

“USER INTERFACE SYSTEM, METHOD AND DEVICE”**TECHNICAL FIELD**

[001] The present invention relates to a novel system and method for interfacing with computing devices such as smartphones, tablets, and the like. The invention also relates to a computing device that is incorporated with novel user interface elements.

BACKGROUND

[002] As can be appreciated from **FIG. 1**, user controls such as, the volume **12**, lock **14**, fingerprint scanner, home **16**, back **18**, recent apps **20** keys, on a smartphone **10** (or a phablet) are positioned apart from one another at different locations viz., on the sides, front and the rear of the smartphone **10**. Therefore, when the smartphone **10** is being operated single-handedly by a user, the placement of said controls, in addition to accessing the touchscreen beyond the area of reach of the thumb, causes the user to move his/her thumb all over the smartphone while constantly changing the grip of his/her hand with respect to the smartphone **10**. This makes the smartphone-wield unstable making it prone to slippages that may result in smartphone **10** damage.

SUMMARY

[003] An embodiment of the present disclosure is directed to a User Interface (UI) system for single-handed navigation of a handheld computing device, which comprises a smartphone or other such devices that have a form factor similar to that of a smartphone. The system comprises a thumbpiece comprising planar touch-gesture input surface disposed on a side edge of the smartphone so as to be accessible by the thumb of the user. The touch surface is disposed in operative communication with the smartphone display such that, when the smartphone is displaying scrollable content thereon, swiping on the thumbpiece along the longitudinal (vertical) axis thereof causes the scrollable content to be scrolled accordingly.

[004] Further, when the smartphone is unlocked, swiping on the thumbpiece along the lateral (horizontal) axis in a first direction causes the smartphone to invoke the function that is the resultant of the conventional actuation of the conventional “recent apps” key thereby displaying recent apps. Further, when the smartphone is displaying any screen other than the home-screen thereof, swiping on the thumbpiece along the lateral axis in an opposing second

direction causes the smartphone to invoke the function that is the resultant of the actuation of the conventional “back” key thereby displaying screen that is last accessed by the user. In an additional embodiment, the thumbpiece further comprises a fingerprint reader integrated therein for, inter alia, locking and unlocking the smartphone biometrically.

[005] In one embodiment, the touch surface is programmed to read additional touch gestures such as, for example, double-tapping thereon. Said double-tapping may result in the invocation of the conventional “home” key on a smartphone leading to the home-screen. In another example, said double-tapping may result in locking the smartphone. The thumbpiece further comprises three physical keys viz., a pair of volume up and down keys and a home (or lock) key, wherein the touch surface is disposed atop the three physical keys. Preferably, the home key is disposed between the volume keys.

[006] The system further comprises a focus zone, which comprises a rectangular area of smartphone display extending between the longitudinal edges of the screen. The focus zone is preferably disposed within the top half of the smartphone screen wherein, said location is where the user’s eyes naturally land when looking at the smartphone display in portrait mode. The system is configured such that, when a selectable item (such as, a link to another screen, an app, a text-input section, etc.) or a part thereof, is within (or brought to be within) the purview of the focus zone, tapping on the thumbpiece leads to the selection of said “focused” item.

[007] Other features and advantages will become apparent from the following description of the preferred embodiments, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF FIGURES

[008] **FIG. 1** is an illustration of a smartphone known in the art.

[009] **FIG. 2** is an illustration of the smartphone depicting the comport zone of the thumb on the display as the held single-handedly.

[0010] **FIG. 3** is an illustration of a smartphone being “standard-gripped.”

[0011] **FIG. 4** is an illustration of a perspective view of the smartphone.

[0012] **FIG. 5** is an illustration of the plan view of the thumbpiece.

[0013] **FIG. 6** is an illustration of a side view of the smartphone.

[0014] **FIG. 7** is an illustration depicting the content of the smartphone being scrolled via the thumbpiece.

[0015] **FIG. 8** is an illustration depicting the focus zone defined within the display screen.

[0016] **FIG. 9** depicts sequential illustrations involved in the selection of a YouTube video link (YouTube®) via the thumbpiece.

[0017] **FIG. 10** is an illustration of focus zone encompassing, inter alia, a default item **64** within a preselection frame.

[0018] **FIG. 11** depicts sequential illustrations involved in “extra-locking” a default item **64**.

[0019] **FIG. 12** depicts, according to an embodiment of the present invention, the positioning of the additional options closer to a side edge of the smartphone display.

[0020] **FIG. 13** is an illustration depicting the invocation of the “recent apps” function as the thumbpiece is swiped thereupon laterally.

[0021] **FIG. 14** is an illustration depicting the thumbpiece being swiped laterally thereupon so as to invoke the “back” function.

[0022] **FIG. 15** is, according to an embodiment of the present invention, an illustration of the thumbpiece comprising two keys.

[0023] **FIG. 16** is, according to an embodiment of the present invention, an illustration of the plan view of the joy-piece.

[0024] **FIG. 17** is, according to an embodiment of the present invention, an illustration of the plan view of the pointing-piece.

[0025] **FIG. 18** is, according to an embodiment of the present invention, an illustration of the plan view of the scroll-piece.

[0026] **FIG. 19** is, according to an embodiment of the present invention, an illustration of the plan view of the track-piece.

[0027] **FIG. 20** is an illustration of a perspective view of the smartphone showing the map key.

[0028] **FIG. 21** is an illustration depicting the launch of app drawer via the thumbpiece and the map key.

[0029] **FIG. 22** is an illustration depicting the launch of notification panel via the thumbpiece and the map key.

[0030] **FIGs. 23A** through **23C** comprise sequential illustrations involved in the selection of default app, control and link respectively.

[0031] **FIG. 24** is an illustration depicting the conversion of focused apps to locked apps.

[0032] **FIGs. 25A** and **25B** depict the blurring effect on Twitter (Twitter®) and the app drawer respectively.

[0033] **FIGs. 26A** and **26B** are sequential illustrations depicting the sequential preselection process.

[0034] **FIG. 27** is an exemplary screenshot of a settings screen with the links therein looped.

[0035] **FIG. 28** illustrates the shifting of the focus zone.

[0036] **FIG. 29** is an exemplary screenshot of the YouTube app (YouTube®) with top and bottom sections.

[0037] **FIG. 30** is an exemplary screenshot of the Twitter app (Twitter®) with hamburger menu laid atop the main feed screen.

[0038] **FIGs. 31A** and **31B** depict the clusters in exemplary Twitter® and YouTube feeds (YouTube®).

[0039] **FIGs. 32A** and **32B** are exemplary clusters pertaining to Twitter® and YouTube®).

[0040] **FIG. 33** depict sequential illustrations involved in the selection of a focused cluster.

[0041] **FIG. 34** is, according to an embodiment of the present invention, an exemplary screenshot of an extra-locked Twitter® cluster.

[0042] **FIG. 35** depicts, according to an embodiment of the present invention, exemplary sequential illustrations involved in “liking” a selectable item.

[0043] **FIG. 36** is, according to an embodiment of the present invention, an illustration of a tablet PC comprising the thumbpiece and the map key.

[0044] **FIG. 37** is an illustration of a perspective view of the smartphone case.

[0045] **FIG. 38** is an illustration of another perspective view of the smartphone case.

[0046] **FIG. 39** is an illustration of the plan view of the smart control pieces.

[0047] **FIG. 40** is an illustration of a smartphone attached with the smart control pieces.

[0048] **FIG. 41** is a flowchart mapping the process involved in selecting a default item **64** via the UI method.

[0049] **FIG. 42** is a flowchart mapping the process involved in selecting a non-default item **64** via the UI method.

[0050] **FIG. 43** is a block diagram of an exemplary computer-implemented system.

DETAILED DESCRIPTION

[0051] Embodiments of the present disclosure are explained in detail below with reference to the various figures. In the following description, numerous specific details are set forth to provide an understanding of the embodiments and examples. However, those of ordinary skill in the art will recognize a number of equivalent variations of the various features provided in the description. Furthermore, the embodiments and examples may be used together in various combinations.

[0052] The following specification discloses embodiments of the present invention that are directed to a User Interface (UI) system & method for accessing a computing device (hereinafter, the “system”). The specification also discloses embodiments that are directed to the device itself that is incorporated with the novel UI elements. The specification also further discloses embodiments directed to a device case paired to the computing device wherein, the case is incorporated with the UI elements. The specification also further yet discloses an external controller paired to a larger computing device such as a smart TV.

[0053] The computing device comprises a smartphone **10**, however, said system may also be adapted for other devices such as, tablets, phablets, laptops, TVs, external controllers, etc. Referring to **FIG. 1**, the frequently used keys, including both physical and virtual keys, on a smartphone **10** viz., the volume up and down keys **12**, the lock/unlock key **14**, the home key **16**, the back key **18**, the recent apps key **20** and the fingerprint scanner, are placed apart from one another and at different locations. As a result of this, the user, in order to operate said keys when the smartphone **10** is being single-handedly gripped, needs to change his/her grip constantly with respect to the smartphone **10**. The same thing also holds true for accessing the touchscreen display **21** beyond the comfort zone **22** of the thumb as the smartphone **10** is single-handedly gripped as seen in **FIG. 2**. Notably, as can be appreciated from **FIG. 3**, single-handedly gripping the smartphone **10** such that, the user's hand wraps around the rear of the smartphone **10** while at least three fingers and the thumb rest on the opposing longitudinal edges of the smartphone **10** is referred to as “standard-gripping” hereinafter. Single-handedly constantly changing one's grip makes the smartphone-wield unstable making it prone to falls and slippages. The system of the present invention is aimed at

delivering a better smartphone **10** interface experience to the user, especially when the smartphone **10** is standard-gripped.

[0054] The system comprises a user command input assembly for receiving user commands whereafter, said user commands are relayed to a processor, which in turn performs smartphone functions corresponding to said user commands. The processor comprises a plurality of processing modules comprising a reception module, an execution module, a focus module, a recognition module and an extra-lock module. More particularly, the system comprises a function database where, each user command is pre-associated with a smartphone function. Once a user command is received by the processor, more particularly, the reception module, via the user command input assembly, the function database is parsed for a match. Upon match, the corresponding smartphone function is duly executed by the execution module. Notably, a user command could be generic, i.e., resulting in the same smartphone function throughout all smartphone apps and screens, or contextual, i.e., resulting in different smartphone functions for different smartphone apps and screens (for the execution of the same user command).

[0055] Referring to **FIGs. 4** through **6**, the user command input assembly comprises a thumbpiece **24**, which in turn comprises a planar touch-gesture input surface (hereinafter, the “touch surface”). The touch surface is overlaid atop three adjacently-abutting keys viz., a pair of volume control keys **12** and a middle key. The thumbpiece **24** is integrated into a side edge of the smartphone **10** so as to be accessible by the thumb of the user as the smartphone **10** is standard-gripped. Preferably, the touch surface is flush with the side edge of the smartphone **10**. The touch surface is integrated with a fingerprint scanner.

[0056] The touch surface is disposed in operative communication with the smartphone display **21** such that, when the smartphone **10** is displaying scrollable content thereon, swiping on the touch surface along the longitudinal (vertical) axis thereof causes the scrollable content to be scrolled accordingly as seen in **FIG. 7**. In an alternate embodiment, the system is configured such that, swiping down on the thumbpiece **24** causes the scrollable content to be scrolled upwards and vice versa. Notably, the scrollable content may be vertically or horizontally scrollable. The longitudinal scrolling on the thumbpiece **24** is referred to as inputting a scroll command, which comprises a scroll gesture. In one embodiment, the system is configured such that, when the user swipes up on the touch

surface and holds at the top extremity thereof, the display jumps to the top of the scrollable content thereby mimicking the “home” or “refresh” key on several feed-based apps like Twitter, Instagram®, YouTube, (Twitter®, Instagram®, YouTube®) etc. Similarly, swiping down on the touch surface and holding at the bottom extremity thereof causes the display to jump to the bottom of the scrollable content. The touch-gestures of longitudinally scrolling a holding at the top and bottom extremities of the thumbpiece **24** are referred to as top and bottom commands respectively, which may also be referred to as top and bottom touch-gestures respectively. Alternatively, instead of swiping and holding, double tapping on the top and bottom extremities of the touch surface results in the scrollable content being jumped all the way to the top and bottom thereof respectively. When the smartphone display **21** is displaying scrollable content, which is currently not the top-most of the scrollable content, the reception of a top command via the user command input assembly results in the display of the top-most of the scrollable content. The top command is akin to the home button on Twitter™, Instagram™, etc., wherein selecting said home button results in the content feed jumping to the top. The top command, which is a user command, comprises a top gesture comprising swiping up longitudinally on the touch surface and holding at its extremity. Alternatively, the top command may be delivered via at least one type of user input being a key input, a joystick input, a pointing-piece input, a scroll wheel input or a trackball input. Similarly, when the display is displaying scrollable content, which is currently not the bottom-most of the scrollable content, the reception of a bottom command via the user command input assembly results in the display of the bottom-most of the scrollable content. The bottom command comprises a bottom gesture comprising swiping down on the touch input surface and holding at its extremity.

[0057] Referring to **FIGs. 4** and **6**, preferably, the thumbpiece **24** is located on the right-side edge of the smartphone **10** so as to be accessible by the right thumb of the user. Alternatively, the thumbpiece **24** may be located on the left side edge of the smartphone **10** so as to be accessible by the left thumb of the user. In one embodiment, a thumbpiece **24** may be located on both the right and left side edges of the smartphone **10** so as to be accessible by the right and left thumbs of the user. In one embodiment, the thumbpiece **24** and the side edge, whereon the thumbpiece **24** is located, are configured to be monolithically integrated whereby, the side edge (whereon the thumbpiece **24** is located) appears unitary. The thumbpiece **24** is wide (or thick) enough to register a lateral (or horizontal) swipe, the utility of which will be disclosed in the following body of text.

[0058] In an alternate embodiment (not shown), the thumbpiece **24** is located on the back of the smartphone **10** so as to be accessible by the index finger of the user. In one embodiment, two thumbpieces **24** may be employed wherein, one is employed on the side (so as to be accessible by the thumb), while the other is employed on the back of the smartphone **10** (so as to be accessible by the index finger). In alternate embodiments, the system is configured such that, swiping along the longitudinal axis of the thumbpiece **24** may result in other smartphone functions such as, adjusting the volume, screen brightness, locking and unlocking the smartphone **10**, camera zooming and un-zooming, receiving and rejecting phone calls, etc. In an alternate embodiment, the functions resulting from swiping on the thumbpiece **24** along the longitudinal axis are user-configurable.

[0059] Referring to **FIG. 8**, the system comprises a focus zone **26** defined within the display **21** of the smartphone **10** as determined by the processor. The focus module is specifically responsible for defining the focus zone within the display of the smartphone. More particularly, the focus zone **26** comprises a horizontal strip of an area extending between the longitudinal edges of the display screen **21**. The focus zone **26** is preferably located within the top half of the smartphone screen as said smartphone screen is in portrait orientation. Notably, the focus zone **26** is the portion of the smartphone display **21** where the user's eyes naturally land when one looks at the smartphone display **21** in portrait orientation. In one embodiment, the position of the focus zone **26** is configured to be user-adjustable. Notably, the processor (shown in **FIG. 43**) is configured to adapt and display content in portrait orientation of the smartphone (tablet, phablet, etc.).

[0060] Referring to **FIG. 8**, the system is configured such that, when a selectable item (such as, a hyperlink (or link) to another screen, an app icon (or simply an "app"), a text-input section, a key of a virtual keyboard, etc.) or a part thereof, is within (or brought to be within) the purview of the focus zone **26**, whereby said selectable item is said to "focused", receiving a selection gesture (which is a selection command) via the thumbpiece **24** leads to said "focused" selectable item being selected. The act of qualifying one or more selectable items within the focus zone as "focused" items is performed by the processor in conjunction with the focus module. Said selection of the focused item **62**, as enabled by the processor, includes said item being actuated, launched, toggled/de-toggled, activated/deactivated, deployed, etc. Notably, when a selectable item is within the focus zone **26**, said selectable

item is referred to as the “focused” item. In the event of there being only one focused item **62**, said focused item **62** is preselected by default. On the other hand, in the event of there being multiple focused item **62**, only one item thereof is preselected by default. The item that is preselected by default is referred to as the “default” item. The act of qualifying a focused item to be “preselected” is performed by the processor based on default criteria, which is stored within a default memory that is accessible by the processor. The selection gesture (or command) comprises single-tapping **32** on the thumbpiece **24**. Alternatively, the selection gesture may comprise one of a myriad of touch-gesture expressions such as, double-tapping, long-tapping **38** (i.e., tapping and holding on the thumbpiece **24**), etc. Notably, long-tapping **38** comprises placing, holding and releasing one’s thumb or finger from the thumbpiece **24**. An exemplary **FIG. 9** depicts a YouTube (YouTube®) video link **28** (or a part thereof) being within the purview of the focus zone **26**. At this point, as enabled by the processor, single-tapping **32** on the thumbpiece **24** leads to the corresponding video link **28** being selected for play as seen in the second exemplary screenshot.

[0061] In the event where there exist multiple focused items **62** (i.e., the multiple selectable items that are within the focus zone **26**), the system is, as enabled by the processor and the default memory, configured to predetermine a focused item **62** that is most spatially dominant to be the default item **64**. Alternatively, the default item **64** may be the one that is centrally-disposed. In another embodiment, the default item **64** may be user-configurable. In yet another embodiment, the default item **64** may be preconfigured. Revisiting the earlier example, if the video link **28** and the pop-up menu link **30** fall within the focus zone **26**, then single-tapping **32** on the thumbpiece **24** results in the selection of the video link **28** (which is spatially-dominant compared to the pop-up link **28**). In an alternate embodiment, in the event where there are multiple focused items **62**, the system, as enabled by the processor and the default memory, predetermines the default item **64** to be the one that is more frequently selected. For example (not shown), between “reply”, “retweet” and “like” focused keys (or links) of the Twitter app (Twitter®), the system, upon single-tapping **32** on the thumbpiece **24**, is configured to select the ‘like’ key, which exemplarily is the most used of the three focused item **62**. If a text-input section is focused and eventually selected (by single-tapping **32** on the thumbpiece **24**), the system is configured to launch a keyboard, via which text is entered into the text-input section. In one embodiment, the keyboard includes a voice-input command built thereinto, wherein selecting the voice-input command results in the text being inputted into the text-input section through user voice.

[0062] In an alternate embodiment, in the event where there are multiple focused item **62**, the system, as enabled by the processor and the default memory, predetermines a focused item **62** to be a default item **64** based on the position thereof within the focus zone **26**. For example, the default item **64** may be first, middle or the last focused item **62** within the focus zone **26**. In an additional embodiment, the system, as enabled by the processor and the default memory, predetermines a focused item **62** to be a default item **64** upon said default item **64** being spatially-dominant, centrally-disposed, or both. In one embodiment, the basis for the system in predetermining a default item **64** is contextual, i.e., varies from app to app and page to page that is being displayed. The criteria for contextually predetermining a default item **64** is stored within the default memory as well.

[0063] In one embodiment, in the event of there being more than one focused item **62**, the system is configured to visually indicate a default item **64** so as to enable the user to be aware of which item is preselected. Said visual indication may comprises a visual “pop” of the preselected item, a frame around the preselected item, or the like. For example, in **FIG. 10**, a preselection frame **34** is employed to visually express the default item **64** bearing the number “1.” Said visual indication is performed by the processor. In an additional embodiment, upon receiving an “extra-lock” command via the thumbpiece **24**, the system, i.e., the execution module, causes the display of additional options (i.e., additional selectable links) pertaining to the default item **64** (or any preselected item) preferably in a pop-up menu style (**36, FIG. 11**), etc. More particularly, the display of additional options is performed by the extra-lock module. The extra-lock command comprises an extra-lock gesture comprising long-tapping (**38, FIG. 11**), which comprises placing one’s thumb on the thumbpiece **24** and holding it for a short amount of time before releasing it. However, other touch-gestures, double-tapping, swiping, etc., may be employed instead of long-tapping **38**. Notably, one of the options comprises a “default” option whereby, single-tapping **32** at this point on the thumbpiece **24** results in the default option being selected. Notably, the default additional option may also be extra-locked to result in further additional options pertaining to the default additional option to be displayed in a similar manner. At this point, the user is, by further performing longitudinal (vertical) swiping on the thumbpiece **24**, enabled to preselect the additional options one option at a time. Said longitudinal swiping could be one longitudinal swipe per option thereby entailing the user to perform multiple longitudinal swipes to reach

multiple options. Notably, the longitudinal swipes are looped whereby, the last option could be accessed first by swiping in the reverse direction (i.e., an upward swipe).

[0064] Alternatively, said longitudinal swiping could be performing one single longitudinal swipe to preselect all options, one at a time. This is done by breaking up the single longitudinal swipe into a plurality of swipe segments wherein, each swipe segment preselects one option. For example, let's say there are five options that pop-up from the long-tapped **38** preselected item. As the first option is already preselected by default, performing one-fourth of the swipe (i.e., the first swipe segment) results in the second option being preselected, performing half swipe results in the middle option being preselected, performing three-fourths of the swipe results in the third option being preselected and finally, performing the full swipe results in the last option being preselected. In an additional embodiment, said single swipe is looped whereby, the last option could be reached first by swiping in the opposite direction. In one embodiment, the focus zone **26** is configured to be invisible whereby when selectable items are within the focus zone **26**, they are visually made known to be within the focus zone **26** via an exemplary "pop", a frame around them, or the like. In one embodiment, instead of employing the pop-up menu **36** (**FIG. 11**) style, the additional options (viz., Links #1 to 4 pertaining to the focused item **62** #1 of **FIG. 11**) are, as enabled by the extra-lock module, displayed closer to the side edge of the display **21** (**ref. FIG. 12**) so as to be accessible by the thumb of the user, who is standard-gripping the smartphone **10**. In an additional embodiment, the Links #1 to 4 are pre-selectable via longitudinal swiping on the thumbpiece **24**.

[0065] In one embodiment, as the vertically scrollable content is scrolled downward by swiping downward on the thumbpiece **24**, the position of the focus zone **26** is, as enabled by the focus module, configured to be shifted be slightly downwards so as to afford time to the user in making a selection decision. In one embodiment, the focus zone **26** is configured to be user enabled and disabled.

[0066] In one embodiment (not shown), the focus zone **26** is divided into a plurality of segments wherein, each of the plurality of segments is treated as the focus zone **26** itself. The system is configured such that, each focus zone segment, comprising one or more selectable items, is adapted to be focused one at a time. Each focus zone segment is sequentially focused via longitudinal swiping or the like. When a focus zone segment is focused with one

or more selectable items, inputting the selection command at that point results in the selection of a default item within the focus zone segment. The selection of the default item is enabled by the processor and the default memory.

[0067] Further, as can be appreciated from **FIG. 13**, the system is configured such that, when the smartphone **10** is unlocked, swiping on the thumbpiece **24** along the lateral axis (i.e., perpendicular to the longitudinal axis) in a first direction causes the smartphone **10**, as enabled by the execution module, to invoke the function that is the resultant of the conventional actuation of the conventional “recent apps” key **20** (**FIG. 1**) thereby displaying recent apps in a cascading fashion, or the like, depending on the User Interface (UI) design of the smartphone **10** operating system. Notably, as the recent apps are displayed, swiping on the thumbpiece **24** along the longitudinal axis causes the recent apps to be scrolled accordingly. The first direction may comprise the direction that is away from oneself as the smartphone **10** is standard-gripped. In one embodiment, the system is configured to preselect one “recent app” at any given time as the recent apps are scrolled. At this point, the system is configured such that, single-tapping **32** on the thumbpiece **24** re-launches the preselected recent app from the background.

[0068] In an additional embodiment, long-tapping **38** on the preselected “recent app” may, as enabled by the extra-lock module, open up additional options pertaining to said recent app preferably in a pop-up menu style. At this point, the user is, by further performing longitudinal (vertical) swiping on the thumbpiece **24**, enabled to preselect said additional options one option at a time. As mentioned in the earlier body of text (ref. paragraphs **63** & **64**), said longitudinal swiping could either be one longitudinal swipe per option or be one single swipe to preselect all options, one at a time.

[0069] In an additional embodiment, the system is, as enabled by the processor, configured such that, when the user swipes laterally on the thumbpiece **24** in the first direction and holds at the extremity, the smartphone **10** is adapted to bring forth the last accessed app from the recent apps. In an alternate embodiment, the system is configured such that, when the user swipes laterally on the thumbpiece **24** in the first direction twice, the smartphone **10** is adapted to bring forth the last accessed app from the recent apps. Performing so again results in the recent app being brought forth from the background wherein, said recent app is previous to the last accessed app.

[0070] Further, as can be appreciated from **FIG. 14**, the system is, as enabled by the execution module, configured such that, when the smartphone **10** is displaying any screen other than the home-screen thereof, swiping on the thumbpiece **24** along the lateral axis in a second direction causes the smartphone **10** to invoke the function that is the resultant of the actuation of the conventional “back” key **18** (**FIG. 1**) on a conventional smartphone thereby displaying screen that is last accessed by the user. The second direction is opposite to the first and is the direction that is towards oneself when the smartphone **10** is standard-gripped. Alternatively, the first and second directions comprise the directions that are toward oneself and away from oneself respectively. In an additional embodiment, the system is configured such that, when the user swipes laterally on the thumbpiece **24** in the second direction and holds at the extremity, the smartphone **10** is adapted to land the user back on the home-screen.

[0071] In an additional embodiment, the system, as enabled by the processor, is configured such that, the smartphone **10** responds to different “L”-shaped gestures on the thumbpiece **24**. For example, doing “L”-shaped gesture on the thumbpiece **24** may lead to turning on the flashlight. In another example, doing an inverted “L”-shaped gesture may lead to capturing a screenshot. In yet another example, gesturing a mirrored-“L” shape may lead to muting the phone.

[0072] In an additional embodiment, the thumbpiece **24** further comprises a fingerprint reader integrated therein for locking and unlocking the smartphone **10** biometrically. More particularly, the fingerprint reader may comprise an optical fingerprint reader, a capacitance fingerprint reader, an ultrasonic fingerprint reader, etc. In alternate embodiments, the system is, as enabled by the processor, configured such that, swiping along the lateral axis of the thumbpiece **24** may result in other functions such as, adjusting the volume, screen brightness, horizontal scrolling, locking and unlocking the smartphone **10**, camera zooming and un-zooming, etc. In an alternate embodiment, the functions resulting from swiping on the thumbpiece **24** along the lateral axis are user-configurable.

[0073] In one embodiment, the thumbpiece **24** (via the touch surface) is programmed to read additional touch gestures such as, for example, double-tapping. Said double-tapping received by the reception module may result in the invocation of the conventional “home” key **16**

(**FIG. 1**) on a smartphone **10** (as enabled the execution module) leading to the display of the main home-screen. In another example, said double-tapping may result in the smartphone **10** being locked. In one embodiment, the thumbpiece **24** is disposed on the back surface of the smartphone **10** so as to be accessible by the index finger. In an alternate embodiment, the function(s) resulting from the double-tap are user-configurable. Notably, the system is configured such that, the touch-gestures on the display **21** of the smartphone **10** always override the touch-gestures on the thumbpiece **24** whereby, any accidental gesturing on the thumbpiece **24** will not interrupt the user's interaction with the smartphone **10** touchscreen. Alternatively, operating the thumbpiece **24** in the aforementioned ways may result in the activation of a different functions that may be preconfigured or user-configured.

[0074] Referring to **FIG. 1**, of the three keys, aside from the volume keys **12**, the middle key comprises a home key **16**. In alternate embodiments, the home key **16** may be disposed before or after the pair of volume keys **12**. In one embodiment, textured/embossed indicia/pattern may be added atop each physical key in order to distinguish one from the other haptically. In an alternate embodiment, the middle key could be a lock key **14**.

[0075] In one embodiment, touch keys may be incorporated in lieu of clickable physical keys. In one embodiment, one or two of the keys may comprise touch keys while, the rest may comprise physical keys. In one embodiment, the thumbpiece **24** and the side edge, whereon the thumbpiece **24** is located, are configured to be monolithically integrated with pressure-sensors disposed underneath the thumbpiece **24** whereby, the side edge appears key-less. In one embodiment, the home and volume keys **12** and **16** are configured to be pressure-sensitive wherein, in one embodiment, different functions maybe assigned in response to different degrees of pressure exertion thereon. Said different functions, in an embodiment, may be user configurable.

[0076] In one embodiment, the volume keys **12** maybe disposed on the back of the smartphone **10** (so as to be accessible by the index finger), while the home key **16** is disposed on the side. Or alternatively, the home key **16** maybe disposed on the back of the smartphone **10** (so as to be accessible by the index finger), while the volume keys **12** are disposed on the side.

[0077] In an alternate, two-key embodiment, as seen in **FIG. 15**, the thumbpiece **24** may comprise only the pair of volume keys **12**. In the two-key embodiment, double-tapping on the thumbpiece **24** may result in landing the user on the home-screen. Alternatively, as mentioned earlier, swiping laterally on the thumbpiece **24** towards the user (“back” function activation) and holding at the extremity may result in the user being landed on the home-screen while double-tapping may lead to the smartphone **10** being locked. In an alternate embodiment, swiping laterally on the thumbpiece **24** twice towards the user (“back” function activation) may result in the user being landed on the home-screen. In one embodiment (not shown) of the two-key embodiment, a unitary piece of volume rocker is employed in lieu of the pair of volume keys **12**. In one embodiment, the volume and home keys **12** and **16** are configured to be pressure-sensitive so that, in one embodiment, different functions may be assigned in response to different degrees of pressure exertion thereon. Said different functions, in an embodiment, may be user configurable.

[0078] Referring to **FIG. 16**, in one embodiment, the thumbpiece **24** comprises a joystick **42** in lieu of one of the keys of the thumbpiece **24**. The thumbpiece **24** is, in this embodiment, referred to as the joy-piece **40**. The joy-piece **40** comprising a joystick **42** and a pair of touch-sensitive volume keys **12** that are located immediately before or after joystick **42**. The joy-piece **40** or the joystick **42** is positioned on the side or rear of the smartphone **10** so as to be accessible by the thumb or the index finger of the user respectively. The head of the joystick **42** is preferably wider and planar (as opposed to being like a stick) for enabling the thumb of the user to ergonomically rest thereon as the joystick **42** is operated. The system is configured such that, the movement of the joystick **42** upward and downward results in the scrollable content to be scrolled accordingly. In one embodiment, the movement of the joystick **42** sideward results in the deployment of “back” and “recent apps” functions.

[0079] Referring to **FIG. 16**, in an additional embodiment, the joystick **42** is configured to be inwardly or downwardly actuated (i.e., pressed) resulting in a preselected item being selected. Said inward/downward actuation is akin to tapping on the thumbpiece **24**. Alternatively, pressing the joystick **42** may result in the activation of a different function that may be preconfigured or user-configured. In one embodiment, the head of the joystick **42** is configured to be touch sensitive, wherein, in an embodiment, tapping (instead of pressing) thereon translates into selection of a preselected item. Alternatively, operating the joystick **42** in the aforementioned ways may result in the activation of different functions that may be

preconfigured or user-configured. In another embodiment, tapping on the joystick **42** may result in the activation of a different function, which may be user configurable. In one embodiment, the head of the joystick **42** is configured to read user fingerprint(s).

[0080] Referring to **FIG. 17**, in one embodiment, the thumbpiece **24** comprises a pointing-stick **46** in lieu of one of the keys of the thumbpiece **24**. The thumbpiece **24** is, in this embodiment, referred to as the pointing-piece **44**. The pointing-piece **44** comprises a pointing stick **46** and a pair of touch-sensitive volume keys **12** that are located immediately before or after pointing stick **46**. The pointing-piece **44** or the pointing stick **46** is positioned on the side or rear of the smartphone **10** so as to be accessible by the thumb or the index finger of the user respectively. The head of the pointing stick **46** is preferably wider and planar for enabling the thumb of the user to ergonomically rest thereon as the pointing stick **46** is operated. The system is configured such that, the push of the pointing stick **46** upward and downward results in the scrollable content to be scrolled accordingly. In one embodiment, the push of the pointing stick **46** sideward results in the deployment of “back” and “recent apps” functions. In one embodiment, the head of the pointing stick **46** is configured to be touch sensitive, wherein, in an embodiment, tapping (instead of pressing) thereon translates into the selection of a preselected item. Alternatively, the touch surface overlaid atop the touch-sensitive volume keys **12** may receive the section gesture. Said tapping on the pointing -stick **46** is akin to tapping on the thumbpiece **24**. Alternatively, operating the pointing stick **46** in the aforementioned ways may result in the activation of a different functions that may be preconfigured or user-configured. In one embodiment, the head of the pointing stick **46** is configured to read user fingerprint(s).

[0081] Referring to **FIG. 18**, in one embodiment, the thumbpiece **24** comprises a scroll wheel **50** in lieu of one of the keys of the thumbpiece **24**. The thumbpiece **24** is, in this embodiment, referred to as the joy-piece **48**. The scroll-piece **48** comprises a scroll wheel **50** and a pair of touch-sensitive volume keys **12** that are located immediately before or after scroll wheel **50**. The scroll-piece **48** or the scroll wheel **50** is positioned on the side or rear of the smartphone **10** so as to be accessible by the thumb or the index finger of the user respectively. The system is configured such that, the rotation of the scroll wheel **50** upward and downward results in the scrollable content to be scrolled accordingly. In one embodiment, the scroll wheel **50** is adapted to be tilted sideways wherein, as a result, the tilt of the scroll wheel **50** sideward results in the deployment of “back” and “recent apps”

functions. In an additional embodiment, the scroll wheel **50** is configured to be inwardly or downwardly actuated (i.e., pressed) resulting in a preselected item to be selected. Said inward/downward actuation is akin to tapping on the thumbpiece **24**. Alternatively, operating the scroll wheel **50** in the aforementioned ways may result in the activation of a different functions that may be preconfigured or user-configured. In one embodiment, the surface of the scroll wheel **50** is touch sensitive so as to receive touch-gesture inputs. In another additional embodiment, the scroll wheel **50** surface is adapted to read fingerprints for locking/unlocking the smartphone **10**.

[0082] Referring to **FIG. 19**, in one embodiment, the thumbpiece **24** comprises a trackball **54** in lieu of one of the keys of the thumbpiece **24**. The thumbpiece **24** is, in this embodiment, referred to as the track-piece **52**. The track-piece **52** comprises a trackball **54** and a pair of touch-sensitive volume keys **12** that are located immediately before or after trackball **54**. The track-piece **52** or the trackball **54** is positioned on the side or rear of the smartphone **10** so as to be accessible by the thumb or the index finger of the user respectively. The system is configured such that, the rotation of the trackball **54** upward and downward results in the scrollable content to be scrolled accordingly. The rotation of the trackball **54** sideways results in the deployment of “back” and “recent apps” functions. In an additional embodiment, the trackball **54** is configured to be inwardly or downwardly actuated (i.e., pressed) resulting in a preselected item to be selected. Said inward/downward actuation is akin to tapping on the thumbpiece **24**. Alternatively, operating the trackball **54** in the aforementioned ways may result in the activation of a different functions that may be preconfigured or user-configured. In one embodiment, the surface of the trackball **54** is touch sensitive so as to receive touch-gesture inputs. In another additional embodiment, the trackball **54** surface is adapted to read fingerprints for locking/unlocking the smartphone **10**. Notably, the joy-piece, pointing-piece, scroll-piece and track-piece are disposed in operative communication with the processor, function database and the default memory.

[0083] Referring to **FIG. 20**, the user command input assembly further includes a map key **56** disposed on the other side edge, which is opposite the side edge whereon the thumbpiece **24** is located. As there is not much wiggle room for the middle and ring fingers as the smartphone **10** is standard-gripped, the map key **56** is preferably located closer to the bottom corner of the smartphone **10** as seen in **FIG. 20** so as to be accessible by the little finger. The map key **56** is configured to invoke designated smartphone functions when operated in

conjunction with the thumbpiece **24**. In one non-limiting example, as seen in **FIG. 21**, actuating the map key **56** and swiping up (along the longitudinal axis) on the thumbpiece **24** results in the app drawer **58** being launched. Notably, the app drawer **58** is configured to be launched (in the aforesaid fashion) from anywhere; there's no longer the need for the user to go back to home screen to access the app drawer **58**. In another non-limiting example, as seen in **FIG. 22**, actuating the map key **56** and swiping down on the thumbpiece **24** may result in the notification panel **60** being deployed. The launch of the app drawer **58** and the notification panel **60** is enabled by the processor and the function database.

[0084] In alternate embodiments, the system is configured such that, swiping along the longitudinal axis of the thumbpiece **24** in conjunction with the actuation of the map key **56** may result in the invocation of other functions such as, adjusting the volume, screen brightness, horizontal scrolling, locking and unlocking the smartphone **10**, camera zooming and un-zooming, etc. In alternate embodiments, the system is configured such that, "L-gesturing" on thumbpiece **24** in conjunction with the actuation of the map key **56** may result in the invocation of other functions such as, adjusting the volume, screen brightness, horizontal scrolling, locking and unlocking the smartphone **10**, camera zooming and un-zooming, etc. In an alternate embodiment, the functions resulting from swiping on the thumbpiece **24** along the longitudinal axis in conjunction with the actuation of the map key **56** are user-configurable.

[0085] Also, in alternate embodiments, the system is configured such that, swiping laterally on the thumbpiece **24** in conjunction with the actuation of the map key **56** may result in the invocation of other smartphone functions such as, adjusting the volume, screen brightness, horizontal scrolling, locking and unlocking the smartphone **10**, camera zooming and un-zooming, etc. In an alternate embodiment, the functions resulting from swiping on the thumbpiece **24** along the lateral axis in conjunction with the actuation of the map key **56** are user-configurable.

[0086] In one embodiment, the system is configured to launch the app drawer **58** and the notification panel **60** by actuating the map key **56** in conjunction with the actuation of the volume up and down **12** keys respectively. In alternate embodiments, the system is configured such that, actuating the volume up and down keys **12** in conjunction with the actuation of the map key **56** may result in other functions such as, adjusting the volume,

screen brightness, horizontal scrolling, locking and unlocking the smartphone **10**, camera zooming and un-zooming, etc. In an alternate embodiment, the functions resulting from actuating the volume up and down keys **12** in conjunction with the actuation of the map key **56** are user-configurable. The launch of the app drawer **58** and the notification panel **60** are enabled by the processor and the function database.

[0087] In a non-limiting example, pressing down the map key 56 and the volume up or down 12 keys together may result in the smartphone 10 being muted. In another non-limiting example, pressing down the map key 56 and long-pressing (or pressing, holding and releasing) the volume up or down 12 keys together may result in the smartphone 10 being muted. Alternatively, simultaneously pressing down the map key 56 and pressing or long-pressing the volume up or down 12 keys together may result in the invocation of smartphone 10 functions that are user-configurable. Similarly, pressing down the map key 56 and the home key 16 together may result in the smartphone 10 being locked, switched off, a screenshot being captured, etc. Likewise, pressing down the map key 56 and long-pressing the home key 16 together may result in the smartphone 10 being locked, switched off, a screenshot being captured, etc. In alternate embodiments, pressing down the map key 56 and pressing or long-pressing the home key 16 together may result in the invocation of smartphone 10 functions that are user-configurable.

[0088] In still yet another non-limiting example, the map key 56 may itself be independently programmed to invoke a smartphone function such as, for example, double-pressing the map key 56 may launch the smartphone camera or a virtual assistant like Google Assistant®, Bixby®, Siri®, etc. In an alternate embodiment, the functions resulting from actuating the map key 56 are user-configurable. For example, long-pressing the map key 56 may result in smartphone 10 switch-off, restart prompts, etc.

[0089] In one embodiment, more than one map key 56 may be employed on the smartphone 10, wherein each map key 56 is adapted to perform differently. In one embodiment, the smartphone 10 may employ two sets of opposingly-disposed thumbpieces 24 and the map keys 56 so as to accommodate both right and left-handed usages. In one embodiment, the smartphone 10 may comprise two spaced-apart map keys 56 so as to allow a person with smaller hands to reach for the closer map key 56. Notably, in this embodiment, each map key 56 is adapted to function identically. In one embodiment, a pressure-sensor may be located

underneath the map key 56 location whereby, the side edge whereon the map key 56 is rendered key-less. In one embodiment, the map key 56 is configured to be pressure-sensitive such that, different functions may be assigned in response to different degrees of pressure exertion thereon. Said different functions, in an embodiment, may be user configurable. In one embodiment, the map key 32 comprises a touch key. In one embodiment, the map key 56 may be disposed on the backside of the smartphone 10 in a way that is accessible by the index finger of the user. Notably, in the event of conflict, the gestures on the touchscreen always override the inputs received the user command input assembly.

[0090] In a virtual key embodiment, side edges of the smartphone 10 comprises touch-sensitive display screen wherein, said side touchscreens are capable of reading pressure sensitive actuation (a.k.a. 3D-touch). A virtual thumbpiece 24 and a map key 56 may be incorporated into the side touchscreens. One advantage of virtual keys over physical is that, the position of the virtual thumbpiece 24 and the map key 56 can be adjustable according to the comfortable reach of the individual user's thumb and finger(s). In one embodiment, the sides of display screen of the smartphone 10 are bent at preferably right angles at which point, the bent sections of the display screen act as the side touch screens. In one embodiment, only one side edge of the smartphone 10 may comprise a touch-sensitive screen comprising virtual key(s) while the other side may comprise physical keys.

[0091] As mentioned in the preceding body of text, in the event of there being multiple focused items 62 (i.e., selectable items within the focus zone 26), the reception of a selection command 32 via the thumbpiece 24 results in the selection of the default item 64. FIGs. 23A through 23C depict the selection of a default item 64 within an app drawer 58, notification panel 60 and an app screen respectively. Notably, the default item 64 within the FIGs. 23A through 23C, which comprises an app (or app icon), a notification control, or a link respectively, comprises a preselection frame 34 disposed around it for identification purposes. In FIG. 23A, the default item 64 within the app drawer 58 is Instagram® as represented by the preselection frame 34 disposed around Instagram®. Therefore, at this point, when the selection command is inputted into the thumbpiece 24 via single-tapping 32, the Instagram app (Instagram®) is launched as seen in FIG. 23A. Notably extra-locking the default app (i.e., Instagram) results in the display of additional options (i.e., additional selectable links) pertaining to said app.

[0092] Similarly, in **FIG. 23B**, the default item **64** within the notification panel **60** is the Bluetooth control as represented by the preselection frame **34** around said control. Therefore, at this point, when the selection command is inputted into the thumbpiece **24**, the Bluetooth is activated as seen in the illustration. Notably extra-locking the default control results in the display of additional options pertaining to the Bluetooth control wherein, said additional options may comprise the list of Bluetooth devices paired with the smartphone **10**. Similarly, in **FIG. 23C**, the default item **64** within an exemplary Twitter app screen (Twitter®) is the tweet as represented by the preselection frame **34** around it. Therefore, at this point, when the selection command is inputted into the thumbpiece **24**, the tweet is selected resulting in the opening of the landing page pertaining to the tweet as seen in the illustration. Notably extra-locking the default link (i.e., the tweet-link) may result in the display of additional options (i.e., additional selectable links) pertaining to said tweet.

[0093] Referring to **FIG. 24**, in order to preselect a non-default focused item **62**, the focused item **62** first need to be “locked”, which is done by inputting a lock command via the thumbpiece **24**. The lock command is received by the reception module. The lock command comprises a lock gesture comprising long-tapping **38** on the thumbpiece **24**. Alternatively, the lock gesture may comprise one of a myriad of touch-gesture expressions such as, double-tapping, long-tapping **38**, etc. However, notably, long-tapping **38** on thumbpiece **24** for more than a predetermined threshold time doesn’t result in the invocation of any smartphone function, i.e., locking in this case. In one embodiment, the system is configured such that, when focused items **62** are locked, the rest of content on the smartphone display **21** is blurred as seen in **FIGs. 25A & 25B** so as to cue the user into realizing that his/her area of activity is restricted to the focus zone **26**. Upon “locking”, the focused item **62** are turned into and thereby referred to as “locked” items **66**. Notably, only locked item **66** are eligible for preselection. Notably, the act of qualifying one or more focused items as “locked” items is performed by the processor based on the lock command received and executed by the reception and execution modules in conjunction with the function database.

[0094] Upon “locking,” the system is configured such that, inputting a preselection command on the thumbpiece **24** results in the sequential preselection of the locked item **66**. The preselection command comprises a preselection gesture comprising longitudinal swiping on the thumbpiece **24**. Alternatively, the preselection gesture may comprise one of a myriad of touch-gesture expressions such as, lateral swiping, depressing the volume keys **12**, extremity

tapping on the thumbpiece **24**, etc. Referring to **FIGs. 26A** and **26B**, upon locking the focused item **62**, swiping once on the thumbpiece **24** results in second locked item **66** next to default item **64** being preselected as represented by the preselection frame **34**. Again, as seen in **FIG. 26B**, performing longitudinal swiping on the thumbpiece **24** results in the third locked item **66** being preselected. The last locked item **66** is preselected similarly. As mentioned in the earlier, a preselected item is selected anytime by inputting the selection command via the thumbpiece **24**.

[0095] Notably, as can be appreciated from **FIG. 24**, even after “locking” and before the sequential preselection is initiated by the user, one of the locked items **66** is a default item **64**, which comprises the same default item **64** within the focus zone **26** before locking. Alternatively, locking is performed by depressing and holding the map key **56** whereafter, performing longitudinal swiping on the thumbpiece **24** with the map key **56** still being depressed results in the sequential preselection of the locked items **66**. Notably, the longitudinal swipes are looped whereby, the last locked item **66** within the focus zone **26** could be preselected first by swiping in the reverse direction (i.e., by performing an upward swipe).

[0096] As mentioned in the earlier body of text (ref. paragraphs **63** & **64**), said longitudinal swiping could either be one longitudinal swipe per locked item **66** or be one single swipe to preselect all locked items **66**, one at a time. Each preselected item may be extra-locked so as to display corresponding additional options (i.e., additional selectable links) preferably in a pop-up menu **36** style. The display of additional options is enabled by the extra-lock module. In one embodiment, when no item is preselected yet, tapping on the top extremity, middle and bottom extremity of the thumbpiece **24** results in the first, middle and last locked items **66** being selected. In one embodiment, the extremity single-tapping **32** (or double-tapping) may be assigned a different function, which may be preconfigured or user-configured. Notably, the method of sequential preselection of selectable items may also be adapted to virtual keyboards wherein, the keys are laid out into a grid of rows and columns. Said keyboard could be a QWERTY keyboard or a number pad keyboard.

[0097] In an alternate embodiment, the focus zone **26** is eliminated and the system is configured such that, all items are locked at once and sequentially preselected by inputting the preselection command on the items results in the sequential preselection thereof. In one

embodiment, said sequential preselection is limited to the items within the entire screen **21** on display, in which case, in one embodiment, the longitudinal swiping comprises carousel scrolling. Basically, in this embodiment, the entire display screen **21** serves as the focus zone **26**. In another embodiment, the sequential preselection is not limited by the borders of the screen on display. In one embodiment, the sequential preselection may be restricted beyond the upper or lower threshold of the display screen **21**.

[0098] In an exemplary event where the focus zone **26** encompasses a links such as a log entry pertaining to the call log screen, a contact pertaining to the contacts screen, or a setting pertaining to the settings screen, single-tapping **32** on the thumbpiece **24** results in the actuation of the default link. In an event where an exemplary settings screen has reached its end and therefore doesn't scroll anymore, the system, at this point, as enabled by the focus module, is configured to move the focus zone **26** up and downwards to preselect the individual setting located above and below in response to the reception of a scroll command via the thumbpiece. Preferably, the scroll command comprises longitudinal swiping on the thumbpiece **24**. This is applicable to other screens (call log, contacts, messages, notification panel/screen, etc.) as well.

[0099] In one embodiment, the call log screen, contacts screen, messages screen, settings screen, etc., are looped (as represented by **67**) thereby negating the need for the movement of the focus zone **26** in order to reach the bottom or top-most links. In an additional embodiment, as seen in **FIG. 27**, each link within the call log screen, contacts screen, messages screen, settings screen, etc., is numerically or alphabetically marked so as to assist the user in order not to lose track of the selectable item due to the loop **67**. In alternate embodiments, color gradients or text indentation may be employed in lieu of the aforesaid marking.

[00100] Referring to **FIG. 28**, in the event of multi-tasking, which comprises having two (or more than two) independent screen sections displayed on the smartphone display **21**, the focus zone **26** is only a part of one of the app screens. In order to shift the focus zone **26** from the top **68** to the bottom section **70** or vice versa, all that is required is, perform the shift command, which comprises lateral swiping on the thumbpiece **24** while the map key **56** is actuated. This act of combining lateral swiping on the thumbpiece **24** and the actuation of the map key **56** is referred to as the "lateral map-swiping". The same concept is applied to apps

that have split screens. As an example, as seen in **FIG. 29**, one of the screens of the YouTube app (YouTube®) comprises screen split into two sections, viz., a stationary top section **68** that comprises a video playing atop, and a scrollable bottom section **70** that displays comments, etc. In order to shift the focus zone **26** from the top video section **68** to the bottom comments section **70** and vice versa, all the user needs to do is perform a lateral map-swipe on the thumbpiece **24**. Similarly, generally, in some screens of some apps, certain links remain stationary while, the rest of them are scrollable. Lateral map-swiping enables a user to access links that are both stationary and mobile. The focus zone **26** is also configured to be shifted between main feed screen **72** and hamburger menu **74** of an app as seen in **FIG. 30**. In an alternate embodiment, a dedicated shift key (not shown) may be incorporated into the side or back of the smartphone **10**, wherein actuating said shift key results in the focus zone **26** being shifted from one section to the other. In another alternate embodiment, a shift touchpad (not shown) may be integrated into the rear of the smartphone **10** wherein, performing a gesture (such as swiping, tapping, etc.) on the shift touch pad results in the focus zone **26** being shifted from one section to the other. Notably, said shifting is performed by the execution module in conjunction with the focus module in response to the shift command.

[00101] In feed-based and list-based content (or screens) like Twitter (Twitter®), phonebook, WhatsApp®, etc., the continuous feed of information therein is divided into series of clusters. For example, as seen in **FIGs. 31A** and **32A**, each cluster **76** in Twitter generally comprises, a tweet-link **78**, the link to the profile **80** of the tweet publisher, a pop-up link **30**, a reply key (link) **84**, a retweet key **86**, a like key **88** and a share key **90**. Notably, the pop-up link **30** is further divided into several other sub-links that are tucked thereinto. Referring to **FIGs. 31B** and **32B**, in YouTube (YouTube®), the feed information is similarly divided into a series of clusters **76**. Each cluster **76** comprises the video link **28**, channel link **92**, and a pop-up link **30**, which further comprises other sub-links tucked thereinto. Therefore, basically, a cluster is collection of content that is grouped together wherein, said collection of content comprises one or more selectable items. The collection of content is grouped together based on proximity. Additionally, the collection of content may be grouped together based on proximity and relevance as well.

[00102] The recognition module is configured to identify the boundary of each cluster. Upon recognition, the boundary location information is the transmitted to the focus module.

The focus module, based on the boundary location information, is configured to optimize the area of the focus zone **26** to fit (or “focus”) the entire cluster within the focus zone **26**. Referring to **FIGs. 31A** and **31B**, the focus zone **26** is, as enabled by the focus and recognition modules, optimized to treat each cluster **76** as a single unit. Therefore, as content is scrolled and thereby is moved in and out of the focus zone **26**, each cluster **76** is sequentially focused. This is despite the size variations between said clusters **76**. For example, as can be appreciated from **FIG. 31A**, the width of the top cluster **76** is greater than that of the bottom cluster **76**. Irrespective of the size variations, the focus zone **26** is optimized to treat each cluster **76** as one unit and thereby encompass the entirety of each cluster **76**. Referring to **FIG. 33**, the system is further configured such that, single-tapping **32** on the thumbpiece **24** when a tweet section (i.e., cluster **76**) is focused results in the tweet link being selected. In other words, the tweet link is predetermined to be default link. By “locking” a focused cluster **76**, the rest of the links within the locked cluster **76** are accessible for preselection. In one embodiment, upon “locking” the rest of locked links are displayed in a pop-up menu **36** style as seen in **FIG. 34**. In one embodiment, the system is configured such that, the pop-up-menu-style-display may not be possible when the user long-taps **38** on tweet or tweet section via the touchscreen. By swiping longitudinally on the thumbpiece **24** the, the links within the pop-up menu **36** are preselected.

[00103] The same method of optimized content navigation (i.e., optimizing the focus zone **26**) can be developed for other apps such as YouTube®, Gmail®, etc., independently. All that is needed is the recognition of the clusters **76** by the recognition module, the predetermination of the default link based on default memory and the configuration of the pop-up menu **36**, if opted. In one embodiment, the system of further optimized such that, an additional function may be assigned upon the reception of an additional selection gesture (which is an additional selection command) via the thumbpiece. Preferably, the additional selection gesture comprises double-tapping when a cluster **76** is focused. For example, as seen in **FIG. 35**, in Twitter (Twitter®), double-tapping **93** when a cluster **76** is focused results in the corresponding tweet being “liked”. In another example (not shown), in Instagram, double-tapping **93** when a cluster **76** is focused results in the corresponding Instagram post being “liked”. In yet another example (not shown), in YouTube®, double-tapping **93** when a cluster **76** is focused results in the corresponding video link **28** being saved for viewing later. Alternatively, the additional selection gesture may comprises other touch gestures such as, long-tapping, tapping in conjunction with the actuation of the map

key, etc. Notably, the commands including the selection command, additional selection command, preselection command, extra-lock command, shift command and the scroll command are various user commands that are executed by the processor in conjunction with the function database.

[00104] In one embodiment, the system comprises a screen gesture database disposed in operative communication with the processor. The screen gesture database is listed with a plurality of screen touch-gestures that are inputted into the touchscreen of the smartphone. Each of the plurality of the screen touch-gestures is associated with a smartphone function. In this embodiment, the depressing of the map key in conjunction with the input of a screen touch-gesture into the touchscreen results in the invocation of the corresponding smartphone function. Said smartphone function could be the launch of an app, turning on of the flashlight, etc. In one embodiment, the screen touch-gestures may comprise inputting the app names on the touchscreen whereby, apps that match the inputted letters are displayed on the screen. For example, the user may proceed to input SPOTIFY on the touchscreen and in the process as the user inputs S and P, all app containing the sequential lettering “SP” may be displayed. As the user proceeds to input “O”, all the apps containing the sequential lettering “SPO” may be displayed.

[00105] Referring to **FIG. 36**, the system may be extended to tablet PCs **94** as well, wherein thumbpiece **24** and the map key(s) **56** are integrated to the side bezels **96** thereof such that, touchscreen display **21**, thumbpiece **24** and the map key **56** lie in the same plane. Both, the thumbpiece **24** and the map key **56** are operable by the thumb of the user so as to result in the same navigation “effect” as seen on the smartphone **10**. In alternate embodiments, the thumbpiece **24**, the map key(s) **56** or both of them are disposed on the back of the tab **94** so as to operable by the index fingers of the user. In one embodiment (not shown), the tab comprises virtual thumbpiece **24** and a map key **56**, which are operable via the touchscreen thereof. Notably, in this embodiment, the touchscreen is pressure-sensitive. One advantage of virtual keys over physical is that, the position of the virtual thumbpiece **24** and the map key **56** can be adjustable according to the comfortable reach of the user’s thumbs and fingers.

[00106] In one embodiment, a trackpad may be integrated into the rear of the computing device comprising the smartphone or the tab. In this embodiment, the system further comprises a cursor displayed by the screen wherein, the cursor is operated by in accordance with the movement gestures performed on the trackpad by the user.

[00107] Referring to **FIGs. 37** and **38**, in one embodiment, the aforementioned controls on the smartphone **10**, i.e., the thumbpiece **24** and map key(s) **56** are incorporated into a smartcase **98** (i.e., a smartphone case) just as the way they are incorporated into the smartphone **10**. The system is configured such that, once the smartcase **98** is fitted over a corresponding smartphone **10** and is paired therewith, irrespective of the native key layout of the encased smartphone, the controls are adapted to perform all of the aforesaid functions that are performed by them on the smartphone **10**. More particularly, an app has to be installed on the smartphone that is encased with the smartcase **98** (or is to be encased) whereafter, the focus zone **26** is incorporated into the display **21** of the smartphone. Further, upon the installation, the smartcase **98** is enabled to communicate with the encased smartphone via said app over a wireless network such as NFC, Bluetooth, Wi-Fi, or the like.

[00108] In one embodiment (not shown), the smartcase **98** may comprise a bumper case thereby removing the possibility of incorporation of the map key **56** and the thumbpiece **24** at the back. One advantage of bumper case over the smartcase **98** is that, the bumper case enables the single-handed usage of both right and left-handed usage. In one embodiment, the smartcase **98** may be adapted for the smartphone **10** of the present invention wherein, said smartcase **98** comprises the thumbpiece **24** and the map key **56** on the left and rights sides of said smartcase **98** so as to accommodated left-handed users. In some embodiments, the pointing-piece **44**, scroll-piece **48**, track-piece **52** or the joy-piece **40** may be employed in lieu of the thumbpiece **24** on the smartcase **98**. The user command input assembly is integrated into the smartcase **98** comprising a smartphone **10** case that is adapted to house the smartphone **10**, the user command input assembly is positioned on the smartcase **98** so as to be accessible by the user single-handedly as the smartphone with the smartcase attached thereto is standard-gripped, the standard-gripping comprising gripping the smartphone in portrait orientation such that, the hand wraps around the rear of the smartphone **10** while at least three fingers and the thumb rest on the opposing longitudinal edges of the smartphone **10**. The smartcase **98** comprises a back panel, a pair of longitudinal side walls extending from the back panel; and an opening for snugly receiving the smartphone such that, the rear of the

smartphone abuts the back panel, while the longitudinal side walls abut the longitudinal side edges of the smartphone.

[00109] Referring to **FIGs. 39 and 40**, in one embodiment, the system comprises a pair of individual smart control pieces (hereinafter, “smart pieces”) viz, a thumbpiece **24** and a map key **56** wherein, each smart piece is adapted to be permanently or detachably coupled to the side edges of the smartphone **10** by means of an adhesive, Velcro®, magnet, suction, etc. More particularly, in a preferred embodiment, the thumbpiece **24** is disposed at a location where, the access thereto by the user’s thumb (or index finger) is easily accomplished. Also, in a preferred embodiment, the map key **56** is disposed at a location where, the access thereto by one of the user’s fingers is easily accomplished. In alternate embodiments, one of or both the smart pieces may be attached to the back of the smartphone **10** so as to be easily accessible by the user’s fingers.

[00110] Referring to **FIGs. 39 and 40**, the system is configured such that, once the smart pieces are fitted over a corresponding smartphone **10** and are paired therewith over a wireless network, irrespective of the native key layout of the paired smartphone **10**, the smart pieces are adapted to perform all of the aforesaid functions that are performed by the thumbpiece **24** and the map key(s) **56** that are integrated into the smartphone **10** as outlined in the earlier embodiments of the system. More particularly, an app may have to be installed on the paired smartphone **10** wherein, upon installation, the smart pieces are enabled to communicate with the smartphone **10** via said app over a wireless network such as NFC, Bluetooth, Wi-Fi, etc. Similarly, the smart pieces are also adapted to be attached to a tab **94** on the side bezels **96** thereof, on the back thereof, or a combination thereof. Once the smart pieces are paired with the tab **52** over a wireless network, irrespective of the native key layout of the paired tab **52**, the smart pieces are adapted to perform all of the aforesaid functions that are performed by the thumbpiece **24** and the map key(s) **56** that are integrated into the tab **52** as outlined in the earlier “tab embodiment” of the computing device. As mentioned earlier, an app may have to be installed on the tab **52** wherein, upon installation, the smart pieces are enabled to communicate with the tab **52** via said app over a wireless network such as NFC, Bluetooth, Wi-Fi, etc. In some embodiments, the pointing-piece **44**, scroll-piece **48**, track-piece **52** or the joy-piece **40** may be employed in lieu of the thumbpiece **24**.

[00111] In one embodiment of the system, a larger screen device, such as, a tablet, a TV – such as the recently exhibited Samsung “Sero TV,” may be employed in place of a smartphone **10**. Said larger screen device is capable of being rotated between portrait and landscape orientations. Within the display **21** of said larger device is defined the focus zone **26**. The larger device is paired with an external controller that comprises the thumbpiece **24** and the map key **56** (and probably a shift key). The external device may comprise a dedicated hardware device such as a game controller of a gaming console. In an exemplary embodiment, the thumbpiece **24** and the map key **56** may be incorporated into the side edges of a commonplace remote controller. In another exemplary embodiment, the thumbpiece **24** and the map key **56** on the smartphone **10** may be employed in order to operate the larger screen device. Alternatively, the external device may comprise a smartphone **10** wherein, the thumbpiece **24** and the map key **56** may be incorporated as virtual elements within the display of the smartphone **10**.

[00112] The user interface system comprises the user command input assembly, the function database, the default memory, and the processor disposed in operative communication with one another. The processor is further divided into a plurality of processing modules comprising the reception module, the execution module, the focus module, the recognition module and the extra-lock module. The function database comprises a plurality of user commands listed therein. Each user command is associated with function. The default memory comprises the default criteria for determining a default item among a plurality of focused items. The reception module is adapted to receive user commands via the user command input assembly. The execution module, as enabled by the function database, is configured to execute the user commands received by the reception module. The focus module is adapted to define the focus zone within the display. The recognition module is configured to determine the boundaries of a cluster and transmit the determined boundary location information to the focus module. The focus module then optimizes the area of the focus zone to fit (or focus) the cluster. The extra-lock module is configured to display additional options pertaining to an extra-locked item preferably in a pop-up menu format.

[00113] Referring to **FIG. 41**, in a method embodiment of the present invention, the method includes defining (step **100**) a focus zone within the display of the smartphone. When one or more selectable display items are within the focus zone and thereby are “focused,” (step **101**) the method further includes receiving (step **102**) a selection command

via the user command input assembly. The method finally includes selecting (step **104**) a default item **64** of the one or more focused item **62**. Referring to **FIG. 42**, the method of selecting a non-default item **64** of the one or more focused item **62** initiates with receiving (step **106**) a lock command via the user command input assembly. Upon receiving the lock command, the method further includes locking (step **108**) the one or more focused item **62** whereafter, each of the one or more locked focused item **62** is referred to as a locked item **66**. Upon locking, the method further includes receiving (step **110**) one or more preselection commands wherein, each of the one or more preselection commands is configured to preselect (step **111**) a locked item **66**. Upon an intended locked item **66** being preselected, the method further includes receiving (step **112**) a selection command. The method finally includes selecting (step **114**) the intended preselected item.

[00114] **FIG. 43** is a block diagram of an exemplary computing device **116**. The computing device **116** includes a processor **118** that executes software instructions or code stored on a non-transitory computer readable storage medium **120** to perform methods of the present disclosure. The instructions on the computer readable storage medium **120** are read and stored the instructions in storage **122** or in random access memory (RAM) **124**. The storage **122** provides space for keeping static data where at least some instructions could be stored for later execution. The stored instructions may be further compiled to generate other representations of the instructions and dynamically stored in the RAM **124**. The processor **118** reads instructions from the RAM **124** and performs actions as instructed. The processor **118** may execute instructions stored in RAM **124** to provide several features of the present disclosure. The processor **118** may contain multiple processing units, with each processing unit potentially being designed for a specific task. Alternatively, processor **118** may contain only a single general-purpose processing unit.

[00115] The computer readable storage medium **120** any non-transitory media that store data and/or instructions that cause a machine to operate in a specific fashion. Such storage media may comprise non-volatile media and/or volatile media. Non-volatile media includes, for example, optical disks, magnetic disks, or solid-state drives, such as storage memory **122**. Volatile media includes dynamic memory, such as RAM **124**. Common forms of storage media include, for example, a floppy disk, a flexible disk, hard disk, solid-state drive, magnetic tape, or any other magnetic data storage medium, a CD-ROM, any other

optical data storage medium, any physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, NVRAM, any other memory chip or cartridge.

[00116] RAM **124** may receive instructions from secondary memory using communication path. RAM **124** is shown currently containing software instructions, such as those used in threads and stacks, constituting shared environment and/or user programs. Shared environment includes operating systems, device drivers, virtual machines, etc., which provide a (common) run time environment for execution of user programs.

[00117] The computing device **116** further includes an output device **126** to provide at least some of the results of the execution as output including, but not limited to, visual information to users. The output device **126** can include a display on computing devices. For example, the display can be a mobile phone screen or a laptop screen. GUIs and/or text are presented as an output on the display screen. The computing device **116** further includes input device **128** to provide a user or another device with mechanisms for entering data and/or otherwise interact with the computing device **116**. The input device may include, for example, a keyboard, a keypad, a mouse, or a touchscreen. The output device **126** and input device **128** are joined by one or more additional peripherals. Graphics controller generates display signals (e.g., in RGB format) to Output device **126** based on data/instructions received from CPU 710. Output device **126** contains a display screen to display the images defined by the display signals. Input device **128** may correspond to a keyboard and a pointing device (e.g., touch-pad, mouse) and may be used to provide inputs. Network communicator **130** provides connectivity to a network (e.g., using Internet Protocol), and may be used to communicate with other systems connected to the network.

The data source interface **132** means for receiving data from the data source means. A driver issues instructions for accessing data stored in a data source **134**, the data source **134** having a data source structure, the driver containing program instructions configured for use in connection with the data source **134**.

[00118] Embodiments and examples are described above, and those skilled in the art will be able to make various modifications to the described embodiments and examples without departing from the scope of the embodiments and examples.

[00119] Although the processes illustrated and described herein include series of steps, it will be appreciated that the different embodiments of the present disclosure are not limited by the illustrated ordering of steps. Some steps may occur in different orders, some concurrently with other steps apart from that shown and described herein. In addition, not all illustrated steps may be required to implement a methodology in accordance with the present disclosure. Moreover, it will be appreciated that the processes may be implemented in association with the apparatus and systems illustrated and described herein as well as in association with other systems not illustrated.

CLAIMS

WHAT IS CLAIMED IS:

1. A user interface (UI) system, comprising:
 - (a) a user command input assembly for receiving user commands;
 - (b) a processor for receiving the user commands transmitted by the user command input assembly; and
 - (c) a focus zone defined within a display of a computing device, wherein when one or more selectable display items are within the focus zone, whereby the one or more selectable items are said to be focused, the reception of a selection command via the user command input assembly results in the selection of a default item of the one or more focused items; one of the user commands comprising the selection command.
2. The system of claim 1, wherein the processor is configured to display content in portrait orientation of the computing device.
3. The system of claim 2, wherein the focus zone is located within the top half of the display as the computing device is in portrait orientation.
4. The system of claim 2, wherein the focus zone extends between the two longitudinal edges of the display.
5. The system of claim 4, wherein the focus zone is divided into one or more segments wherein, each segment is adapted to be focused one at a time; when one or more focused items are within a focused segment, receiving a selection command results in the selection of the default item of the one or more focused items within said focused segment.
6. The system of claim 2, wherein the focus zone is configured to be movable between top and bottom of display as the computing device is held in portrait orientation, the

movement of the focus zone being in response to the reception of a scroll command via the user command input piece, one of the user commands comprising the scroll command.

7. The system of claim 6, wherein the scroll command is delivered via at least one type of user input of a plurality of user input types comprising a touch-gesture input, a key input, a joystick input, a pointing-piece input, a scroll wheel input and a trackball input.
8. The system of claim 7, wherein the scroll command is delivered via a touch-gesture input.
9. The system of claim 1, wherein the default item comprises a focused item that is either centrally-disposed within the focus zone, user favored, spatially-dominant within the focus zone, positioned at an extremity within the focus zone, or a combination thereof.
10. The system of claim 1, wherein the selection of the selectable item comprises the deployment, actuation, toggling, de-toggling, activation, deactivation, and the launch thereof.
11. The system of claim 1, wherein the user command input assembly is adapted to receive a user command via various types of user inputs including touch-gesture inputs, key inputs, joystick inputs, pointing-stick inputs, scroll wheel inputs and trackball inputs.
12. The system of claim 1, wherein the user command input assembly comprises a touch-gesture input surface.
13. The system of claim 12, wherein when the display is displaying scrollable content, which is currently not the top-most of the scrollable content, the reception of a top command via the user command input assembly results in the display of the top-most of the scrollable content; the top command delivered via at least one type of user input of a plurality of user input types comprising: a touch-gesture input, a key input, a joystick input, a pointing-piece input, a scroll wheel input and a trackball input; one of the user commands comprising the top command.

14. The system of claim 13, wherein the user input type comprises a touch-gesture input.
15. The system of claim 14, wherein the touch-gesture input comprises swiping up longitudinally on the touch-gesture input surface and holding at the extremity of the touch-gesture input surface for a predetermined time.
16. The system of claim 12, wherein when the display is displaying scrollable content, which is currently not the bottom-most of the scrollable content, the reception of a bottom command via the user command input assembly results in the display of the bottom-most of the scrollable content; the bottom command delivered via at least one type of user input of a plurality of user input types comprising: a touch-gesture input, a key input, a joystick input, a pointing-piece input, a scroll wheel input and a trackball input; one of the user commands comprising the bottom command.
17. The system of claim 16, wherein the user input type comprises a touch-gesture input.
18. The system of claim 17, wherein the touch-gesture input comprises swiping down longitudinally on the touch-gesture input surface and holding at the extremity of the touch-gesture input surface for a predetermined time.
19. The system of claim 12, wherein the selection command is delivered via a touch-gesture input on the touch-gesture input surface.
20. The system of claim 12, wherein the touch-gesture input surface is integrated with a fingerprint scanner.
21. The system of claim 12, wherein the touch-gesture input surface is disposed atop at least two keys, two of the at least two keys comprising volume control keys; the touch-gesture input surface and the at least two keys together making up at least a part of a thumbpiece.
22. The system of claim 21, wherein the thumbpiece further comprises at least one of: a joystick, a pointing-stick, a scroll wheel and a trackball.

23. The system of claim 21, wherein the user command input assembly further comprises a map key, which is configured to be operated independently and in conjunction with the thumbpiece in order to invoke functions pertaining to the computing device.
24. The system of claim 21, wherein the at least two keys comprises three keys.
25. The system of claim 21, wherein each of the at least two keys comprises a physical key, a touch key, a virtual key, or a combination thereof.
26. The system of claim 1, wherein the computing device comprises a smartphone
27. The system of claim 26, wherein the user command input assembly is located on the smartphone.
28. The system of claim 27, wherein the user command input assembly is positioned to be accessible by the user single-handedly as the smartphone is standard-gripped; the standard-gripping comprising gripping the smartphone in portrait orientation such that, the hand wraps around the rear of the smartphone while at least three fingers and the thumb rest on the opposing longitudinal edges of the smartphone.
29. The system of claim 28, wherein the touch-gesture input surface is integrated into a side edge of the smartphone such that, the touch-gesture input surface is accessible by the thumb of the user as the smartphone is standard-gripped.
30. The system of claim 28, wherein the touch-gesture input surface is integrated into a side edge of the smartphone such that, the touch-gesture input surface is accessible by one of the four fingers of the user as the smartphone is standard-gripped.
31. The system of claim 28, wherein the touch-gesture input surface is integrated into the rear of the smartphone such that, the touch-gesture input surface is accessible by the index finger of the user as the smartphone is standard-gripped.

32. The system of claim 26, wherein the user command input assembly is integrated into a smartcase comprising a smartphone case that is adapted to house the smartphone; the user command input assembly is positioned on the smartcase so as to be accessible by the user single-handedly as the smartphone with the smartcase attached thereto is standard-gripped; said standard-gripping comprising gripping the smartphone in portrait orientation such that, the hand wraps around the rear of the smartphone while at least three fingers and the thumb rest on the opposing longitudinal edges of the smartphone.
33. The system of claim 32, wherein the smartcase comprises:
- (a) a back panel;
 - (b) a pair of longitudinal side walls extending from the back panel; and
 - (c) an opening for snugly receiving the smartphone such that, the rear of the smartphone abuts the back panel, while the longitudinal side walls abut the longitudinal side edges of the smartphone.
34. The system of claim 33, wherein the touch-gesture input surface is integrated into a side edge of the smartcase such that, the touch-gesture input surface is accessible by the thumb of the user as the smartphone is standard-gripped.
35. The system of claim 33, wherein the touch-gesture input surface is integrated into a side edge of the smartcase such that, the touch-gesture input surface is accessible by one of the four fingers of the user as the smartphone is standard-gripped.
36. The system of claim 33, wherein the touch-gesture input surface is integrated into the rear of the smartcase such that, the touch-gesture input surface is accessible by the index finger of the user as the smartphone is standard-gripped.
37. The system of claim 12, wherein the computing device comprises a tablet PC with the user command input assembly integrated therein.
38. The system of claim 37, wherein the touch-gesture input surface is integrated into one of the bezels of the tablet.

39. The system of claim 37, wherein the touch-gesture input surface is integrated into the rear of the tablet.
40. The system of claim 37, wherein the touch-gesture input surface is virtual and is located within the display of the tablet.
41. The system of claim 1, wherein the user command input assembly is located on an external input device, which is disposed in operative communication with the computing device.
42. The system of claim 41, wherein the external input device comprises an external controller.
43. The system of claim 1, wherein the selection command is delivered by inputting at least one of the various types of user inputs comprising: a touch-gesture input, a key input, a joystick input, a pointing-stick input, a scroll wheel input and a trackball input.
44. The system of claim 43, wherein the selection command is delivered through a touch-gesture input.
45. The system of claim 1, wherein the selection of a non-default item of the one or more focused items involves:
- (a) receiving a lock command via the user command input assembly resulting in the one or more focused items being locked, the locked focused items referred to as locked items;
 - (b) upon locking the focused items, receiving one or more preselection commands via the user command input assembly, wherein the input of each preselection command results in a locked item being preselected; and
 - (c) upon preselecting a locked item, receiving the selection command resulting in the preselected item being selected; the user commands comprising the lock and preselection commands.

46. The system of claim 45, wherein the lock command is delivered by inputting at least one of the various types of user inputs comprising: a touch-gesture input, a key input, a joystick input, a pointing-stick input, a scroll wheel input and a trackball input.
47. The system of claim 46, wherein the lock command is delivered via a touch-gesture input.
48. The system of claim 45, wherein the preselection command is delivered by inputting at least one of the various types of user inputs comprising: a touch-gesture input, a key input, a joystick input, a pointing-stick input, a scroll wheel input and a trackball input.
49. The system of claim 48, wherein the preselection command is delivered via a touch-gesture input.
50. The system of claim 45, wherein upon preselecting a locked item, receiving an extra-lock command results in the display of one or more additional selectable links pertaining to the preselected item, each additional selectable link preselected and eventually selected by employing the preselection and selection commands respectively; one of the user commands comprising the extra-lock command.
51. The system of claim 50, wherein the extra-lock command is delivered by inputting at least one of the various types of user inputs comprising: a touch-gesture input, a key input, a joystick input, a pointing-stick input, a scroll wheel input and a trackball input.
52. The system of claim 51, wherein the extra-lock command is delivered via a touch-gesture input.
53. The system of claim 45, wherein the content outside of the focus zone is blurred upon receiving the lock command.
54. The system of claim 1, wherein as content moves in and out of the focus zone, the focus zone is adapted to focus or bring within the purview thereof one cluster at a time; a cluster comprising a collection of content that includes one or more selectable items.

55. The system of claim 54, wherein the processor comprises a recognition module for determining the boundary of a cluster, said determined cluster boundary information is transmitted to a focus module, which then defines the focus zone such that, the focus zone encompasses said cluster, the focus module part of the processor; the focus zone for defining the focus zone within the display of the computing device.
56. The system of claim 1, wherein the reception of an additional selection command via the user command input assembly results in the invocation of a smartphone function pertaining to one of the one or more focused items; one of the user commands comprising the additional selection command.
57. The system of claim 56, wherein the additional selection command is delivered by inputting at least one of the various types of user inputs comprising: a touch-gesture input, a key input, a joystick input, a pointing-stick input, a scroll wheel input and a trackball input.
58. The system of claim 57, wherein the additional selection command is delivered via a touch-gesture input.
59. The system of claim 1, wherein in the event of the display screen comprising multiple independent sections, the reception of a shift command via the user command input assembly results in the focus zone being shifted from one section to the other; one of the user commands comprising the shift command.
60. The system of claim 59, wherein the shift command is delivered by inputting at least one of the various types of user inputs comprising: a touch-gesture input, a key input, a joystick input, a pointing-stick input, a scroll wheel input a trackball input, or a combination thereof.
61. The system of claim 1, wherein the processor comprises a focus module for defining the focus zone within the display.
62. The system of claim 1, wherein the processor comprises:

- (a) a reception module for receiving user commands from the user command input assembly;
 - (b) a function database listed with the user commands; each user command associated with a function pertaining to the computing device; and
 - (c) an execution module for executing a user command by performing the function associated with said user command.
63. The system of claim 1, wherein a selectable item comprises one of an app icon, a hyperlink (or link), a control within notification panel, and a key of a virtual keyboard.
64. A handheld computing device, comprising:
- (a) a user command input assembly located thereon for receiving user commands;
 - (b) a processor for receiving the user commands transmitted by the user command input assembly; and
 - (c) a focus zone defined within a display thereof, wherein when one or more selectable display items are within the focus zone, whereby the one or more selectable items are said to be focused, the reception of a selection command via the user command input assembly results in the selection of a default item of the one or more focused items, and wherein the selection of a non-default item of the one or more focused items involves receiving a lock command via the user command input assembly resulting in the one or more focused items being locked, the locked focused items referred to as locked items, upon locking the focused items, receiving one or more preselection commands via the user command input assembly, wherein the input of each preselection command results in a locked item being preselected, and upon preselecting a locked item, receiving the selection command resulting in the preselected item being selected; the user commands comprising the lock preselection, and the selection commands.

65. A UI method, comprising:

- (a) defining a focus zone within a display of a computing device;
- (b) upon one or more selectable display items being within the focus zone whereby, said one or more selectable items are said to be focused, receiving a selection command via a user command input assembly; and
- (c) in response to the reception of the selection command, selecting a default item of the one or more focused items.

66. The method of claim 59, wherein the preselection and selection of a non-default item involves:

- (a) receiving a lock command via the user command input assembly;
- (b) upon receiving the lock command, locking the one or more focused items;
- (c) receiving one or more a preselection commands wherein, each of the one or more preselection commands preselects a locked item; and
- (d) upon the preselection of a locked item, receiving the selection command; and
- (e) in response to the reception of the selection command, selecting the preselected item.