FIG. 25B illustrates that when two fingertips are detected together with a palm as shown in **FIG. 25B**, the cursor become a pencil (**71**) and can be use to do freehand drawing. When three fingertips and no palm are detected as shown in **FIG. 25C**, the cursor become an eraser (**72**). As shown in **FIG. 25D**, two fingertips sensed apart with a palm becomes a ruler (**73**).

[**0124**] From the examples illustrated above, the present chameleon cursor interaction mode may be used in any number of programs. For example, the chameleon cursor interaction mode illustrated above may be very useful for a drawing program.

[**0125**] Although the description above contains many specifics, these should not be construed as limiting the scope of the system and method but as merely providing illustrations of some of the presently preferred embodiments of this system and method. For example, the mini-hand may appear as a leaf, or a starfish instead of a human hand alike, the soft keyboard on a mobile phone display may not layout similar to a conventional keyboard, the sensing surface may have features and feel much like conventional switch panel or keyboard, the sensing surface can be installed together with LCD or a display as one device, the chameleon cursor can be used with word processing program to quickly change from typing mode to drawing mode etc.

[**0126**] Tablet Cursor Interaction Mode

[**0127**] Unlike the previously described interaction modes, the tablet cursor interaction mode illustrated in **FIG. 26** is to be used specifically with a touch screen system. The rules of user interface when incorporating the present tablet cursor interaction mode are similar to that when using a mouse cursor. **FIG. 26** illustrates a tablet cursor incorporated in a personal digital assistant (PDA) (**41**) touch screen system. When the operator places a finger (**4**) on the touch screen (**42**), a cursor (**74**) appears above the touched finger. According to one exemplary embodiment, the cursor visibly appears on the touch screen (**42**) in a location close to the touched finger. According to this embodiment, the cursor always follows the operator's touched finger (**4**). As shown in **FIG. 26**, the operator is making selection for letter N on a soft keyboard (**35**) by using the virtual button mechanism explained previously.

[**0128**] Like a cursor of a mouse icon, the cursor (**74**) used in the present tablet cursor interaction mode can be interchanged automatically. For example, according to one exemplary embodiment, the cursor (**74**) may change from a pointer (arrow) to an insert cursor (|) while working with word processor software.

[**0129**] Additionally, the present tablet cursor interaction mode illustrated in **FIG. 26** can incorporate and otherwise take advantages of the other modes, previously described. The ability of the present tablet cursor interaction mode to incorporate and otherwise take advantage of the other previously described modes may depend on the capability of the input device used.

[**0130**] In conclusion, the present exemplary systems and methods allow a computer to do so some much more even if it is very small in size. Many restrictions that normally hinder the communication between a human and a computer can be removed. One input device can be used to replace many other input devices. The present system and method provides a human computer interaction method that can exploit the dexterity of human hands and fingers using touch sensing technology for every type of computing device. The present system and method also provide a simple, intuitive, and fun-to-use method for word processing on small computing devices such as a mobile phones, digital cameras, camcorders, watches, palm PCs, and PDAs. Additionally, this method is faster to operate than any other existing system, and does not require new learning. The present system and method also provide a method for word processing by touch typing or browsing without using a mechanical keyboard by providing a direct manipulation method for human computer interaction. Using the above-mentioned advantages, the present system and method provides the possibility of creating even smaller computing devices.

[**0131**] The preceding description has been presented only to illustrate and describe exemplary embodiments of the present system and method. It is not intended to be exhaustive or to limit the system and method to any precise form disclosed. Many modifications and variations are possible in light of the above teaching. It is intended that the scope of the system and method be defined by the following claims.

1. A data input device comprising:

a finger touch sensing surface;

wherein said finger touch sensing surface is configured to produce a visual feedback in response to a touching of said touch inputs, said visual feedback corresponding to an absolute location that said finger touch sensing surface was touched by a finger.

2. The data input device of claim 1, wherein said data input device is configured to provide a function of a traditional input device.

3. The data input device of claim 2, wherein said function of a traditional input device includes a functionality of one of a mouse, a keyboard, a stylus, or a touch screen.

4. The data input device of claim 1, wherein said finger touch sensing surface comprises one of a virtual switch device, a touch pad, an air gap virtual switch, of a rubber feet virtual switch, a peripheral switch, or a touch strength detector.

5. The data input device of claim 1, wherein said visual feedback comprises one of an icon on a visual display or a highlighted key on a virtual keyboard.

6. The data input device of claim 5, wherein said virtual keyboard comprises one of a QWERTY keyboard or a cell phone keypad.

7. The data input device of claim 1, wherein said finger touch sensing surface is configured to:

simultaneously sense a touching of multiple fingers; and

produce an independent visual feedback corresponding to an absolute position of each of said multiple fingers on said finger touch sensing surface.

8. The data input device of claim 7, wherein said data input device is configured to perform a functionality of a keyboard.

9. The data input device of claim 8, wherein said visual feedback comprises a highlighting of a key on a virtual keyboard.