DISPLAY CLIPPING ON A MULTISCREEN DEVICE

CROSS REFERENCE TO RELATED APPLICATION

The present application is a continuation of and claims priority to U.S. patent application Ser. No. 13/629,211, filed Sep. 27, 2012, entitled "DISPLAY CLIPPING," which claims the benefits of and priority, under 35 U.S.C. §119(e), to U.S. Provisional Application Ser. No. 61/539,884, filed Sep. 27, 2011, entitled "MOBILE DEVICE;" each of which is incorporated herein by reference in its entirety for all that it teaches and for all purposes.

BACKGROUND

A substantial number of handheld computing devices, such as cellular phones, tablets, and E-Readers, make use of a touch screen display not only to deliver display information to the user but also to receive inputs from user interface commands. While touch screen displays may increase the configurability of the handheld device and provide a wide variety of user interface options, this flexibility typically comes at a price. The dual use of the touch screen to provide content and receive user commands, while flexible for the user, may obfuscate the display and cause visual clutter, thereby leading to user frustration and loss of productivity.

The small form factor of handheld computing devices requires a careful balancing between the displayed graphics and the area provided for receiving inputs. On the one hand, the small display constrains the display space, which may increase the difficulty of interpreting actions or results. On the other hand, a virtual keypad or other user interface scheme is superimposed on or positioned adjacent to an executing application, requiring the application to be squeezed into an even smaller portion of the display.

This balancing act is particularly difficult for single display touch screen devices. Single display touch screen devices are crippled by their limited screen space. When users are entering information into the device, through the single display, the ability to interpret information in the display can be severely hampered, particularly when a complex interaction between display and interface is required.

SUMMARY

There is a need for a dual multi-display handheld computing device that provides for enhanced power and/or versatility compared to conventional single display handheld computing devices. These and other needs are addressed by the various aspects, embodiments, and/or configurations of the present disclosure. Also, while the disclosure is presented in terms of exemplary embodiments, it should be appreciated that individual aspects of the disclosure can be separately claimed.

In one embodiment, a method includes providing a device having at least first and second screens and displaying an image in a first display of a first screen, wherein the image is displayed entirely within a display area of the first display. A determination is then made by at least one processor as to whether the image displayed in the first display of the first screen requires clipping. If the image displayed in the first display of the first screen requires clipping, then the image displayed in the first display of the first screen is clipped such that a first portion of the image is displayed in the first display of the first screen and a second portion of the image is prevented from being displayed in a first display of a second screen.

Another embodiment is directed to a non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method that includes displaying an image in a first display of a first screen and determining if the image displayed in the first display of the first screen requires clipping. If the image in the first display of a first screen requires clipping, then the image displayed in the first display of the first screen is clipped such that a first portion of the image is displayed in the first display of the first screen and a second portion of the image is prevented from being displayed in a first display of a second screen.

Yet another embodiment is directed to a dual screen communication device. The communication device includes a first display of a first screen, a second display of a second screen, and a computer readable medium that stores computer executable instructions that when executed by at least one processor perform a method that includes displaying an image in a first display of a first screen and determining if the image displayed in the first display of the first screen requires clipping. If the image in the first display of a first screen requires clipping, then the image displayed in the first display of the first screen is clipped such that a first portion of the image is displayed in the first display of the first screen and a second portion of the image is prevented from being displayed in a first display of a second screen.

The present disclosure can provide a number of advantages depending on the particular aspect, embodiment, and/or configuration. In a device that includes more than one screen, a user may desire to reposition an image, window, or application on the more than one screen. However, the user may not desire to move a window such that the window spills over one display and onto another display, potentially blocking other images, windows, and applications which may have content that is of interest to a user. Further, by clipping and not displaying the content that spilled over or exceeded the display area of the display, cpu cycles and power—often battery power, can be saved by not rendering this content. These and other advantages will be apparent from the disclosure.

The phrases "at least one", "one or more", and "and/or" are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions "at least one of A, B and C", "at least one of A, B, or C", "one or more of A, B, and C", "one or more of A, B, or C" and "A, B, and/or C" means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together.

The term "a" or "an" entity refers to one or more of that entity. As such, the terms "a" (or "an"), "one or more" and "at least one" can be used interchangeably herein. It is also to be noted that the terms "comprising", "including", and "having" can be used interchangeably.

The term "automatic" and variations thereof, as used herein, refers to any process or operation done without material human input when the process or operation is performed. However, a process or operation can be automatic, even though performance of the process or operation uses material or immaterial human input, if the input is received before performance of the process or operation. Human input is deemed to be material if such input influences how the process or operation will be performed. Human input that consents to the performance of the process or operation is not deemed to be "material".