US 20120092380A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2012/0092380 A1

(43) Pub. Date: Apr. 19, 2012

KANEKO

(54) APPARATUS AND METHOD FOR CHANGING THE SIZE OF DISPLAYED CONTENTS

(75) Inventor: **Satoshi KANEKO**, Iruma-gun (JP)

(73) Assignee: **KABUSHIKI KAISHA TOSHIBA**

(21) Appl. No.: **13/306,663**

(22) Filed: **Nov. 29, 2011**

Related U.S. Application Data

(63) Continuation of application No. 12/588,085, filed on Oct. 2, 2009, which is a continuation of application No. 10/920,396, filed on Aug. 18, 2004, now abandoned.

(30) **Foreign Application Priority Data**

Aug. 20, 2003 (JP) 2003-296588

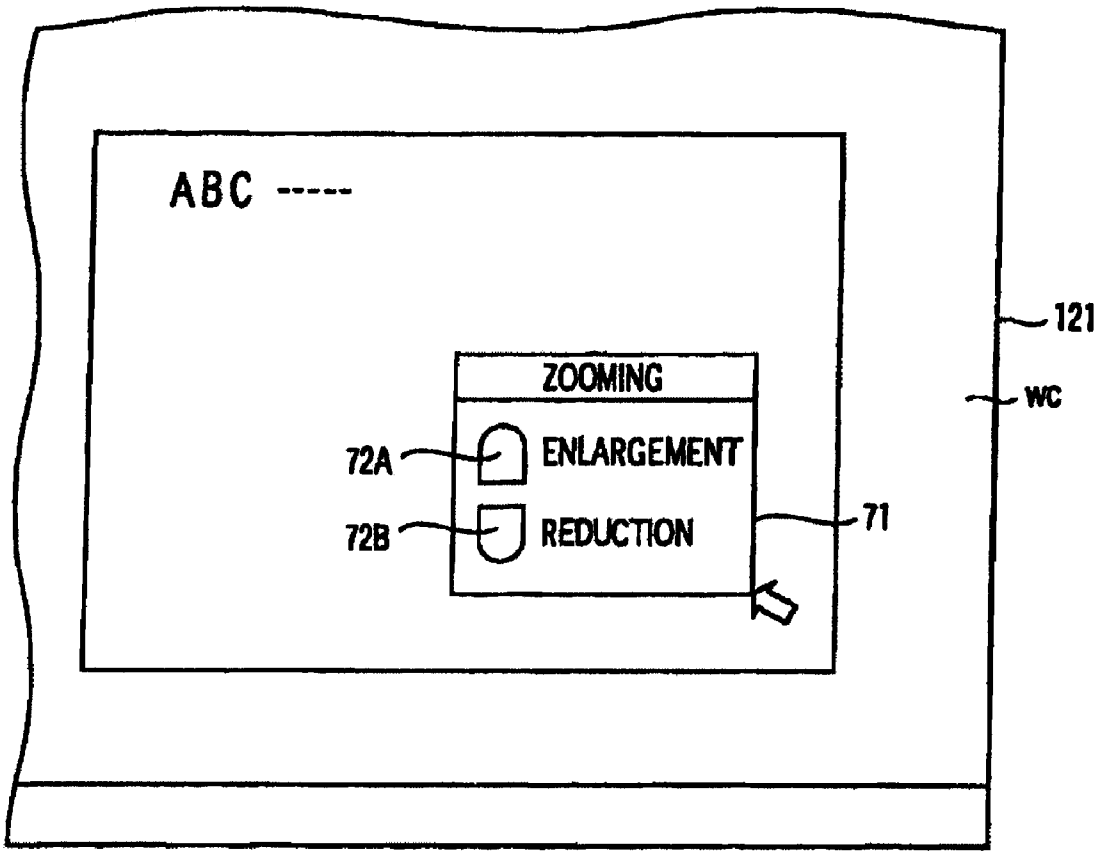
Publication Classification

(51) **Int. Cl.**
G09G 5/00 (2006.01)

(52) **U.S. Cl.** **345/660**

(57) **ABSTRACT**

A data processing apparatus comprises an operation member which is operated to change a display form of displayed contents and a processing unit which is responsive to an operation of the operation member to change the display form of the displayed contents of an active window.



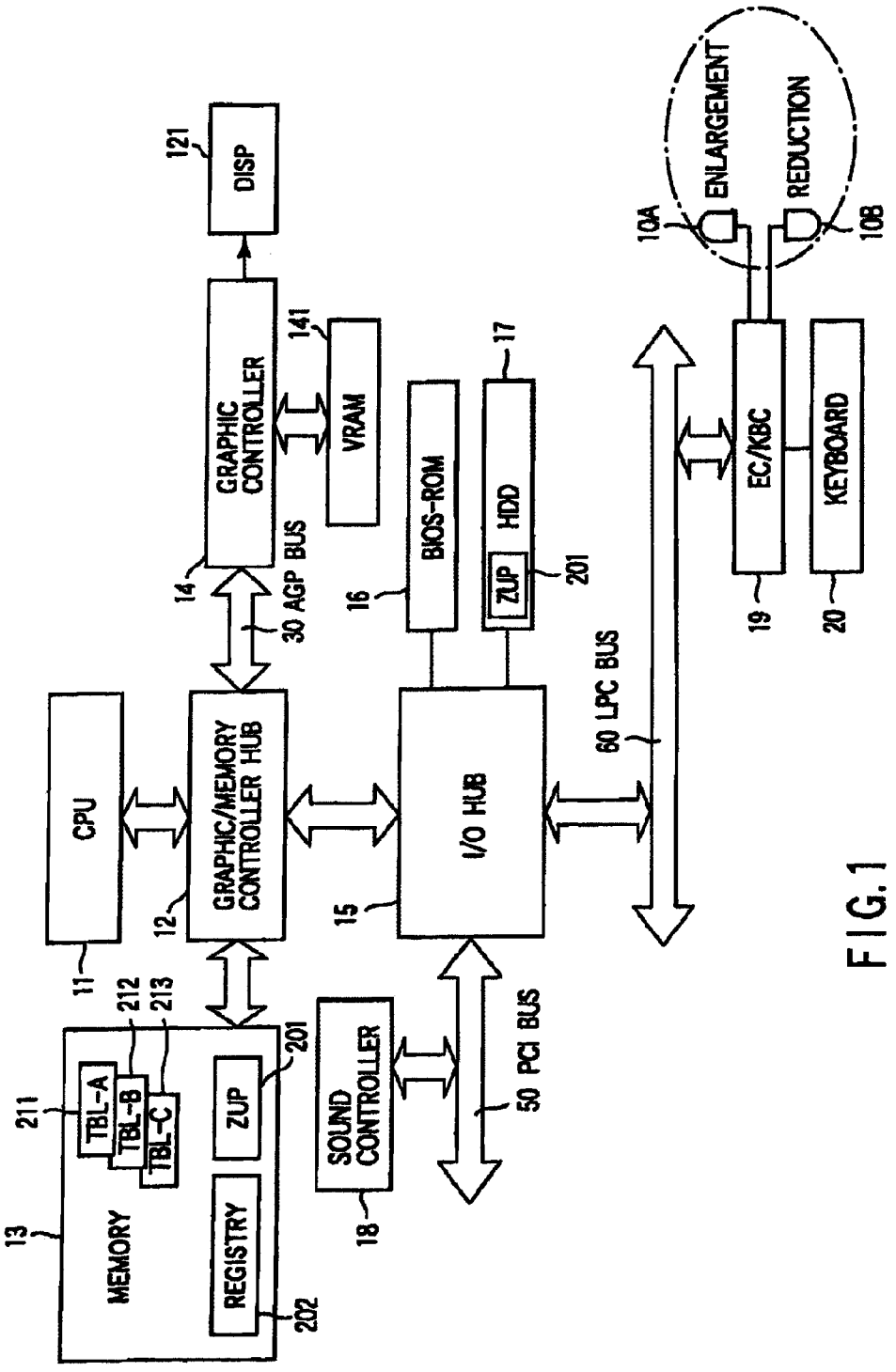

121
DISP
GRAPHIC CONTROLLER
141
VRAM
14
30 AGP BUS
16
BIOS-ROM
17
HDD
ZUP
201
60 LPC BUS
ENLARGEMENT
REDUCTION
10A
10B
EC/KBC
KEYBOARD
19
20
CPU
11
GRAPHIC/MEMORY CONTROLLER HUB
12
I/O HUB
15
212
213
211
TBL-A
TBL-B
TBL-C
ZUP
201
SOUND CONTROLLER
18
50 PCI BUS
13
MEMORY
REGISTRY
202

FIG. 1

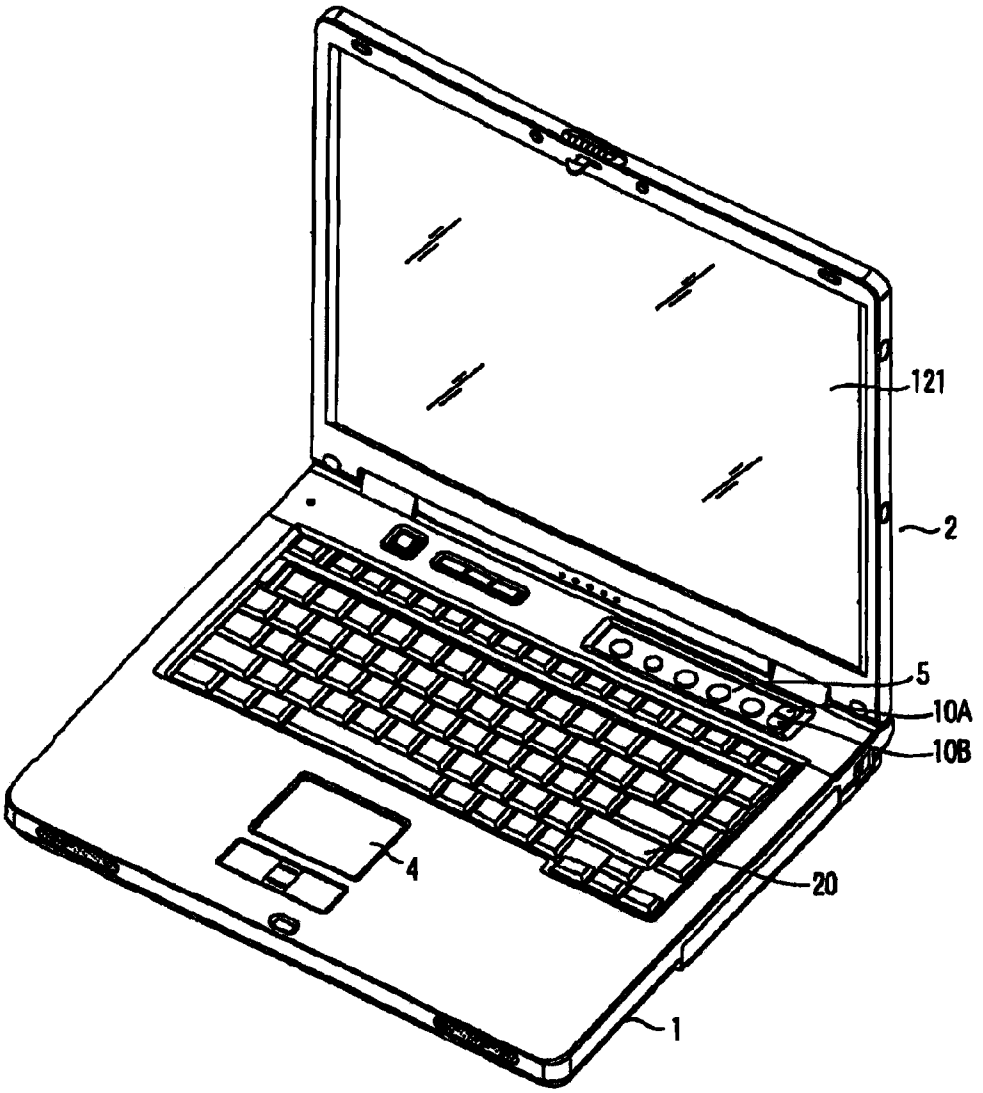


FIG. 2

211

APPLICATION REFERENCE TABLE (TBL-A)		
CLASS NAME	WINDOW NAME	APPLICATION NAME
CLASS-A	W-O	APPLICATION A
CLASS-B	W-P	APPLICATION B
	W-Q	APPLICATION C
	W-R	APPLICATION D
CLASS-C	W-R	APPLICATION E

FIG. 3

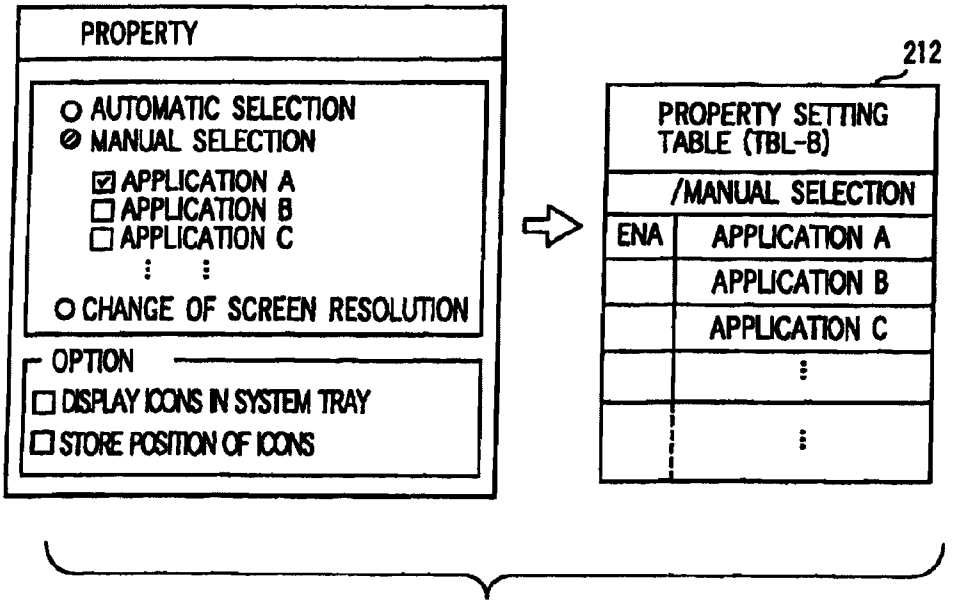


FIG. 4

213

ZOOMING TABLE (TBL-C)	
APPLICATION NAME	ROUTINE ENTRY
APPLICATION A	ENTRY P
APPLICATION B	ENTRY R
APPLICATION C	ENTRY R
APPLICATION D	ENTRY P
⋮	⋮

FIG. 5

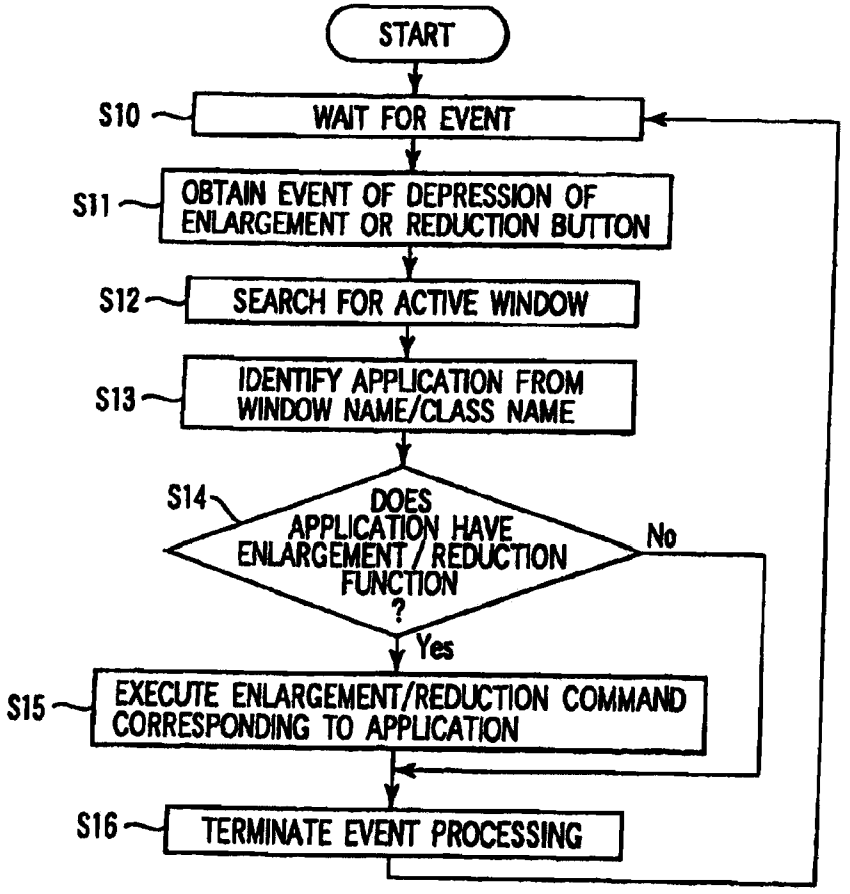


FIG. 6

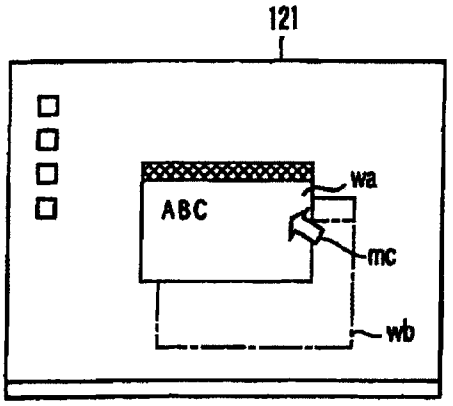


FIG.7A

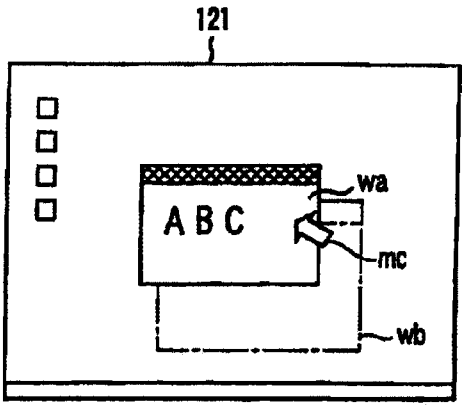


FIG.7B

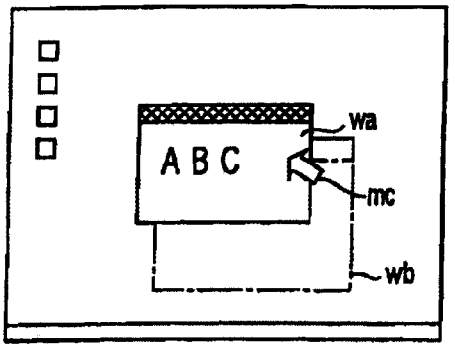


FIG.8A

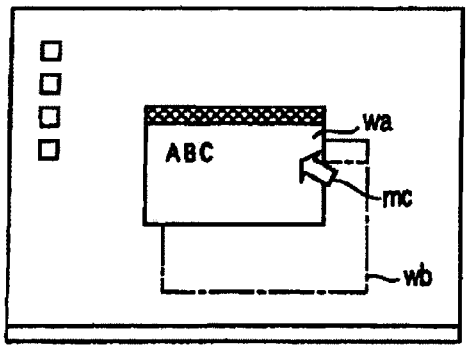


FIG.8B

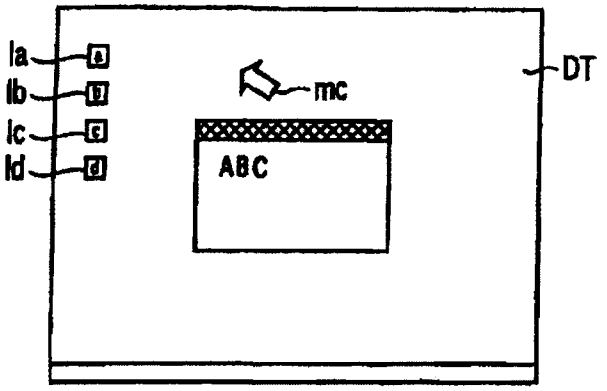


FIG.9A

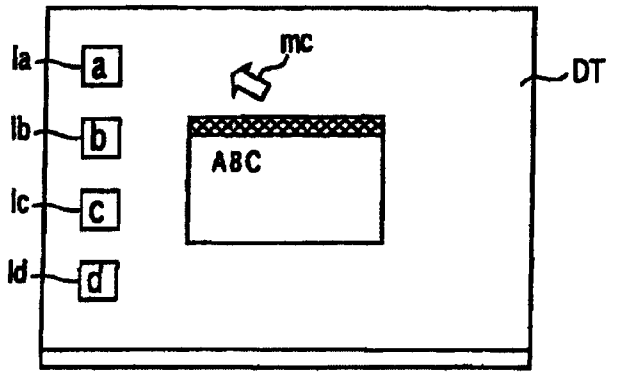


FIG.9B

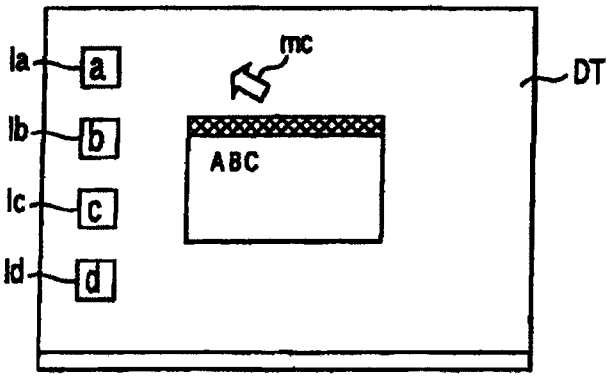


FIG.10A

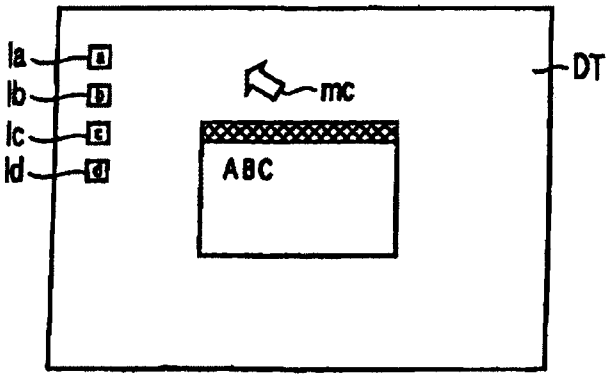


FIG.10B

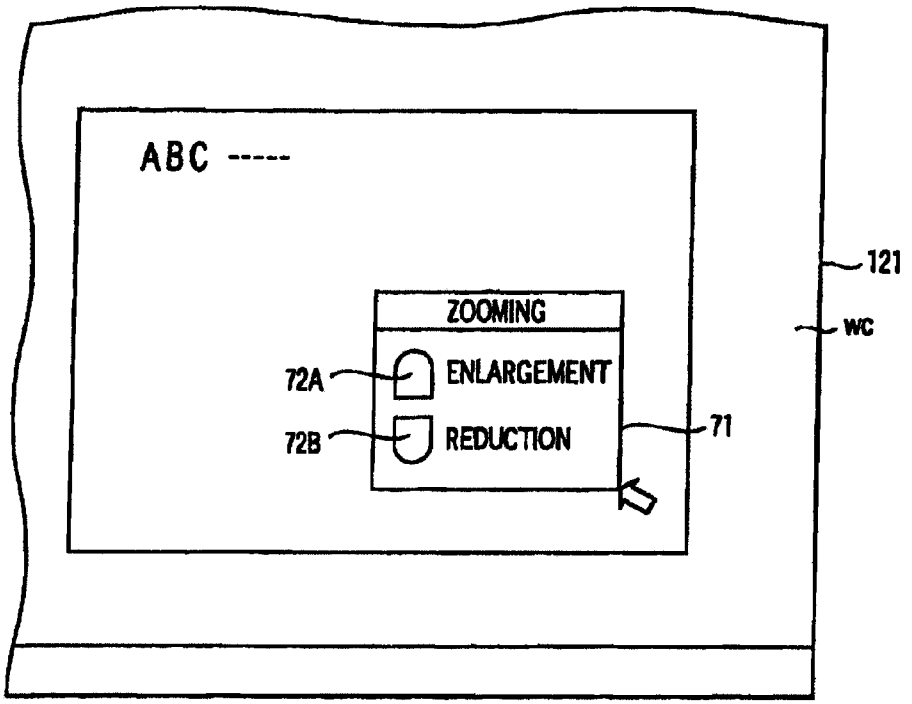

ABC -----
121
WC
ZOOMING
72A
ENLARGEMENT
72B
REDUCTION
71

FIG. 11

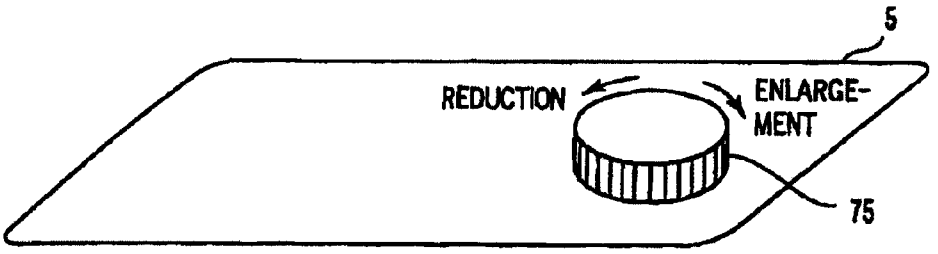

5
REDUCTION
ENLARGE-
MENT
75

FIG. 12

APPARATUS AND METHOD FOR CHANGING THE SIZE OF DISPLAYED CONTENTS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is based upon and claims the benefit of priority from prior Japanese Patent Application No. 2003-296588, filed Aug. 20, 2003, the entire contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a data processing apparatus equipped with an operating device and a display device and a display control method for the data processing apparatus.

[0004] 2. Description of the Related Art

[0005] An example of a utility program that is adapted to enlarge or reduce on-screen images is one that is capable of enlarging or reducing user interface components, such as icons, toolbar options, pull-down menus, etc., when a mouse is clicked (for example, Liquid View (trade name) by Portrait Display Company).

[0006] Such a conventional type of utility program is set to enlarge or reduce each of the components in the user interface at the same time. Therefore, a problem arises in that even components the user does not intend enlarging or reducing are enlarged or reduced. In addition, objects for enlargement or reduction are the frames and titles of windows. That is, images within the windows are displayed without being enlarged or reduced. The utility program is therefore not so convenient.

BRIEF SUMMARY OF THE INVENTION

[0007] According to an embodiment of the present invention, a data processing apparatus comprises an operation member which is operated to change a display form of displayed contents, and a processing unit which is responsive to an operation of the operation member to change the display form of the displayed contents of an active window.

[0008] According to another embodiment of the present invention, a data processing apparatus comprises a display unit having a screen capable of displaying windows, an operation member which is operated to change a display form, and a processing unit which is responsive to an operation of the operation member to search through the windows displayed on the screen for a window in an active state and changes the display form of displayed contents of the searched window.

[0009] According to still another embodiment of the present invention, a data processing apparatus comprises a display unit on which an image of a desktop appears, an operation member which is operated to change the display form of the image of the desktop, and a processing unit which is responsive to an operation of the operation member to change the display form of the image of the desktop.

[0010] According to still another embodiment of the present invention, a display control method comprises obtaining an event associated with an operation on an operation member assigned a predetermined function, detecting an active window in accordance with the obtained event, identifying an application from the class name or the window name including the class name of the detected window, making a decision of whether or not the identified application is capable of carrying out a function corresponding to the obtained event, and carrying out that function when the decision is that the identified application is capable of carrying out that function.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

[0011] The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the present invention and, together with the general description given above and the detailed description of the embodiments given below, serve to explain the principles of the present invention in which:

[0012] FIG. **1** is a block diagram of a first embodiment of the data processing apparatus according to the present invention;

[0013] FIG. **2** is a perspective exterior view of the data processing apparatus shown in FIG. **1**;

[0014] FIG. **3** shows exemplary contents of an application reference table (TBL-A) within a memory of FIG. **1**;

[0015] FIG. **4** shows exemplary contents of a property setting table (TBL-B) associated with a zooming utility program within the memory of FIG. **1**;

[0016] FIG. **5** shows exemplary contents of a zooming process activation table (TBL-C) within the memory of FIG. **1**;

[0017] FIG. **6** is a flowchart for the procedure of a zooming utility program (ZUP) within the memory of FIG. **1**;

[0018] FIGS. **7**A and **7**B are diagrams for use in explanation of a zooming process of enlarging display contents of an active window;

[0019] FIGS. **8**A and **8**B are diagrams for use in explanation of a zooming process of reducing display contents of the active window;

[0020] FIGS. **9**A and **9**B are diagrams for use in explanation of a zooming process of enlarging icons on a desktop;

[0021] FIGS. **10**A and **10**B are diagrams for use in explanation of a zooming process of reducing icons on an image of the desktop;

[0022] FIG. **11** shows a modification of an operation member in the data processing apparatus; and

[0023] FIG. **12** shows another modification of the operation member in the data processing apparatus.

DETAILED DESCRIPTION OF THE INVENTION

[0024] An embodiment of a data processing apparatus according to the present invention will now be described with reference to the accompanying drawings.

[0025] FIG. **1** illustrates the configuration of the data processing apparatus according to the embodiment. Here, as an example, the system configuration of a battery-powered notebook personal computer is illustrated.

[0026] This computer system includes a CPU **11**, a graphics/memory controller hub **12**, a memory (main memory) **13**, a graphics controller **14**, a video RAM (VRAM) **141**, an I/O hub **15**, a BIOS-ROM **16**, a hard disk drive (HDD) **17**, a sound controller **18**, a keyboard/embedded controller (EC/KBC) **19**, a keyboard **20**, a display device (DISP) **121**.

[0027] As user's operation member, in addition to the keyboard **20** and pointing devices such as a mouse, a touch panel, etc., dedicated buttons **10**A and **10**B that are operated to change the display form are provided (see FIG. **2**).

[0028] In this embodiment, the dedicated button **10**A is used as the button (enlargement button) to enlarge display

contents, while the dedicated button **10**B is used as the button (reduction button) to reduce the display contents.

[0029] When the enlargement button **10**A or the reduction button **10**B is pressed, an event notification associated with that button operation is issued by the keyboard/embedded controller **19** to the CPU **11**.

[0030] If, when the enlargement button **10**A or the reduction button **10**B is pressed, the subject (the area pointed to by the mouse cursor) the display form of which is to be changed (here enlargement or reduction) is the active window displayed on the display device **121**, the display contents within the active window will be displayed with enlargement or reduction. If, on the other hand, the subject of change is the desktop outside the active window, then icons on an image of the desktop become subjects of change and are displayed with enlargement or reduction. This procedure will be described later.

[0031] The CPU **11**, which is adapted to control the operation of the computer system, carries out various processes in accordance with the operating system (OS), application programs and utility programs which have been loaded from the hard disk drive **17** into the main memory **13**. In this embodiment, the CPU **11** carries out enlargement/reduction processing on various windows including the desktop in accordance with a zooming utility program (ZUP) **201** related to a display. The enlargement/reduction processing will be described later with reference to FIGS. **3** through **10**B.

[0032] The memory **13** is loaded with the zooming utility program (ZUP) **201**, an application reference table (TBL-A) **211**, a zooming-utility-related property setting table (TBL-B) **212**, and a zooming activation table (TBL-C) **213**, these tables being referred to by the zooming utility program **201**. The memory **13** further stores a registry group **202** having setting information for various windows including the desktop. The zooming utility program **201** is loaded at the time of system activation from the hard disk drive **17**. The configurations of the application reference table (TBL-A) **211**, the property setting table (TBL-B) **212** for zooming utility program and the zooming activation table (TBL-C) **213** will be described later with reference to FIGS. **3** to **5**.

[0033] By referring to the application reference table (TBL-A) **211**, the zooming-utility-related property setting table (TBL-B) **212**, and the zooming activation table (TBL-C) **213**, the zooming utility program **201** performs a process of enlarging or reducing the contents of a window as shown in FIGS. **7**A through **8**B or a process of enlarging or reducing icons on an image of the desktop as shown in FIGS. **9**A through **10**B, in accordance with such a display control procedure as shown in FIG. **6**. In this process, font sizes and so on contained in the registry group **202** and pertaining to the display of the active window the display form of which is to be changed (enlarged/reduced) or the icons on an image of the desktop are rewritten, whereby the contents of the active window or the icons on an image of the desktop are displayed with enlargement or reduction. This enlarging/reducing function (zooming function) will be described later.

[0034] The graphics controller **14**, under the control of the operating system (OS) executed by the CPU **11**, controls the display device **121** and external display devices connected through external display connection interfaces, such as a CRT terminal, a DVI terminal, a TV terminal, etc., which are not shown.

[0035] The keyboard/embedded controller (EC/KBC) **19**, which is an integrated-circuit device including a microprocessor that provides system power management, the function of the keyboard controller, etc., processes key entries from the keyboard **20**, the enlargement button **10**A, and the reduction button **10**B. When the enlargement button **10**A or the reduction button **10**B is pressed, the keyboard/embedded controller **19** presents a display control command associated with that operation to the CPU **11**. Upon receiving this command from the keyboard/embedded controller **19**, the CPU **11** carries out the zooming utility program **201** whose flowchart is shown in FIG. **6**.

[0036] FIG. **2** is a perspective exterior view of the data processing apparatus. Here, the data processing apparatus is shown in the form of a notebook personal computer by way of example.

[0037] The personal computer is composed of a computer body **1** and a display unit (casing in which the LCD display is housed) **2**.

[0038] The computer body **1** has a casing in the form of a thin box. The keyboard **20** is placed on the top of the casing. A palm rest is formed on the top of the casing in front of the keyboard **20**. A touch panel **4** is provided substantially in the central portion of the palm rest. The casing is provided on top with an operation member **5** between the keyboard **20** and the pivoted member that rotatably supports the display unit **2**. The operation member **5** includes the enlargement button **10**A and the reduction button **10**B. As the display device **121**, an LCD-based display is built into the display unit **12**. The display unit **2** is pivotally mounted to the computer body **1** so that it can rotate between open and closed positions.

[0039] FIGS. **3** to **5** show exemplary contents of the respective tables referred to by the zooming utility program **201**.

[0040] FIG. **3** shows the contents of the application reference table (TBL-A) **211**. Here, for various applications (programs) the system can handle, class names, window names and application names are entered into the table in such a way that they are associated with one another. By referring to the application reference table (TBL-A) **211**, an application can be identified through a class name or a combination of a class name and a window name.

[0041] The contents set on a property screen concerning the zooming utility program and shown in FIG. **4** are entered into the property setting table (TBL-B) **212** as shown in FIG. **4**. On the property screen concerning the zooming utility program and shown in FIG. **4**, each item shown can be set in accordance with an operating procedure similar to that for setting mouse property by way of example. In this example, automatic/manual setting of the zooming utility program, setting of object applications under the manual setting, display setting of corresponding property icons on the system tray, and setting of icon display positions on the desk top before changing are possible. These settings are held in the property setting table (TBL-B) **212** shown in FIG. **4**. It is only applications having the zooming function (zooming routine) that can be set in the table. Applications with no zooming function are removed from candidates for retrieval at the time of manual setting.

[0042] FIG. **5** shows the contents of the zooming activation table (TBL-C) **213**. Into this table, applications the system can handle are mapped into entry points for calling enlargement/reduction routines (zooming functions) of the respective applications are entered. By referring to the zooming activation table (TBL-C) **213**, the zooming function (zooming routine) of a particular application can be called.

[0043] FIG. **6** is a flowchart illustrating the procedure of the zooming utility program **201**. This program is started each time the enlargement button **10**A or the reduction button **10**B is pressed. FIGS. **7**A through **10**B show display examples associated with the zooming function. More specifically, FIGS. **7**A and **7**B show display examples of enlarging the contents of the active window. FIGS. **8**A and **8**B show display examples of reducing the contents of the active window. FIGS. **9**A and **9**B show display examples of enlarging the icons on an image of the desktop in processing performed on an image of the desktop. FIGS. **10**A and **10**B show display examples of reducing the icons on an image of the desktop in processing performed on an image of the desktop.

[0044] When the enlargement button **10**A or the reduction button **10**B on the computer body **1** is pressed after the computer system shown in FIG. **1** has been activated, the keyboard/embedded controller **19** notifies the CPU **11** of the occurrence of an event associated with that button pressing (step S**10** in FIG. **6**). Upon receipt of notification of the occurrence of an event associated with the button pressing from the keyboard/embedded controller **19** (step S**11**), according to the zooming utility program **201** stored in the memory **13** the CPU **11** searches for a window that is active (step S**12**), identifies the application that has that active window (step S**13**) and, when the application has the enlarging/reducing function (YES in step S**14**), performs a zooming process corresponding to the pressed button on the window in the active state (step S**15**). Various processes of changing display forms at this point will be described with reference to FIGS. **7**A through **10**B.

[0045] The operation and processing of displaying the contents of the active window with enlargement will be described with reference to FIGS. **7**A and **7**B.

[0046] To select a window and enlarge its contents on the display screen of the display device **121**, a window (wa) to be enlarged is clicked on with the mouse cursor (mc) put on that window to make it active and the enlargement button **10**A on the top of the computer body **1** pressed. The keyboard/embedded controller **19** notifies the CPU **11** of the occurrence of an event associated with the button pressing (step S**10** in FIG. **6**).

[0047] Upon receipt of notification of the occurrence of an event associated with the button pressing from the keyboard/embedded controller **19** (step S**11**), the CPU **11** searches for a window (wa) that is active (step S**12**). The CPU then obtains the class name or the class and window names of that window (wa) and refers to the application reference table (TBL-A) **211** on the basis of the obtained information to thereby identify the application name corresponding to the window in the active state (step S**13**).

[0048] Then, reference is made to the property setting table (TBL-B) **212** concerning zooming utility program to make a decision of whether or not the identified application in one that accommodates zooming (step S**14**).

[0049] If the application is one capable of zooming (Yes in step S**14**), then reference is made to the zooming activation table (TBL-C) **213** to call the zooming function (zooming routine) of the application. As a result, a zooming process corresponding to the enlargement button **10**A is carried out (step S**15**). For example, each time the enlargement button **10**A is pressed, the display size information in the registry corresponding to the active window (wa) is updated to enlarge the displayed contents stepwise or by a fixed ratio. An example of an enlarged display of the contents of the active window is illustrated in FIG. **7**B.

[0050] In the event that the identified application is one which has no zooming function (zooming routine) (No in step S**14**), the pressing of the enlargement button **10**A or the reduction button **10**B is nullified to terminate the event associated with the button pressing (step S**16**).

[0051] Thus, merely pressing the enlargement button **10**A allows the contents of an arbitrary window to be easily displayed with enlargement.

[0052] Next, the operation and processing involved in reducing the contents of the active window will be described with reference to FIGS. **8**A and **8**B.

[0053] To select a window and reduce its contents on the display screen of the display device **121**, a window (wa) to be enlarged is clicked on with the mouse cursor (mc) put on that window to make it active and the reduction button **10**B on the top of the computer body **1** pressed. The keyboard/embedded controller **19** notifies the CPU **11** of the occurrence of an event associated with the button pressing (step S**10** in FIG. **6**).

[0054] Upon receipt of notification of the occurrence of an event associated with the button pressing from the keyboard/embedded controller **19** (step S**11**), the CPU **11** searches for a window (wa) that is active (step S**12**). The CPU then obtains the class name or the class and window names of that window (wa) and refers to the application reference table (TBL-A) **211** on the basis of the obtained information to thereby identify the application name corresponding to the window in the active state (step S**13**).

[0055] Then, reference is made to the property setting table (TBL-B) **212** to make a decision of whether or not the identified application is one that accommodates zooming (step S**14**).

[0056] If the application is one capable of zooming (Yes in step S**14**), then reference is made to the zooming activation table (TBL-C) **213** to call the zooming function (zooming routine) of the identified application. As a result, a zooming process corresponding to the reduction button **10**B is carried out (step S**15**). For example, each time the reduction button **10**B is pressed, the display size information in the registry corresponding to the active window (wa) is updated to reduce the displayed contents stepwise or by a fixed ratio. An example of a reduced display of the contents of the active window is illustrated in FIG. **8**B.

[0057] In the event that the identified application is one which has no zooming function (zooming routine) (No in step S**14**), the pressing of the enlargement button **10**A or the reduction button **10**B is nullified to terminate the event associated with the button pressing (step S**16**).

[0058] Thus, merely pressing the reduction button **10**B allows the contents of an arbitrary window to be easily displayed with reduction.

[0059] Reference is next made to FIGS. **9**A through **10**B to describe the operation and processing of enlarging/reducing the contents of a window with regard to the desktop. In this embodiment, the desktop is also considered a window which becomes a subject of enlargement or reduction processing. When the enlargement button **10**A is pressed, icons on an image of the desktop are enlarged in size by a fixed ratio. When the reduction button **10**B is pressed, on the other hand, the icons are reduced in size by a fixed ratio.

[0060] Reference is now made to FIGS. **9**A and **9**B to describe the operation and processing of enlarging the icons on an image of the desktop.

[0061] On the display screen of the display device **121** shown in FIG. **9**A, the user clicks on an image of the desktop (DT) with the mouse cursor (mc) put on an image of the desktop to make it active and then presses the enlargement button **10**A. The keyboard/embedded controller **19** notifies the CPU **11** of the occurrence of an event associated with the button pressing (step S**10** in FIG. **6**). Upon receipt of notification of the occurrence of an event associated with the button pressing from the keyboard/embedded controller **19** (step S**11**), the CPU **11** searches for the active window (wa) pointed to by the mouse cursor (mc) (step S**12**) and identifies it (step S**13**). Here, the active window is the desktop (DT) configured such that icons can be enlarged or reduced in size (Yes in step S**14**). Therefore, the display size held in the registry for icons (Ia, Ib, ≅≅≅) on an image of the desktop is changed by a fixed enlargement ratio with the result that the icons are displayed with enlargement (step S**15**). An enlargement display of the icons on an image of the desktop is illustrated in FIG. **9**B.

[0062] Thus, merely pressing the enlargement button **10**A allows the icons (Ia, Ib, ≅≅≅) on an image of the desktop (DT) to be easily displayed with enlargement.

[0063] Reference is next made to FIGS. **10**A and **10**B to describe the operation and processing of reducing the icons on an image of the desktop.

[0064] On the display screen of the display device **121** shown in FIG. **10**A, the user clicks on an image of the desktop (DT) with the mouse cursor (mc) put on an image of the desktop to make it active and then presses the reduction button **10**B. The keyboard/embedded controller **19** notifies the CPU **11** of the occurrence of an event associated with the button pressing (step S**10** in FIG. **6**). Upon receipt of notification of the occurrence of an event associated with the button pressing from the keyboard/embedded controller **19** (step S**11**), the CPU **11** searches for the active window (wa) pointed to by the mouse cursor (mc) (step S**12**) and identifies it (step S**13**). Here, the active window is the desktop (DT) configured such that icons can be enlarged or reduced in size (Yes in step S**14**). Therefore, the display size held in the registry for icons (Ia, Ib, ≅≅≅) on an image of the desktop is changed by a fixed reduction ratio with the result that the icons are displayed with reduction (step S**15**). A reduction display of the icons on an image of the desktop is illustrated in FIG. **10**B.

[0065] Thus, merely pressing the reduction button **10**B allows the icons (Ia, Ib, ≅≅≅) on an image of the desktop (DT) to be easily displayed with reduction.

[0066] According to the present embodiment, manipulating operation member assigned predetermined functions allows a window in the active state to be searched for and only images within the active window (of the multiple windows appearing on screen, the window appearing in front of the others) to be displayed with enlargement or reduction through processing function of changing the display form of the searched window. Moreover, the use of single operation member allows either images on an image of the desktop or images within the active window to be selectively displayed with enlargement or reduction.

[0067] Although the embodiment has been described as using the enlargement button **10**A or the reduction button **10**B mounted to the top of the computer body **1** to display the contents of the active window or the icons on an image of the desktop with enlargement or reduction, this is not restrictive. Other operation member than the enlargement and reduction buttons **10**A and **10**B may be used. For example, it is also possible to cause such an enlargement/reduction operating window **71** as shown in FIG. **11** to appear by clicking the right-hand button of the mouse on the inside of the active window (wc) or on an image of the desktop and then click an enlargement button **72**A or a reduction button **72**B within that window **71**. By doing so, the contents of the active window or the icons on an image of the desktop can be displayed with enlargement or reduction as in the embodiment. Alternatively, as shown in FIG. **12**, an enlargement/reduction dial **75** may be provided on the operation member **5** on the top of the computer body in place of the enlargement button **72**A and the reduction button **72**B. In this case, it will become possible to continuously enlarge or reduce the contents of the active window or the icons on an image of the desktop. Further, the functions of the enlargement button **10**A and the reduction button **10**B may be assigned to specific individual keys or combinations of specific keys on the keyboard **20**.

[0068] The embodiment has been described in terms of processing of enlarging or reducing the contents of the active window or the icons on an image of the desktop through the use of the enlargement button **10**A or the reduction button **10**B. For applications having a display processing function (processing routine) other than the zooming function, the enlargement button **10**A and the reduction button **10**B may be used to perform that display processing function.

[0069] While the description above refers to particular embodiments of the present invention, it will be understood that many modifications may be made without departing from the spirit thereof. The accompanying claims are intended to cover such modifications as would fall within the true scope and spirit of the present invention. The presently disclosed embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims, rather than the foregoing description, and all changes that come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

1-16. (canceled)

17. A data processing apparatus comprising:

a display configured to display window screens on a desktop screen;

a first memory configured to store information specifying an application capable of performing an enlargement or reduction of display;

a second memory configured to store information indicating a relationship among the application and the window screens and the desktop screen;

an operation module configured to be operated to issue an instruction to perform an enlargement or reduction of display;

a determination module configured to determine, whether a current application displaying an active window when the operation module issues the instruction is capable of performing an enlargement or reduction of display, based on the information in the first memory and the second memory; and

a processor configured to instruct the current application to perform an enlargement or reduction of the active window in response to one operation of the operation module when the current application displaying the active window is capable of performing an enlargement or reduction of display, and to instruct the current application to perform an enlargement or reduction of the desktop screen in response to one operation of the operation

module when the desktop screen is active when the operation module issues the instruction.

18. The data processing apparatus of claim **17**, wherein the operation module comprises a hardware member mounted on a housing of the data processing apparatus.

19. The data processing apparatus of claim **18**, wherein the hardware member comprises a button for issuing an instruction to perform an enlargement or reduction of display by a predetermined magnification in response to the one operation of the operation module.

20. The data processing apparatus of claim **18**, wherein the hardware member comprises a dial for issuing an instruction to perform an enlargement or reduction of display by a variable magnification.

21. The data processing apparatus of claim **17**, wherein the operation module comprises an icon displayed in the active window, the icon issuing an instruction to perform an enlargement or reduction of display by a predetermined magnification in response to the one operation of the icon.

22. The data processing apparatus of claim **21**, wherein the icon comprises an enlargement icon and a reduction icon.

23. A data processing method comprising:

displaying window screens on a desktop screen;

issuing an instruction to perform an enlargement or reduction of display by operating an operation module;

determining, whether a current application displaying an active window when the operation module issues the instruction is capable of performing an enlargement or reduction of display, based on information in a first memory and a second memory, wherein the first memory stores information specifying an application capable of performing an enlargement or reduction of display and the second memory stores information indicating a relationship among the application and the window screens and the desktop screen;

instructing the current application to perform an enlargement or reduction of the active window in response to one operation of the operation module when the current application displaying the active window is capable of performing an enlargement or reduction of display; and

instructing the current application to perform an enlargement or reduction of the desktop screen in response to one operation of the operation module when the desktop screen is active when the operation module issues the instruction.

24. The data processing method of claim **23**, wherein the operation module comprises a hardware member mounted on a housing of a data processing apparatus.

25. The data processing method of claim **24**, wherein the hardware member comprises a button for issuing an instruction to perform an enlargement or reduction of display by a predetermined magnification in response to the one operation of the operation module.

26. The data processing method of claim **24**, wherein the hardware member comprises a dial for issuing an instruction to perform an enlargement or reduction of display by a variable magnification.

27. The data processing method of claim **23**, wherein the operation module comprises an icon displayed in the active window, the icon issuing an instruction to perform an enlargement or reduction of display by a predetermined magnification in response to the one operation of the icon.

28. The data processing method of claim **27**, wherein the icon comprises an enlargement icon and a reduction icon.

* * * * *