

“N” in FIG. 11A). The character image that is displayed prior to lift off is selected in accordance with the adjustable hit regions of the displayed key icons. For example, if the hidden hit regions of two (or more) keys overlap with the finger contact (or with a touch point position derived from a finger contact), then a character image that corresponds to the key with the largest hit region  $A_{Total}(i)$  (including its hidden hit region  $A_{Hidden}(i)$ ) is selected for display.

After receiving each of the individual touch points, the device:

forms a user-input directed graph for the sequence of individual touch points received so far;

determines a character corresponding to a last received individual touch point in accordance with the adjustable hit regions of the displayed key icons;

displays a sequence of characters corresponding to the sequence of individual touch points, including the determined character; and

updates sizes of the adjustable hit regions for a plurality of the key icons (1006).

As noted above, in some embodiments, if the hidden hit regions of two (or more) keys overlap with a finger contact (or with a touch point position derived from the finger contact), then the character corresponding to the key with the largest hit region (including its hidden hit region) is selected as the determined character.

In some embodiments, the device determines (1008) one of more alternate sequences of characters corresponding to the sequence of individual touch points, and determines a respective probability for each of the alternate sequences of characters and for the displayed sequence of characters. In some embodiments, the device displays a suggested replacement character string comprising a selected one of the alternate sequence of characters when the probability of the selected alternate sequence meets one or more predefined criteria with respect to the probability of the displayed sequence of characters [e.g., in FIG. 9,  $P_{touch}(t)P_{usage}(t) > P_{touch}(h)P_{usage}(h)$   $P_{touch}(e)P_{usage}(e) > P_{touch}(r)P_{usage}(r)$   $P_{touch}(h)P_{usage}(h)$   $P_{touch}(e)P_{usage}(e)$ ].

In some embodiments, the device receives (1010) a touch point corresponding to a deletion key icon; deletes one or more of the displayed characters to produce a shortened sequence of characters; receives additional individual touch points; and after receiving each of the additional individual touch points: determines and displays a suggested character string only when the suggested character string starts with the shortened sequence of characters and the suggested character string meets predefined character string suggestion criteria (1010).

In some embodiments, the size of the adjustable hit region for a respective key icon is updated in accordance with the sequence of individual touch points input by the user. In some embodiments, updating the size of the adjustable hit region for a respective key icon includes determining a probability associated with the respective key icon and determining a size of the adjustable hit region in accordance with the determined probability. In some embodiments, the probability associated with the respective key icon is determined in accordance with the displayed sequence of characters (e.g., “Go” in FIG. 8B). In some embodiments, the probability associated with the respective key icon is determined in accordance with a plurality of character sequences including the displayed sequence of characters and at least one other sequence of characters consistent with the sequence of individual touch points input by the user. For example, the probability associated with the respective key icon may be based on the displayed sequence of characters (e.g., “Go” in FIG. 8B) and the

top N (where N=1, 2, 5, etc.) candidate words (e.g., God, Goal, and Good for N=3) consistent with the sequence of individual touch points input by the user.

In some embodiments, the device determines a respective probability for each of a plurality of character sequences consistent with the sequence of individual touch points input by the user. The probability associated with the respective key icon is determined in accordance with determined probabilities of the plurality of character sequences, each of which comprises a potential prefix for a next character corresponding to a next touch point input by the user.

Process 1050 is performed at a portable electronic device having a touch screen display (e.g., device 100). The process increases the accuracy of suggested words by using information derived from character deletion by a user on the character string currently being entered. In the process, in addition to meeting other predefined word suggestion criteria, a word is not suggested unless the word starts with the shortened sequence of characters that remain after a user has deleted characters from the current character string being input by the user.

The device displays (1030) a plurality of key icons (e.g., soft keyboard 5640, FIG. 8A).

The device receives (1032) a sequence of individual touch points input by a user on the touch screen display.

The device displays (1034) a sequence of characters corresponding to the sequence of individual touch points.

The device receives (1036) a touch point corresponding to a deletion key icon.

The device deletes (1038) one or more of the displayed characters to produce a shortened sequence of characters.

The device receives (1040) additional individual touch points.

After receiving each of the additional individual touch points, the device:

displays a current sequence of characters including characters associated with the additional individual touch points; and

determines and displays a suggested character string only when the suggested character string starts with the shortened sequence of characters and the suggested character string meets predefined character string suggestion criteria (1042).

In some embodiments, the device determines a respective probability for the suggested character string and for the current sequence of characters. The predefined character string suggestion criteria include a requirement that the determined probability for the suggested character string be greater than the determined probability for the current sequence of characters.

In some embodiments, the predefined character string suggestion criteria include a requirement that the determined probability for the suggested character string be greater than the determined probability for the current sequence of characters by at least a predefined margin. For example, the margin may be a 10% margin, requiring that the probability for the suggested character string is at least 10% greater than the probability for the current sequence of characters.

In some embodiments, the determined probabilities are determined in accordance with the additional individual touch points input by the user.

In some embodiments, the determined probabilities are determined in accordance with the shortened sequence of characters and the additional individual touch points input by the user.

In some embodiments, the suggested character string comprises a complete word.