

words in a dictionary; instructions for generating a list of candidate words based at least in part on the comparing step; and instructions for presenting at least some of the candidate words to the user.

[0012] In accordance with some embodiments, a portable communications device includes a display; a keyboard; one or more processors; memory; and a program stored in the memory and configured to be executed by the one or more processors. The program includes instructions for receiving a sequence of individual touch points input by a user that form a user-input directed graph; instructions for comparing the user-input directed graph to respective directed graphs for words in a dictionary; instructions for generating a list of candidate words based at least in part on the comparing step; and instructions for presenting at least some of the candidate words to the user.

[0013] In accordance with some embodiments, a portable communications device includes means for receiving a sequence of individual touch points input by a user that form a user-input directed graph; means for comparing the user-input directed graph to respective directed graphs for words in a dictionary; means for generating a list of candidate words based at least in part on the comparing step; and means for presenting at least some of the candidate words to the user.

[0014] Thus, the embodiments provide more efficient ways to enter text in a portable device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] For a better understanding of the aforementioned embodiments of the invention as well as additional embodiments thereof, reference should be made to the Description of Embodiments below, in conjunction with the following drawings in which like reference numerals refer to corresponding parts throughout the figures.

[0016] FIG. 1 is a block diagram illustrating a portable communications device in accordance with some embodiments.

[0017] FIG. 2 is a flow diagram illustrating a process of providing word recommendations in accordance with some embodiments.

[0018] FIG. 3 is a flow diagram illustrating a process of scoring candidate words in accordance with some embodiments.

[0019] FIG. 4 is a flow diagram illustrating a process of selecting and presenting candidate words in accordance with some embodiments.

[0020] FIGS. 5A and 5B illustrate exemplary layouts of letter keys on a keyboard in accordance with some embodiments.

[0021] FIG. 6 illustrates an exemplary derivation of candidate words based on a text input in accordance with some embodiments.

[0022] FIGS. 7A-7C illustrate examples of scoring of candidate words in accordance with some embodiments.

DESCRIPTION OF EMBODIMENTS

[0023] Reference will now be made in detail to embodiments, examples of which are illustrated in the accompanying drawings. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will be apparent to one of ordinary skill in the art that the present invention may be practiced without these specific details. In

other instances, well-known methods, procedures, components, circuits, and networks have not been described in detail so as not to unnecessarily obscure aspects of the embodiments.

[0024] A portable communication device includes a user interface and a text input device. Via the interface and the text input device, a user may enter text into the device. The text includes words, which are sequences of characters separated by whitespaces or particular punctuation. For a word as it is being entered or an entered word, the device identifies and offers word recommendations that may be selected by the user to replace the word as inputted by the user.

[0025] Attention is now directed to an embodiment of a portable communications device. FIG. 1 is a block diagram illustrating an embodiment of a device 100, such as a portable electronic device having a touch-sensitive display 112. The device 100 may include a memory controller 120, one or more data processors, image processors and/or central processing units 118 and a peripherals interface 116. The memory controller 120, the one or more processors 118 and/or the peripherals interface 116 may be separate components or may be integrated, such as in one or more integrated circuits 104. The various components in the device 100 may be coupled by one or more communication buses or signal lines 103.

[0026] The peripherals interface 116 may be coupled to an optical sensor (not shown), such as a CMOS or CCD image sensor; RF circuitry 108; audio circuitry 110; and/or an input/output (I/O) subsystem 106. The audio circuitry 110 may be coupled to a speaker 142 and a micro-phone 144. The device 100 may support voice recognition and/or voice replication. The RF circuitry 108 may be coupled to one or more antennas 146 and may allow communication with one or more additional devices, computers and/or servers using a wireless network. The device 100 may support a variety of communications protocols, including code division multiple access (CDMA), Global System for Mobile Communications (GSM), Enhanced Data GSM Environment (EDGE), Wi-Fi (such as IEEE 802.11a, IEEE 802.11b, IEEE 802.11g and/or IEEE 802.11n), Bluetooth, Wi-MAX, a protocol for email, instant messaging, and/or a short message service (SMS), or any other suitable communication protocol, including communication protocols not yet developed as of the filing date of this document. In an exemplary embodiment, the device 100 may be, at least in part, a cellular telephone.

[0027] The I/O subsystem 106 may include a touch screen controller 152 and/or other input controller(s) 154. The touch-screen controller 152 may be coupled to a touch-sensitive screen or touch sensitive display system 112.

[0028] The touch-sensitive display system 112 provides an input interface and an output interface between the device and a user. The display controller 152 receives and/or sends electrical signals from/to the display system 112. The display system 112 displays visual output to the user. The visual output may include graphics, text, icons, video, and any combination thereof (collectively termed "graphics"). In some embodiments, some or all of the visual output may correspond to user-interface objects, further details of which are described below.

[0029] A touch screen in display system 112 is a touch-sensitive surface that accepts input from the user based on haptic and/or tactile contact. The display system 112 and the display controller 152 (along with any associated modules and/or sets of instructions in memory 102) detect contact (and any movement or breaking of the contact) on the display