

MOBILE TERMINAL EQUIPPED WITH FLEXIBLE DISPLAY AND CONTROLLING METHOD THEREOF

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of Korean Application No. 10-2008-0086441, filed Sep. 2, 2008 in the Korean Intellectual Property Office, the disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a mobile terminal equipped with flexible display and an controlling method of the mobile terminal, and more particularly, to a mobile terminal including a flexible display and an controlling method of the mobile terminal, in which a screen effect applied to a display region on the flexible display can be changed according to whether the flexible display is bent.

[0004] 2. Description of the Related Art

[0005] A mobile terminal is a portable device equipped with one or more of functions for performing voice and video communications, inputting and outputting information, storing data and so on while being carried with. As the types of services provided by mobile terminals diversify, an increasing number of mobile terminals have been equipped with various complicated functions such as capturing photos or moving pictures, playing music files or moving image files, providing game programs, and receiving broadcast programs and have thus evolved into multimedia players.

[0006] In order to implement the complicated functions, a variety of attempts have been made to the mobile terminal, implemented in the form of a multimedia player, in terms of hardware or software. For example, there is user interface environment to provide convenient search function or choice function. As mobile terminals are thought personal things to express user's individuality, there are requests to change a various design form such as a double-sided LCD(Liquid Crystal Display) or touch screen

[0007] Space allocation for user interface such as display unit or keypad is limited in mobile terminal, because mobility or size of mobile terminal should be considered. Therefore, in order to use various functions provided from a mobile terminal, it is necessary to operate a mobile terminal with new input-output method instead of serial choice method in the complicated menu structure.

SUMMARY OF THE INVENTION

[0008] According to an aspect of the present invention, there is provided a controlling method of a mobile terminal, the controlling method including detecting whether a part of display region of the flexible display is bent; and changing a screen displayed on the display region according to the bent part of the display region when the bent is detected.

[0009] According to another aspect of the present invention, there is provided a mobile terminal including a flexible display configured to display a screen; a sensing unit configured to determine whether a part of display region of the flexible display is bent; a controller configured to change the screen displayed on the display region according to the bent

part of the flexible display, wherein if the results of the sensing unit indicate that the region is bent.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The above and other features and advantages of the present invention will become more apparent by describing in detail preferred embodiments thereof with reference to the attached drawings in which:

[0011] FIG. 1 illustrates a block diagram of a mobile terminal according to an exemplary embodiment of the present invention;

[0012] FIG. 2 illustrates a perspective view of the mobile terminal shown in FIG. 1;

[0013] FIG. 3 illustrates a rear perspective view of the mobile terminal shown in FIG. 2;

[0014] FIG. 4 through 7 illustrate a flowchart of an controlling method of a mobile terminal according to an exemplary embodiment of the present invention;

[0015] FIG. 8 through 25 illustrate a diagrams for controlling method of a mobile terminal according to an exemplary embodiment of the present invention with various exemplary embodiments.

[0016] 110: a wireless communication unit

[0017] 120: an audio/video (A/V) input unit 120

[0018] 130: a user input unit

[0019] 140: a sensing unit

[0020] 150: an output unit

[0021] 160: a memory

[0022] 170: an interface unit

[0023] 180: a controller

DETAILED DESCRIPTION OF THE INVENTION

[0024] The present invention will hereinafter be described in detail with reference to the accompanying drawings in which exemplary embodiments of the invention are shown.

[0025] FIG. 1 illustrates a block diagram of a mobile terminal in accordance with an embodiment of the present invention. From a viewpoint of constituent elements according to their functions, the mobile terminal in accordance with an embodiment of the present invention is described with reference to FIG. 1.

[0026] Referring to FIG. 1, a mobile terminal 100 may include a wireless 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 unit 170, a controller 180, and a power supply unit 190. When the constituent elements are implemented in actual applications, two or more of the constituent elements may be combined into one constituent element or one constituent element may be divided into two or more constituent elements, if appropriate.

[0027] The wireless communication unit 110 may include a broadcasting receiving module 111, a mobile communication module 113, a wireless Internet module 115, a short-range communication module 117, a global positioning system (GPS) module 119 and so on.

[0028] The broadcasting receiving module 111 receives at least one of broadcasting signals and broadcasting-associated information from an external broadcasting management server through broadcasting channels. The broadcasting channels may include a satellite channel, a terrestrial wave channel and the like. The broadcasting management server can refer to a server for creating and transmitting at least one of broadcasting signals and broadcasting-associated informa-