

ment” in this specification) that stores information in addition to that maintained in the actual electronic document itself (such as, alternative words or characters generated by the recognizer). Systems and methods according to some examples of the invention further may include an input device that receives input selecting the first portion of the content, and once that portion is selected, the processor further may be programmed and adapted to provide at least one selectable alternative for the first portion of the content based at least in part on the stored data associated with the first portion. If this alternative is then selected, e.g., by user input, the content of the electronic document may be changed to correspond to the selected alternative.

[0009] Additional aspects of the invention relate to systems and methods that include: (a) receiving input in an electronic document, wherein the electronic document includes a data structure having a plurality of independent data sets (e.g., data sets representing individual words and/or characters and/or character strings in the electronic document); and (b) maintaining a supporting data structure based on content in at least a portion of the electronic document, wherein the supporting data structure includes a plurality of supporting data sets such that at least some of the independent data sets in the electronic document include an associated supporting data set in the supporting data structure. The supporting data sets in the supporting data structure may include, for example, potential alternative words, characters, and/or character strings generated by a recognition system, a spell-check or grammar check system, a thesaurus programs, alternatives from storage of personalization or customization information, or other relevant data relating to the data sets contained in the electronic document. The supporting data structure may include an expanded copy of the electronic document including the additional data, such as potential alternatives generated by a handwriting or speech recognition system. A user may request display of or access to information contained in at least one supporting data set (e.g., by requesting display of a correction interface, by selecting a word, character, or character string in the electronic document, etc.), and he/she can edit the electronic document, if appropriate, using information (e.g., the potential alternatives) stored in the supporting data set.

[0010] Still additional aspects of the invention relate to computer-readable media including computer-executable instructions stored thereon for performing various methods and/or operating various systems for modifying electronic documents, including systems and methods like those described above.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The above and other objects, features, and advantages of the present invention will be more readily apparent and more fully understood from the following detailed description, taken in conjunction with the appended drawings, in which:

[0012] FIG. 1 illustrates a schematic diagram of a general-purpose digital computing environment in which at least some aspects of the present invention may be implemented;

[0013] FIG. 2 illustrates a pen-based personal computing (PC) environment in which at least some aspects of the present invention may be implemented;

[0014] FIG. 3 illustrates an example data structure that may be used in conjunction with various electronic documents provided in systems and methods according to some examples of the invention;

[0015] FIG. 4 illustrates an example data structure that may be used in conjunction with various words or character strings provided in systems and methods according to some examples of the invention;

[0016] FIGS. 5A and 5B illustrate an example correction interface that may be used in at least some examples of systems and methods according to this invention;

[0017] FIG. 6 illustrates the relationship between an electronic document that does not accept and/or process electronic ink or speech input and a supporting data structure that does accept and maintain such input;

[0018] FIG. 7 illustrates example architecture useful in accordance with at least some examples of the invention;

[0019] FIG. 8 illustrates an example procedure for providing changes in a supporting document structure based on changes made in an electronic document;

[0020] FIG. 9 illustrates an example procedure for providing changes based on electronic ink input in an electronic document that does not accept or process electronic ink data; and

[0021] FIG. 10 illustrates an example of making corrections using electronic ink and/or a pen-based computing system in accordance with at least some examples of the invention.

[0022] When the same reference number is used in more than one of the attached drawings, it is intended to refer to the same or similar parts, features, or steps in the various different drawings.

DETAILED DESCRIPTION

[0023] As described above, aspects of the present invention relate to systems, methods, and computer-readable media for processing electronic data and interacting with electronic text, e.g., when modifying or editing electronic documents. The following description is divided into sub-sections to assist the reader. The sub-sections include: Terms; General Description of Various Aspects of the Invention; Example Hardware; Example Systems, Methods, and Computer-Readable Media According to the Invention; and Conclusion.

I. TERMS

[0024] The following terms are used in this specification and, unless otherwise specified or clear from the context, the terms have the meanings provided below:

[0025] “Pen”—Any type of user input device useful in entering electronic ink into and/or otherwise manipulating or controlling an electronic document, a user interface, and/or a computer operating system. The terms “pen” and “stylus” are used interchangeably in this specification.

[0026] “Pen-Down Event”—An event that is initiated at the time a pen contacts a digitizer. Typically, a pen-down event will end at the time the pen leaves the digitizer surface (also called a “pen-up event” in this specification). Elec-