ALTERNATE KEY OPTIONS FOR LAUNCHING APPLICATIONS IN MOBILE COMMUNICATION DEVICES

Inventors: Jeffrey C. Hawkins, Atherton, CA (US); Robert Y. Haitani, Menlo Park, CA (US)

Correspondence Address:
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041 (US)

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ABSTRACT
A system and a method are disclosed for using an application button on a hand-held computing device to launch a plurality of applications including a primary application and an alternate application. A primary application is associated with an application button and an alternate application is associable with the application button. Responsive to a received input requesting launching the alternate application, the primary application is temporarily disassociated with the application button and the alternate application is temporarily associated with the application button. This causes the alternate application to be launched when the application button is activated. Multiple alternate applications may be associable with an application button so that different inputs including the application button activate different applications.
ASSOCIATE INPUTS WITH ALTERNATE APPLICATION 510

RECEIVE INPUT REQUESTING ALTERNATE APPLICATION 520

LAUNCH ALTERNATE APPLICATION 530

FIG. 5
<table>
<thead>
<tr>
<th>Application Button 610</th>
<th>Button 1 611</th>
<th>Button 2</th>
<th>Button 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option + Application Button 630</td>
<td>Application 1 613</td>
<td>Application 4</td>
<td>Application 5</td>
</tr>
<tr>
<td>Press and Hold Application Button 640</td>
<td>Application 10 617</td>
<td>Application 8</td>
<td>Application 3</td>
</tr>
<tr>
<td>Shift + Option + Application Button 650</td>
<td>Application 12 619</td>
<td>Application 6</td>
<td>Application 7</td>
</tr>
</tbody>
</table>

FIG. 6
ALTERNATE KEY OPTIONS FOR LAUNCHING APPLICATIONS IN MOBILE COMMUNICATION DEVICES

CROSS REFERENCE TO RELATED APPLICATIONS


BACKGROUND

[0002] 1. Field of Art

[0003] The disclosure generally relates to the field of mobile computing, in particular to launching applications on a mobile communication device.

[0004] 2. Description of the Related Art

[0005] Mobile computing devices, particularly hand-held devices and computers, are becoming increasingly more powerful and functional devices. Many hand-held devices are multifunction devices with multiple device roles, such as personal digital assistant (PDA), cellular phone, portable media player, voice recorder, video recorder, global positioning system (GPS), camera and electronic file storage. This increased functionality has caused hand-held devices to use an increased number of applications. Further, hand-held devices have become increasingly more compact and portable while their functionality has increased. This combination of increased functionality and reduced size has made hand-held device use more prevalent.

[0006] Hand-held devices use specialized applications to provide different functions, so increases in functionality have increased the number of applications used by hand-held devices. However, the compact size of hand-held devices limits the number of data entry mechanisms, such as buttons or activation areas, capable of launching these different applications. Although increasing hand-held device size would increase the number of possible data entry mechanisms for application launching, such an increase would reduce the portability of the hand-held device.

[0007] Alternatively, more complex data entry mechanisms, such as special key sequences, allow hand-held devices to remain compact while providing a mechanism for launching additional applications. However, requiring users to memorize complex key sequences for application launching complicates the user interface of the hand-held device. Further, using key sequences to launch applications increases the time necessary to launch applications.

[0008] From the above, there is a lack of a method for quickly launching applications on a hand-held device having physical size limitations.

SUMMARY

[0009] Using various embodiments disclosed herein, a mobile computing device, for example, a hand-held computing device, uses an application button to launch a plurality of applications. This simplifies launching applications on a hand-held computing device by allowing multiple applications to be launched using an application button. In particular, different inputs including the application button can be used to intuitively launch multiple applications without requiring the hand-held computing device to implement a complex user interface.

[0010] In one embodiment, the hand-held computing device initially associates a primary application with an application button. At least one alternate application is also associated with the application button so that an alternate application is launched through an input that includes the application button. For example, an input including the application button and an option button enables the alternate application or an input of pressing and holding the application button enables the alternate application. When input requesting the launching of the alternate application is then received, the alternate application is temporarily associated with the application button and the primary application is temporally disassociated with the application button. This causes the application button to launch the alternate application.

[0011] In an embodiment, input is received from a user that assigns a first input including the application button to a first alternate application and assigns a second input including the application button to a second alternate application. This allows an application button to launch multiple applications when different inputs including the application button are received.

[0012] The features and advantages described in the specification are not all inclusive and, in particular, many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification, and claims. Moreover, it should be noted that the language used in the specification has been principally selected for readability and instructional purposes, and may not have been selected to delinate or circumscribe the described subject matter.

BRIEF DESCRIPTION OF DRAWINGS

[0013] The disclosed embodiments have other advantages and features which will be more readily apparent from the detailed description, the appended claims, and the accompanying drawings, in which:

[0014] Figure (FIG.) 1A illustrates a front perspective view of one embodiment of a hand-held computing device.

[0015] FIG. 1B illustrates a rear perspective view of one embodiment of a hand-held computing device.

[0016] FIG. 1C illustrates a front side view of one embodiment of a hand-held computing device.

[0017] FIG. 2 illustrates a block diagram of one embodiment of a hand-held computing device.

[0018] FIG. 3A illustrates an example embodiment of a keyboard of the hand-held computing device.

[0019] FIG. 3B illustrates an example embodiment of a layout of the application buttons on a hand-held computing device.

[0020] FIG. 4 illustrates one embodiment of a hand-held computing device comprising a handwriting area.
[0021] FIG. 5 illustrates a flow chart of one embodiment of launching an alternate application associated with an application button.

[0022] FIG. 6 illustrates an example embodiment of a user interface for associating applications with input sequences.

DETAILED DESCRIPTION

[0023] The Figures (FIGS.) and the following description relate to preferred embodiments by way of illustration only. It should be noted that from the following discussion, alternative embodiments of the structures and methods disclosed herein will be readily recognized as viable alternatives that may be employed without departing from the principles described herein.

[0024] Reference will now be made in detail to several embodiments, examples of which are illustrated in the accompanying figures. It is noted that wherever practicable similar or like reference numbers may be used in the figures and may indicate similar or like functionality. The figures depict embodiments of the disclosed system (or method) for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles described herein.

Architectural Overview

[0025] FIG. 1A illustrates a front view of a mobile computing device, such as a hand-held computing device 100, according to one embodiment of the present invention. In an embodiment, the hand-held computing device 100 comprises a case 101 having a front side 104 and one or more sides, such as a first side 102. The front side 104 comprises a display area 128, a keyboard 103 and application buttons 112, 114, 116, 118 and 120. As shown in FIG. 1A, the hand-held computing device 100 is structured to be of a form factor that can be conveniently held in a user's hand, such as the form factor of a personal digital assistant (PDA) or the form factor of a smart phone. For example, the hand-held computing device 100 can have dimensions ranging from 7.5 to 15.5 centimeters in length, 5 to 12.75 centimeters in width, 0.64 to 2.2 centimeters in height and weigh between 57 and 227 grams.

[0026] The display area 128 comprises an active matrix liquid crystal display (AMLCD), a thin-film transistor liquid crystal display (TFT-LCD), an organic light emitting diode (OLED), an interferometric modulator display (IMOD), a liquid crystal display (LCD), or other suitable display device. In an embodiment, the display displays color images. In another embodiment, the display area 128 further comprises a touch-sensitive display (e.g., pressure-sensitive (resistive), electrically sensitive (capacitive), acoustically sensitive (SAW or surface acoustic wave), photo-sensitive (infra-red) including a digitizer for receiving input data, commands or information from a user. The user may use a stylus, a finger or another suitable input device for data entry, such as selecting from a menu.

[0027] Application buttons 112, 114, 116, 118 and 120 allow a user to load an application or perform another action. Each application button 112, 114, 116, 118 and 120 is associated with at least one application or action. Activation, or selection, of an application button 112, 114, 116, 118 or 120 causes the immediate launch, or execution, of an application associated with the activated application button 112, 114, 116, 118 or 120. For example, application button 112 is associated with a telephone application, application button 114 is associated with a calendars application, application button 116 is associated with a scroll-up/scroll-down feature and application button 118 is associated with an Internet access application. In another embodiment, an application button 120 may be associated with a messaging service, such as email, short messaging service (SMS), media messaging service (MMS), or another messaging service. In another embodiment, application button 116 comprises a five-way navigation switch, a jog rocker or another input device capable of receiving multiple types of user input. One or more application buttons 112, 114, 116, 118 or 120 are associated with more than one function or more than one application, allowing one application button 112, 114, 116, 118 or 120 to directly launch multiple applications or perform multiple actions. For example, pressing and immediately releasing an application button 112, 114, 116, 118 or 120 directly launches a primary application, while pressing and holding the application button 112, 114, 116, 118 or 120 for longer than an immediate release of the application button 112, 114, 116, 118 or 120 launches an alternate application. Hence, the application buttons 112, 114, 116, 118 or 120 simplify the user interface of the hand-held computing device by allowing a user to directly launch one or more applications.

[0028] In an embodiment, the hand-held computing device 100 further comprises an optional lid 106. For example, the lid 106 is a flip type that is hinged 144 above the display area 128 that includes a transparent portion 108 through which a user can see the display area 128 even when the lid 106 is closed. In another embodiment, the lid 106 further comprises a speaker 110.

[0029] In another embodiment, the hand-held computing device 100 further comprises a side user input device 126, such as a jog rocker, a button or other input device located on the first side 102. Also included on the first side 102 of the device 100 is a socket 130 allowing a device, such as a headset, a single earpiece, a hands-free speaker device, headphones or other device to be connected to the hand-held computing device 100.

[0030] FIG. 1B illustrates a rear side 142 of the hand-held computing device 100. A top side 146 of the hand-held device 100 includes an antenna 136 and a ringer switch 132 (further described below in conjunction with FIG. 2) inside of the case 101 that provide for radio communications using cellular telephone functionality. In an embodiment, the antenna 136 also provides for data communication using a wireless communication system, such as general packet radio service (GPRS), IEEE 802.11 (WiFi), IEEE 802.16 (WiMax) or another suitable wireless communication system. In an embodiment, a light emitting diode (LED) 152 is shown on the top side 146 of the device. The top side 146 of the hand-held computing device 100 also includes an opening for a stylus holder 134 which extends cylindrically down the rear side 142 of the hand-held computing device 100. The rear side 142 of the hand-held device 100 further comprises a door 140. In one embodiment, the door 140 is structured to receive a component, for example, an identification card such as a subscriber identification module (SIM) card typically used with the Global System for
Mobile (GSM) communication networks or a data storage device, such as a Secure Digital (SD) card that interoperates with a user or the hand-held computing device 100. This allows the user to place the card, or other data storage device, in another device. For example, if a user is on another continent, the user can insert the card into another communication device, such as a telephone configured to operate at the frequencies allocated for that continent, country or group of countries.

[0031] FIG. 1C illustrates a view of the front side of the hand-held computing device 100 with the lid 106 in a closed position. The lid 106 extends over the keyboard 103 and the display area 128 in the closed position. In an embodiment, the lid 106 comprises a transparent portion 108 to protect the display area 128 while also allowing the user to view the display 128.

[0032] FIG. 2 illustrates a block diagram of an embodiment of a system 200 comprising units making up the hardware and/or software for performing these functions. In an embodiment, the system 200 is implemented in a printed circuit board. The system 200 comprises a microprocessor 202, a read only memory (ROM) 204, a synchronous dynamic random access memory (SDRAM) 206, an input/output (I/O) port 208 for processing input from the keyboard 103, the side user input device 126, the ringer switch 132, the power switch 136 or any other suitable input device. In another embodiment, the user interface unit 208 also determines the position of the lid 106 to determine whether the lid 106 is open or closed. Charging circuitry 210 is also adapted to communicate with the microprocessor 202 for providing power to the microprocessor 202 from the battery 212 and/or for providing power to the battery 212 from a cradle connector 226. The microprocessor 202 is adapted to communicate with a display unit 216 and a backlight unit 218 to provide output to a user using display area 128. In an embodiment, the microprocessor 202 is also adapted to communicate with a touch panel unit 216 to receive input from the display area 128.

[0033] The microprocessor 202 is also connected to a peripheral device transceiver 224, such as a universal Serial Bus (USB) transceiver, a Bluetooth transceiver, an IEEE 1394 transceiver or any other wired or wireless transceiver that transmits and receives data from a peripheral device, and an input/output (I/O) port 222, such as an EIA-232 port, an RS-232 port or other port capable of transmitting and/or receiving data. In an embodiment, the peripheral device transceiver 224 and/or the I/O port 222 are also connected to the cradle connector 226. The microprocessor 202 is also connected to an infrared communication transceiver 220, such as an Infrared Data Association (IrDA) transceiver. The microprocessor is also connected with a speaker unit 228, such as a piezo speaker, a red/green light emitting diode (LED) unit 230, a vibrator unit 232 or another device capable of providing output to a user.

[0034] The microprocessor 202 is also connected to a radio module 234 providing radio communications including cellular telephone functionality. In an embodiment, the radio module 234 also provides wireless data communication functionality. The radio module 234 also can provide Internet access, text messaging or other communication functionality. An example text messaging service provided by the radio module 234 is the short message service (SMS) which provides for sending and receiving short text messages from the hand-held computing device 100 to another communication device such as a personal digital assistant, a mobile phone, a smart-phone or other suitable communication device. The radio module 234 is connected to an antenna 236 and an amplifier 238, which is also connected to an internal speaker 240. The radio module 234 is also connected to an internal microphone 242 as well as a card detector unit 244. In an embodiment, the radio module 234 is further connected to a hands-free attachment connector 246.

[0035] Logic enclosed within the hand-held computing device 100, such as hardware and/or software, processes input from user input devices in different forms and performs functions with respect to the input. For example, the user interface unit 208 may be embodied in hardware and/or software under the control of the microprocessor 202 which executes software instructions for receiving input and responding to the received input using software application programs 205 stored in a memory such as read only memory 204, random access memory, such as the illustrated SDRAM 206, or the user interface unit 208.

[0036] FIG. 3A illustrates a keyboard 103 that is included in the hand-held computing device 100 in an embodiment of the invention. Keyboard 103 allows users to accurately enter data for e-mail, other forms of electronic messaging, text editing, device configuration or other actions involving entered data. In an embodiment, the keyboard 103 comprises a layout with the Q-W-E-R-T-Y keys contiguous within a row (e.g., a “QWERTY” layout or a “QWERTY” keyboard). The keyboard 103 includes 26 keys for the letters A-Z, keys for punctuation marks, and an option key 628. The option key 628 is a dedicated key for performing an alternate action when another key is depressed. Keyboard 103 also includes keys for certain functions such as “space,” “return,” “backspace,” or other functions used for data entry and/or modification. In an embodiment, the keyboard 103 is a representation of a QWERTY keyboard displayed the display area 128. The keys receive input from a user that is subsequently processed and used by the hand-held device 100. Hence, the keyboard receives input from the user which is subsequently interpreted by the hand-held device 100 to determine appropriate processing for the received input.

[0037] In an embodiment, keyboard 103 also includes specialized keys, such as the option key 628, a shift key 630 and/or a menu/command key 632, which perform predefined operations. Input from the option key 628 causes an option symbol associated with a key to be entered when the key is activated. In the example shown in FIG. 3A, the “y” key 610 has an option symbol of “1,” so after the option key 628 is activated, activating the “y” key 610 causes a “1” to be entered. Input from the shift key 630 causes a modified version of a key, such as a capitalized version of the key, to be entered when the key is activated. Input from the menu/command key 632 causes a menu screen or command entry screen to be displayed in the display area 128.

[0038] FIG. 3B shows the layout of one embodiment of the application buttons 112, 114, 116, 118 and 120 of the hand-held computing device 110. Each application button 112, 114, 116, 118 and 120 is associated with a primary application which is loaded when the application button is activated. In an embodiment, a first application button 112 is
associated with a telephone application, a second application button 114 is associated with a calendar application, a third application button 118 is associated with an Internet access application and a fourth application button 120 is associated with a messaging application. In an embodiment, a fifth application button 116 is associated with a scroll-up/scroll down feature. Although the example illustrated in FIG. 3B shows five application buttons 112, 114, 116, 118 and 120, in other embodiments the hand-held computing device 110 can contain additional application buttons or fewer application buttons.

[0039] One or more of the application buttons 112, 114, 116, 118 and 120 are also associated with one or more alternate applications, allowing a single application button 112, 114, 116, 118 or 120 to launch the primary application or an alternate application. In an embodiment, when the option key 628 is activated and then the first application button 112 is activated, an alternate application, such as a telephone directory, is launched rather than the primary application associated with the first application button 112. In an alternative embodiment, when a user depresses and holds an application button 112, 114, 116, 118 or 120, an alternate application is launched. In an embodiment, one or more application buttons 112, 114, 116, 118 or 120 are associated with multiple alternate applications, allowing a single application button 112, 114, 116, 118 or 120 to launch multiple applications. For example, pressing and immediately releasing the first application button 112 launches a telephone application, depressing the option key 628 then depressing the first application button 112 launches a telephone directory application and pressing and holding the first application button 112, for longer than an immediate release, activates a push-to-talk application.

[0040] In an embodiment, the primary application associated with an application button 112, 114, 116, 118 or 120 and alternate applications associated with an application button 112, 114, 116, 118 or 120 are modified or defined by a user according to user preferences or requirements. For example, a user specifies that related applications such as a telephone application, a telephone directory application, a voice recorder application and a push to talk application are activated by the first application button 112. Alternatively, the primary application associated with an application button 112, 114, 116, 118 or 120 and alternate applications associated with an application button 112, 114, 116, 118 or 120 are predefined so an application button 112, 114, 116, 118 or 120 activates the same group of applications on multiple hand-held computing devices 100. In yet another embodiment, a combination of predefined and customizable application associations is used so a user can customize a subset of the applications associated with an application button 112, 114, 116, 118 or 120 while other applications associated with an application button 112, 114, 116, 118 or 120 remain fixed.

[0041] FIG. 4 illustrates another embodiment of the hand-held computing device 100 of FIGS. 1A, 1B and 1C. In the embodiment illustrated in FIG. 4, the hand-held computing device 100 comprises a handwriting area 702 on which a user enters symbols using a stylus or another contact data entry device. Icons surrounding the handwriting area 720 perform functions when tapped or otherwise activated. For example, an application icon 708 opens applications when activated, a calculator icon 706 displays a calculator when activated and a find function icon 704 allows a user to search data for text. In an embodiment where the hand-held computing device 100 comprises a lid 106, when the lid is closed, the hand-held computing device 100 illustrated in FIG. 4 appears as the hand-held computing device 100 depicted in FIG. 1C. The hand-held computing device 100 shown in FIG. 4 also comprises a system, such as described above in conjunction with FIG. 2, comprising logic, such as hardware and/or software, for providing communication service and symbol processing. For example, the hand-held computing device 100 illustrated in FIG. 4 also includes radio communication functionality such as cellular, or mobile, telephone functionality as described above.

System Operation

[0042] FIG. 5 illustrates a flow chart of a method 500 for activating an alternate application associated with an application button 112, 114, 116, 118 and 120 according to one embodiment of the present invention. In an embodiment, the steps of the method 500 are implemented by the microprocessor 202 executing software instructions that cause the described actions. Those of skill in the art will recognize that one or more of the methods may be implemented in embodiments of hardware and/or software or combinations thereof. For example, instructions for performing the described actions are embodied or stored within a computer readable medium. Furthermore, those of skill in the art will recognize that other embodiments can perform the steps of FIG. 5 in different orders. Moreover, other embodiments can include different and/or additional steps than the ones described here.

[0043] Initially, application buttons 112, 114, 116, 118 and 120 are associated 510 with one or more alternate applications so an application button 112, 114, 116, 118 or 120 activates a primary application and one or more alternate applications. For example, a software process executing on a processor allows a user to associate 510 an application button 112, 114, 116, 118 or 120 with at least one alternate application. Alternatively, hardware and/or firmware pre-define the alternate applications associated 510 with an application button 112, 114, 116, 118 or 120. In another embodiment, a combination of hardware and software is used to associate 510 applications with an application button 112, 114, 116, 118 or 120, allowing a set of applications associated with an application button 112, 114, 116, 118 or 120 to be predefined and another set of applications associated with an application button 112, 114, 116, 118 or 120 to be user-defined. For example, the primary applications associated with an application button 112, 114, 116, 118 or 120 are predefined using hardware, while the alternate applications associated with an application button 112, 114, 116, 118 or 120 are specified using software and can be modified during operation.

[0044] Upon receiving 520 input to launch an alternate application, the application associated with the received input is launched 530. In an embodiment, when the received input comprises pressing then immediately releasing an application button a primary application is launched. Alternatively, the received input comprises pressing then releasing an application after a specified time interval. A user may provide the input to launch the alternate application by using a key sequence, such as activating the option key 628 then
activating an application button 112, 114, 116, 118 or 120, activating the option button 628, activating the shift key 630 then activating an application button 112, 114, 116, 118 or 120. Alternatively, a user may launch an alternate application by pressing and holding an application button 112, 114, 116, 118 or 120 for longer than an immediate release. The received input determines which alternate application is launched 530, allowing an application button 112, 114, 116, 118 or 120 to launch 530 multiple applications depending on the received input.

User Interface

[0045] As described above, a user may specify how applications are associated with received inputs, such as depressing an application button 112, 114, 116, 118 or 120, holding an application button 112, 114, 116, 118 or 120 down, entering a key sequence including an application button 112, 114, 115, 118 or 120 or another suitable input. This allows the user to assign different input sequences with different alternate applications, allowing an application button to launch multiple alternate applications. FIG. 6 shows an embodiment of a user interface for associating applications with input sequences according to an embodiment of the invention. Those of skill in the art will recognize that different embodiments can provide the information and functionality of FIG. 6 in different ways. Moreover, other embodiments can include different and/or additional features and/or layouts than the ones described here.

[0046] In one embodiment, the display area 128 of the hand-held computing device 100 displays a configuration display, such as a preference panel, describing the application buttons 612, input sequences 634, 640 and 650 including the application buttons 612, and applications 620 launched by the input sequences 634, 640 and 650. The configuration display may be accessed according to standard user-interface techniques for the hand-held computing device 100, such as selecting an option from a configuration menu, entering a key input sequence or depressing a configuration button. In the example shown in FIG. 6, each row and column indicates the application 620 activated by an input sequence 634, 640 and 650. In the example of FIG. 6, depressing Button 1611 launches Application 1613, depressing the option key 628 then depressing Button 1611 launches Application 11615, holding Button 1611 launches Application 10617 and depressing the shift key 630 then the option key 628 then Button 1611 launches Application 12619.

[0047] Further, the configuration panel allows a user to specify or modify the applications 620 associated with at least a subset of the input sequences 634, 640 and 650. This allows the user to customize the input sequence 634, 640 and 650 used to launch various applications 620. In an embodiment, the user manually specifies the application 620 launched by each input sequence 634, 640 and 650. Alternatively, the user manually specifies a subset of the applications 620 launched by each input sequence 634, 640 and 650, while certain applications 620 are statically associated with certain input sequences 634, 640 and 650. For example, in FIG. 6, Application 1613 could be statically associated with Button 1611 while the input sequence 634, 640 and 650 associated with Application 11615, Application 10617 and Application 12619 are specified by the user by modifying the contents of the configuration panel. The contents of the configuration panel can be modified in a variety of ways. In one embodiment, the user taps the display area 128 in the location where the contents are to be changed and then enters an application 620 or selects an application 620 from a list. Alternatively, the user uses an application button 112, 114, 116, 118 or 120, the side user input device 126, or other navigation device, to highlight the location where the contents are to be changed, presses a key, an application button 112, 114, 116, 118 or 120 or another user input device to select the location then enters an application 620 or selects an application 620 from a list.

[0048] The applications 620 associated with the input sequences 634, 640 and 650 comprise a variety of applications or actions performed by a hand-held device 100. For example, the application 620 comprises a general application for performing user-specified tasks, such as a calendar, a contact database, a text editor, an e-mail editor, a calculator, an interactive map, a web browser, a file manager, an image capture application, a push to talk application or other software capable of performing end-user tasks. Alternatively, the applications associated with the input techniques 634, 640 and 650 comprise system-level applications such as a keypad, a volume control, a power management application, a display manager application or other application modifying system-level functions or characteristics of the hand-held computing device 100.

[0049] Some portions of above description describe the embodiments of the invention in terms of algorithms and symbolic representations of operations on information. These algorithmic descriptions and representations are commonly used by those skilled in the data processing arts to convey the substance of their work effectively to others skilled in the art. These operations, while described functionally, computationally, or logically, are understood to be implemented by computer programs or equivalent electrical circuits, microcode, or the like. Furthermore, it has also proven convenient at times, to refer to these arrangements of operations as modules, without loss of generality. The described operations and their associated modules may be embodied in software, firmware, hardware, or any combinations thereof.

[0050] As used herein any reference to “one embodiment” or “an embodiment” means that a particular element, feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment. The appearances of the phrase “in one embodiment” in various places in the specification are not necessarily all referring to the same embodiment.

[0051] Some embodiments may be described using the expression “coupled” and “connected” along with their derivatives. It should be understood that these terms are not intended as synonyms for each other. For example, some embodiments may be described using the term “connected” to indicate that two or more elements are in direct physical or electrical contact with each other. In another example, some embodiments may be described using the term “coupled” to indicate that two or more elements are in direct physical or electrical contact. The term “coupled,” however, may also mean that two or more elements are not in direct contact with each other, but yet still co-operate or interact with each other. The embodiments are not limited in this context.
[0052] As used herein, the terms “comprises,”“comprising,”“includes,”“including,”“has,”“having” or any other variation thereof, are intended to cover a non-exclusive inclusion. For example, a process, method, article, or apparatus that comprises a list of elements is not necessarily limited to only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. Further, unless expressly stated to the contrary, “or” refers to an inclusive or and not to an exclusive or. For example, a condition A or B is satisfied by any one of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

[0053] In addition, use of the “a” or “an” are employed to describe elements and components of the embodiments herein. This is done merely for convenience and to give a general sense of the invention. This description should be read to include one or at least one and the singular also includes the plural unless it is obvious that it is meant otherwise.

[0054] Upon reading this disclosure, those of skill in the art will appreciate still additional alternative structural and functional designs for a system and a process for using application buttons to quickly launch multiple applications without modifying the design of hand-held computing devices through the disclosed principles herein. Thus, while particular embodiments and applications have been illustrated and described, it is to be understood that the present invention is not limited to the precise construction and components disclosed herein and that various modifications, changes and variations which will be apparent to those skilled in the art may be made in the arrangement, operation and details of the method and apparatus of the embodiments disclosed herein without departing from the spirit and scope as defined in the appended claims.

What is claimed is:

1. A method for launching a plurality of applications, the method comprising:
   - associating a first application with an application button and having a second application associable with the application button;
   - receiving input from a first key or the application button to temporarily disassociate the first application with the application button and temporarily associate the second application with the application button; and
   - receiving input from depressing the application button; and
   - launching the second application associated with the application button.

2. The method of claim 1, further comprising:
   - disassociating the second application with the application button; and
   - reassociating the first application with the application button.

3. The method of claim 1, wherein receiving input from a first key or the application button comprises:
   - receiving input from a first key indicative of the second application; and
   - receiving input from the application button.

4. The method of claim 3, wherein the first key indicative of the second application comprises an option key.

5. The method of claim 1, wherein receiving input from the first key or the application button comprises pressing and holding the application button for longer than an immediate release of the application button.

6. The method of claim 1, further comprising:
   - receiving a configuration command from a user, the configuration command assigning the second application associable with the application button to an input including the application button.

7. The method of claim 1, further comprising:
   - receiving a first configuration command from a user, the first configuration command assigning the second application associable with the application button to a first input including the application button; and
   - receiving a second configuration command from a user, the second configuration command assigning a third application associable with the application button to a second input including the application button.

8. The method of claim 1, wherein the second application associable with the application button comprises a system-level application.

9. The method of claim 8, wherein the system-level application comprises an application selected from a group consisting of: a power management application, a keyguard application and a display manager application.

10. The method of claim 1, wherein the second application associable with the application button comprises a general application.

11. The method of claim 10, wherein the general application comprises an application selected from a group consisting of: a calendar, a contact database, a text editor, an email editor, a calculator, an interactive map, a web browser, a file manager, an image capture application and a messaging application.

12. A mobile computing device having telephone functionality for launching a plurality of applications comprising:
   - an option key;
   - an application button; and
   - a computer program product stored in a memory for launching the plurality of applications using the application button, wherein the computer program product comprises instructions that when executed by a processor cause the processor to:
     - associate a first application with the application button and have a second application associable with the application button;
     - receive input from the option key or the application button to temporarily disassociate the first application with the application button and temporarily associate the second application with the application button; and
     - receive input from depressing the application button; and
     - launch the second application associated with the application button.
13. The device of claim 12, wherein the input from the option key or the application button comprises:
pressing and releasing the option key and thereafter pressing and immediately releasing the application button.
14. The device of claim 12, wherein the input from the option key or the application button comprises:
pressing and holding the application button for longer than an immediate release of the application button.
15. The device of claim 12, further comprising:
a plurality of application buttons; and
a computer program product stored in the memory for launching the plurality of applications using the plurality of application buttons, wherein the computer program product comprises instructions that when executed cause the processor to:
associate a first application with each of the plurality of application buttons and have at least a second application associable with a combination of at least one of the plurality of application buttons and the option key.
16. The device of claim 12, wherein the second application associable with the application button comprises a system-level application.
17. The device of claim 16, wherein the system-level application comprises an application selected from a group consisting of: a power management application, a keyguard application and a display manager application.
18. The device of claim 12, wherein the second application associable with the application button comprises a general application.
19. The device of claim 18, wherein the general application comprises an application selected from a group consisting of: a calendar, a contact database, a text editor, an email editor, a calculator, an interactive map, a web browser, a file manager, an image capture application and a messaging application.
20. A computer readable medium configured to store instructions, the instructions when executed by a processor cause the processor to:
associate a first application with the application button and have a second application associable with the application button;
receive input from the option key or the application button to temporarily disassociate the first application with the application button and temporarily associate the second application with the application button;
receive input from depressing the application button; and
launch the second application associated with the application button.
21. The computer readable medium of claim 20, wherein receiving input from the option key or the application button comprises:
receiving input from a first key indicative of the second application; and
receiving input from the application button.
22. The computer readable medium of claim 21, wherein the first key indicative of the second application comprises an option key.
23. The computer readable medium of claim 20, further comprising instructions when executed by the processor cause the processor to:
receive a configuration command from a user, the configuration command assigning the second application associable with the application button to an input including the application button.
24. The computer readable medium of claim 23, further comprising instructions when executed by the processor cause the processor to:
receive a second configuration command from a user, the configuration command assigning a third application associable with the application button to a second input including the application button.
25. The computer readable medium of claim 20, wherein the second application associable with the application button comprises a system-level application.
26. The computer readable medium of claim 20, wherein the second application associable with the application button comprises a general application.

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