

certain angle, using the right hand, while the user is holding the left side of the device 100 with the left hand. The touch sensor 140 of the device 100 may output, to the controller, the touch signal generated at the left side of the device 100. Simultaneously, the flexible sensor 150 may generate a bend signal at the corner A1. The device 100 may be bent at various angles, and may be bent more than a determined angle. When the corner A1 at the lower right of the device 100 is bent, the display unit 130 may output, for example, a corresponding portion of a page currently being displayed on the bent lower right corner A1.

[0045] When the controller 160 receives a touch signal and a bend signal from the touch sensor 140 and the flexible sensor 150, respectively, the controller 160 may load a function table 171 from the storage unit 170, and may control the display unit 130 to display a menu image B1 at the lower right corner A1 of the device 100 according to the bend event that occurred at the lower right corner A1 and the touch event that occurred at the left side of the device. For example, as shown in still shot 215, the menu image B1 may be displayed on the lower right corner A1 where the bend event has occurred. The controller 160 can initialize touch sensors 140 in the lower right corner A1 so that the menu image B1 can be appropriately output. That is, the controller 160 may perform an initialization so that touch events can occur on the items contained in the menu image B1.

[0046] Although the menu image B1 is output on the lower right corner A1 of the device 100, it should be understood that exemplary embodiments of the present invention are not limited thereto. For example, the menu image B1 can be displayed on a center portion of the display unit 130, or on another region of the display unit 130 where a touch event continues to occur, so that the user can easily perform a touch action on the display unit 130.

[0047] Referring to FIG. 5, a user may hold both sides of the display unit 130 of the flexible display device 100 as shown in still shot 221. The touch sensors 140 may detect touch events by both thumbs and then output corresponding touch signals to the controller 160. If the controller 160 determines that the touch events have occurred, the controller 160 may control the display unit 130 to display a preset content. For example, the controller 160 may control the display unit 130 to display one of the pages contained in a document file that is one of the contents 177 stored in the storage unit 170. The controller 160 may activate the flexible sensor 150 before or when the touch sensor 140 generates a touch signal.

[0048] As shown in still shot 223, the user may bend a corner A2 at the upper left of the device 100 at a certain angle, using the left index finger, while the user is holding the device 100 with both hands. The touch sensor 140 of the device 100 may continue to output, to the controller 160, the touch signals generated as both hands hold both sides of the display unit 130. The activated flexible sensor 150 may detect a bend event as the lower left corner A2 is bent over a certain angle, and may output the generated bend signal to the controller 160. As the upper left corner A2 of the device 100 is bent, the display unit 130 may display the page currently being output on the bent lower left corner A2. The controller 160 may activate the flexible sensor 150 before or when the touch sensor 140 generates a touch signal.

[0049] When the controller 160 receives a touch signal and a bend signal from the touch sensor 140 and a flexible sensor 150, respectively, the controller 160 may load a function table 171 from the storage unit 170. The controller 160 may display

a slide view image B2 based on the bend event detected at the upper left corner A2 and the touch event detected at both sides of the display unit 130. Therefore, as shown in still shot 225, the controller 160 may display the slide view image B2 on the left side where the bend event has occurred. The controller 160 can initialize touch sensors 140 on the left side of the display unit 130, thereby allowing the user to select other pages displayed on the left side. The controller 160 may initialize the touch sensors 140 so that touch events can be detected with respect to items contained in the slide view image B2.

[0050] Although the slide view image B2 is displayed on the left side, exemplary embodiments of the present invention are not limited thereto. For example, the slide view image B2 can be displayed on the center portion of the display unit 130. In some cases, the slide view image B2 can also be displayed on the right side or upper or lower margin area of the display unit 130, so that the user can easily perform a touch action on the display unit 130. The controller 160 can partially initialize touch sensors 140 with respect to an area where the slide view image B2 is displayed, instead of initializing all the touch sensors 140. The area where the slide view image B2 is displayed can be implemented to support various functions according to types of touch events detected by the touch sensor 140, for example, a flick, drag, and double touches.

[0051] Referring to FIG. 6, a user may hold both sides of the display unit 130 of the flexible display device 100 as shown in still shot 231. The touch sensors 140 may detect touch events by both thumbs and then output touch signals to the controller 160. If the controller 160 determines that the touch events have occurred, the controller 160 may control the display unit 130 to display a preset content. For example, the controller 160 may control the display unit 130 to display one of the contents 177 stored in the storage unit 170. The controller 160 may activate the flexible sensor 150 before or when the touch sensor 140 generates a touch signal.

[0052] As shown in still shot 233, the user may bend a corner A3 at the lower left of the device 100, at a certain angle, using the left hand, while the user is holding the right side of the device 100 with the right hand. The touch sensor 140 of the device 100 may continue to output, to the controller 160, the touch signals generated at the right side of the device 100. The flexible sensor 150 may generate a bend signal as the lower left corner A3 is bent over a certain angle. When the corner A3 at the lower left of the device 100 is bent, the display unit 130 may output a corresponding portion of a page currently being displayed on the bent lower left corner A3.

[0053] When the controller 160 receives a touch signal and a bend signal from the touch sensor 140 and a flexible sensor 150, respectively, the controller 160 may load a function table 171 from the storage unit 170. The controller 160 may then display a multi view image B3 based on the bend event detected at the lower left corner A3 and the touch event detected at the right side of the display unit 130. Therefore, as shown in still shot 235, the controller 160 may display the multi view image B3 on the left side (of the display unit 130) where the bend event has been detected. The controller 160 can initialize touch sensors 140 on the left side of the display unit 130, thereby allowing the user to select other contents displayed on the left side of the display unit 130. The controller 160 may initialize touch sensors 140 so that touch events can be detected with respect to respective contents contained in the multi view image B3.