

(e.g., meta data) defined by the user or the programmer for identifying the particular selectable options **1010** for which to provide tactile feedback.

[0087] In some embodiments, the electronic device may provide tactile feedback in response to detecting the user's finger over text box **1020** or receiving a user selection of text box **1020** to demarcate the location of text box **1020** on the screen. Text box **1020** may include any suitable option or box in display **1000** in which the user may provide text. For example, text box **1020** may include search fields, internet web address fields (e.g., in a web browser), comments fields, username and password fields, shipping information fields, payment information fields, or any other suitable field in which the user may provide text. If the display includes several successive text boxes **1020** (e.g., successive fields for providing a shipping address), the electronic device may initially only provide tactile feedback for the first box, and then provide tactile feedback for each successive box in turn as the user provides text to the previous box. In response to receiving a user selection of a text box **1020**, the electronic device may display a keyboard or keypad for providing text (e.g., keypad **910** of FIG. **9A** or keyboard **960** of FIG. **9B**).

[0088] In some embodiments, the electronic device may provide tactile feedback to assist the user in performing scrolling operations. For example, the electronic device may provide tactile feedback to mimic detents as the user scrolls through entries in a list. As another example, tactile feedback may be used to mimic a mechanical stop as the user reaches the beginning or the end of a scrollable display. FIG. **11** is a schematic view of illustrative display **1000** of FIG. **10** when the display is scrolled in accordance with one embodiment of the invention. Display **1100** may include some or all of selectable options **1010** and text boxes **1020** of display **1000**. As the user scrolls down display **1000**, the electronic device may display portions of the page provided by the application (e.g., portions of the web page) that were not initially displayed in display **1000**. To indicate to the user that the end of the page has been reached, the electronic device may scroll the page beyond lower limit **1110** of the page and display background **1112**. In some embodiments, the electronic device may display scroll bar **1120** to provide an indication of the amount of the page provided in display **1100** and the relative portion of the page that is displayed. For example, the user may compare scroll bar **1120** with scroll bar region **1122** to determine the relative amount of scroll bar region **1122** taken by scroll bar **1120**, and to determine the position of scroll bar **1120** in scroll bar region **1122**. The electronic device may provide any suitable tactile feedback as the user reaches limit **1110** of the page. For example, the electronic device may provide tactile feedback (e.g., in increasing intensity or frequency) as the user approaches limit **1110**. As another example, the electronic device may provide tactile feedback (e.g., in increasing intensity or frequency) as the user moves beyond limit **1110** (e.g., the more background **1112** is displayed, the stronger the tactile feedback).

[0089] In some embodiments, the electronic device may provide tactile feedback when the user zooms a display. FIG. **12** is a schematic view of illustrative display **1000** of FIG. **10** when the display is zoomed in accordance with one embodiment of the invention. Display **1200** may be a zoomed in display of the page in display **1000**. For example, display **1200** may include a more detailed view of a particular aspect of display **1000** (e.g., a more detailed view of one or more images). The electronic device may provide any suitable tac-

tile feedback as the user zooms the display. For example, the electronic device may provide tactile feedback (e.g., in increasing amounts) as the user approaches a zoom-in or zoom-out limit of the electronic device (e.g., the limit after which the electronic device can no longer render the display). As another example, the electronic device may provide tactile feedback to identify the particular amount of zoom used by the user (e.g., different tactile feedback for 50%, 75%, 100% and 200% zoom).

[0090] In some embodiments, the electronic device may provide tactile feedback based on the physical location of the electronic device. For example, the electronic device may provide tactile feedback based on the user's distance relative to a particular location. As another example, the electronic device may provide tactile feedback to guide the user along a particular path between two locations (e.g., provide tactile feedback when the user follows or leaves the particular path).

[0091] The electronic device may determine the current position of the electronic device using any suitable approach. In some embodiments, the electronic device may include a location module. Although the location module may be implemented in software, in some embodiments, the location module may also be implemented in hardware, firmware, or any combination of software, hardware, and firmware. For example, the location module may include an application process, thread, or subroutine configured to compute the position, orientation, movement, or location of the electronic device. The location of the electronic device may be derived from any suitable trilateration or triangulation technique, in which case the location module may include a Global Position System (GPS) receiver, RF triangulation detector or sensor, or any other location circuitry configured to determine the geographic or physical location of the electronic device. The location module may also include the associated applications to support the location circuitry. The location module may also include one or more sensors or circuitry for detecting the position, orientation, or movement of the electronic device. Such sensors and circuitry may include, for example, single-axis or multi-axis accelerometers, angular rate or inertial sensors (e.g., optical gyroscopes, vibrating gyroscopes, gas rate gyroscopes, or ring gyroscopes), magnetometers (e.g., scalar or vector magnetometers), and linear velocity sensors. For example, the processor may be configured to read data from one or more of the sensors or circuitry in the location module in order to determine the orientation of the electronic device and its velocity. The derivation of the location of a communications device is described in more detail in pending U.S. patent application Ser. No. _____, filed _____, and entitled "Location-Based Modes For Portable Media Devices" (Attorney Docket No. P4788US1), which is incorporated by reference herein in its entirety.

[0092] FIG. **13** is a schematic view of an illustrative display screen of a mapping application in accordance with one embodiment. Display **1300** may include map **1302** displayed by any suitable application. Map **1302** may include streets, roads, traffic information, topography, symbols, or any other suitable symbol, object or feature. In some embodiments, map **1302** may include a schematic view, a satellite view, or a combination of the displayed geographic area. The user may direct map **1302** to display any suitable information. For example, in response to a search for a particular store or address, the electronic device may direct the map to display a marker or indicator for the particular store or address identified as a result of the search. The user may also provide the