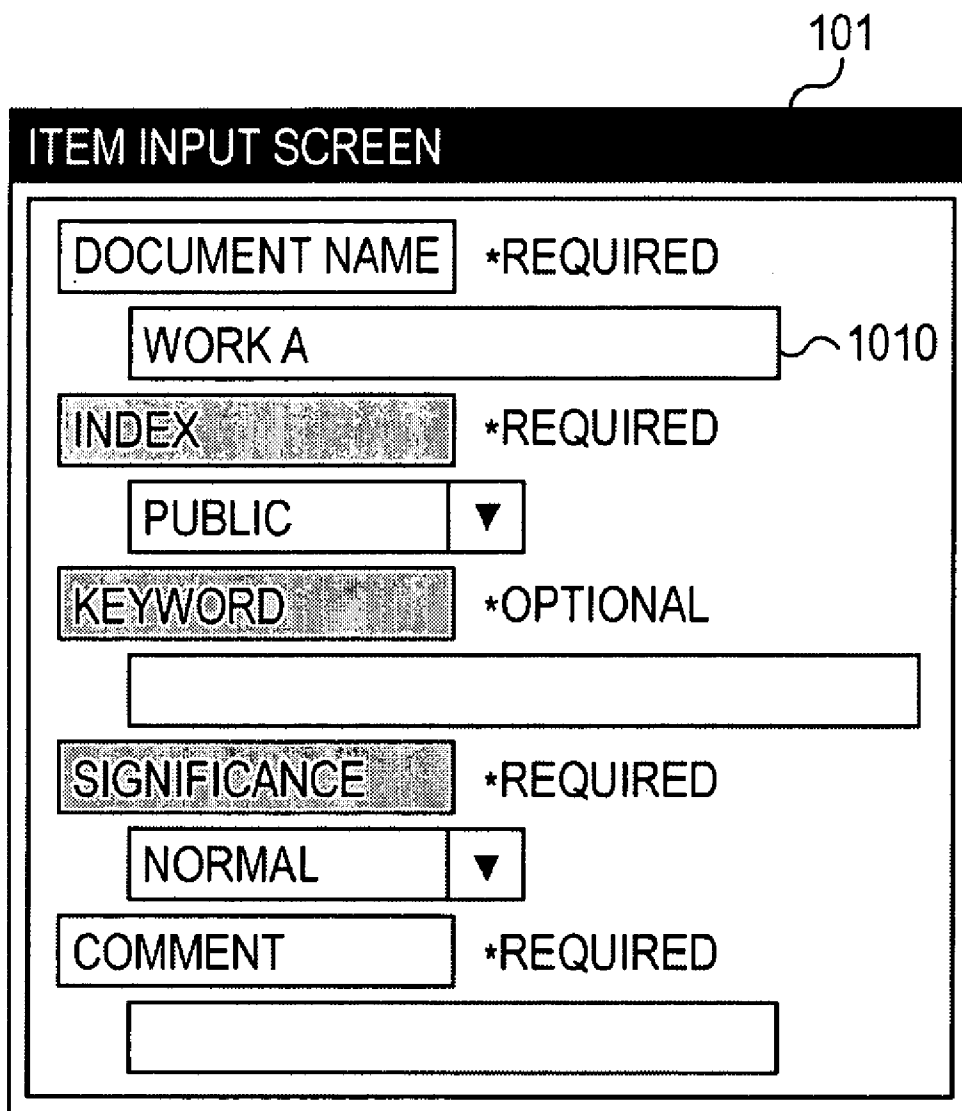


FIG. 5

<INPUT-ITEM MANAGEMENT TABLE>

INPUT SPECIFYING SCREEN	INPUT ITEM NAME	REQUIRED/OPTIONAL	TYPE	ORDER	INITIAL VALUE
LOGIN	LOGIN NAME	REQUIRED	TEXT	1	
LOGIN	PASSWORD	REQUIRED	TEXT	2	
ITEM INPUT SCREEN	DOCUMENT NAME	REQUIRED	TEXT	1	WORKA
ITEM INPUT SCREEN	INDEX	REQUIRED	PULL-DOWN	-	
ITEM INPUT SCREEN	KEYWORD	OPTIONAL	TEXT	3	
ITEM INPUT SCREEN	SIGNIFICANCE	REQUIRED	PULL-DOWN	-	
ITEM INPUT SCREEN	COMMENT	REQUIRED	TEXT	2	

FIG. 6

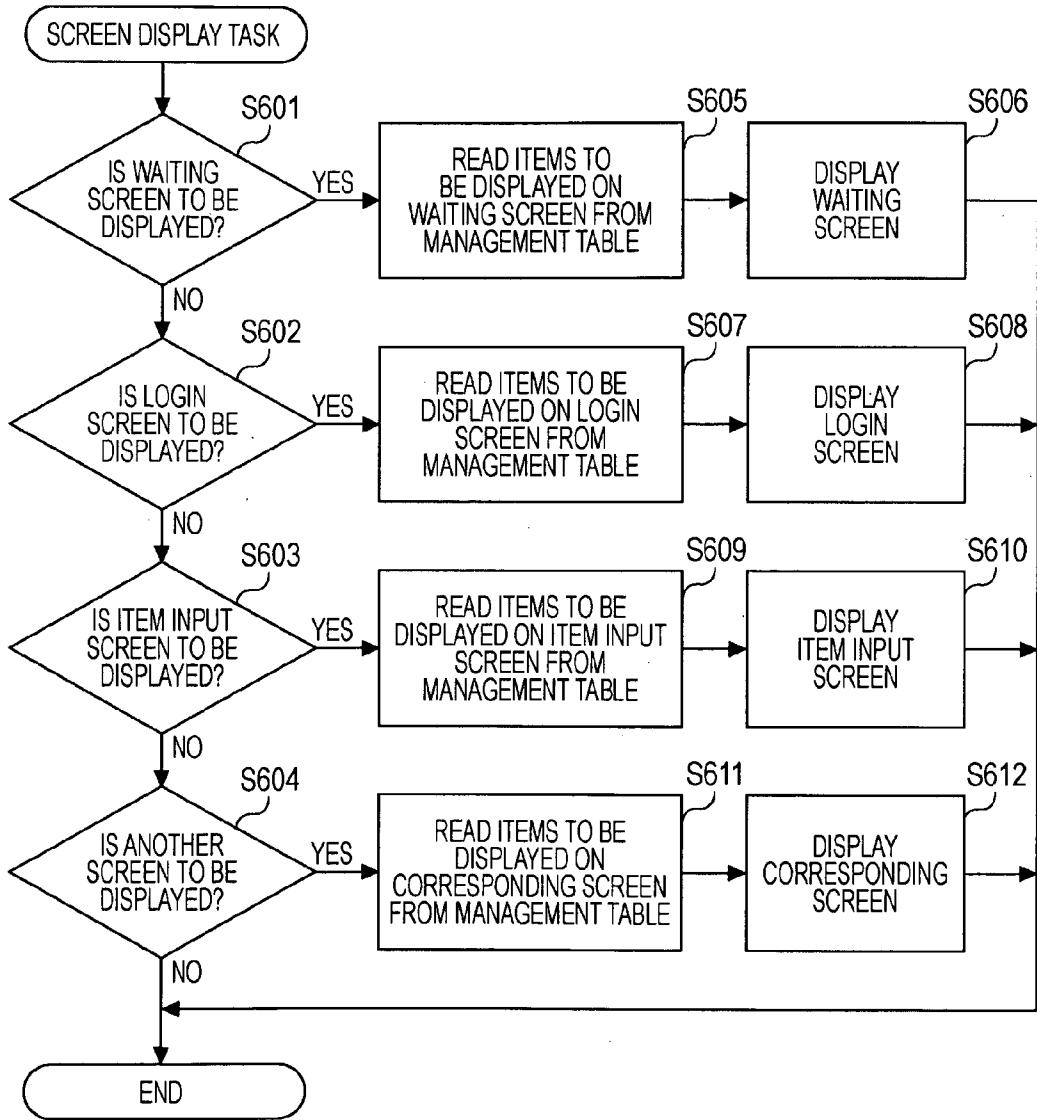


FIG. 7A

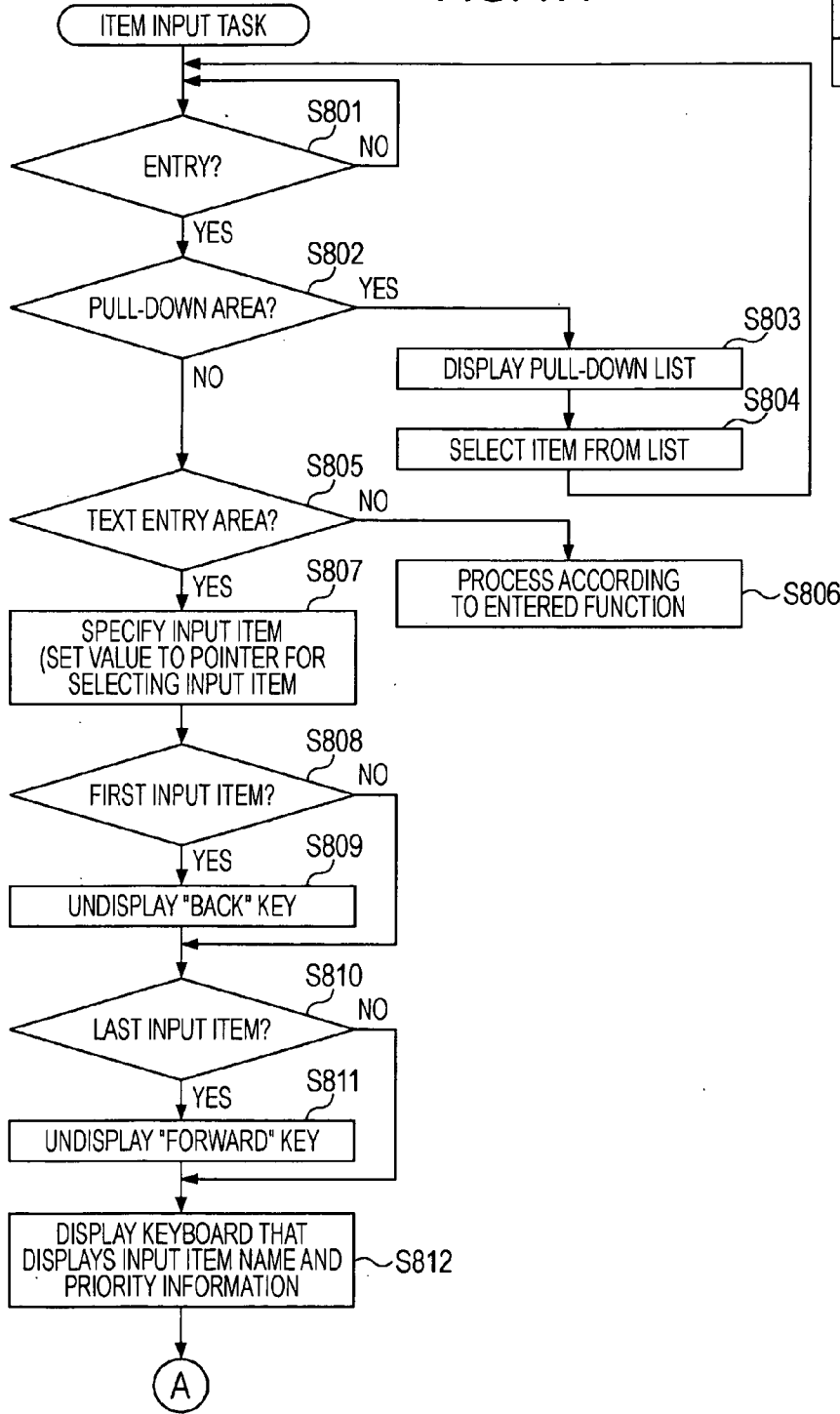


FIG. 7

FIG. 7A
FIG. 7B

FIG. 7B

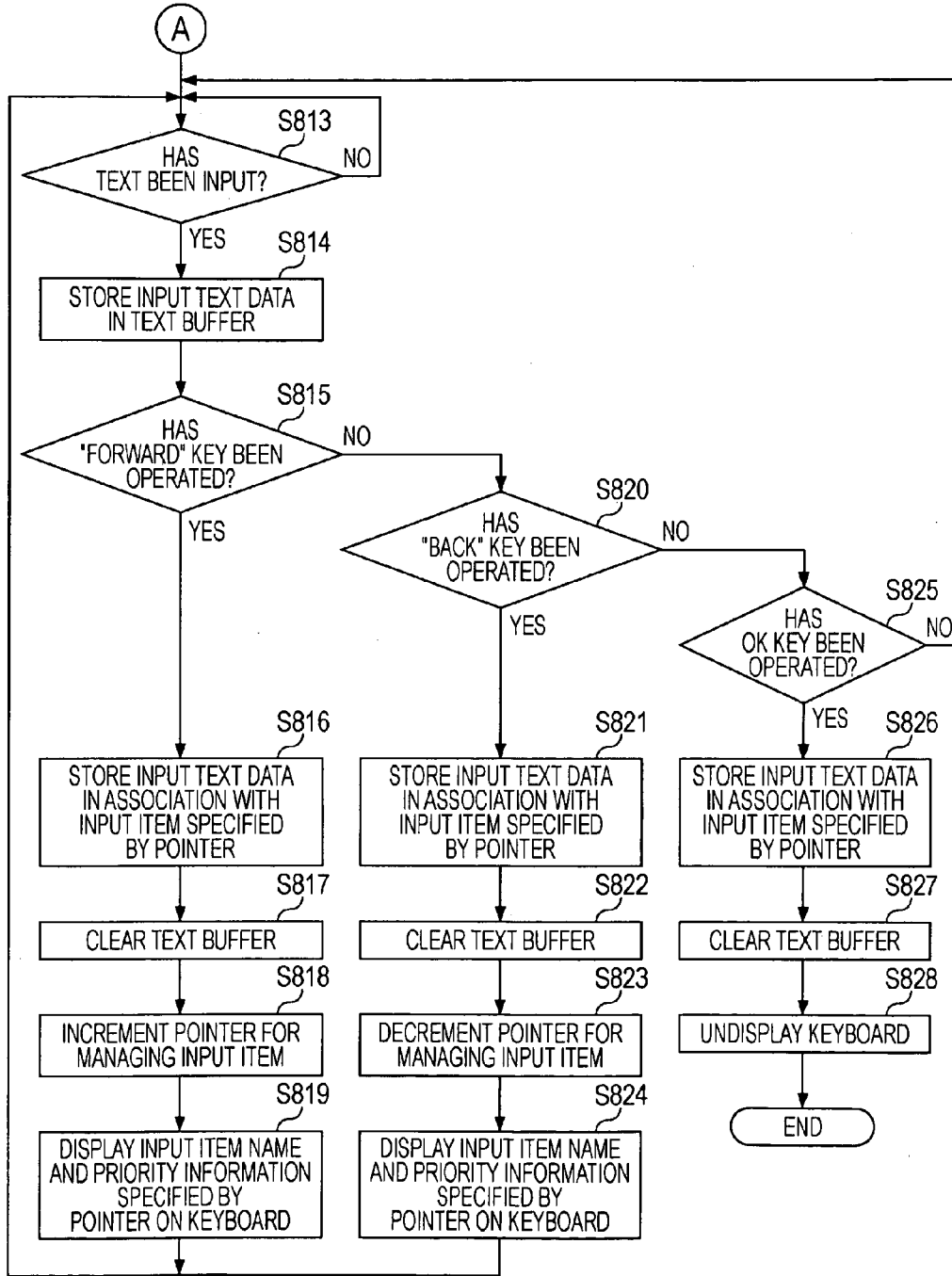


FIG. 8

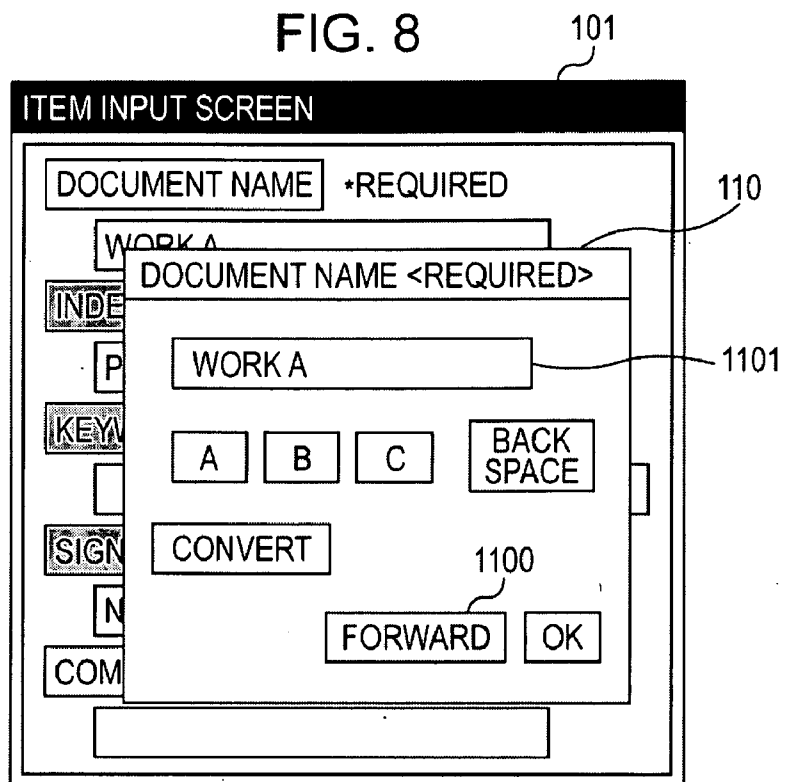


FIG. 9

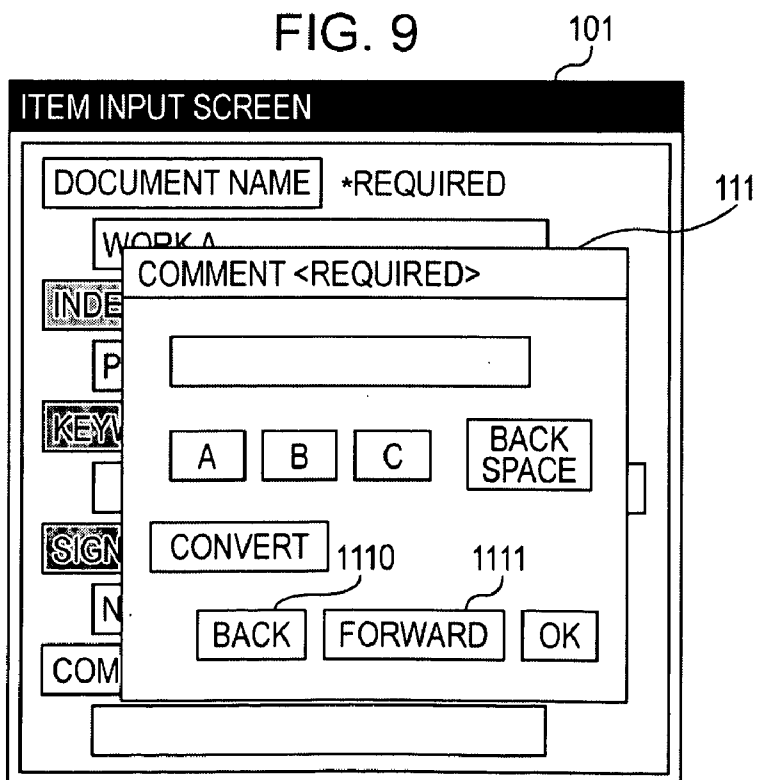


FIG. 10

101

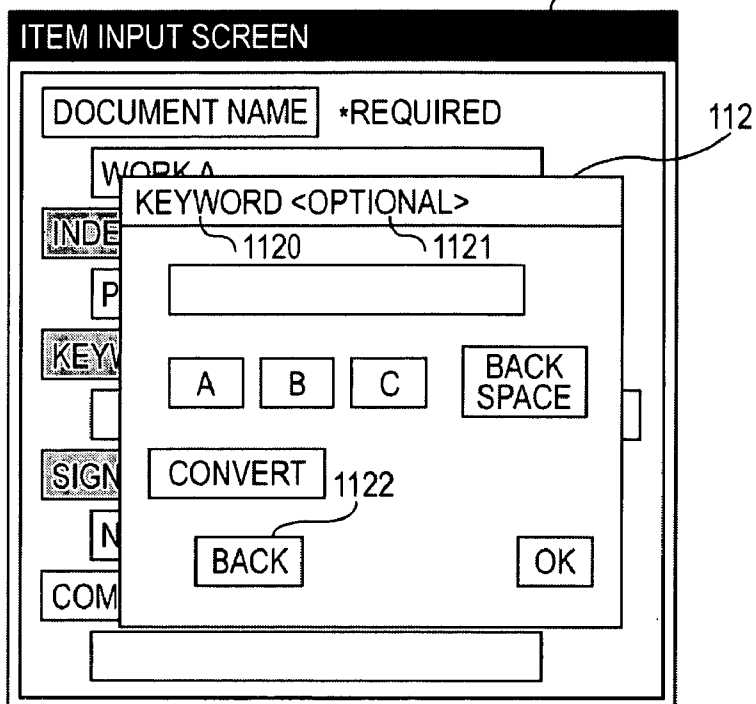


FIG. 11

101

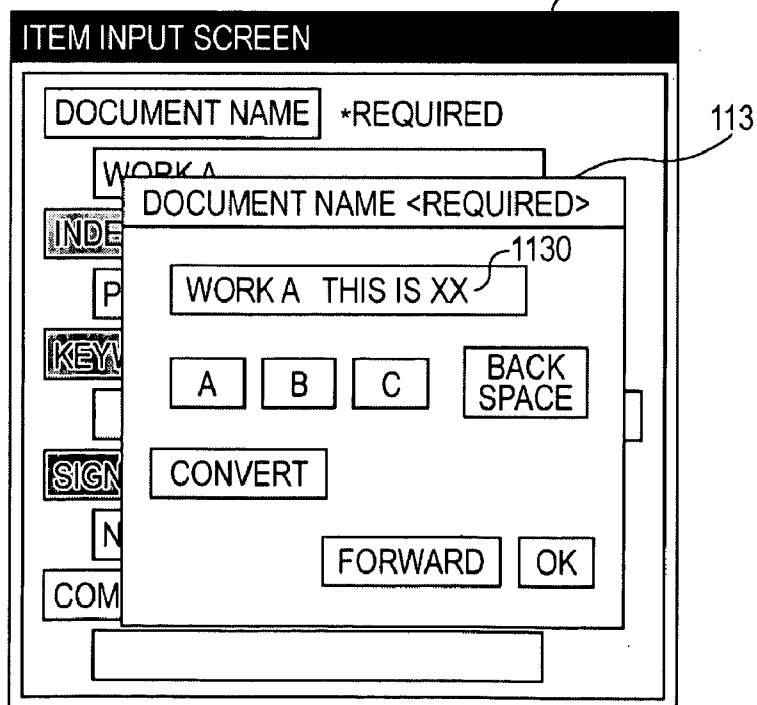


FIG. 12

PRIOR ART

101

ITEM INPUT SCREEN

DOCUMENT NAME *REQUIRED
WORK A 1010

INDEX *REQUIRED
PUBLIC ▼

KEYWORD *OPTIONAL

SIGNIFICANCE *REQUIRED
NORMAL ▼

COMMENT *REQUIRED

FIG. 13

PRIOR ART

101

ITEM INPUT SCREEN

DOCUMENT NAME *REQUIRED 102

WORK A 1020

INDEX

PUBLIC

KEYWORD

SIGNIFICANCE

NORMAL ▼

COMMENT *REQUIRED

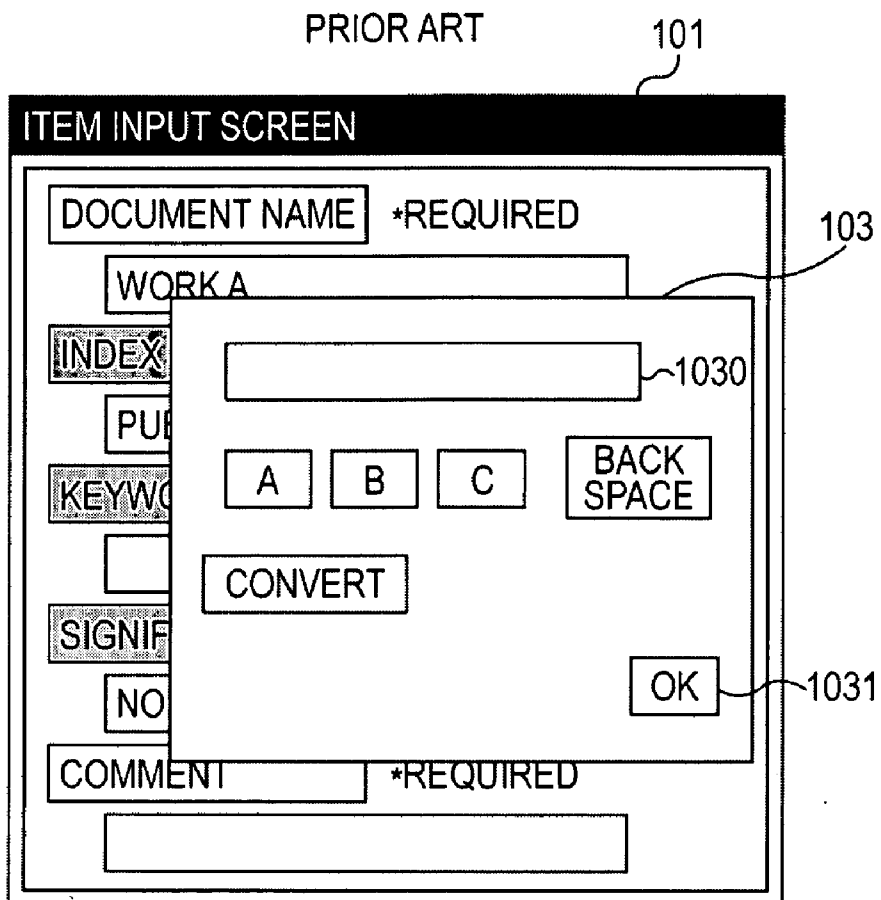
A B C BACK SPACE

CONVERT

OK 1021

FIG. 14

PRIOR ART



**INFORMATION PROCESSING APPARATUS,
METHOD AND PROGRAM FOR
CONTROLLING THE SAME, AND STORAGE
MEDIUM**

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an information processing apparatus, a method and a program for the same, and a storage medium.

[0003] 2. Description of the Related Art

[0004] One example of information processing apparatuses is multifunction devices, that is, multifunction peripherals that incorporate the functionality of image forming apparatuses in one, such as printers, copy machines, and facsimile machines. Since multifunction devices perform jobs using the incorporated multiple functions, entry jobs that the user must do in front of the devices have been significantly increasing.

[0005] For example, when the user reads a document using the scanner function of a multifunction device, sends the read document using a transmitting function, and prints it by the multifunction device, the user needs to set the parameters of the individual functions. Specifically, for the document reading function, the user inputs values for reading the document, such as values of resolution, color density, and color or monochrome. For the transmitting function, the user inputs a destination address, the title of the document to be sent, a comment for the document, and so on. For the print function, the user inputs the size and kind of the sheet, and so on. For a box function for storing documents, the user inputs the name, keyword, comment, index, and significance of a document to be stored. The parameters for reading and printing documents depend on the capability of multifunction devices and are provided as the values of choices or lists of choices in pull-down menus. Parameters for transmission are provided as text entry fields for the user to input text data, the values of choices or a list of choices in a pull-down menu.

[0006] When the physical size of a display section (a display) provided for the user is limited, a software keyboard (for example, refer to Japanese Patent Laid-Open No. 6-195164) is provided for the user to enter in text entry fields. The software keyboard is a keyboard displayed on a display screen. The user can input items as in keyboard typing by operating key objects on the software keyboard.

[0007] However, the above-described related-art technique is configured such that when the user finishes entry in a first text entry field and then selects a second text entry field for entry using a software keyboard, the software keyboard is always closed temporarily and, thereafter, displayed again when the user selects the second text entry field. In other words, if more than one item must be input, the user needs to repeatedly execute the operation of displaying and undisplaying the software keyboard, [selecting an input item→inputting a text on a software keyboard displayed→closing the software keyboard]. This requires much time and effort to input in text fields. If more than one text entry field are displayed to allow selection of a text entry field, with a software keyboard displayed, the user can continue input without closing the software keyboard temporarily. However, display sections of multifunction devices are generally small. Accordingly, a large screen is necessary to display both a software keyboard and text entry fields.

[0008] FIG. 12 is an image diagram showing an example for describing the above-described problem. Reference

numeral 101 denotes an item input screen that shows a plurality of text entry field items and selection items using pull-down menus. Referring to FIG. 13, a software keyboard 102 is displayed when the user designates a text entry field (“Document Name”) 1010 on the item input screen 101 so that a value can be input in a text entry field 1020. When the user inputs a desired value in the text entry field 1020 and presses an OK key 1021, the software keyboard 102 is closed. When the software keyboard 102 is closed, the value that the user inputs in the text entry field 1020 is input in the document-name text entry field 1010 and the item input screen 101 is displayed (FIG. 12).

[0009] Next, the user can select a desired item on the item input screen 101 to input or set an attribute. Referring to FIG. 14, a software keyboard 103 is displayed when the user designates another text entry field (“Keyword”) on the item input screen 101. This shows a state in which the user can input a value in a text entry field 1030. When the user inputs a desired value in the text entry field 1030 and presses an OK key 1031, the software keyboard 103 is closed. In this manner, the user opens and closes the software keyboard every time the user finishes entry in one text entry field and moves to the next text entry field using the software keyboard, which requires unnecessary time and effort.

SUMMARY OF THE INVENTION

[0010] The present invention provides an information processing apparatus which overcomes the above-described problem and a method for controlling the same.

[0011] According to an aspect of the present invention, an information processing apparatus includes a processor configured to cause a display unit to display an input screen including a plurality of items in which text data can be input, to display a keyboard for inputting text data in one input item of the plurality of items so as to be superimposed on the input screen displayed by the display unit, and to display a name of the input item on the keyboard; and a control unit configured to perform control, in a case where an instruction to change the input item to a different item is received, with the keyboard superimposed on the display unit, so as to change the input item to the different item, with the keyboard kept displayed on the display unit, and cause the display unit to display the name of the different item.

[0012] Further features and aspects of the invention will become apparent from the following description of exemplary embodiments with reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the invention and, together with the description, serve to explain the principle of the invention.

[0014] FIG. 1 is a block diagram showing a configuration of the main components of a copy machine.

[0015] FIG. 2 is an exemplary structure of an operating section shown in FIG. 1.

[0016] FIG. 3 is a diagram showing an example of an operating screen displayed on the operating section.

[0017] FIG. 4 is a diagram showing an example of an item input screen.

[0018] FIG. 5 shows an item-entry-field management table.

[0019] FIG. 6 shows a flowchart for a screen display task.

[0020] FIG. 7 shows a flowchart for an item input task.

[0021] FIG. 8 shows a software keyboard for inputting text-type data of the invention is displayed.

[0022] FIG. 9 shows a software keyboard for inputting text-type data of the invention is displayed.

[0023] FIG. 10 shows a software keyboard for inputting text-type data of the invention is displayed.

[0024] FIG. 11 shows a software keyboard for inputting text-type data of the invention is displayed.

[0025] FIG. 12 shows a software keyboard for inputting text-type data of a related art is displayed.

[0026] FIG. 13 shows a software keyboard for inputting text-type data of the related art is displayed.

[0027] FIG. 14 shows a software keyboard for inputting text-type data of the related art is displayed.

DESCRIPTION OF THE EMBODIMENTS

[0028] Embodiments of the present invention will be described with reference to the drawings.

Description of Multifunction Device

[0029] FIG. 1 is a block diagram showing the configuration of the main components of a multifunction device (hereinafter simply referred to as a copy machine) 1001 as an example of an information processing apparatus.

[0030] The copy machine 1001 includes a controller unit 2000. The controller unit 2000 is connected to a scanner 2070 which is an image input device, a printer 2095 which is an image output device, and an operating section 2012. The operating section 2012 includes a display section for displaying screens shown in FIG. 3 and FIGS. 7 to 13. The display section is, but not necessarily, a touch-panel LCD or the like; it may be an organic EL or a plasma display. The controller unit 2000 includes a CPU 2001. The CPU 2001 boots up an operating system (OS) according to a boot program stored in a ROM 2003. The CPU 2001 executes application programs stored in a hard disk drive (HDD) 2004 on the OS to execute various processes. The HDD 2004 stores a program for implementing an item input device of the invention. The CPU 2001 uses a RAM 2002 for its work area. The RAM 2002 provides the work area and also an image memory area for temporarily storing image data. The HDD 2004 stores the application programs and image data. The CPU 2001 is connected to the ROM 2003 and the RAM 2002 and also to an operating section interface 2006 and a network interface 2010 over a system bus 2007. The CPU 2001 is also connected to a modem 2050 and an image bus interface 2005.

[0031] The operating section interface 2006 is an interface to the operating section 2012 having a touch panel and outputs image data to be displayed on the operating section 2012 to the operating section 2012. The display of the operating section 2012 is controlled by the CPU 2001 via the operating section interface 2006 according to a program stored in the HDD 2004. Examples of image data to be displayed are the images shown in FIGS. 3 and 4 and FIGS. 8 to 14. The operating section 2012 displays more than one item to be input, a keyboard, a text display area, and "Forward" key and "Back" key for selecting another item. The operating section interface 2006 sends information input by the user at the operating section 2012 to the CPU 2001.

[0032] The network interface 2010 is connected to a LAN 1006 and inputs and outputs information to/from various units on the LAN 1006. For example, the network interface 2010 is used to transmit and receive emails and files and to

print content from the Web. The modem 2050 is connected to a public line 1008 and transmits and receives facsimile information over the public line 1008.

[0033] The image bus interface 2005 is a bus bridge that connects the system bus 2007 and an image bus 2008 that transfers image data at a high speed, for converting the data format. For example, the image bus 2008 may be a PCI bus or an IEEE1394 bus. On the image bus 2008 are provided a raster image processor (hereinafter referred to as RIP) 2060, a device interface 2020, a scanner-image processing section 2080, a printer-image processing section 2090, an image rotating section 2030, and an image compressing section 2040. While the controller unit 2000 uses two buses, the system bus 2007 and the image bus 2008, for example, the invention is not limited to that. The system bus 2007 and the image bus 2008 may be integrated to a single bus or, alternatively, three or more buses may be used.

[0034] The RIP 2060 is a processor that opens up PDL code to a bitmap image. The device interface 2020 is connected to the scanner 2070 and the printer 2095 and performs synchronous or asynchronous conversion of image data. The scanner-image processing section 2080 corrects, processes, and edits input image data. The printer-image processing section 2090 corrects print-output image data and converts the resolution thereof according to the printer 2095. The image rotating section 2030 rotates image data. The image compressing section 2040 compresses multivalued image data to JPEG data and binary image data to JBIG data, MMR data, or MH data and expands them.

[0035] The controller unit 2000 performs the control described below. The controller unit 2000 performs control for implementing a copy function to print image data read by the scanner 2070 using the printer 2095. The controller unit 2000 also performs control for transmitting and receiving image information and device-status information by connecting to the LAN 1006 or the public line 1008 (WAN). Furthermore, the controller unit 2000 performs control for opening up received print data to a bitmap image using the RIP 2060 and printing it.

[0036] FIG. 2 is a plan view showing the structure of the operating section 2012 shown in FIG. 1.

[0037] An LCD display section 2013 is controlled by the CPU 2001 according to a program stored in the HDD 2004. The LCD display section 2013 has a structure in which a touch panel is bonded on an LCD. The LCD display section 2013 displays a copy-machine operating screen as shown in FIG. 3, with the copy machine 1001 in a waiting state. When the user touches a key displayed on the operating screen, position information thereof is transmitted to the CPU 2001. Reference numeral 2014 denotes a start key, which is used to start a document reading operation. Reference numeral 2015 denotes a stop key, which is operated to stop an action. Reference numeral 2016 denotes an ID key, which is used to input a user ID. Reference numeral 2017 denotes a reset key, which is used to initialize setting of the operating section 2012 (setting of the number of copies and the like).

[0038] FIG. 3 shows one example of the operating screen displayed on the operating section 2012 while the copy machine 1001 is in the waiting state. This operating screen is produced by the CPU 2001 according to a program stored in the HDD 2004. This also applies to various screens described hereinafter.

[0039] The operating screen of the operating section 2012 displays, at the upper part, touch keys of a copy tab 901, a

send/fax tab 902, a box tab 903, a browser tab 904, and a right-arrow tab 905 for use in selecting additional functions.

[0040] FIG. 3 shows a copy-function initial screen while the copy machine 1001 is in the waiting state or when the touch key of the copy tab 901 is pressed. The copy function is displayed in an area 906. The status of the copy function is displayed at the upper part of the area 906, in which "Copying is available" is displayed. Below the status, a percentage, a sheet size, and the number of sheets are displayed. Furthermore, touch keys for setting the copy-function operation mode, such as 1× magnification, copy ratio, paper select, sorter, double-sided, interrupt, color density control, and character, are arranged. A left-arrow key for decreasing the color density, a right-arrow key for increasing the color density, and an automatic key for automatically controlling the color density are displayed. Screens for designating operation modes that cannot be displayed on the initial screen are displayed hierarchically in the area 906 by pressing a mode key.

[0041] A display area 907 is an area for displaying the status of the copy machine 1001. For example, an alarm message, such as a jam alarm, and a status message that PDL printing is being performed, if executed, are displayed. The display area 907 also displays a system status/stop touch key 908. When the system status/stop touch key 908 is pressed, a screen that displays the device information of the copy machine 1001 and a screen that displays a print job status (not shown) are displayed. This screen allows the user to stop the job.

[0042] When the send/fax tab 902 is pressed, a screen for sending an image read by the scanner 2070 is displayed. This screen allows the user to select a transmission using an E-MAIL protocol or an FTP protocol for sending an image to a device on the LAN 1006 or a facsimile transmission using the public line 1008.

[0043] When the box tab 903 is pressed, the following setting screen is displayed: a setting screen (not shown) for storing an image read on the copy machine 1001 into a box area in the HDD 2004, designating image data stored in the box area and printing it, or sending an image to a device on the LAN 1006, as described above. When the browser tab 904 is pressed, a screen for entering URL for acquiring data, a screen for designating to store data acquired from entered URL, or a screen for designating printing is displayed.

[0044] When the controller unit 2000 has five or more functions, the following screen is displayed. That is, a right-arrow key 905 is displayed on the right of the four function tabs 901 to 904 of COPY, SEND/FAX, BOX, and BROWSER. When the right-arrow key 905 is pressed, a screen for another function is displayed.

[0045] FIG. 4 shows an item input screen 101 in which input items displayed on the LCD display section 2013 are displayed. The item input screen 101 displays an example of text entry fields and option items using a pull-down menu. This operating screen is produced by the CPU 2001 according to a program stored in the HDD 2004. This also applies to various screens described hereinbelow. When the send/fax tab 902, the box tab 903, or the browser tab 904 is pressed, a screens for entering an item, such as the address of email, a subject, or an image to be stored in the box is displayed.

[0046] FIG. 5 shows an item-entry-field management table which is used to input the items displayed on the item input screen 101 in FIG. 4. The management table will be described in detail. "Input specifying screen" indicates a displayed screen. FIG. 4 shows a state in which "Item input screen" in

FIG. 5 is displayed. Another example of an input specifying screen is a screen for the user to logs in. "Input item name" indicates the name of an input item. "Required/optional" indicates whether entry of an item indicated by the input item name is required or optional. "Type" indicates the type of data that is input to the item indicated by the input item name. For items described as "Text", text data, such as alphabets, kana, or kanji, is entered on a software keyboard. For items described as "Pull-down", the user selects corresponding data from a pull-down menu when inputting data to the item indicated by "Input item name". "Order" indicates an order selected as an input item. "Initial value" indicates an initial value to display a specified input item. When an input item having an initial value is selected, the initial value is displayed in the text field in a state in which no text data has been input. The purpose of using the items has been described above. Although not shown, a table listing of input items on the waiting screen in FIG. 3 is similar to the item input screen and a login screen.

[0047] FIG. 6 shows the task of selecting a screen to be displayed on the LCD display section 2013 of the operating section 2012. The CPU 2001 executes the flowchart shown in FIG. 6 according to a program stored in the HDD 2004.

[0048] When the screen display task is started, the CPU 2001 determines whether it is the task of displaying the waiting screen (step S601). If it is determined that it is the task of displaying the waiting screen, then the CPU 2001 reads the management table shown in FIG. 5 (step S605) and displays the item entry fields (step S606). If it is determined that the waiting screen is not to be displayed, then the CPU 2001 determines whether to display the login screen (step S602). If it is determined that the login screen is to be displayed, then the CPU 2001 reads the management table shown in FIG. 5 (step S607) and displays item entry fields (step S608). If it is determined that the login screen is not to be displayed, then the CPU 2001 determines whether to display the item input screen (step S603). If it is determined that the item input screen is to be displayed, then the CPU 2001 reads the management table shown in FIG. 5 (step S609) and displays item entry fields (step S610). On the other hand, if it is determined that item entry fields are not to be displayed, then the CPU 2001 determines whether it is the task of displaying another screen (step S604). If it is the task of displaying another screen, then the CPU 2001 reads the management table shown in FIG. 5 (step S611) and displays item entry fields (step S612). In contrast, if it is not the task of displaying another screen, then the CPU 2001 terminates the screen display task.

[0049] FIG. 7 shows the task of inputting data in the individual item entry fields on the screens displayed by the screen display task in FIG. 6. The CPU 2001 executes the flowchart shown in FIG. 7 according to a program stored in the HDD 2004.

[0050] When the item input task is started, the CPU 2001 determines whether an entry has been made (step S801). Whether an entry is made or not is determined depending on whether a corresponding item entry field is touched or a cursor (not shown) has moved to a corresponding item entry field. The specification of an input item by moving a cursor or touching will not be described in detail because it is well known.

[0051] Next, the CPU 2001 determines whether the type of the input item is the pull-down type shown in FIG. 5 (step S802). If it is the pull-down type, then the CPU 2001 displays

a pull-down list (step **S803**) to allow the user to select a desired choice from the list (step **S804**). When the user selects a choice from the list, the program returns to step **S801**. In contrast, if it is not the pull-down type, then the CPU **2001** determines whether the type of the input item is the text type (the text field) shown in FIG. 5. If it is not the text type, then the CPU **2001** input an item according to the input value. In contrast, if it is the text type, then the CPU **2001** sets a pointer for selecting an input item (step **S807**). Here, the data indicative of the order, shown in FIG. 5, is set for the pointer. In this embodiment, an input item can be moved to another item from the selected item by increasing or decreasing the value of the pointer.

[**0052**] Next, the CPU **2001** determines whether the specification of the text input field in the displayed screen is made for the first time (step **S808**). If it is the first time, “Back” key for returning to the previously input item is not displayed (step **S809**). Likewise, the CPU **2001** determines whether it is the last input item (step **S810**). If it is the last input item, “Forward” key for moving to the next input item is not displayed, as shown in FIG. 10 (step **S811**).

[**0053**] Here, the CPU **2001** determines whether it is the last input item depending on whether all the other input items have been input. It may be determined from the data indicative of the order, shown in FIG. 5.

[**0054**] If it is neither the first specified text field nor the last specified text field, the CPU **2001** displays both “Back” key and “Forward” key as shown in FIG. 9.

[**0055**] Next, the CPU **2001** displays a keyboard for inputting characters, such as alphabets, as shown in FIGS. 8 to 10 (step **S812**). This keyboard displays a keyboard for inputting text, a text-data display area that displays input text data, a “Forward” key or a “Back” key for selecting another input item, and an “OK” key for confirming the input text. This keyboard also displays input item name for specifying an item input on the displayed keyboard and priority information indicative of whether the entry is required or optional. This allows the user to be informed of input item name and the order of priority of the entry even if the item input screen is hidden by the displayed keyboard. This superimposing of the item input screen that displays a plurality of item display areas and a keyboard has a remarkable merit of reducing the size of an input screen.

[**0056**] Examples of a keyboard for entering characters in entry areas include a well-known QWERTY keyboard and a numeric keyboard, in addition to the displayed keyboard. When text is input, the CPU **2001** stores the input text in a text buffer area in the RAM **2002** that is a temporary storage area (step **S814**).

[**0057**] Next, the CPU **2001** determines whether “Forward” key has been operated (step **S815**). If it is determined that “Forward” key has been pressed, then the CPU **2001** stores the data that has been input in the text buffer area serving as a temporary storage area in association with input item name that has been input (step **S816**). The input item name is specified by a pointer. Next, the CPU **2001** clears the text buffer to display the next input item (step **S817**). When the text buffer area is cleared, the CPU **2001** increments the pointer that manages the input item name and specifies the next input item (step **S818**). At that time, the CPU **2001** changes the input item name for specifying an item input on the keyboard and priority information to an input item name

indicated by the pointer and priority information, with the keyboard kept displayed (step **S819**). Thus, the input item can be moved.

[**0058**] For example, in the case where the input item name and priority information that have been input before “Forward” key is pressed are “Document name” and “Required” of “Item input screen” shown in FIG. 5, the following display is given when “Forward” key is pressed. That is, the input item name and priority information are changed to “Comment” and “Required” according to the order data shown in FIG. 5, with the keyboard kept displayed. This eliminates the time and effort of the user to open and close the keyboard. Moreover, this has a remarkable merit of allowing the user to immediately recognize information of an input item even if an item input screen that displays a plurality of input item display areas is hidden by the displayed keyboard.

[**0059**] When text data has already been input and stored in the comment field, the stored text data may be displayed in the text display area.

[**0060**] If it is determined that the “Forward” key has not been pressed, then the CPU **2001** determines whether the “Back” key has been pressed (step **S820**). If it is determined that the “Back” key has been pressed, then the CPU **2001** stores the data that has been input in the text buffer area serving as a temporary storage area in association with the input item name that has been input (step **S821**). The input item name is specified by a pointer. Furthermore, the CPU **2001** clears the text buffer to display the previous input item data (step **S817**). When the text buffer area is cleared, the CPU **2001** decrements the pointer that manages the input item name and specifies the previous input item (step **S822**). When text data that has already been input and stored in the previous input item is present, the stored text data is displayed.

[**0061**] At that time, the CPU **2001** changes the input item name for specifying an input item on the keyboard and priority information to an input item name indicated by the pointer and priority information, with the display of the keyboard maintained (step **S824**). Thus, the input item can be moved.

[**0062**] If it is determined that the “Back” key has not been pressed, then the CPU **2001** determines whether the “OK” key has been pressed (step **S825**). If it is determined that the “OK” key has been pressed, then the CPU **2001** stores the data that has been input in the text buffer area serving as a temporary storage area in association with the input item name that has been input (step **S826**). Then, the CPU **2001** clears the text buffer (step **S827**). When the text buffer area is cleared, the CPU **2001** undisplay the keyboard (step **S828**) and terminates this process. When it is determined that the “OK” key has not been pressed, the program returns to step **S813**.

[**0063**] After the process has been finished, the text data stored in steps **S816**, **S821**, and **S826** may be displayed on the item input screen. That is, the text data, such as “Document name”, “Keyword”, and “Comment”, may be displayed in the text entry fields on the item input screen **101** shown in FIG. 4. This offers a remarkable merit that the user can confirm all the input items at a glance.

[**0064**] Here, although an example is described in which text-type input items are displayed in sequence using the order data shown in FIG. 5 so that an input item is changed, with the keyboard kept displayed, the invention is not limited to that.

[**0065**] The user operation of opening and closing the software keyboard can be decreased using only the type data

shown in FIG. 5 without using order data. The CPU 2001 executes the following process according to a program stored in the HDD 2004.

[0066] For example, if the CPU 2001 determines in step S815 that the “Forward” key has been operated, the following process may be executed in place of incrementing the pointer. That is, the CPU 2001 determines whether another text-type input item is present. If another text-type input item is present, the CPU 2001 executes the following process: in place of step S816, the CPU 2001 stores the data that has been input in the text buffer area serving as a temporary storage area in association with an input item that has been input. In this case, the program switches to step S819 without executing the process of step S818.

[0067] A description of the “Back” key will be omitted because it is similar to the “Forward” key.

[0068] The operation of opening and closing the software keyboard by the user can be decreased using the priority information data (REQUIRED/OPTIONAL) shown in FIG. 5.

[0069] For example, if the CPU 2001 determines in step S815 that the “Forward” key has been operated, the following process may be executed in place of incrementing the pointer. That is, first the CPU 2001 determines whether another input item in which priority information is “Required” is present. If another input item in which priority information is “Required” is present, the CPU 2001 stores the data that has been input in the text buffer area serving as a temporary storage area in association with the input item name that has been input, in place of step S816. In this case, the program switches to step S819 without executing the process of step S818.

[0070] On the other hand, if another input item in which priority information is “Required” is absent, the CPU 2001 determines whether another input item in which priority information is “Optional” is present. If another input item in which priority information is “Optional” is present, the CPU 2001 stores the data that has been input in the text buffer area serving as a temporary storage area in association with the input item name that has been input in place of step S816. In this case, the program switches to step S819 without executing the process of step S818.

[0071] If neither “Required” input item nor another “Optional” input item is present, the CPU 2001 executes the same process as for the “OK” key shown in FIG. 7. That is, the CPU 2001 stores the data that has been input in the text buffer area serving as a temporary storage area in association with the input item name that has been input, in place of step S826. Subsequently, the CPU 2001 executes steps S827 and S828.

[0072] Similarly, the above operations may be applied to a case in which the “Back” key is pressed, thus, its description will be omitted.

[0073] The item input screen 101 in FIG. 8 of this example provides the same functions as the item input screen 101 of the related art, which displays the text entry fields and options of attributes to be selected using pull-down menus. A software keyboard 110 is displayed when the text entry field (“Document name”) on the item input screen 101 is pressed, so that text data can be input in a text display area 1101 of the software keyboard 110. The software keyboard 110 displays input information (“Document name” and “Required”). The software keyboard 110 also displays a Forward key 1100. The user inputs text in the text buffer for displaying it in the text display area and thereafter presses the Forward key 1100. When the Forward key 1100 is pressed, the input item infor-

mation switches from “Document name” and “Required” to “Comment” and “Required”, with the software keyboard kept displayed (FIG. 9). Thus, the text buffer that is held to display the data in the text buffer in the text display area switches to a text buffer for inputting text for the input item “Comment”. A software keyboard 111 of the input item “Comment” displays a Back key 1110 and a Forward key 1111. When the Back key 1110 is pressed, the software keyboard 111 shifts to the software keyboard 110 of the previous input item “Document name”, with the software keyboard kept displayed. Thus, the data in the text buffer that is held to display the data in the text buffer in the text display area switches to the text buffer for inputting text for the input item “Document name”. When the Forward key 1111 is pressed, the information of the input item switches from “Comment” and “Required” to “Keyword” and “Optional”, with the software keyboard kept displayed. Thus, the data in the text buffer that is held to display the data in the text buffer in the text display area switches to a text buffer for inputting text for the input item “Keyword” (FIG. 10).

[0074] Reference numeral 113 in FIG. 11 denotes a software keyboard of the input item “Document name” that is displayed when the Back key 1110 is pressed (the same as the software keyboard 110 of the input item “Document name”). In this case, a value that was previously input in the text buffer for displaying it in the text display area is input in advance in a text display area 1130 as an initial input value.

[0075] Reference numeral 112 denotes a software keyboard of the input item “Keyword” that is displayed when the Forward key 1111 is pressed.

[0076] All of the software keyboard 110 of the input item “Document name”, the software keyboard 111 of the input item “Comment”, and the software keyboard 112 of the input item “Keyword” display the following items in common: an input item name 1120 and priority information 1121 indicative of whether the input is required or optional. The software keyboards 110 to 112 also display a text display area, text input keys, a conversion key, and an OK key for confirming data stored in the text buffer to undisplay the software keyboard.

[0077] The software keyboard 112 shows only a Back key 1122 because no next input item is present.

[0078] Although the Forward key and the Back key are displayed on the software keyboards, the invention is not limited to that. Those keys may be provided at a location other than the software keyboards. In this case, the Forward key and the Back key are not displayed in step S809 and S811 as follows: Entry of the Back key is invalidated in step S809. Even if the Back key is pressed, the entry may be ignored or a warning that the entry is invalid may be issued. Likewise, entry of the Forward key is invalidated in step S811. Even if the Forward key is pressed, the entry may be ignored or a warning that the entry is invalid may be issued.

[0079] The invention can be achieved by providing a storage medium (or a recording medium) that stores program code of software that implements the above functions to a system or unit. The invention can also be achieved when the computer (or the CPU or MPU) of the system or unit reads the program code stored in the storage medium and implements it.

[0080] In this case, the program code itself that is read from the storage medium implements the above-described functions of the embodiments, and the storage medium that stores the program code constitutes the invention. The above-de-

scribed functions of the embodiments are implemented by executing the program code read by the computer. In addition, an operating system (OS) that operates on the computer according to an instruction of the program code can implement part or the whole of actual operations. This invention also includes implementing the functions of the embodiments by the operations.

[0081] Furthermore, when program code read from the storage medium is written to a feature expansion card inserted in the computer or a storage medium provided in a feature expansion unit connected to the computer, the functions of the embodiments are implemented as follows: a CPU or the like provided in the feature expansion card or the feature expansion unit implements part or the whole of actual operations, by which the above-described functions of the embodiments are implemented.

[0082] When the program code of the software that implements the functions of the embodiments is distributed via a network, the program code is stored in a storage device of a system or unit, such as a hard disk or a memory, or a storage medium, such as a CD-RW, CD-R, or a USB memory. The functions are also implemented in such a manner that the computer (or the CPU or MPU) of the system or unit reads the program code read from the storage device or the storage medium and implements it.

[0083] While the present invention has been described with reference to exemplary embodiments, it is to be understood that the invention is not limited to the disclosed exemplary embodiments. The scope of the following claims is to be accorded the broadest interpretation so as to encompass all modifications and equivalent structures and functions.

[0084] This application claims the benefit of Japanese Patent Application No. 2007-336846 filed Dec. 27, 2007, which is hereby incorporated by reference herein in its entirety.

What is claimed is:

1. An information processing apparatus, comprising: a processor configured to cause:
 - a display unit to display an input screen including a plurality of items in which text data can be input, to display a keyboard for inputting text data in one input item of the plurality of items so as to be superimposed on the input screen displayed by the display unit, and to display a name of the input item on the keyboard; and
 - a control unit configured to perform control, in a case where an instruction to change the object input item to a different item is received, with the keyboard superimposed on the display unit, so as to change the input item to the different item, with the keyboard kept displayed on the display unit, and cause the display unit to display the name of the different item.
2. The information processing apparatus according to claim 1, further comprising:
 - a storage unit configured to store text data that is input to the input item by a user in association with the input item in response to reception of an instruction to change the input item of the text data to a different item.
3. The information processing apparatus according to claim 1, wherein the instruction to change the input item to the different item is given through the keyboard.
4. The information processing apparatus according to claim 1, wherein the instruction to change the input item to

the different item includes an instruction to change the input item to a previous item and an instruction to change the input item to a next item.

5. The information processing apparatus according to claim 1, wherein the processor further causes:

the display unit to display a key for giving an instruction to change the input item to a previous item and a key for giving an instruction to change the input item to a next item on the keyboard,

wherein the display unit

does not display an instruction to change the input item of the text data to a previous item in a case where the previous item of the input item is not present, and

does not display an instruction to change the input item of the text data to a next item in a case where the next item of the input item is not present.

6. The information processing apparatus according to claim 1, wherein the control unit is configured to change, in a case where the instruction to change the input item to the different item is received, the input item to, among the plurality of items, a different item set to be input by a user.

7. A method for controlling an information processing apparatus, the method comprising:

displaying, on a display unit, an input screen including a plurality of items in which text data can be input;

displaying, on the display unit, a keyboard for inputting text data in one input item of the plurality of items so as to be superimposed on the input screen;

displaying, on the display unit, a name of the input item on the displayed keyboard; and

performing control, in a case where an instruction to change the input item to a different item is received, with the keyboard superimposed on the display unit by the keyboard display unit, so as to change the input item to the different item, with the keyboard kept displayed on the display unit, and cause the display unit to display the name of the different item.

8. The method according to claim 7, further comprising: storing text data that is input to the input item by a user in association with the input item in response to reception of the instruction to change the input item of the text data to the different item.

9. The method according to claim 7, wherein the instruction to change the input item to the different item is given through the keyboard.

10. The method according to claim 7, wherein the instruction to change the input item to the different item includes an instruction to change the input item to a previous item and an instruction to change the input item to a next item.

11. The method according to claim 7, further comprising: displaying, on the display unit, a key for giving an instruction to change the input item to a previous item and a key for giving an instruction to change the input item to a next item on the keyboard,

wherein the display unit

does not display an instruction to change the input item of the text data to a previous item in a case where the previous item of the input item is not present, and

does not display an instruction to change the input item of the text data to a next item in a case where the next item of the input item is not present.

12. The method according to claim 7, wherein, in a case where an instruction to change the input item to a different

item is received, the input item is changed to, of the plurality of items, a different item set to be input by a user.

13. A computer-readable recording medium storing a computer-executable program for executing a method for controlling an information processing apparatus, the computer-executable program comprising:

- displaying, on a display unit, an input screen including a plurality of items in which text data can be input;

- displaying, on the display unit, a keyboard for inputting text data in one input item of the plurality of items so as to be superimposed on the input screen displayed by the display unit;

- displaying, on the display unit, a name of the input item on the displayed keyboard displayed by the keyboard display unit; and

- performing control, in a case where an instruction to change the input item to a different item is received, with the keyboard superimposed on the display unit by the keyboard display unit, so as to change the input item to the different item, with the keyboard kept displayed on the display unit, and display the name of the different item on the keyboard.

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