

of the fact that the previously output word is the currently highlighted text region. In another aspect, an input path is traced that corresponds to a “control-tap” gesture (as described below) and a control character is sent to the target text application. For example, a “control-tap” gesture corresponding to a control-B is performed and the target application receives the control-B and applies bold formatting to the highlighted previously output word. In another aspect, when the system detects that the user has scrolled the displayed text region such that the text insertion location is no longer visible on the display screen when the pre-determined stylus action or gesture is performed, the text insertion location is not restored to its former location in the output text when a replacement word is selected from the automatically generated word choice selection list. In another aspect, the various possible responses of the system to the pre-determined stylus action or gesture and subsequent actions (including, for example, the action of restoring the text insertion location to its former location in the output text) are determined by the user by selecting from among a set of system preferences.

[0196] These aspects of the system greatly increase the efficiency of its use for text input. The system inherently results in a relatively small number of incorrectly generated words that are more or less randomly scattered throughout the previously generated text. In most cases, the user simply needs to correct the incorrectly generated words, and continue entering text at the point where they paused to review the previously output text. The ability of the system to track and automatically restore the text insertion location provides a significant benefit to the user who would otherwise have to tediously move the text insertion location back to its original position. By making the error-recovery procedure extremely efficient, the system’s overall efficiency is greatly enhanced in two ways. First, obviously, the occasional error becomes simple to correct and little time is consumed in the process, so the overall effective input speed is increased. Secondly, because the error-recovery process is so simple and easy, most users will tend to be less concerned about the possibility of recognition errors, and will consequently trace input paths more rapidly and with less concern for precision. This generally leads to faster overall input speeds.

[0197] In another aspect, the system detects when the user has tapped the screen within the text window or otherwise repositioned the text insertion cursor, and modifies automatic system behaviors (Context Change Detection). In one aspect, when the system detects that the cursor has been moved to a new context and auto-spacing is enabled, the system automatically disables the automatic output of a space prior to the first word output in the new context. In another aspect, when the system detects that the cursor has been moved to a new context and auto-spacing is enabled, the system examines the character to the left of the new cursor position, and when the character to the left of the cursor is a “whitespace” character, and/or when the cursor is positioned at the first character position of a text field, and/or when the text field is a password-entry field, the system automatically disables the automatic output of a space prior to the first word output in the new context. Similarly, when the system detects that the cursor has been moved to a new context, and automatic capitalization is enabled, when the first character other than white space to the left of the cursor is a sentence terminating character (for example, period and optionally question mark and/or exclamation point), then the

system automatically capitalizes the first letter of the first word output in the new context.

[0198] In another aspect, the system detects and adapts to changes in one or more characteristics of the text output area in which generated text is inserted. The text output area in which generated text is inserted and displayed comprises the editing environment in which the text input system operates. The text input system may be used in a variety of editing environments, each of which has different characteristics to which the text input system adapts in order to improve performance or to satisfy other requirements. For example, in one aspect, the system detects that the current editing environment is a password field, and automatically suppresses the display of a word choice selection list so that the user’s password is not inadvertently displayed in a public place. Again, in a password entry field, for security purposes, the user may choose to have the system automatically adjust certain thresholds and parameters so that the input path for a password must be entered with a greater level of precision. Conversely, the user may choose to allow password entry with a lower level of precision so that the password can be entered so quickly that it is more difficult for an observer to follow visually.

[0199] In another aspect, based on one or more characteristics of the editing environment, the system modifies which of one or more databases are searched, or which subset of words within a given database are regarded as valid potential matches for an input path. For example, the system detects that the editing environment is a field for entering a name from a list of contacts, and restricts the active database to one comprised of (or derived from) the names present in the list of contacts. In another example, a doctor may be filling out an automated form for a patient that includes a field for prescribing medication, and a special database of names of medications is searched to identify the word that best matches an input path entered when the current editing environment corresponds to such a field. Alternatively, additional characteristics are stored with words in database (such as the characteristic of whether or not a word present in the database may be used as a name, whether it is the name of a medication, what language the word is from, and so forth), and the system restricts the set of possible candidates to those with characteristics that are flagged as required according to the characteristics of the editing environment. In another aspect, two or more databases are active simultaneously, and characteristics of the editing environment are used to prioritize words matched from the various databases according to their associated characteristics. In another aspect, the numerical score calculated for a word is adjusted by a determined factor based on whether the word is associated with characteristics that are associated with the active editing environment. In another aspect, the system determines characteristics of the text in the neighborhood of the position of the text insertion location. For example, the system examines one or more of the previously output words immediately preceding the text insertion location and determines which natural language the word(s) belongs to, what part of speech is associated with the word(s), and so on. These characteristics allow the system to prioritize identified candidate words to those that are most likely in the current editing context, and allow the user to maintain a number of simultaneously active databases without the need to explicitly enable and disable specific databases.