Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).
Description

TECHNICAL FIELD

[0001] The embodiments of the present invention are directed to a mobile terminal and a method of controlling the mobile terminal, and more specifically to a mobile terminal and a method of controlling the mobile terminal, which can set a virtual area adjacent to a display area and control an item selected according to an attribute of the virtual area.

DISCUSSION OF THE RELATED ART


[0003] Terminals can be categorized as mobile terminals and stationary terminals. The mobile terminals can be further comprised of handheld terminals and vehicle mount terminals according to whether users can personally carry the terminals. Conventional terminals including mobile terminals provide an increasing number of complex and various functions.


[0005] In particular, US 2009/064055 A1 discloses a mobile terminal comprising a touch screen configured to display a display area and a controller configured to control the touch screen. Said controller is configured to:

- display a first background screen comprising one or more items on the display area; and
- receive, via the touch screen, a touch input dragging the display area to shift the first background screen to a second background screen. A page indicator indicates where the second background screen being currently displayed is located among a plurality of background screens. The controller is also configured to display, adjacent to the display area, a menu bar area in which items are displayed. Items can be moved from the display area into the menu bar and back.

SUMMARY

[0006] The present invention relates to a mobile terminal and a method of controlling the mobile terminal as set out in claims 1 and 8, respectively.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain the principle of the invention.

Fig. 1 is a block diagram of a mobile terminal according to an embodiment of the present invention; Fig. 2 is a flowchart illustrating an operation of the mobile terminal shown in Fig. 1; Figs. 3A and 3B illustrate an example of initiating an editing mode as described in connection with Fig. 2; Fig. 4 is a view illustrating an exemplary virtual area of the mobile terminal shown in Fig. 1; Figs. 5 to 7 are views illustrating examples of using virtual areas of the mobile terminal as shown in Fig. 1; Fig. 8 is a view illustrating another example of initiating an editing mode by the mobile terminal as shown in Fig. 1; Figs. 9 to 11 are views illustrating various exemplary virtual areas of the mobile terminal shown in Fig. 1; Figs. 12A and 12B are views illustrating arrangements of virtual areas as the mobile terminal shown in Fig. 1 rotates; Figs. 13 to 19 are views illustrating operations of buffer areas of the mobile terminal shown in Fig. 1; Figs. 20 to 24 are view illustrating operation of a management area of the mobile terminal shown in Fig. 1; Figs. 25 to 27 are views illustrating operations of a lock screen area of the mobile terminal shown in Fig. 1; and Figs. 28 to 30 are views illustrating operations of a hidden area of the mobile terminal shown in Fig. 1.

DETAILED DESCRIPTION

[0008] The present invention will now be described more fully with reference to the accompanying drawings, in which exemplary embodiments of the invention are shown. The invention may, however, be embodied in many different forms and should not be construed as being limited to the embodiments set forth herein; rather, there embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the concept of the invention to those skilled in the art.

[0009] Hereinafter, a mobile terminal relating to the present invention will be described below in more detail with reference to the accompanying drawings. In the following description, suffixes "module" and "unit" are given to components of the mobile terminal in consideration of only facilitation of description and do not have meanings or functions discriminated from each other.

[0010] The mobile terminal described in the specification can include a cellular phone, a smart phone, a laptop computer, a digital broadcasting terminal, personal dig-
digital assistants (PDA), a portable multimedia player (PMP), a navigation system and so on.

Fig. 1 is a block diagram of a mobile terminal 100 according to an embodiment of the present invention. Other embodiments, configurations and arrangements may also be provided. As shown, the mobile terminal 100 may include a radio communication unit 110, an audio/video (A/V) input unit 120, a user input unit 130, a sensing unit 140, an output unit 150, a memory 160, an interface 170, a controller 180, and a power supply 190. Not all of the components shown in Fig. 1 may be essential parts and the number of components included in the mobile terminal 100 may be varied. The components of the mobile terminal 100 will now be described.

The broadcasting receiving module 111 may receive digital broadcasting signals and/or broadcasting related information from an external broadcasting management server through a broadcasting channel. The broadcasting channel may include a satellite channel and a terrestrial channel, and the broadcasting management server may be a server that generates and transmits broadcasting signals and/or broadcasting related information and/or a server that receives previously created broadcasting signals and/or broadcasting related information and transmits the broadcasting signals and/or broadcasting related information to a terminal.

The broadcasting signals may include not only TV broadcasting signals, radio broadcasting signals, and data broadcasting signals but also signals in the form of a combination of a TV broadcasting signal and a radio broadcasting signal. The broadcasting related information may be information on a broadcasting channel, a broadcasting program or a broadcasting service provider, and may be provided even through a mobile communication network. In the latter case, the broadcasting related information may be received by the mobile communication module 112.

The broadcasting related information may exist in various forms. For example, the broadcasting related information may exist in the form of an electronic program guide (EPG) of a digital multimedia broadcasting (DMB) system or in the form of an electronic service guide (ESG) of a digital video broadcast-handheld (DVB-H) system. The broadcasting receiving module 111 may receive broadcasting signals using various broadcasting systems. More particularly, the broadcasting receiving module 111 may receive digital broadcasting signals using digital broadcasting systems such as a digital multimedia broadcasting-terrestrial (DMB-T) system, a digital multimedia broadcasting-satellite (DMB-S) system, a media forward link only (MediaFLO) system, a DVB-H and integrated services digital broadcast-terrestrial (IS-DB-T) systems. The broadcasting receiving module 111 may receive signals from broadcasting systems providing broadcasting signals other than the above-described digital broadcasting systems.

The broadcasting signals and/or broadcasting related information received through the broadcasting receiving module 111 may be stored in the memory 160. The mobile communication module 112 may transmit/receive a radio signal to/from at least one of a base station, an external terminal and a server on a mobile communication network. The radio signal may include a voice call signal, a video telephony call signal or data in various forms according to transmission and reception of text/multimedia messages.

The wireless Internet module 113 may correspond to a module for wireless Internet access and may be included in the mobile terminal 100 or may be externally attached to the mobile terminal 100. Wireless LAN (WLAN or Wi-Fi), wireless broadband (WiBro), world interoperability for microwave access (Wimax), high speed downlink packet access (HSDPA) and so on may be used as a wireless Internet technique.

The local area communication module 114 may correspond to a module for local area communication. Further, Bluetooth®, radio frequency identification (RFID), infrared data association (IrDA), ultra wideband (UWB) and/or ZigBee® may be used as a local area communication technique.

The location information module 115 may confirm or obtain the position of the mobile terminal 100. The position information module 115 may obtain position information by using a global navigation satellite system (GNSS). The GNSS is a terminology describing a radio navigation satellite system that revolves around the earth and transmits reference signals to predetermined types of radio navigation receivers such that the radio navigation receivers can determine their positions on the earth’s surface or near the earth’s surface. The GNSS may include a global positioning system (GPS) of the United States, Galileo of Europe, a global orbiting navigational satellite system (GLONASS) of Russia, COMPASS of China, and a quasi-zenith satellite system (QZSS) of Japan among others.

A global positioning system (GPS) module is a representative example of the location information module 115. The GPS module 115 may calculate information on distances between one point or object and at least three satellites and information on a time when the distance information is measured and apply trigonometry to the obtained distance information to obtain three-dimensional position information on the point or object according to latitude, longitude and altitude at a predetermined time.

A method of calculating position and time infor-
position information. In addition, the GPS module 115 may also be used. In addition, the GPS module 115 may continuously calculate the current position in real time and calculate velocity information using the location or position information.

[0023] As shown in Fig. 1, the A/V input unit 120 may input an audio signal or a video signal and include a camera 121 and a microphone 122. The camera 121 may process image frames of still images or moving images obtained by an image sensor in a video telephony mode or a photographing mode. The processed image frames may be displayed on a display 151 which may be a touch screen.

[0024] The image frames processed by the camera 121 may be stored in the memory 160 or may be transmitted to an external device through the radio communication unit 110. The mobile terminal 100 may also include at least two cameras 121.

[0025] The microphone 122 may receive an external audio signal in a call mode, a recording mode or a speech recognition mode and process the received audio signal into electric audio data. The audio data may then be converted into a form that can be transmitted to a mobile communication base station through the mobile communication module 112 and output in the call mode. The microphone 122 may employ various noise removal algorithms (or noise canceling algorithm) for removing or reducing noise generated when the external audio signal is received.

[0026] The user input unit 130 may receive input data for controlling operation of the mobile terminal 100 from a user. The user input unit 130 may include a keypad, a dome switch, a touch pad (constant voltage/capacitance), a jog wheel, a jog switch and so on.

[0027] The sensing unit 140 may sense a current state of the mobile terminal 100, such as an open/close state of the mobile terminal, a position of the mobile terminal 100, a direction of the mobile terminal 100, and acceleration/deceleration of the mobile terminal 100, and generate a sensing signal for controlling operation of the mobile terminal 100. For example, in case of a slide phone, the sensing unit 140 may sense whether the slide phone is opened or closed. Further, the sensing unit 140 may sense whether the power supply 190 supplies power and/or whether the interface 170 is connected to an external device. The sensing unit 140 may also include a posture detection sensor 141.

[0028] The output unit 150 may generate visual, auditory and/or tactile output and may include the display 151, an audio output module 152, an alarm 153 and a haptic module 154. The display 151 may display information processed by the mobile terminal 100. The display 151 may display a user interface (UI) or a graphic user interface (GUI) related to a telephone call when the mobile terminal 100 is in the call mode. The display 151 may also display a captured and/or received image, a UI or a GUI when the mobile terminal 100 is in the video telephony mode or the photographing mode.

[0029] In addition, the display 151 may include at least one of a liquid crystal display, a thin film transistor liquid crystal display, an organic light-emitting diode display, a flexible display and a three-dimensional display. Some of these displays may be of a transparent type or a light transmissive type. That is, the display 151 may include a transparent display.

[0030] The transparent display may include a transparent liquid crystal display. The rear structure of the display 151 may also be of a light transmissive type. Accordingly, a user may see an object located behind the body of the mobile terminal 100 through the transparent area of the body of the mobile terminal 100 that is occupied by the display 151.

[0031] The mobile terminal 100 may also include at least two displays 151. For example, the mobile terminal 100 may include a plurality of displays 151 that are arranged on a single face at a predetermined distance or integrated displays. The plurality of displays 151 may also be arranged on different sides.

[0032] Further, when the display 151 and a sensor sensing touch (hereafter referred to as a touch sensor) form a layered structure that is referred to as a touch screen, the display 151 may be used as an input device in addition to an output device. The touch sensor may be in the form of a touch film, a touch sheet, and a touch pad, for example.

[0033] The touch sensor may convert a variation in pressure applied to a specific portion of the display 151 or a variation in capacitance generated at a specific portion of the display 151 into an electric input signal. The touch sensor may sense pressure of touch as well as position and area of the touch.

[0034] When the user applies a touch input to the touch sensor, a signal corresponding to the touch input may be transmitted to a touch controller. The touch controller may then process the signal and transmit data corresponding to the processed signal to the controller 180. Accordingly, the controller 180 may detect a touched portion of the display 151.

[0035] The proximity sensor 141 of the sensing unit 140 may be located in an internal region of the mobile terminal 100, surrounded by the touch screen, or near the touch screen. The proximity sensor 141 may sense an object approaching a predetermined sensing face or an object located near the proximity sensor using an electromagnetic force or infrared rays without having mechanical contact. The proximity sensor 141 may have a lifetime longer than a contact sensor and may thus have a wide application in the mobile terminal 100.

[0036] The proximity sensor 141 may include a transmission type photo-electric sensor, a direct reflection type photo-electric sensor, a mirror reflection type photo-electric sensor, a high-frequency oscillating proximity sensor, a capacitive proximity sensor, a magnetic proximity sensor, and/or an infrared proximity sensor. A ca-
pactive touch screen may be constructed such that prox-
imity of a pointer is detected through a variation in an
electric field according to the proximity of the pointer. The
touch screen (touch sensor) may be classified as a prox-
imity sensor 141.

[0037] For ease of convenience of explanation, an ac-
tion of the pointer approaching the touch screen without
actually touching the touch screen may be referred to as
a proximity touch and an action of bringing the pointer
into contact with the touch screen may be referred to as
a contact touch. The proximity touch point of the pointer
on the touch screen may correspond to a point of the
touch screen at which the pointer is perpendicular to the
touch screen.

[0038] The proximity sensor 141 may sense the prox-
imity touch and a proximity touch pattern (e.g., a proximity
touch distance, a proximity touch direction, a proximity
touch velocity, a proximity touch time, a proximity touch
position, a proximity touch moving state, etc.). Informa-
tion corresponding to the sensed proximity touch action
and proximity touch pattern may then be displayed on
the touch screen.

[0039] The audio output module 152 may output audio
data received from the radio communication unit 110 or
stored in the memory 160 in a call signal receiving mode,
a telephone call mode or a recording mode, a speech
recognition mode and a broadcasting receiving mode.
The audio output module 152 may output audio signals
related to functions, such as a call signal incoming tone
and a message incoming tone, performed in the mobile
terminal 100. The audio output module 152 may include
a receiver, a speaker, a buzzer, and the like. The audio
output module 152 may output sounds through an ear-
phone jack. The user may hear the sounds by connecting
an earphone to the earphone jack.

[0040] The alarm 153 may output a signal for indicating
generation of an event of the mobile terminal 100. For
example, alarms may be generated when receiving a call
signal, receiving a message, inputting a key signal, or
inputting touch. The alarm 153 may also output signals
in forms different from video signals or audio signals, for
example, a signal for indicating generation of an event
through vibration. The video signals or the audio signals
may also be output through the display 151 or the audio
output module 152.

[0041] The haptic module 154 may generate various
haptic effects that the user can feel. One example of the
haptic effects is vibration. The intensity and/or pattern
of vibration generated by the haptic module 154 may also
be controlled. For example, different vibrations may be
combined and output or may be sequentially output.

[0042] The haptic module 154 may generate a variety
of haptic effects including an effect of stimulus according
to an arrangement of pins vertically moving against a
contact skin surface, an effect of stimulus according to a
jet force or sucking force of air through a jet hole or a
sucking hole, an effect of stimulus of rubbing the skin, an
effect of stimulus according to contact of an electrode,
an effect of stimulus using an electrostatic force, and an
effect according to a reproduction of cold and warmth
using an element capable of absorbing or radiating heat
in addition to vibrations.

[0043] The haptic module 154 may not only transmit
haptic effects through direct contact but may also allow
the user to feel haptic effects through a kinesthetic sense
of the user's fingers or arms. The mobile terminal 100
may also include a plurality of haptic modules 154.

[0044] The memory 160 may store a program for op-
eration of the controller 180 and temporarily store input/
output data such as a phone book, messages, still
images, and/or moving images. The memory 160 may
also store data about vibrations and sounds in various
patterns that are output from when a touch input is applied
to the touch screen.

[0045] The memory 160 may include at least a flash
memory, a hard disk type memory, a multimedia card
micro type memory, a card type memory, such as SD or
XD memory, a random access memory (RAM), a static
RAM (SRAM), a read-only memory (ROM), an electrically
erasable programmable ROM (EEPROM), a program-
table ROM (PROM) magnetic memory, a magnetic disk
or an optical disk. The mobile terminal 100 may also op-
erate in relation to a web storage performing the storing
function of the memory 160 on the Internet.

[0046] The interface 170 may serve as a path to exter-
nal devices connected to the mobile terminal 100. The
interface 170 may receive data from the external devices
or power and transmit the data or power to internal com-
ponents of the mobile terminal 100 or transmit data of
the mobile terminal 100 to the external devices. For ex-
ample, the interface 170 may include a wired/wireless
headset port, an external charger port, a wired/wireless
data port, a memory card port, a port for connecting a
device having a user identification module, an audio I/O
port, a video I/O port, and/or an earphone port.

[0047] The interface 170 may also interface with a user
identification module that is a chip that stores information
for authenticating authority to use the mobile terminal
100. For example, the user identification module may be
a user identify module (UIM), a subscriber identify mod-
ule (SIM) and a universal subscriber identify module
(USIM). An identification device including the user iden-
tification module may also be manufactured in the form
of a smartcard. Accordingly, the identification device may
be connected to the mobile terminal 100 through a port
of the interface 170.

[0048] The interface 170 may also be a path through
which power from an external cradle is provided to the
mobile terminal 100 when the mobile terminal 100 is con-
nected to the external cradle or a path through which
various command signals input by the user through the
cradle are transmitted to the mobile terminal 100. The
various command signals or power input from the cradle
may be used as signals for confirming whether the mobile
terminal 100 is correctly set in the cradle.

[0049] The controller 180 may control overall opera-
The controller 180 may perform a pattern recognition process capable of recognizing handwriting input or picture-drawing input applied to the touch screen as characters or images. The power supply 190 may receive external power and internal power and provide power required for operations of the components of the mobile terminal 100 under control of the controller 180.

[0050] The controller 180 may perform a pattern recognition process capable of recognizing handwriting input or picture-drawing input applied to the touch screen as characters or images. The power supply 190 may receive external power and internal power and provide power required for operations of the components of the mobile terminal 100 under control of the controller 180. The controller 180, in the editing mode, may set a first area having a different attribute from an attribute of a second area at a periphery of the display 151. As described above, the virtual areas may have different attributes from each other. Unless otherwise stated, the set area is referred to as a "virtual area".

When a touch input is present (S30), a step of obtaining a direction of the touch input is performed (S40). When the virtual area may be located at, at least, one of upper, lower, left, and right sides of the current screen. Accordingly, it may be needed to obtain not only a touch operation of selecting a specific item but also a direction of a touch stroke included in the touch operation. A step SS0 may be performed to move a selected item to an area corresponding to the obtained direction of the touch input. A step may be selected upon a user's entry of a touch down operation. For example, when an upper portion of an item displayed at a specific location, the touch item may be selected.

When the item is selected by the touch down operation, the user may perform an operation of dragging the item along a specific direction. For example, after selecting an item located at a center of the screen by a touch down operation, a user may drag the item to an upper portion of the display 151. The moved area may be any one of virtual areas outside a display area of the display 151. As described above, the virtual areas may have different attributes from an attribute of the current display area. Further, the virtual areas may have different attributes from each other.

The controller 180 may perform a step of initiating an editing mode (S10).

According to software implementation, embodiments of the present disclosure may be implemented using at least one of application specific integrated circuits (ASICs), digital signal processors (DSPs), digital signal processing devices (DSPDs), programmable logic devices (PLDs), field programmable gate arrays (FPGAs), processors, controllers, micro-controllers, micro-processors, and/or electrical units for executing functions. The embodiments may be implemented by the controller 180.

According to software implementation, embodiments such as procedures or functions may be implemented with a separate software module executing at least one function or operation. Software codes may be implemented according to a software application written in an appropriate software language. The software codes may be stored in the memory 160 and executed by the controller 180.

Referring to Fig. 2, the controller 180 of the mobile terminal 100 may perform an editing mode that may be initiated when an editing mode is activated will be specifically described in relevant part below.

The items may be icons. The icons may correspond to predetermined applications, respectively. For example, when a certain icon is selected, an application corresponding to the selected icon may be performed.

The controller 180 may perform a function corresponding to an attribute of a virtual area into which the item has been moved. For example, when the item is moved into a buffer area, the controller 180 may perform an operation of temporarily storing the item until a subsequent operation is entered.

When the item is selected by the touch down operation, the user may perform an operation of dragging the item along a specific direction. For example, after selecting an item located at a center of the screen by a touch down operation, a user may drag the item to an upper portion of the display 151.

The items may be icons that may display states of the mobile terminal 100. For example, the controller 180 may perform control and processing for voice communication, data communication and/or video telephony. The controller 180 may include the multimedia module 181 for playing multimedia. The multimedia module 181 may be included in the controller 180 as shown in Fig. 1 or may be separated from the controller 180.

The display screen may be divided into a plurality of sub areas having different attributes from each other. Unless otherwise stated, the set area is referred to as a "virtual area".
terminal 100 and/or obtained data. For example, when messages are received, the number of the messages may be displayed on a widget.

[0072] The items may be contents. Each item may be an image file, a video file, and a sound file. In the case that an item is an image file, when a user selects the item, the image may be displayed on the entire screen of the display 151.

[0073] As shown in Fig. 3B, a user may perform a long touch on a predetermined point on the display 151 using his finger F. When the long touch is performed on the predetermined point, the controller 180 may initiate the editing mode. For example, it may be preset that when keeping a touch on a space without the items for a predetermined time, the editing mode is initiated.

[0074] Fig. 4 is a view illustrating an exemplary virtual area of the mobile terminal shown in Fig. 1.

[0075] Referring to Fig. 4, the controller 180 of the mobile terminal 100 may set virtual areas surrounding a current screen area O.

[0076] The current screen area O may be an area that is displayed on the display 151 until entry into an editing mode. The current screen area O may display contents that have been displayed upon entry of the editing mode.

[0077] The controller 180 may display virtual areas surrounding the current screen area O. The virtual areas include a buffer area B, a management area M, a lock screen area L, and a hidden area H. The buffer area B, the management area M, the lock screen area L, and the hidden area H may be respectively positioned at an upper portion, a left portion, a right portion, and a lower portion of the current screen area O.

[0078] The virtual areas may be conceptually positioned at those locations. For example, simultaneously with entry into the editing mode, the virtual areas may not be displayed on the display 151. For example, as described above, when entry into the editing mode is made by performing a long touch on a specific point of the display 151, the screen changes to display the virtual areas including the buffer area B on the display 151 while keeping the screen displayed as is. For example, despite the entry into the editing mode, the buffer area B, the management area M, the lock screen area L, and the hidden area H may not be explicitly displayed on the display 151.

[0079] Figs. 5 to 7 are views illustrating examples of using virtual areas of the mobile terminal as shown in Fig. 1.

[0080] Referring to Figs. 5 to 7, the controller 180 of the mobile terminal 100 may perform an operation of moving a specific item into a virtual area in response to a user’s touch input.

[0081] As shown in Fig. 5A, a user may select a specific item using his finger F.

[0082] As shown in Fig. 5B, the user may form a touch trajectory TF in a certain direction. For example, a touch operation of dragging the selected item upward may be performed.

[0083] As shown in Fig. 6, as the user’s touch trajectory TF approaches an upper border which is an upper portion of the display 151, the controller 180 may expose part of a virtual area positioned along the direction to the user. For example, when the user’s touch approaches the upper border, part of a preview area PV may be exposed. When the preview area PV is displayed, the user may visually identify, in advance, what attribute the virtual area corresponding to the dragged direction has. Accordingly, an unwanted virtual area may be previously prevented from being operated due to errors or malfunctions.

[0084] As shown in Fig. 7, the item selected and moved by the user may be located in a corresponding virtual area. The controller 180 may move ITEM 5 selected by the user’s touch operation from the current screen area to the buffer area B and display ITEM5 on the buffer area B.

[0085] The controller 180 may relocate ITEM6 in the buffer area B and display part or whole of a virtual area including the buffer area B on the display 151. For example, it can be visually displayed in which virtual area an item is relocated.

[0086] Fig. 8 is a view illustrating another example of initiating an editing mode by the mobile terminal as shown in Fig. 1.

[0087] Referring to Fig. 8, the controller 180 of the mobile terminal 100 may initiate an editing mode upon a user’s specific touch operation.

[0088] The user may touch the display 151 using his first and second fingers F1 and F2. The touch operation using the first and second fingers F1 and F2 may include a touch that has the first and second fingers F1 and F2 close to each other. Upon entry of a multi touch having the fingers F1 and F2 close to each other, the controller 180 may initiate an editing mode.

[0089] Figs. 9 to 11 are views illustrating various exemplary virtual areas of the mobile terminal shown in Fig. 1.

[0090] As shown in Figs. 9 to 11, the controller 180 of the mobile terminal 100 may set virtual areas by various methods.

[0091] As shown in Fig. 9A, virtual areas may be located surrounding a current screen area O.

[0092] As shown in Fig. 9B, virtual areas may be stacked over a current screen area O. For example, the current screen area O is located at a lowermost part, and a hidden area H, a lock screen area L, a management area M, and a buffer area B may be sequentially set over the current screen area O.

[0093] The controller 180 may selectively display the virtual areas. For example, while displaying the current screen area O under the current circumstance, the controller 180 may sequentially display the virtual areas.

[0094] As shown in Fig. 10A, a virtual area may be set to be located only over a current screen area O. For example, a first virtual area A1 may be set to be located over and adjacent to the current screen area O.

[0095] As shown in Fig. 10B, virtual areas may be re-
spectively set to be located under and over a current screen area O. For example, first and second virtual areas A1 and A2 may be respectively set to be located over and under the current screen area O and adjacent to the current screen area O.

[0096] As shown in Fig. 10C, virtual areas may be set to be located over diagonal lines extending from a current screen area O. For example, in addition to the first and second virtual areas A1 and A2 as shown in Fig. 2B, third and fourth virtual areas A3 and A4 may be set to be located over diagonal lines extending from the current screen area O. In other words, the third and fourth virtual areas A3 and A4 may be positioned at left and right sides of the first virtual area A1.

[0097] As shown in Fig. 10D, virtual areas may be set to be located adjacent to and surrounding a current screen area O. For example, first to eighth virtual areas A1 to A8 may be set to be located adjacent to the current screen area O.

[0098] As shown in Fig. 11, virtual areas may be set to be located in a shape of a cube CB. For example, virtual areas may be set to be located on respective corresponding surfaces of the cube CB or located on some surfaces of the cube CB.

[0099] In response to a user's drag touch operation, the controller 180 may rotate the cube CB. A user may rotate the cube CB so that a desired surface is displayed. Further, the user may relocate an item from a surface of the cube CB to another surface of the cube CB.

[0100] Figs. 12A and 12B are views illustrating arrangements of virtual areas as the mobile terminal shown in Fig. 1 rotates.

[0101] Referring to Fig. 12, the controller 180 of the mobile terminal 100 may adjust the locations of the virtual areas depending on a rotational direction of the mobile terminal 100.

[0102] As shown in Fig. 12A, when the mobile terminal 100 stays upright, the controller 180 may respectively set a buffer area, a hidden area H, a lock screen area L, and a management area M at an upper side, a lower side, a right side, and a left side of a current screen area O.

[0103] The arrangement of the virtual areas may be pre-set or properly adjusted by a user.

[0104] As shown in Fig. 12B, when the mobile terminal 100 lies down, the controller 180 may maintain the locations of the virtual areas when the mobile terminal 100 stays upright. For example, irrespective of the rotation of the mobile terminal 100, the virtual areas may be positioned at predetermined locations, respectively.

[0105] As shown in Fig. 12C, when the mobile terminal 100 lies down, the controller 180 may rotate the locations of the virtual areas to correspond to the direction of the rotation of the 100. For example, when the mobile terminal 100 rotates clockwise, the virtual areas may also rotate sequentially clockwise.

[0106] Figs. 13 to 19 are views illustrating operations of buffer areas of the mobile terminal shown in Fig. 1.

[0107] Referring to Figs. 13 to 19, the controller 180 of the mobile terminal 100 may perform an operation corresponding to a user's touch on a set buffer area B.

[0108] As shown in Fig. 13A, the display 151 may display a current screen area O and virtual areas B, L, H, and M. The virtual areas B, L, H, and M may be displayed on the display 151 together with the current screen area O. Alternatively, some of the virtual areas B, L, H, and M may be displayed together with the current screen area O or only certain parts of the virtual areas B, L, H, and M may be displayed.

[0109] As shown in Fig. 13B, a user may perform a touch operation of touching a specific item using his finger F and dragging the item into the buffer area B. The user may drag a plurality of items one by one or may select and drag the plurality of items at once.

[0110] As shown in Fig. 14A, the moved items may be located in the buffer area B.

[0111] As shown in Fig. 14B, the user may perform a touch operation of dragging a current screen area O in a left direction. The touch operation of dragging the current screen area O in the left direction may correspond to a function of shifting the current screen area O to another background screen.

[0112] As shown in Fig. 15A, a background screen of another page may be displayed on a current screen area O of the display 151. This may be intuitively recognized by a page indicator PI indicating at what position the background screen being currently displayed is located among a plurality of background screens.

[0113] As shown in Fig. 15B, a user may select a desired item of items relocated in the buffer area B and drag the selected item into the current screen area O.

[0114] As shown in Fig. 16, the item dragged by the user may be relocated in the current screen area O and displayed.

[0115] Applying a method of temporarily moving an item in the buffer area and then relocating into a desired page may reduce a chance of malfunction and increase convenience in manipulation compared to the prior art of moving items one by one.

[0116] As shown in Fig. 17A, another item may be dragged to overlap the item located in the buffer area B. For example, a user may perform a touch operation of dragging and dropping ITEM5 on ITEM4 located in the buffer area B.

[0117] As shown in Fig. 17B, when a drag is performed to overlap items, the overlapping items may generate a group or a folder. The name of the generated group may vary with attributes of the overlapping items.

[0118] As shown in Fig. 18A, items selected and relocated by a user may be positioned in the buffer area B. An email application may be executed in the current screen area O.

[0119] As shown in Fig. 18B, a user may perform a touch operation of selecting a specific item among items in the buffer area B and dragging and dropping the selected item in the current screen area O.

[0120] As shown in Fig. 19, when the user selects the
specific item and drags and drops the selected item in the current screen area, the item may become an attached file Al for an email.

[0121] The application executed in the current screen area O may be a picture view application, so that when an item in the buffer area B is dragged and dropped in the current screen area O, the item may be viewed by the picture view application.

[0122] The application executed in the current screen area O may be an mp3 player application, so that when an item in the buffer area B is dragged and dropped in the current screen area O, the item may be played by the mp3 player application.

[0123] By dragging and dropping an item from the buffer area B to the current screen area O, an operation associated with a specific application may be performed thus providing convenience of manipulation, such as attaching files.

[0124] Figs. 20 to 24 are view illustrating operation of a management area of the mobile terminal shown in Fig. 1.

[0125] Referring to Figs. 20 to 24, the controller 180 of the mobile terminal 100 may effectively manage, for example, background screens through the management area M.

[0126] As shown in Fig. 20, a user may perform a drag touch operation of selecting a specific item and moving the selected item leftward.

[0127] As shown in Fig. 21, when the user’s drag touch operation is performed, the controller 180 may display the management area M on the display 151.

[0128] The management area M may be an area for displaying each background screen and/or each application in execution of the mobile terminal 100. Each background screen and/or each application in execution may be displayed in the shape of panels.

[0129] The management area M may display a current state of the virtual areas. For example, the management area M may display what items are located in the buffer area B, lock screen area L, and hidden area H.

[0130] The management area M may display states of background screens as set, such as background screens 1 to 3. For example, the management area M may display that items 7 and 8 are located in the background 1.

[0131] The management area M may display current states of applications in execution, such as applications 4 to 6. For example, the management area M may display that the applications 4 and 5 in execution are web surfing applications and the application 6 in execution is a picture view application.

[0132] A user may relocate an item from a specific location to another location in the management area M. For example, the user may move the item 1 from the background screen 2 into the buffer area B by a drag and drop touch operation.

[0133] As shown in Fig. 22, it can be seen that the item 1 has been relocated into the buffer area B by the user performing the drag and drop touch operation on the item 1.

[0134] As shown in Fig. 23, each panel in the management area M may display a delete button CI. A panel may be deleted by a user selecting the corresponding delete button CI.

[0135] As shown in Fig. 24, by the user selecting the delete button CI of the background screen 3, the background screen 3 may be deleted.

[0136] The user may delete not only each panel but also each item. For example, by the user performing a long touch on a specific item, the item may be deleted or a menu for deleting the item may be popped up.

[0137] Figs. 25 to 27 are views illustrating operations of a lock screen area of the mobile terminal shown in Fig. 1.

[0138] Referring to Figs. 25 to 27, the controller 180 of the mobile terminal 100 may select items to be displayed on a lock screen through the lock screen area L.

[0139] As shown in Fig. 25, a user may perform an operation of selecting a specific item and dragging the selected item rightwards.

[0140] As shown in Fig. 26, when the mobile terminal 100 is locked, an item ITEM5 selected by the user may be arranged on the display 151.

[0141] In the case of the item ITEM5, the controller 180 may enable the item ITEM5 to be executed immediately when the user selects the item ITEM5 irrespective of whether the mobile terminal 100 is locked. For example, a process of selecting the item ITEM5 after the mobile terminal is unlocked may be omitted.

[0142] As shown in Fig. 27A, a specific application may be in execution. For example, an application for web surfing may be executed. While the application is in execution, a user may relocate the application into a lock screen area L by performing a touch operation of dragging the application in the right direction of the display 151 using his finger F.

[0143] As shown in Fig. 27B, the application relocated in the lock screen may be displayed as a background screen of the lock screen. When the mobile terminal is unlocked, the application may be executed.

[0144] It can be easily performed to set the lock screen by displaying an application being currently executed as a background screen of the lock screen without additional operations and by executing the application when the mobile terminal is unlocked.

[0145] Figs. 28 to 30 are views illustrating operations of a hidden area of the mobile terminal shown in Fig. 1.

[0146] Referring to Figs. 28 to 30, the controller 180 of the mobile terminal 100 may perform a touch operation of selecting a specific item and dragging the selected item in a hidden area H which is located at a lower portion of the display 151, and may restrict access to the specific item.

[0147] As shown in Fig. 29A, a password may need to be entered to enter into the hidden area H, and only when a right password is entered, the hidden area H may be allowed to access.
As shown in Fig. 29B, only when the hidden area is allowed to access, the items in the hidden area H may be displayed.

As shown in Fig. 30, the controller 180 may restrict access to a specific item relocated in the hidden area. For example, to visually express that the specific item relocated in the hidden area has been inactivated, the controller 180 may add hatching to ITEM5. According to an embodiment, the controller 180 may delete the specific item relocated in the hidden area from the display 151.

The above-described method of controlling the mobile terminal may be written as computer programs and may be implemented in digital microprocessors that execute the programs using a computer readable recording medium. The method of controlling the mobile terminal may be executed through software. The software may include code segments that perform required tasks. Programs or code segments may also be stored in a processor readable medium or may be transmitted according to a computer data signal combined with a carrier through a transmission medium or communication network.

A mobile terminal may include a first touch screen configured to display a first object, a second touch screen configured to display a second object, and a controller configured to receive a first touch input applied to the first object and to link the first object to a function corresponding to the second object when receiving a second touch input applied to the second object while the first touch input is maintained.

A method may be provided of controlling a mobile terminal that includes displaying a first object on the first touch screen, displaying a second object on the second touch screen, receiving a first touch input applied to the first object, and linking the first object to a function corresponding to the second object when a second touch input applied to the second object is received while the first touch input is maintained.

Any reference in this specification to "one embodiment," "an embodiment," "example embodiment," etc., means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the invention, as defined by the appended claims. The appearances of such phrases in various places in the specification are not necessarily all referring to the same embodiment.
the fourth touch input.

2. The mobile terminal of claim 1, wherein the display area (O) has a substantially rectangular shape and the location of the buffer area is at an upper portion of the display area (O).

3. The mobile terminal of claim 1, wherein the controller (180) is further configured to control the display (151) to display the buffer area (B) that is adjacent to a border of the display area (O) when a trajectory of a drag of the selected at least one item approaches the border.

4. The mobile terminal of claim 1, wherein the controller (180) is further configured to control the display (151) to change locations of the buffer area (B) according to a rotational direction of the mobile terminal.

5. The mobile terminal of claim 1, wherein the buffer area having an attribute of temporarily storing the selected at least one item and the controller (180) is further configured to associate the selected at least one item with an operation of an application being executed in the display area (O) in response to a received touch input.

6. The mobile terminal of claim 1, wherein the controller is further configured to set a lock screen area (L) adjacent to the display area (O) having an attribute of relocating the selected at least one item into a lock screen and displaying the relocated item and wherein the controller (180) is further configured to control the display (151) to relocate and execute the selected at least one item irrespective of whether the mobile terminal is locked.

7. The mobile terminal of claim 1, wherein the controller is further configured to set a lock screen area (L) having an attribute of relocating the selected at least one item into a lock screen and displaying the relocated item and wherein the controller (180) is further configured to execute the relocated item when the mobile terminal is unlocked.

8. A method of controlling a mobile, the method comprising:

   1. displaying a first background screen comprising one or more items on the display area (O);
   2. setting (S20) a buffer area (B) adjacent to the display area (O) when an editing mode is initiated in response to a first touch input, wherein the buffer area is displayed at an upper portion of the display area (O) comprising the first background screen in the editing mode;
   3. selecting an item from the one or more displayed items comprised in the first background screen according to a second touch input;
   4. controlling the touch screen (151) to relocate the selected item to the buffer area (B) if the buffer area (B) corresponds to a direction of a drag of the second touch input, wherein the selected item is not displayed on the display area based on the second touch input,
   5. receiving, via the touch screen (151), a third touch input dragging the display area (O) to shift the first background screen to a second background screen (O), wherein displaying of the buffer area (B) is maintained while the first background screen is shifted to the second background screen;
   6. displaying the second background screen on the display area (O) of the touch screen, wherein the buffer area (B) comprising the selected item is displayed at the upper portion of the display area (O) comprising the second background screen,
   7. wherein the second background screen comprises a page indicator (PI) indicating where the second background screen being currently displayed is located among a plurality of background screens,
   8. receiving, via the touch screen (151), a fourth touch input dragging the selected item from the buffer area to the second background screen, and
   9. relocating the selected item to the second background screen in response to the fourth touch input, wherein the selected item is not displayed on the buffer area (B) based on the fourth touch input.

Patentansprüche

1. Mobiles Endgerät (100), das aufweist:

   1. einen Berührungsbildschirm (151), der konfiguriert ist, um einen Anzeigebereich (O) anzuzeigen; und
   2. eine Steuerung (180), die konfiguriert ist, um den Berührungsbildschirm (151) zu steuern, wobei die Steuerung (180) ferner konfiguriert ist, um:

   1. einen ersten Hintergrundbildschirm anzuzeigen, der ein oder mehrere Objekte auf dem Anzeigebereich (O) aufweist;
   2. einen Pufferbereich (B) benachbart zu dem Anzeigebereich (O) festzulegen (S20), wenn ansprechend auf eine erste Berührungsseingabe ein Editiermodus eingeleitet wird, wobei der Pufferbereich in einem oberen Abschnitt des Anzeigebereichs (O) an-
gezeigt wird, der in dem Editiermodus den ersten Hintergrundbildschirm aufweist; ein Objekt aus dem einen oder den mehreren angezeigten Objekten, die in dem ersten Hintergrundbildschirm enthalten sind, gemäß einer zweiten Berührungseingabe auszuwählen; den Berührungsbildschirm (151) zu steuern, um das ausgewählte Objekt in den Pufferbereich (B) zu verlagern, wenn der Pufferbereich (B) einer Richtung eines Ziehens der zweiten Berührungseingabe entspricht, wobei das ausgewählte Objekt basierend auf der zweiten Berührungseingabe nicht auf dem Anzeigebereich angezeigt wird, über den Berührungsbildschirm (151) eine dritte Berührungseingabe zu empfangen, die den Anzeigebereich (O) zieht, um den ersten Hintergrundbildschirm auf einen zweiten Hintergrundbildschirm (O) zu verschieben, wobei das Anzeigen des Pufferbereichs (B) aufrechterhalten wird, während der erste Hintergrundbildschirm auf einen zweiten Hintergrundbildschirm verschoben wird; den zweiten Hintergrundbildschirm auf dem Anzeigebereich (O) des Berührungsbildschirms anzuzeigen, wobei der Pufferbereich (B), der das ausgewählte Objekt aufweist, an dem oberen Abschnitt des Anzeigebereichs (O), der den zweiten Hintergrundbildschirm aufweist, angezeigt wird, wobei der zweite Hintergrundbildschirm einen Seitenanzeiger (PI) aufweist, der anzeigt, wo der zweite Hintergrundbildschirm, der gerade angezeigt wird, von mehreren Hintergrundbildschirmen angeordnet ist, über den Berührungsbildschirm (151) eine vierte Berührungseingabe zu empfangen, die das ausgewählte Objekt von dem Pufferbereich zu dem zweiten Hintergrundbildschirm zieht, und das ausgewählte Objekt anzuzeigen, wobei das ausgewählte Objekt basierend auf der vierten Berührungseingabe auf dem Pufferbereich (B) angezeigt wird.

2. Mobiles Endgerät nach Anspruch 1, wobei der Anzeigebereich (O) eine im Wesentlichen rechteckige Form hat und der Ort des Pufferbereichs in einem oberen Abschnitt des Anzeigebereichs (O) ist.

3. Mobiles Endgerät nach Anspruch 1, wobei die Steuerung (180) ferner konfiguriert ist, um die Anzeige (151) zu steuern, um den Pufferbereich (B), der nach einer ersten Ziehung des Anzeigebereichs (O) ist, anzuzeigen, wenn eine Trajektorie eines Ziehens des ausgewählten wenigstens einen Objekts sich dem Rand nähert.

4. Mobiles Endgerät nach Anspruch 1, wobei die Steuerung (180) ferner konfiguriert ist, um die Anzeige (151) zu steuern, um Orte des Pufferbereichs (B) gemäß einer Drehrichtung des mobilen Endgeräts zu ändern.

5. Mobiles Endgerät nach Anspruch 1, wobei der Pufferbereich ein Attribut zum vorübergehenden Speichern des ausgewählten wenigstens einen Objekts hat und die Steuerung (180) ferner konfiguriert ist, um das ausgewählte wenigstens eine Objekt anzuzeigen, auf eine empfangene Berührungseingabe mit einem Betrieb einer Anwendung in Verbindung zu bringen, die gerade in dem Anzeigebereich (O) ausgeführt wird.

6. Mobiles Endgerät nach Anspruch 1, wobei die Steuerung ferner konfiguriert ist, um einen Sperrbildschirmbereich (L) benachbart zu dem Anzeigebereich (O), der ein Attribut zum Verlagern des ausgewählten wenigstens eines Objekts zu einem Sperrbildschirm und Anzeigen des verlagerten Objekts hat, festzulegen, und wobei die Steuerung (180) ferner konfiguriert ist, um die Anzeige (151) zu steuern, um das ausgewählte wenigstens eine Objekt, ungeachtet dessen, ob das mobile Endgerät gesperrt ist, zu verlagern und auszuführen.

7. Mobiles Endgerät nach Anspruch 1, wobei die Steuerung ferner konfiguriert ist, um einen Sperrbildschirmbereich (L), der ein Attribut zum Verlagern des ausgewählten wenigstens einen Objekts in einen Sperrbildschirm und Anzeigen des verlagerten Objekts hat, festzulegen, und wobei die Steuerung (180) ferner konfiguriert ist, um das verlagerte Objekt, auszuführen, wenn das mobile Endgerät entsperrt ist.

8. Verfahren zur Steuerung eines Mobilgeräts, wobei das Verfahren aufweist:

   Anzeigen eines ersten Hintergrundbildschirms, der ein oder mehrere Objekte auf dem Anzeigebereich (O) aufweist;
   Festlegen (S20) eines Pufferbereichs (B) benachbart zu dem Anzeigebereich (O), wenn angesprechend auf eine erste Berührungseingabe ein Editiermodus eingeleitet wird, wobei der Pufferbereich in einem oberen Abschnitt des Anzeigebereichs (O) angezeigt wird, der in dem Editiermodus den ersten Hintergrundbildschirm aufweist;
   Auswählen eines Objekts aus dem einen oder
den mehreren angezeigten Objekten, die in dem ersten Hintergrundbildschirm enthalten sind, gemäß einer zweiten Berührungseingabe; Steuern des Berührungsbildschirms (151), um das ausgewählte Objekt in den Pufferbereich (B) zu verlagern, wenn der Pufferbereich (B) einer Richtung eines Ziehens der zweiten Berührungseingabe entspricht, wobei das ausgewählte Objekt basierend auf der zweiten Berührungseingabe nicht auf dem Anzeigebereich angezeigt wird.

Empfangen einer dritten Berührungseingabe, die den Anzeigebereich (O) zieht, über den Berührungsbildschirm (151), um den ersten Hintergrundbildschirm (151), um den ersten Hintergrundbildschirm auf einen zweiten Hintergrundbildschirm (O) zu verschieben, wobei das Anzeigen des Pufferbereichs (B) aufrechterhalten wird, während der erste Hintergrundbildschirm auf den zweiten Hintergrundbildschirm verschoben wird;

Anzeigen des zweiten Hintergrundbildschirms auf dem Anzeigebereich (O) des Berührungsbildschirms, wobei der Pufferbereich (B), der das ausgewählte Objekt aufweist, an dem oberen Abschnitt des Anzeigebereichs (O), der den zweiten Hintergrundbildschirm aufweist, angezeigt wird,

wobei der zweite Hintergrundbildschirm einen Seitenanzeiger (PI) aufweist, der angezeigt, wo der zweite Hintergrundbildschirm, der gerade angezeigt wird, von mehreren Hintergrundbildschirmen angeordnet ist,

Empfangen einer vierten Berührungseingabe, die das ausgewählte Objekt von dem Pufferbereich zu dem zweiten Hintergrundbildschirm zieht, über den Berührungsbildschirm (151), und

Verlagern des ausgewählten Objekts anschließend auf die vierte Berührungseingabe zu dem zweiten Hintergrundbildschirm, wobei das ausgewählte Objekt basierend auf der vierten Berührungseingabe nicht auf dem Pufferbereich (B) angezeigt wird.

Revendications

1. Terminal mobile (100) comprenant :

un écran tactile (151) configuré pour afficher une zone d'affichage (O) ; et

un dispositif de contrôle (180) configuré pour contrôler l'écran tactile (151),

dans lequel

le dispositif de contrôle (180) est en outre configuré pour :

afficher un premier écran d'arrière-plan comprenant un ou plusieurs éléments sur la zone d'affichage (O) ;

definir (S20) une zone tampon (B) adjacente à la zone d'affichage (O) lorsqu'un mode d'édition est lancé en réponse à une première entrée tactile, dans lequel la zone tampon est affichée au niveau d'une partie supérieure de la zone d'affichage (O) comprenant le premier écran d'arrière-plan dans le mode d'édition ;

sélectionner un élément à partir des un ou plusieurs éléments affichés compris dans le premier écran d'arrière-plan selon une deuxième entrée tactile ;

contrôler l'écran tactile (151) pour repositionner l'élément sélectionné dans la zone tampon (B) si la zone tampon (B) correspond à une direction d'un glissement de la deuxième entrée tactile, dans lequel l'élément sélectionné n'est pas affiché sur la zone d'affichage sur la base de la deuxième entrée tactile, recevoir, par l'intermédiaire de l'écran tactile (151), une troisième entrée tactile faisant glisser la zone d'affichage (O) pour déplacer le premier écran d'arrière-plan jusqu'à un second écran d'arrière-plan (O), dans lequel l'affichage de la zone tampon (B) est maintenu tandis que le premier écran d'arrière-plan est déplacé jusqu'au second écran d'arrière-plan ;

afficher le second écran d'arrière-plan sur la zone d'affichage (O) de l'écran tactile, dans lequel la zone tampon (B) comprenant l'élément sélectionné est affichée au niveau de la partie supérieure de la zone d'affichage (O) comprenant le second écran d'arrière-plan, dans lequel le second écran d'arrière-plan comprend un indicateur de page (PI) indiquant où le second écran d'arrière-plan étant actuellement affiché est situé parmi une pluralité d'écrans d'arrière-plan, recevoir, par l'intermédiaire de l'écran tactile (151), une quatrième entrée tactile faisant glisser l'élément sélectionné de la zone tampon au second écran d'arrière-plan, et repositionner l'élément sélectionné dans le second écran d'arrière-plan en réponse à la quatrième entrée tactile, dans lequel l'élément sélectionné n'est pas affiché sur la zone tampon (B) sur la base de la quatrième entrée tactile.

2. Terminal mobile selon la revendication 1, dans lequel la zone d'affichage (O) a une forme sensiblement rectangulaire et l'emplacement de la zone tampon est au niveau d'une partie supérieure de la zone...
d'affichage (O).

3. Terminal mobile selon la revendication 1, dans lequel le dispositif de contrôle (180) est en outre configuré pour contrôler le dispositif d'affichage (151) pour afficher la zone tampon (B) qui est adjacente à une bordure de la zone d'affichage (O) lorsqu'une trajectoire d'un glissement de l'au moins un élément sélectionné approche de la bordure.

4. Terminal mobile selon la revendication 1, dans lequel le dispositif de contrôle (180) est en outre configuré pour contrôler le dispositif d'affichage (151) pour modifier les emplacements de la zone tampon (B) selon une direction de rotation du terminal mobile.

5. Terminal mobile selon la revendication 1, dans lequel la zone tampon ayant un attribut de stockage temporaire de l'au moins un élément sélectionné et le dispositif de contrôle (180) est en outre configuré pour associer l'au moins un élément sélectionné à une opération d'une application étant exécutée dans la zone d'affichage (O) en réponse à une entrée tactile reçue.

6. Terminal mobile selon la revendication 1, dans lequel le dispositif de contrôle est en outre configuré pour définir une zone d'écran de verrouillage (L) adjacente à la zone d'affichage (O) ayant un attribut de repositionnement de l'au moins un élément sélectionné sur un écran de verrouillage et d'affichage de l'élément repositionné et dans lequel le dispositif de contrôle (180) est en outre configuré pour contrôler le dispositif d'affichage (151) pour repositionner et exécuter l'au moins un élément sélectionné que le terminal mobile soit verrouillé ou non.

7. Terminal mobile selon la revendication 1, dans lequel le dispositif de contrôle est en outre configuré pour définir une zone d'écran de verrouillage (L) ayant un attribut de repositionnement de l'au moins un élément sélectionné sur un écran de verrouillage et d'affichage de l'élément repositionné et dans lequel le dispositif de contrôle (180) est en outre configuré pour exécuter l'élément repositionné lorsque le terminal mobile est déverrouillé.

8. Procédé de contrôle d'un mobile, le procédé comprenant :

   l'affichage d'un premier écran d'arrière-plan comprenant un ou plusieurs éléments sur la zone d'affichage (O) ;
   la définition (S20) d'une zone tampon (B) adjacente à la zone d'affichage (O) lorsqu'un mode d'édition est lancé en réponse à une première entrée tactile, dans lequel la zone tampon est affichée au niveau d'une partie supérieure de la zone d'affichage (O) comprenant le premier écran d'arrière-plan dans le mode d'édition ;
   la sélection d'un élément à partir des un ou plusieurs éléments affichés compris dans le premier écran d'arrière-plan selon une deuxième entrée tactile ;
   le contrôle de l'écran tactile (151) pour repositionner l'élément sélectionné dans la zone tampon (B) si la zone tampon (B) correspond à une direction d'un glissement de la deuxième entrée tactile, dans lequel l'élément sélectionné n'est pas affiché sur la zone d'affichage sur la base de la deuxième entrée tactile, la réception, par l'intermédiaire de l'écran tactile (151), d'une troisième entrée tactile faisant glisser la zone d'affichage (O) pour déplacer le premier écran d'arrière-plan jusqu'à un second écran d'arrière-plan (O), dans lequel l'affichage de la zone tampon (B) est maintenu tandis que le premier écran d'arrière-plan est déplacé jusqu'au second écran d'arrière-plan ;
   l'affichage du second écran d'arrière-plan sur la zone d'affichage (O) de l'écran tactile, dans lequel la zone tampon (B) comprenant l'élément sélectionné est affichée au niveau de la partie supérieure de la zone d'affichage (O) comprenant le second écran d'arrière-plan, dans lequel le second écran d'arrière-plan comprend un indicateur de page (PI) indiquant où le second écran d'arrière-plan étant actuellement affiché est situé parmi une pluralité d'écrans d'arrière-plan, la réception, par l'intermédiaire de l'écran tactile (151), d'une quatrième entrée tactile faisant glisser l'élément sélectionné de la zone tampon jusqu'au second écran d'arrière-plan, et le repositionnement de l'élément sélectionné dans le second écran d'arrière-plan en réponse à la quatrième entrée tactile, dans lequel l'élément sélectionné n'est pas affiché sur la zone tampon (B) sur la base de la quatrième entrée tactile.
FIG. 2

START

INITIATE EDITING MODE

SET AREA HAVING DIFFERENT ATTRIBUTE AROUND CURRENT AREA

TOUCH INPUT?

No

Yes

OBTAIN DIRECTION OF TOUCH INPUT

MOVE SELECTED ITEM INTO AREA CORRESPONDING TO DIRECTION OF OBTAINED TOUCH INPUT

PERFORM FUNCTION ACCORDING TO ATTRIBUTE OF THE AREA IN THE AREA

END
FIG. 4
FIG. 5
FIG. 6
FIG. 18

(a)

To: aaa@bb.co
See the attached file.

e-mail

(b)

To: aaa@bbb.co
See the attached file.
FIG. 19

M

L

O

H

ITEM 4

ITEM 5

e-mail

To: aaa@bb.co

See the attached file.
### FIG. 23

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<th>Column</th>
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### FIG. 24

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Google

NAVER
FIG. 28
FIG. 29

(a) Enter Password

(b) ITEM 11 ITEM 12 ITEM 13
    ITEM 14 ITEM 5
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