[0016] FIG. **6***a* illustrates an exemplary mobile telephone that can include a touch sensor panel and computing system for implementing gesture movies and associated features according to one embodiment of this invention.

[0017] FIG. **6***b* illustrates an exemplary digital media player that can include a touch sensor panel and computing system for implementing gesture movies and associated features according to one embodiment of this invention.

[0018] FIG. **6***c* illustrates an exemplary personal computer that can include a touch sensor panel and computing system for implementing gesture movies and associated features according to one embodiment of this invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0019] In the following description of preferred embodiments, reference is made to the accompanying drawings which form a part hereof, and in which it is shown by way of illustration specific embodiments in which the invention can be practiced. It is to be understood that other embodiments can be used and structural changes can be made without departing from the scope of the embodiments of this invention.

[0020] This relates to the display of gesture movies to assist users in performing gestures. Gesture movies can be short, unintrusive, and available on demand. A list box can appear in a pop-up window or preference panel, containing a list of gestures that can be demonstrated. If a user clicks on a gesture in the list, a movie (e.g. a video or animation) of the gesture being performed can appears in one box, while a movie (e.g. a video or animation) of the action being performed on a particular object can be displayed in another box. Thus, a hand can be shown performing the selected gesture over a touch sensor panel, while at the same time, and synchronized with the gesture being displayed, an object being manipulated by the gesture can be displayed.

[0021] FIG. **1***a* illustrates a display **100** showing an exemplary gesture movie according to embodiments of the invention. In the example of FIG. **1**, a list box **102** can appear in a pop-up window or preference panel **104** containing a list of gestures that can be displayed. The preference panel **104** can be called up manually by a user, or can pop up automatically as described in other embodiments below. If a user clicks on a gesture in the list **102**, a movie (e.g. video or animation) of the gesture being performed can appear at **106**, and a movie (e.g. video or animation) of the action being performed on a particular object can be displayed at **108**. Thus, box **106** can show an actual hand **110** (including one or more fingers and optionally a palm) performing the selected gesture over a touch sensor panel **112**, while at the same time, and synchronized with the gesture being displayed, an object **114** being manipulated by the gesture can be displayed. For example, if the gesture is a simple two-finger zoom out gesture, while box **106** shows two fingers spreading apart, box **108** can show a map being zoomed out.

[0022] The object displayed while the gesture is being performed can be predetermined, or it can be a function of the gesture and/or context in which the demonstration is invoked. For example, if the preference panel is invoked, either manually by the user or automatically while an image such as a photo is being displayed, the object may be a smaller version of the actual image being displayed, or in other embodiments it could be a sample image. In another example, if the preference panel is invoked while a list is being displayed, the object may be a smaller version of the actual list being displayed, or in other embodiments it could be a sample list. In yet another example, if the preference panel is invoked while a desktop of icons is being displayed, the object may be a smaller version of the actual desktop being displayed, or in other embodiments it could be a desktop of representative icons. In contrast, if a zoom gesture is selected for demonstration while a list is being displayed, because the zoom gesture may be incompatible with a list (i.e. lists are generally not subjected to zooming in or out), the object manipulated may not be a list, but rather a representative image.

[0023] FIG. **1***b* illustrates the display **100** showing an alternative exemplary gesture movie according to embodiments of the invention. In the example of FIG. **1***b*, box **106** can show a hand **110** performing the gesture, with dots, outlines or other indicators **116** indicating the touch points of the fingers on the touch sensor panel **112**. In some embodiments, the hand can then fade out, leaving only the dots remaining to show the gestures being performed. In other embodiments, arrows **124** can appear, disappear, move, grow, shrink, or otherwise appear in other animated ways to indicate the direction and order that fingers or palms should move. In other embodiments, audio **118** may accompany the video or animations, including but not limited to finger touchdown sounds, explanations of the gesture being performed, and the like. Other options would be to light up the area of finger touchdowns, create a "water ripple" effect to show finger touchdowns, or show side or perspective views of the hand in additional boxes to show when the fingers actually touch down.

[0024] In other embodiments, if the gesture preference panel is not removed, the panel can automatically cycle through the entire list of gestures, playing the movie of the gesture and showing an application of the gesture in boxes **106** and **108**. Alternatively, the same selected gesture can be cycled through repeatedly.

[0025] Because different touches and gestures can mean different things in different applications, a user could possibly start a gesture by touching fingers down on a touch sensor panel, and then pause or "freeze up," not remembering the particular gesture for that application. In this case, another embodiment of the invention can have the preference panel and a particular gesture movie (video or animation) such as those described above with respect to FIGS. **1***a* and **1***b* pop up automatically if a touchdown accompanied by a freeze in motion is detected, the video or animation showing how to complete the gesture for that particular application. A motion freeze can be defined in terms of the contact points having movement below a certain threshold for a predetermined amount of time. The particular gesture movie that appears automatically can be a gesture whose starting positions most closely match the fingers or objects touching down on the touch sensor panel. In some embodiments, the displayed gesture movie can reflected the apparent "handedness" of the touchdown points. In other words, if the touchdown points suggest a left hand, the displayed gesture movie can feature a left hand performing the gesture.

[0026] Because a number of gestures may start from the same or similar pattern of contacts touching down on the touch sensor panel, in some embodiments the pop-up preference panel may cycle through the possible gestures for the detected pattern of contacts. In alternative embodiments, the user may be forced to continue the gesture just long enough until firmware can determine a particular gesture movie to show. In other embodiments, the list box may display a list of