(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
8 May 2014 (08.05.2014)

WIPO | PCT

(10) International Publication Number

WO 2014/070539 A1

(51) **International Patent Classification:**
G06F 3/14 (2006.01)   G06F 3/048 (2013.01)

(21) **International Application Number:**
PCT/US2013/066289

(22) **International Filing Date:**
23 October 2013 (23.10.2013)

(25) **Filing Language:**   English

(26) **Publication Language:**   English

(30) **Priority Data:**
13/663,229   29 October 2012 (29.10.2012)   US

(71) **Applicant: FACEBOOK, INC.** [US/US]; 1601 Willow Road, Menlo Park, CA 94025 (US).

(72) **Inventors: WALKIN, Brandon, Marshall;** 1601 Willow Road, Menlo Park, CA 94025 (US). **MATAS, Michael;** 1601 Willow Road, Menlo Park, CA 94025 (US). **AMERIGE, Brian, D.I.;** 1601 Willow Road, Menlo Park, CA 94025 (US).

(74) **Agent: CHOI, Hogene, L.;** Baker Botts L.L.P., 2001 Ross Avenue, Suite 600, Dallas, TX 75201 (US).

(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) **Title:** ANIMATION SEQUENCE ASSOCIATED WITH IMAGE
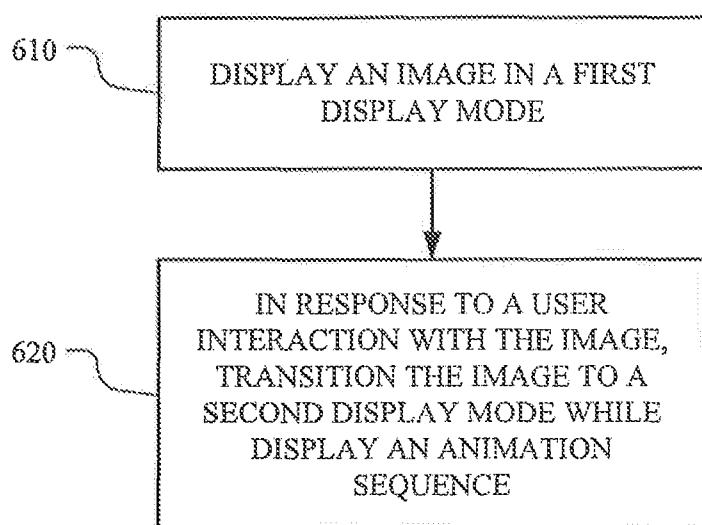
(57) **Abstract:** In one embodiment, an image may be displayed in one of several display modes. When an image is displayed in a first display mode on the screen of an electronic device, a user input may cause the image to transition to a second display mode. An animation sequence is displayed while the image transitions from the first display mode to the second display mode.

610 — DISPLAY AN IMAGE IN A FIRST DISPLAY MODE

620 — IN RESPONSE TO A USER INTERACTION WITH THE IMAGE, TRANSITION THE IMAGE TO A SECOND DISPLAY MODE WHILE DISPLAY AN ANIMATION SEQUENCE

FIG. 6

WO 2014/070539 A1

ANIMATION SEQUENCE ASSOCIATED WITH IMAGE

TECHNICAL FIELD

[1]   This disclosure generally relates to a user interface.

BACKGROUND

[2]   A user interface (UI), in the industrial design field of human-machine interaction, is the space where interactions between humans and machines occur. The goal of the interactions between a human, often referred to as a "user", and a machine at the user interface is the user's control of the machine and its operations (e.g., through user input) and machine feedback (e.g., through program output). A graphical user interface (GUI) is a type of user interface that allows users to interact with software applications executing on electronic or computing devices through multimedia objects (e.g., images, videos, audios, etc.) rather than purely text commands.

SUMMARY OF PARTICULAR EMBODIMENTS

[3]   In particular embodiments, a user interface for presenting content to users may have a hierarchical structure. The user interface may have any number of content sections, and each content section may have any number of content items. The content items may be of any type or format. A user may consume or interact with some of the content items. In particular embodiments, each content item may correspond to a user-interface element.

[4]   In particular embodiments, a content item, such as an image (e.g., a digital photograph, or photo for short), when being displayed on an electronic device, may be displayed in one of several display modes, including, for example and without limitation, full-screen mode, on-page mode, and index mode (i.e., table-of-content (TOC) mode). In particular embodiments, when an image is displayed in a first display mode on an electronic device having a touchscreen, a user input (e.g., the user sliding his finger quickly across the touchscreen to make a finger swipe, pan, or drag gesture) may cause the display mode to transition to a second display mode so that the image is displayed in the second display mode. An animation sequence may be displayed in connection with the mode transition, which occurs in response to the user input (e.g., the user's swipe gesture).

BRIEF DESCRIPTION OF THE DRAWINGS

[5]   FIG. 1 illustrates an example network environment associated with a social-networking system.

[6]   FIGS. 2A and 2B illustrate two example mobile electronic devices.

[7]   FIG. 3 illustrates an example social graph.

[8]   FIG. 4 illustrates an example object hierarchy.

[9]   FIGS. 5A-5C illustrate example display modes.

[10]   FIG. 6 illustrates an example method for transitioning an image between two display modes.

[11]   FIGS. 7A-7I illustrate an example animation sequence displayed when an image is transitioned between two display modes.

[12]   FIG. 8 illustrates an example computer system.

DESCRIPTION OF EXAMPLE EMBODIMENTS

[13]   A user interface (UI) may be incorporated into any type of software applications, including, for example, desktop applications, mobile applications, or web-based applications, to enable users to interact with and control the applications. A graphical user interface (GUI) is a type of user interface that enables users to interact with software applications through multi-media objects, including, for example, icons, buttons, menus, images, video, or audios.

[14]   In particular embodiments, a software application may be associated with a social-networking system. FIG. 1 illustrates an example network environment 100 associated with a social-networking system. Network environment 100 includes a user 101, a client system 130, a social-networking system 160, and a third-party system 170 connected to each other by a network 110. Although FIG. 1 illustrates a particular arrangement of user 101, client system 130, social-networking system 160, third-party system 170, and network 110, this disclosure contemplates any suitable arrangement of user 101, client system 130, social-networking system 160, third-party system 170, and network 110. As an example and not by way of limitation, two or more of client system 130, social-networking system 160, and third-party system 170 may be connected to each other directly, bypassing network 110. As another example, two or more of client system 130, social-networking system 160, and third-party system 170 may be physically or logically co-located with each other in whole or in part. Moreover, although FIG. 1 illustrates a particular number of users 101, client systems

130, social-networking systems 160, third-party systems 170, and networks 110, this disclosure contemplates any suitable number of users 101, client systems 130, social-networking systems 160, third-party systems 170, and networks 110. As an example and not by way of limitation, network environment 100 may include multiple users 101, client system 130, social-networking systems 160, third-party systems 170, and networks 110.

[15]   In particular embodiments, user 101 may be an individual (human user), an entity (e.g., an enterprise, business, or third-party application), or a group (e.g., of individuals or entities) that interacts or communicates with or over social-networking system 160. In particular embodiments, social-networking system 160 may be a network-addressable computing system hosting an online social network. Social-networking system 160 may generate, store, receive, and transmit social-networking data, such as, for example, user-profile data, concept-profile data, social-graph information, or other suitable data related to the online social network. Social-networking system 160 may be accessed by the other components of network environment 100 either directly or via network 110. In particular embodiments, social-networking system 160 may include an authorization server that allows users 101 to opt in or opt out of having their actions logged by social-networking system 160 or shared with other systems (e.g., third-party systems 170), such as, for example, by setting appropriate privacy settings. In particular embodiments, third-party system 170 may be a network-addressable computing system that can host various third-party software applications (e.g., web-based applications). Third-party system 170 may generate, store, receive, and transmit various types of data, such as, for example, texts, images, videos, or audios. Third-party system 170 may be accessed by the other components of network environment 100 either directly or via network 110. In particular embodiments, one or more users 101 may use one or more client systems 130 to access, send data to, and receive data from social-networking system 160 or third-party system 170. Client system 130 may access social-networking system 160 or third-party system 170 directly, via network 110, or via a third-party system. As an example and not by way of limitation, client system 130 may access third-party system 170 via social-networking system 160. Client system 130 may be any suitable computing device, such as, for example, a personal computer, a laptop computer, a cellular telephone, a smartphone, or a tablet computer.

[16]   This disclosure contemplates any suitable network 110. As an example and not by way of limitation, one or more portions of network 110 may include an ad hoc network, an intranet, an extranet, a virtual private network (VPN), a local area network (LAN), a wireless

4

LAN (WLAN), a wide area network (WAN), a wireless WAN (WWAN), a metropolitan area network (MAN), a portion of the Internet, a portion of the Public Switched Telephone Network (PSTN), a cellular telephone network, or a combination of two or more of these. Network 110 may include one or more networks 110.

[17]   Links 150 may connect client system 130, social-networking system 160, and third-party system 170 to communication network 110 or to each other. This disclosure contemplates any suitable links 150. In particular embodiments, one or more links 150 include one or more wireline (such as for example Digital Subscriber Line (DSL) or Data Over Cable Service Interface Specification (DOCSIS)), wireless (such as for example Wi-Fi or Worldwide Interoperability for Microwave Access (WiMAX)), or optical (such as for example Synchronous Optical Network (SONET) or Synchronous Digital Hierarchy (SDH)) links. In particular embodiments, one or more links 150 each include an ad hoc network, an intranet, an extranet, a VPN, a LAN, a WLAN, a WAN, a WWAN, a MAN, a portion of the Internet, a portion of the PSTN, a cellular technology-based network, a satellite communications technology-based network, another link 150, or a combination of two or more such links 150. Links 150 need not necessarily be the same throughout network environment 100. One or more first links 150 may differ in one or more respects from one or more second links 150.

[18]   In particular embodiments, data (e.g., data representing various types of information or content) may be sent between servers associated with social-networking system 160 and individual client systems 130 via network 110. When two electronic devices (e.g., a server and a client) are connected to a network (e.g., a computer or communications network, such as network 110), data may be transmitted between the two devices over the network using one or more suitable network protocols. A network may include any number of sub-networks. By transmitting data between the two devices, the two devices may communicate with each other.

[19]   In network communications, there are two ways to send a communication (i.e., data) from one device to another device: push and pull. With push technology, the request for the communication transaction is initiated by the sending device. That is, the sending device "pushes" the communication, so to speak, to the receiving device. In this case, the sending device may be considered the active party and the receiving device may be considered the passive party in the transaction. In contrast, with pull technology, the request for the communication transaction is initiated by the receiving device. That is, the receiving device

"pulls" the communication, so to speak, from the sending device. In this case, the sending device may be considered the passive party and the receiving device may be considered the active party in the transaction. In particular embodiments, a server associated with social-networking system 160 may push data to a client system 130. A communication pushed from a server to a client may be referred to as a "push notification". Similarly, a client system 130 may push data to a server associated with social-networking system 160.

[20] In particular embodiments, a client system 130 may be a mobile electronic or computing device. A mobile electronic device – such as a Smartphone, tablet computer, or laptop computer – may include functionality for determining its location, direction, or orientation, such as a GPS receiver, compass, or gyroscope. Such a mobile device may also include functionality for wireless communication, such as BLUETOOTH communication, near-field communication (NFC), or infrared (IR) communication or communication with a wireless local area networks (WLANs) or cellular-telephone network. Such a mobile device may also include one or more cameras, scanners, touchscreens, microphones, or speakers. Mobile electronic devices may also execute software applications, such as games, web browsers, or social-networking applications. With social-networking applications, users may connect, communicate, and share information with other users in their social networks.

[21] In particular embodiments, a mobile electronic device (e.g., Smartphone or tablet computer) may include a touchscreen capable of receiving touch input. FIG. 2A illustrates an example mobile electronic device 210 (e.g., a Smartphone) having a touchscreen 215. Touchscreen 215 may incorporate one or more touch sensors and a touch-sensor controller for detecting the presence and location of a touch (e.g., from a user's finger) or the proximity of an object (e.g., a stylus). In particular embodiments, a specific touch detected via touchscreen 215 may result in a touch input event.

[22] Different mobile electronic devices may have different designs. As a result, the size, shape, or aspect ration of the touchscreens of different mobile devices may differ. FIG. 2B illustrates another example mobile electronic device 220 (e.g., a tablet computer) having a touchscreen 225. Similarly, touchscreen 225 may incorporate one or more touch sensors and a touch-sensor controller for detecting the presence and location of a touch (e.g., from a user's finger) or the proximity of an object (e.g., a stylus). A specific touch detected via touchscreen 225 may result in a touch input event. However, since mobile electronic devices 210 and 220 are two different types of devices, their respective touchscreen 215 and

225 have different sizes and aspect ratios.

[23]   There may be various types of touches or gestures, such as single tap, double tap, short press, long press, slide, swipe, flip, pan, drag, pinch open, or pinch close, corresponding to various types of touch input events. Different touch input events may result in different responses and this disclosure contemplates any applicable gesture.

[24]   Social-networking system 160 may store various types of data including, for example, user data, application data, or social data. In particular embodiments, such data may be stored in a graph having any number of nodes and edges, where each edge connects two nodes. The graph is often referred to as a "social graph" or "open graph" as it contains, among others, social information.

[25]   FIG. 3 illustrates example social graph 300. In particular embodiments, social-networking system 160 may store one or more social graphs 300 in one or more data stores. In particular embodiments, social graph 300 may include multiple nodes—which may include multiple user nodes 302 or multiple concept nodes 304—and multiple edges 306 connecting the nodes. Example social graph 300 illustrated in FIG. 3 is shown, for didactic purposes, in a two-dimensional visual map representation. In particular embodiments, a social-networking system 160, client system 130, or third-party system 170 may access social graph 300 and related social-graph information for suitable applications. The nodes and edges of social graph 300 may be stored as data objects, for example, in a data store (such as a social-graph database). Such a data store may include one or more searchable or queryable indexes of nodes or edges of social graph 300.

[26]   In particular embodiments, a user node 302 may correspond to a user of social-networking system 160. As an example and not by way of limitation, a user may be an individual (human user), an entity (e.g., an enterprise, business, or third-party application), or a group (e.g., of individuals or entities) that interacts or communicates with or over social-networking system 160. In particular embodiments, when a user registers for an account with social-networking system 160, social-networking system 160 may create a user node 302 corresponding to the user, and store the user node 302 in one or more data stores. Users and user nodes 302 described herein may, where appropriate, refer to registered users and user nodes 302 associated with registered users. In addition or as an alternative, users and user nodes 302 described herein may, where appropriate, refer to users that have not registered with social-networking system 160. In particular embodiments, a user node 302 may be associated with information provided by a user or information gathered by various systems,

including social-networking system 160. As an example and not by way of limitation, a user may provide his or her name, profile picture, contact information, birth date, sex, marital status, family status, employment, education background, preferences, interests, or other demographic information. In particular embodiments, a user node 302 may be associated with one or more data objects corresponding to information associated with a user. In particular embodiments, a user node 302 may correspond to one or more webpages.

[27]   In particular embodiments, a concept node 304 may correspond to a concept. As an example and not by way of limitation, a concept may correspond to a place (such as, for example, a movie theater, restaurant, landmark, or city); a website (such as, for example, a website associated with social-network system 160 or a third-party website associated with a web-application server); an entity (such as, for example, a person, business, group, sports team, or celebrity); a resource (such as, for example, an audio file, video file, digital photo, text file, structured document, or application) which may be located within social-networking system 160 or on an external server, such as a web-application server; real or intellectual property (such as, for example, a sculpture, painting, movie, game, song, idea, photograph, or written work); a game; an activity; an idea or theory; another suitable concept; or two or more such concepts. A concept node 304 may be associated with information of a concept provided by a user or information gathered by various systems, including social-networking system 160. As an example and not by way of limitation, information of a concept may include a name or a title; one or more images (e.g., an image of the cover page of a book); a location (e.g., an address or a geographical location); a website (which may be associated with a URL); contact information (e.g., a phone number or an email address); other suitable concept information; or any suitable combination of such information. In particular embodiments, a concept node 304 may be associated with one or more data objects corresponding to information associated with concept node 304. In particular embodiments, a concept node 304 may correspond to one or more webpages.

[28]   In particular embodiments, a node in social graph 300 may represent or be represented by a webpage (which may be referred to as a "profile page"). Profile pages may be hosted by or accessible to social-networking system 160. Profile pages may also be hosted on third-party websites associated with a third-party server 170. As an example and not by way of limitation, a profile page corresponding to a particular external webpage may be the particular external webpage and the profile page may correspond to a particular concept node 304. Profile pages may be viewable by all or a selected subset of other users. As an example

8

and not by way of limitation, a user node 302 may have a corresponding user-profile page in which the corresponding user may add content, make declarations, or otherwise express himself or herself. As another example and not by way of limitation, a concept node 304 may have a corresponding concept-profile page in which one or more users may add content, make declarations, or express themselves, particularly in relation to the concept corresponding to concept node 304.

[29]   In particular embodiments, a concept node 304 may represent a third-party webpage or resource hosted by a third-party system 170. The third-party webpage or resource may include, among other elements, content, a selectable or other icon, or other inter-actable object (which may be implemented, for example, in JavaScript, AJAX, or PHP codes) representing an action or activity. As an example and not by way of limitation, a third-party webpage may include a selectable icon such as "like," "check in," "eat," "recommend," or another suitable action or activity. A user viewing the third-party webpage may perform an action by selecting one of the icons (e.g., "eat"), causing a client system 130 to transmit to social-networking system 160 a message indicating the user's action. In response to the message, social-networking system 160 may create an edge (e.g., an "eat" edge) between a user node 302 corresponding to the user and a concept node 304 corresponding to the third-party webpage or resource and store edge 306 in one or more data stores.

[30]   In particular embodiments, a pair of nodes in social graph 300 may be connected to each other by one or more edges 306. An edge 306 connecting a pair of nodes may represent a relationship between the pair of nodes. In particular embodiments, an edge 306 may include or represent one or more data objects or attributes corresponding to the relationship between a pair of nodes. As an example and not by way of limitation, a first user may indicate that a second user is a "friend" of the first user. In response to this indication, social-networking system 160 may transmit a "friend request" to the second user. If the second user confirms the "friend request," social-networking system 160 may create an edge 306 connecting the first user's user node 302 to the second user's user node 302 in social graph 300 and store edge 306 as social-graph information in one or more of data stores (e.g., data stores associated with social-networking system 160). In the example of FIG. 3, social graph 300 includes an edge 306 indicating a friend relation between user nodes 302 of user "A" and user "B" and an edge indicating a friend relation between user nodes 302 of user "C" and user "B." Although this disclosure describes or illustrates particular edges 306 with particular attributes connecting particular user nodes 302, this disclosure contemplates any

suitable edges 306 with any suitable attributes connecting user nodes 302. As an example and not by way of limitation, an edge 306 may represent a friendship, family relationship, business or employment relationship, fan relationship, follower relationship, visitor relationship, subscriber relationship, superior/subordinate relationship, reciprocal relationship, non-reciprocal relationship, another suitable type of relationship, or two or more such relationships. Moreover, although this disclosure generally describes nodes as being connected, this disclosure also describes users or concepts as being connected. Herein, references to users or concepts being connected may, where appropriate, refer to the nodes corresponding to those users or concepts being connected in social graph 300 by one or more edges 306.

[31] In particular embodiments, an edge 306 between a user node 302 and a concept node 304 may represent a particular action or activity performed by a user associated with user node 302 toward a concept associated with a concept node 304. As an example and not by way of limitation, as illustrated in FIG. 3, a user may "like," "attended," "played," "listened," "cooked," "worked at," or "watched" a concept, each of which may correspond to a edge type or subtype. A concept-profile page corresponding to a concept node 304 may include, for example, a selectable "check in" icon (such as, for example, a clickable "check in" icon) or a selectable "add to favorites" icon. Similarly, after a user clicks these icons, social-networking system 160 may create a "favorite" edge or a "check in" edge in response to a user's action corresponding to a respective action. As another example and not by way of limitation, a user (user "C") may listen to a particular song ("Ramble On") using a particular application (SPOTIFY, which is an online music application). In this case, social-networking system 160 may create a "listened" edge 306 and a "used" edge (as illustrated in FIG. 3) between user nodes 302 corresponding to the user and concept nodes 304 corresponding to the song and application to indicate that the user listened to the song and used the application. Moreover, social-networking system 160 may create a "played" edge 306 (as illustrated in FIG. 3) between concept nodes 304 corresponding to the song and the application to indicate that the particular song was played by the particular application. In this case, "played" edge 306 corresponds to an action performed by an external application (SPOTIFY) on an external audio file (the song "Imagine"). Although this disclosure describes particular edges 306 with particular attributes connecting user nodes 302 and concept nodes 304, this disclosure contemplates any suitable edges 306 with any suitable attributes connecting user nodes 302 and concept nodes 304. Moreover, although this disclosure describes edges between a user

node 302 and a concept node 304 representing a single relationship, this disclosure contemplates edges between a user node 302 and a concept node 304 representing one or more relationships. As an example and not by way of limitation, an edge 306 may represent both that a user likes and has used at a particular concept. Alternatively, another edge 306 may represent each type of relationship (or multiples of a single relationship) between a user node 302 and a concept node 304 (as illustrated in FIG. 3 between user node 302 for user "E" and concept node 304 for "SPOTIFY").

[32]   In particular embodiments, social-networking system 160 may create an edge 306 between a user node 302 and a concept node 304 in social graph 300. As an example and not by way of limitation, a user viewing a concept-profile page (such as, for example, by using a web browser or a special-purpose application hosted by the user's client system 130) may indicate that he or she likes the concept represented by the concept node 304 by clicking or selecting a "Like" icon, which may cause the user's client system 130 to transmit to social-networking system 160 a message indicating the user's liking of the concept associated with the concept-profile page. In response to the message, social-networking system 160 may create an edge 306 between user node 302 associated with the user and concept node 304, as illustrated by "like" edge 306 between the user and concept node 304. In particular embodiments, social-networking system 160 may store an edge 306 in one or more data stores. In particular embodiments, an edge 306 may be automatically formed by social-networking system 160 in response to a particular user action. As an example and not by way of limitation, if a first user uploads a picture, watches a movie, or listens to a song, an edge 306 may be formed between user node 302 corresponding to the first user and concept nodes 304 corresponding to those concepts. Although this disclosure describes forming particular edges 306 in particular manners, this disclosure contemplates forming any suitable edges 306 in any suitable manner.

[33]   In particular embodiments, a set of objects may be organized into a hierarchy based on, for example, how the individual objects are related to each other. An object hierarchy may have any number of levels, and at each level, there may be any number of objects. Parent-child or sibling relationships may exist between specific objects in the hierarchy. Within an object hierarchy, a parent object is one level above the level of its child objects. Two sibling objects are at the same level and share the same parent object. In addition, any portion of the hierarchy may also be considered a hierarchy in itself.

[34]   FIG. 4 illustrates a portion of an example object hierarchy 400 that includes a

number of objects 410. FIG. 4 is in fact a visual representation of an object hierarchy. Each node represents a specific object in the hierarchy, and each edge connecting two nodes represents a parent-child relationship between the two corresponding objects.

[35] In particular embodiments, an object in a hierarchy may or may not have a parent. If an object does not have a parent, it may be referred to as a "root" object (e.g., object 410A). Typically, the root object is positioned at the first or topmost level of the hierarchy. In particular embodiments, an object in a hierarchy may or may not have any children. If an object does not have any children, it may be referred to as a "leaf" or "terminal" object (e.g., object 410B). If an object does have children (e.g., object 410C), it may have any number of children. In addition, objects sharing the same parent may be referred to as each other's "siblings". For example, in FIG. 4, object 410C is the parent of objects 410D and 410B. Objects 410D and 410B are the children of object 410C and are siblings to each other. Thus, a hierarchy of objects (e.g., object hierarchy 400) not only includes the individual objects (e.g., objects 410) themselves but also indicates the relationships among the specific objects. Moreover, the position of a specific object within the hierarchy may indicate its relationships with other objects in the hierarchy.

[36] Objects 410 may be of various types, and this disclosure contemplates any applicable object types. For example and without limitation, the term "object" may refer to any type of content, including but not limited to images, videos, captions, text blocks or boxes, user-interface elements, clickable links, newsfeed stories, references to other objects, advertisements, calendar events, units for displaying open graph analysis that may be graphically rendered, applications, websites, web pages, books, chapters. In particular embodiments, given a hierarchy of objects, which may be a portion of another, larger hierarchy of objects, the hierarchical relationships (e.g., parent-child or sibling relationships, positions of the objects within the hierarchy) between specific objects may direct some aspects of how these objects behave in the context of a user interface or how the objects are presented to a user.

[37] As an example, in the context of the desktop of a computing device, the desktop may be a parent object, and sometimes the root object of a hierarchy, whose child objects are the individual software applications available on the desktop. A software application, while itself being one of the child objects of the desktop, is also the parent object of the individual components of that software application. Different software applications may include different components. For example, for a software application that manages

digital books (e.g., a book reader application), its components may include the digital books available, the individual chapters of each book, the pages of each chapter, and the texts, images, videos, audios, or other content or media elements on each page. Each of these also corresponds to an object (e.g., user-interface component) in the hierarchy. More specifically, within the hierarchy, the digital book application may be the parent object of the digital books. A digital book may be the parent object of the individual chapters of that book. A chapter, while itself being one of the child objects of the book, is also the parent object of the pages in that chapter. A page is the parent object of the texts, images, videos, audios, or other content or media elements on that page. A text block, image, video, audio, or other content or media element is one of the child objects of the page to which it belongs. Similarly, for a software application that manages news feeds, its components may include the individual news channels and the news stories within each channel. Each of these may correspond to an object. Within the hierarchy, the news-feed application, while itself being one of the child objects of the desktop, is also the parent object of the news channels. A news channel in turn is the parent object of the news stories included in that channel.

[38]   As another example, in the context of the Internet or the World Wide Web, the Internet may be a parent object whose child objects are the individual websites. A website, while itself being one of the child objects of the Internet, is also the parent object of the individual web pages of that website. A web page, while itself being one of the child objects of the website to which it belongs, is the parent object of the texts, images, videos, audios, or links (e.g., Uniform Resource Locators (URLs)) included in the web page. Each text block, image, video, audio, or link may also correspond to a specific object in the hierarchy.

[39]   As a third example, a website, such as a social-networking website implemented by social-networking system 160, may also be arranged in a hierarchical structure for navigating the content of the social-networking website. In this context, the social-networking website may be a parent object whose child objects are the components (e.g., photo albums, user profile pages, etc.) of the website. For example, a photo album, while itself being a child object of the social-networking website, may in turn be a parent object, and the individual photos within the album may be the child objects of the photo album. A user's profile page may be structured in such a hierarchical fashion as well. The profile page itself may be considered a parent object, and the individual objects on the profile page may be the child objects of the profile page. In particular embodiments, a profile page may be considered and rendered (e.g., for presentation to a user) as a linear timeline of

13

objects, such as, for example and without limitation, photos, photo albums, check-ins, comments from other users, attended events, tags, applications the user has added to the profile page, stories, songs the user has listened to, playlists. These various types of objects may all be children of the profile page, or may be further arranged into multiple levels. With some implementations, a user's profile page may include any number of sections, such as the user's education and employment information, the user's public "wall", or the user's social connections. Then the various types of objects above may be divided into specific sections.

[40]   In particular embodiments, an object 410 may be a component of a user interface. In this case, object hierarchy 400 may correspond to the user interface, and each object 410 may correspond to a specific component of the user-interface. A user interface may have various types of components, and this disclosure contemplates any applicable user-interface component types. For example, a user-interface component (i.e., an object 410) may be a window, a section, a tab, an image, a video, an audio, a text block, a menu, an icon, a button, a checkbox, a website, a web page, a frame, a clickable link, a message, a post, or an input field. In particular embodiments, an object 410 may be consumed by a user if the user is able to, for example and without limitation, interact with, view, read, listen to, manipulate, or handle the object 410. For example, some user-consumable objects 410 may be texts, images, videos, audios, feeds, executables (e.g., application programs or games), websites, web pages, digital books, photo albums, posts, or messages.

[41]   In particular embodiments, when the user interface corresponding to object hierarchy 400 is displayed (e.g., on a client system 130), the structure of the corresponding object hierarchy 400 may reflect the structure of the user interface. The relationships among the individual components in the user interface, as reflected in object hierarchy 400, may influence how these components are organized and presented to users. The user interface may have any number of layers, respectively corresponding to the individual levels of object hierarchy 400. Objects 410 (e.g., user-interface components) at a specific level of object hierarchy 400 are displayed in the corresponding layer of the user interface. With some implementations, the lowest or bottommost layer of the user interface corresponds to the first or topmost level of object hierarchy 400. Thus, root object 410A is displayed in the lowest layer of the user interface. Furthermore, in the user interface, each object 410 (e.g., user-interface component) is displayed in a layer immediately above the layer where its parent, if one exists, is displayed and immediately below the layer where its children, if any, are displayed. Sibling objects 410 are displayed at the same layer. Thus, the position of a

component in the user interface indicates its relationships (e.g., parent-child or sibling) with other components in the user interface.

[42]   In particular embodiments, a user-interface component (e.g., an image, a video, a folder, etc.) may be displayed in various display modes. As an example, the user-interface component may be displayed in a "full-screen" mode, where the user-interface component occupies the entire or nearly the entire display area (e.g., the screen of an electronic device). As another example, the user-interface component may be displayed in an "on-page" mode, where the user-interface component is included in another user-interface component and displayed as a part of that other user-interface component (e.g., an image is displayed as a part of a web page). As a third example, the user-interface component may be displayed in an "index" mode, where the user-interface component is a part of a series of user-interface components (e.g., an image is displayed together with other images from the same album, or a chapter of a book is displayed in the table of content of the book together with other chapters from the same book).

[43]   In particular embodiments, a hierarchical user interface may be used to present content to a user. Such a user interface may be referred to as a "content feed" or "news feed" user interface. The content may be of any type and format, such as, for example and without limitation, text, icon, image, video, audio, web page, post, or message. This disclosure contemplates any applicable content type and format. In particular embodiments, the individual content items (e.g., text, image, video, audio, web page, post, message, news piece, etc.) may be organized into various categories, referred to as content sections. For example, related content items may be categorized into the same content section. The user interface may include any number of content sections, and each content section may include any number of content items. Hierarchically, a content section may be the parent of the content items belonging to that section. For example, various photos taken during a holiday trip may be organized into the same album, and various photo albums may be organized into the photo section of the user interface.

[44]   In particular embodiments, a user may consume or interact with a specific content item. For example, a user consumes a content item when the user scrolls, opens up, views, listens to, selects, reviews, or comments on the content item. A user interacts with a content item when the user selects, clicks on, taps, reviews, or comments on the content item. This disclosure contemplates any applicable means for a user to consume or interact with a content item.

[45]   In particular embodiments, when a content item is displayed on the screen of an electronic device (e.g., as a part of a hierarchical user interface), the content item may be displayed in one of several display modes, such as, for example and without limitation, full-screen mode, on-page mode, and index mode. FIG. 5A illustrates an example image 511 (e.g., a digital photograph, or photo for short) being displayed in the full-screen mode on the screen of a Smartphone. In this case, image 511 occupies, by itself, the entire or nearly the entire display area (e.g., the screen of the Smartphone). FIG. 5B illustrates an example image 521 being displayed in the on-page mode on the screen of the Smartphone. In this case, image 521 is included in and displayed as a part (e.g., a component) of another content item 522 (e.g., a web page). FIG. 5C illustrates example image 511 being displayed in the index mode on the screen of a Smartphone. In this case, image 511 is a part of a series of content items 531 of the same or different types, and several of these content items are displayed together (e.g., as an index or a table of content).

[46]   In particular embodiments, when a content item is displayed in one display mode, it may transition to another display mode in response to a user input. As an example, while image 511 is displayed in the full-screen mode as illustrated in FIG. 5A, in response to a user making a pinch-close gesture on the touchscreen of the Smartphone, image 511 may transition to the on-page mode or the index mode. As another example, while image 521 is displayed in the on-page mode as illustrated in FIG. 5B, in response to the user making a pinch-open gesture on the touchscreen of the Smartphone, image 521 may transition to the full-screen mode. Conversely, in response to the user making a pinch-close gesture on the touchscreen of the Smartphone, image 521 may transition to the index mode. As a third example, while image 511 is displayed in the index mode as illustrated in FIG. 5C, in response to a user making a pinch-open gesture on the touchscreen of the Smartphone, image 511 may transition to the on-page mode or the full-screen mode.

[47]   FIG. 6 illustrates an example method 600 for transitioning an image between two display modes. Method 600 may begin at STEP 610, where an image, such as a digital photograph, is displayed in a first display mode. At STEP 620, in response to a user input, such as a user interaction with the image, the image may transition from the first display mode to the second display mode. In particular embodiments, an animation sequence may be displayed during the mode transition. With some implementation, the animation sequence may feature the image itself.

[48]   To further explain the steps of method 600, consider the example animation

sequence illustrated in FIGS. 7A-7I. In FIG. 7A, an image 711 is displayed in the full-screen mode on the screen of a Smartphone. The screen is a touchscreen and is capable of receiving a user's touch gesture as input. Suppose that a user makes a finger swipe gesture by quickly sliding a finger across the touchscreen. This swipe gesture results in a user input being received at the Smartphone and may cause image 711 to transition from the current display mode (e.g., the full-screen mode) to another display mode (e.g., the on-page mode).

[49]   In particular embodiments, different gestures may cause the image to make different types of mode transitions. As an example, when an image is displayed in the on-page mode, an upward finger swipe (e.g., quickly sliding a finger from bottom to top across the touchscreen) may cause the image to transition to the full-screen mode, while a downward finger swipe (e.g., quickly sliding a finger from top to bottom across the touchscreen) may cause the image to transition to the index mode. As another example, when an image displayed in the full-screen mode, the pinch-close gesture (e.g., brining two fingers closer together) may cause the image to transition to the on-page mode or index mode. Conversely, when an image displayed in the index mode, the pinch-open gesture (e.g., brining two fingers farther apart) may cause the image to transition to the on-page mode or full-screen mode. Other gestures, such as pan or drag may also be used to cause these transitions and this disclosure contemplates any applicable gestures.

[50]   More generally speaking, an image may be displayed in various sizes. For example, the image is shown in a larger size when it is displayed in the full-screen mode, but is shown in a smaller size when it is displayed in the index mode. Thus, each display mode may correspond to a specific size for displaying the image. In particular embodiments, while an image is displayed at a specific size, one type of user input (e.g., upward swipe, pinch open, or single tap) may cause the image to be transitioned to the next larger size, while another type of user input (e.g., downward swipe, pinch close, or double tap) may cause the image to be transitioned to the next smaller size. For example, if a user wants to view an image in successive larger sizes, the user may repeatedly make upward swipe gestures. Conversely, if the user wants to view the image in successive smaller sizes, the user may repeatedly make downward swipe gestures.

[51]   From FIG. 7A, upon receiving a user input (e.g., caused by a finger swipe gesture), an animation sequence may be displayed while image 711 is transitioned from the current display mode (e.g., the full-screen mode) to another display mode (e.g., the on-page mode). In particular embodiments, the animation sequence may feature image 711 itself.

17

With some implementations, for the animation sequence, image 711 may first recede backward while decreasing in size, as illustrated in FIGS. 7B-7D. When image 711 reaches a smallest size (e.g., FIG. 7D), it then advances forward while increasing in size, as illustrated in FIGS. 7E-7G. When image 711 reaches a largest size (e.g., FIG. 7G), it again decreases in size, as illustrated in FIG. 7H, until finally it reaches the size and position corresponding to the destination display mode to which image 711 is transitioning, as illustrated in FIG. 7I, where image 711 is displayed in the on-page mode, being included as a part of another content item 712 (e.g., a web page).

[52]   When a three-dimensional object is presented in a two-dimensional medium, various perspective techniques may be employed to simulate three-dimensional visual effects. For example, when an object gradually decreases in size, it has the visual effect of the object gradually receding backward, moving farther away from the viewer. Conversely, when an object gradually increases in size, it has the visual effect of the object gradually advancing forward, moving closer to the viewer. Thus, in the animation sequence illustrated in FIGS. 7A-7I, when image 711 gradually decreases in size as illustrated in FIGS. 7B-7D, it has the visual effect of image 711 gradually receding backward on the screen of the Smartphone, moving farther away from the user. Conversely, when image 711 gradually increases in size as illustrated in FIGS. 7E-7G, it has the visual effect of image 711 gradually advancing forward on the screen, moving closer to the user.

[53]   In particular embodiments, the movements of the image during an animation sequence may be based on spring motion. With some implementations, the spring motion may be defined based on Hooke's law of elasticity, which, in mechanics and physics, states that the extension of a spring is in direct proportion with the load applied to it. Mathematically, Hooke's law states that $F = -kx$, where x is the displacement of the spring's end from its equilibrium position; F is the restoring force exerted by the spring on that end; and k is the rate of spring constant.

[54]   With some implementations, the movements of the image during an animation sequence may simulate the effect of attaching the image (e.g., the center of the image) to one end of an imaginary spring, while the other end of the spring is attached to a position on the screen where the image should be displayed (e.g., in the display mode to which the image is transitioned). During an animation sequence, the image may be displaced from its destination position on the screen (e.g., receding backward, advancing forward, or panning around). Nevertheless, the image is tethered to its original position and state by the imaginary spring.

18

Thus, the movements of the image during an animation sequence may have a bouncing visual quality.

[55]   In particular embodiments, the movements of an image in an animation sequence (e.g., the speed at which the image changes its size or recedes backward or advances forward, the smallest or largest size of the image used in the animation sequence) during a mode transition may be determined based on the velocity or acceleration of a user's finger when making the touch gesture that causes the image to transition between two display modes. For example, suppose that the user makes a swipe gesture by sliding a finger vertically (e.g., up and down) across the touchscreen of an electronic device. With some implementations, the velocity or acceleration of the user's finger moving vertically across the touchscreen may be recorded or determined. Suppose that the horizontal direction with respect to the screen is the "x" direction; the vertical direction with respect to the screen is the "y" direction; and the perpendicular direction with respect to the screen is the "z" direction. Then, the velocity or acceleration of the user's finger moving vertically across the touchscreen is the velocity or acceleration in the "y" direction. This velocity or acceleration in the "y" direction may be translated into corresponding velocity or acceleration in the "z" direction for determining how fast or how far back the image should recede during the animation sequence. Since the image recedes backward and advances forward with respect to the screen, the image moves in the "z" direction. Thus, the user's finger's movements in the "y" direction on the touchscreen may control the image's movements in the "z" direction during the animation sequence. For example, if the user makes a faster swipe gesture, the image recedes backward faster and farther. Conversely, if the user makes a slower swipe gesture, the image recedes backward slower and closer.

[56]   In particular embodiments, the velocity of the swiping gesture may be normalized (e.g., for scale and size) by dividing the velocity by a normalization factor. With some implementations, the normalization factor is itself a function of the velocity, "v". With some implementations, the normalization factor is defined in terms of the velocity, "v", as:

(1) normalization factor = 170 when $0 <= |v| <= 3000$;

(2) normalization factor = $(170 + (((|v| - 3000) / 1500) * 50))$ when $3000 < |v| <= 4500$;

(3) normalization factor = 220 when $4500 < |v| <$ infinite.

Note that in case (2), the normalization factor is a linear function from 170 to 220. The velocity is thus normalized by dividing the velocity by the appropriate normalization

factor for the range to which the velocity belongs.

[57]   Particular embodiments may repeat one or more steps of the method of FIG. 6, where appropriate. Although this disclosure describes and illustrates particular steps of the method of FIG. 6 as occurring in a particular order, this disclosure contemplates any suitable steps of the method of FIG. 6 occurring in any suitable order. Moreover, although this disclosure describes and illustrates particular components, devices, or systems carrying out particular steps of the method of FIG. 6, this disclosure contemplates any suitable combination of any suitable components, devices, or systems carrying out any suitable steps of the method of FIG. 6.

[58]   In particular embodiments, method 600 may be implemented as computer software and executed on an electronic or computer system. FIG. 8 illustrates an example computer system 800. In particular embodiments, one or more computer systems 800 perform one or more steps of one or more methods described or illustrated herein. In particular embodiments, one or more computer systems 800 provide functionality described or illustrated herein. In particular embodiments, software running on one or more computer systems 800 performs one or more steps of one or more methods described or illustrated herein or provides functionality described or illustrated herein. Particular embodiments include one or more portions of one or more computer systems 800. Herein, reference to a computer system may encompass a computing device, and vice versa, where appropriate. Moreover, reference to a computer system may encompass one or more computer systems, where appropriate.

[59]   This disclosure contemplates any suitable number of computer systems 800. This disclosure contemplates computer system 800 taking any suitable physical form. As example and not by way of limitation, computer system 800 may be an embedded computer system, a system-on-chip (SOC), a single-board computer system (SBC) (such as, for example, a computer-on-module (COM) or system-on-module (SOM)), a desktop computer system, a laptop or notebook computer system, an interactive kiosk, a mainframe, a mesh of computer systems, a mobile telephone, a personal digital assistant (PDA), a server, a tablet computer system, or a combination of two or more of these. Where appropriate, computer system 800 may include one or more computer systems 800; be unitary or distributed; span multiple locations; span multiple machines; span multiple data centers; or reside in a cloud, which may include one or more cloud components in one or more networks. Where appropriate, one or more computer systems 800 may perform without substantial spatial or

temporal limitation one or more steps of one or more methods described or illustrated herein. As an example and not by way of limitation, one or more computer systems 800 may perform in real time or in batch mode one or more steps of one or more methods described or illustrated herein. One or more computer systems 800 may perform at different times or at different locations one or more steps of one or more methods described or illustrated herein, where appropriate.

[60]   In particular embodiments, computer system 800 includes a processor 802, memory 804, storage 806, an input/output (I/O) interface 808, a communication interface 810, and a bus 812. Although this disclosure describes and illustrates a particular computer system having a particular number of particular components in a particular arrangement, this disclosure contemplates any suitable computer system having any suitable number of any suitable components in any suitable arrangement.

[61]   In particular embodiments, processor 802 includes hardware for executing instructions, such as those making up a computer program. As an example and not by way of limitation, to execute instructions, processor 802 may retrieve (or fetch) the instructions from an internal register, an internal cache, memory 804, or storage 806; decode and execute them; and then write one or more results to an internal register, an internal cache, memory 804, or storage 806. In particular embodiments, processor 802 may include one or more internal caches for data, instructions, or addresses. This disclosure contemplates processor 802 including any suitable number of any suitable internal caches, where appropriate. As an example and not by way of limitation, processor 802 may include one or more instruction caches, one or more data caches, and one or more translation lookaside buffers (TLBs). Instructions in the instruction caches may be copies of instructions in memory 804 or storage 806, and the instruction caches may speed up retrieval of those instructions by processor 802. Data in the data caches may be copies of data in memory 804 or storage 806 for instructions executing at processor 802 to operate on; the results of previous instructions executed at processor 802 for access by subsequent instructions executing at processor 802 or for writing to memory 804 or storage 806; or other suitable data. The data caches may speed up read or write operations by processor 802. The TLBs may speed up virtual-address translation for processor 802. In particular embodiments, processor 802 may include one or more internal registers for data, instructions, or addresses. This disclosure contemplates processor 802 including any suitable number of any suitable internal registers, where appropriate. Where appropriate, processor 802 may include one or more arithmetic logic units (ALUs); be a

multi-core processor; or include one or more processors 802. Although this disclosure describes and illustrates a particular processor, this disclosure contemplates any suitable processor.

[62]   In particular embodiments, memory 804 includes main memory for storing instructions for processor 802 to execute or data for processor 802 to operate on. As an example and not by way of limitation, computer system 800 may load instructions from storage 806 or another source (such as, for example, another computer system 800) to memory 804. Processor 802 may then load the instructions from memory 804 to an internal register or internal cache. To execute the instructions, processor 802 may retrieve the instructions from the internal register or internal cache and decode them. During or after execution of the instructions, processor 802 may write one or more results (which may be intermediate or final results) to the internal register or internal cache. Processor 802 may then write one or more of those results to memory 804. In particular embodiments, processor 802 executes only instructions in one or more internal registers or internal caches or in memory 804 (as opposed to storage 806 or elsewhere) and operates only on data in one or more internal registers or internal caches or in memory 804 (as opposed to storage 806 or elsewhere). One or more memory buses (which may each include an address bus and a data bus) may couple processor 802 to memory 804. Bus 812 may include one or more memory buses, as described below. In particular embodiments, one or more memory management units (MMUs) reside between processor 802 and memory 804 and facilitate accesses to memory 804 requested by processor 802. In particular embodiments, memory 804 includes random access memory (RAM). This RAM may be volatile memory, where appropriate Where appropriate, this RAM may be dynamic RAM (DRAM) or static RAM (SRAM). Moreover, where appropriate, this RAM may be single-ported or multi-ported RAM. This disclosure contemplates any suitable RAM. Memory 804 may include one or more memories 804, where appropriate. Although this disclosure describes and illustrates particular memory, this disclosure contemplates any suitable memory.

[63]   In particular embodiments, storage 806 includes mass storage for data or instructions. As an example and not by way of limitation, storage 806 may include a hard disk drive (HDD), a floppy disk drive, flash memory, an optical disc, a magneto-optical disc, magnetic tape, or a Universal Serial Bus (USB) drive or a combination of two or more of these. Storage 806 may include removable or non-removable (or fixed) media, where appropriate. Storage 806 may be internal or external to computer system 800, where

appropriate. In particular embodiments, storage 806 is non-volatile, solid-state memory. In particular embodiments, storage 806 includes read-only memory (ROM). Where appropriate, this ROM may be mask-programmed ROM, programmable ROM (PROM), erasable PROM (EPROM), electrically erasable PROM (EEPROM), electrically alterable ROM (EAROM), or flash memory or a combination of two or more of these. This disclosure contemplates mass storage 806 taking any suitable physical form. Storage 806 may include one or more storage control units facilitating communication between processor 802 and storage 806, where appropriate. Where appropriate, storage 806 may include one or more storages 806. Although this disclosure describes and illustrates particular storage, this disclosure contemplates any suitable storage.

[64]   In particular embodiments, I/O interface 808 includes hardware, software, or both, providing one or more interfaces for communication between computer system 800 and one or more I/O devices. Computer system 800 may include one or more of these I/O devices, where appropriate. One or more of these I/O devices may enable communication between a person and computer system 800. As an example and not by way of limitation, an I/O device may include a keyboard, keypad, microphone, monitor, mouse, printer, scanner, speaker, still camera, stylus, tablet, touch screen, trackball, video camera, another suitable I/O device or a combination of two or more of these. An I/O device may include one or more sensors. This disclosure contemplates any suitable I/O devices and any suitable I/O interfaces 808 for them. Where appropriate, I/O interface 808 may include one or more device or software drivers enabling processor 802 to drive one or more of these I/O devices. I/O interface 808 may include one or more I/O interfaces 808, where appropriate. Although this disclosure describes and illustrates a particular I/O interface, this disclosure contemplates any suitable I/O interface.

[65]   In particular embodiments, communication interface 810 includes hardware, software, or both providing one or more interfaces for communication (such as, for example, packet-based communication) between computer system 800 and one or more other computer systems 800 or one or more networks. As an example and not by way of limitation, communication interface 810 may include a network interface controller (NIC) or network adapter for communicating with an Ethernet or other wire-based network or a wireless NIC (WNIC) or wireless adapter for communicating with a wireless network, such as a WI-FI network. This disclosure contemplates any suitable network and any suitable communication interface 810 for it. As an example and not by way of limitation, computer system 800 may

communicate with an ad hoc network, a personal area network (PAN), a local area network (LAN), a wide area network (WAN), a metropolitan area network (MAN), or one or more portions of the Internet or a combination of two or more of these. One or more portions of one or more of these networks may be wired or wireless. As an example, computer system 800 may communicate with a wireless PAN (WPAN) (such as, for example, a BLUETOOTH WPAN), a WI-FI network, a WI-MAX network, a cellular telephone network (such as, for example, a Global System for Mobile Communications (GSM) network), or other suitable wireless network or a combination of two or more of these. Computer system 800 may include any suitable communication interface 810 for any of these networks, where appropriate. Communication interface 810 may include one or more communication interfaces 810, where appropriate. Although this disclosure describes and illustrates a particular communication interface, this disclosure contemplates any suitable communication interface.

[66]   In particular embodiments, bus 812 includes hardware, software, or both coupling components of computer system 800 to each other. As an example and not by way of limitation, bus 812 may include an Accelerated Graphics Port (AGP) or other graphics bus, an Enhanced Industry Standard Architecture (EISA) bus, a front-side bus (FSB), a HYPERTRANSPORT (HT) interconnect, an Industry Standard Architecture (ISA) bus, an INFINIBAND interconnect, a low-pin-count (LPC) bus, a memory bus, a Micro Channel Architecture (MCA) bus, a Peripheral Component Interconnect (PCI) bus, a PCI-Express (PCIe) bus, a serial advanced technology attachment (SATA) bus, a Video Electronics Standards Association local (VLB) bus, or another suitable bus or a combination of two or more of these. Bus 812 may include one or more buses 812, where appropriate. Although this disclosure describes and illustrates a particular bus, this disclosure contemplates any suitable bus or interconnect.

[67]   Herein, a computer-readable non-transitory storage medium or media may include one or more semiconductor-based or other integrated circuits (ICs) (such, as for example, field-programmable gate arrays (FPGAs) or application-specific ICs (ASICs)), hard disk drives (HDDs), hybrid hard drives (HHDs), optical discs, optical disc drives (ODDs), magneto-optical discs, magneto-optical drives, floppy diskettes, floppy disk drives (FDDs), magnetic tapes, solid-state drives (SSDs), RAM-drives, SECURE DIGITAL cards or drives, any other suitable computer-readable non-transitory storage media, or any suitable combination of two or more of these, where appropriate. A computer-readable non-transitory

24

storage medium may be volatile, non-volatile, or a combination of volatile and non-volatile, where appropriate.

[68]   Herein, "or" is inclusive and not exclusive, unless expressly indicated otherwise or indicated otherwise by context. Therefore, herein, "A or B" means "A, B, or both," unless expressly indicated otherwise or indicated otherwise by context. Moreover, "and" is both joint and several, unless expressly indicated otherwise or indicated otherwise by context. Therefore, herein, "A and B" means "A and B, jointly or severally," unless expressly indicated otherwise or indicated otherwise by context.

[69]   The scope of this disclosure encompasses all changes, substitutions, variations, alterations, and modifications to the example embodiments described or illustrated herein that a person having ordinary skill in the art would comprehend. The scope of this disclosure is not limited to the example embodiments described or illustrated herein. Moreover, although this disclosure describes and illustrates respective embodiments herein as including particular components, elements, functions, operations, or steps, any of these embodiments may include any combination or permutation of any of the components, elements, functions, operations, or steps described or illustrated anywhere herein that a person having ordinary skill in the art would comprehend. Furthermore, reference in the appended claims to an apparatus or system or a component of an apparatus or system being adapted to, arranged to, capable of, configured to, enabled to, operable to, or operative to perform a particular function encompasses that apparatus, system, component, whether or not it or that particular function is activated, turned on, or unlocked, as long as that apparatus, system, or component is so adapted, arranged, capable, configured, enabled, operable, or operative.

WHAT IS CLAIMED IS:

1. A computer-implemented method comprising:

displaying an image in a first display mode; and

in response to a user input, displaying an animation sequence to transition the image to a second display mode.

2. The method of Claim 1, wherein the animation sequence depicts the image first recedes backward while decreasing in size and then advances forward while increasing in size.

3. The method of Claim 2, wherein:

the image is displayed on a touchscreen of an electronic device;

the user input is a swipe gesture resulting from sliding a finger across the touchscreen; and

a velocity or distance for which the image recedes backward in the animation sequence is determined based on a velocity of the finger sliding across the touchscreen.

4. The method of Claim 1, wherein movements of the image in the animation sequence are based on spring motion by simulating an effect of attaching the image to a position on a screen of an electronic device via an imaginary spring.

5. The method of Claim 1, wherein the image is displayed at a first size in the first display mode and at a second size in the second display mode.

6. One or more computer-readable non-transitory storage media embodying software that is operable when executed to:

display an image in a first display mode; and

in response to a user input, display an animation sequence to transition the image to a second display mode.

7. The media of Claim 6, wherein the animation sequence depicts the image first recedes backward while decreasing in size and then advances forward while increasing in size.

8. The media of Claim 7, wherein:

the image is displayed on a touchscreen of an electronic device;

the user input is a swipe gesture resulting from sliding a finger across the touchscreen; and

a velocity or distance for which the image recedes backward in the animation sequence is determined based on a velocity of the finger sliding across the touchscreen.

9. The media of Claim 6, wherein movements of the image in the animation sequence are based on spring motion by simulating an effect of attaching the image to a position on a screen of an electronic device via an imaginary spring.

10. The media of Claim 6, wherein the image is displayed at a first size in the first display mode and at a second size in the second display mode.

11. A system comprising:

one or more processors; and

a memory coupled to the processors comprising instructions executable by the processors, the processors operable when executing the instructions to:

display an image in a first display mode; and

in response to a user input, display an animation sequence to transition the image to a second display mode.

12. The system of Claim 11, wherein the animation sequence depicts the image first recedes backward while decreasing in size and then advances forward while increasing in size.

13. The system of Claim 12, wherein:

the image is displayed on a touchscreen of an electronic device;

the user input is a swipe gesture resulting from sliding a finger across the touchscreen; and

a velocity or distance for which the image recedes backward in the animation sequence is determined based on a velocity of the finger sliding across the touchscreen.

27

14. The system of Claim 11, wherein movements of the image in the animation sequence are based on spring motion by simulating an effect of attaching the image to a position on a screen of an electronic device via an imaginary spring.

15. The system of Claim 11, wherein the image is displayed at a first size in the first display mode and at a second size in the second display mode.

100

130

USER
101

CLIENT
SYSTEM

150

160

SOCIAL-
NETWORKING
SYSTEM

150

NETWORK
110

150

170

THIRD-PARTY
SYSTEM

FIG. 1

210

— 215

FIG. 2A

220

225

FIG. 2B

FIG. 3

FIG. 4

FIG. 5C

FIG. 5B

FIG. 5A

600

610 — DISPLAY AN IMAGE IN A FIRST
DISPLAY MODE

620 — IN RESPONSE TO A USER
INTERACTION WITH THE IMAGE,
TRANSITION THE IMAGE TO A
SECOND DISPLAY MODE WHILE
DISPLAY AN ANIMATION
SEQUENCE
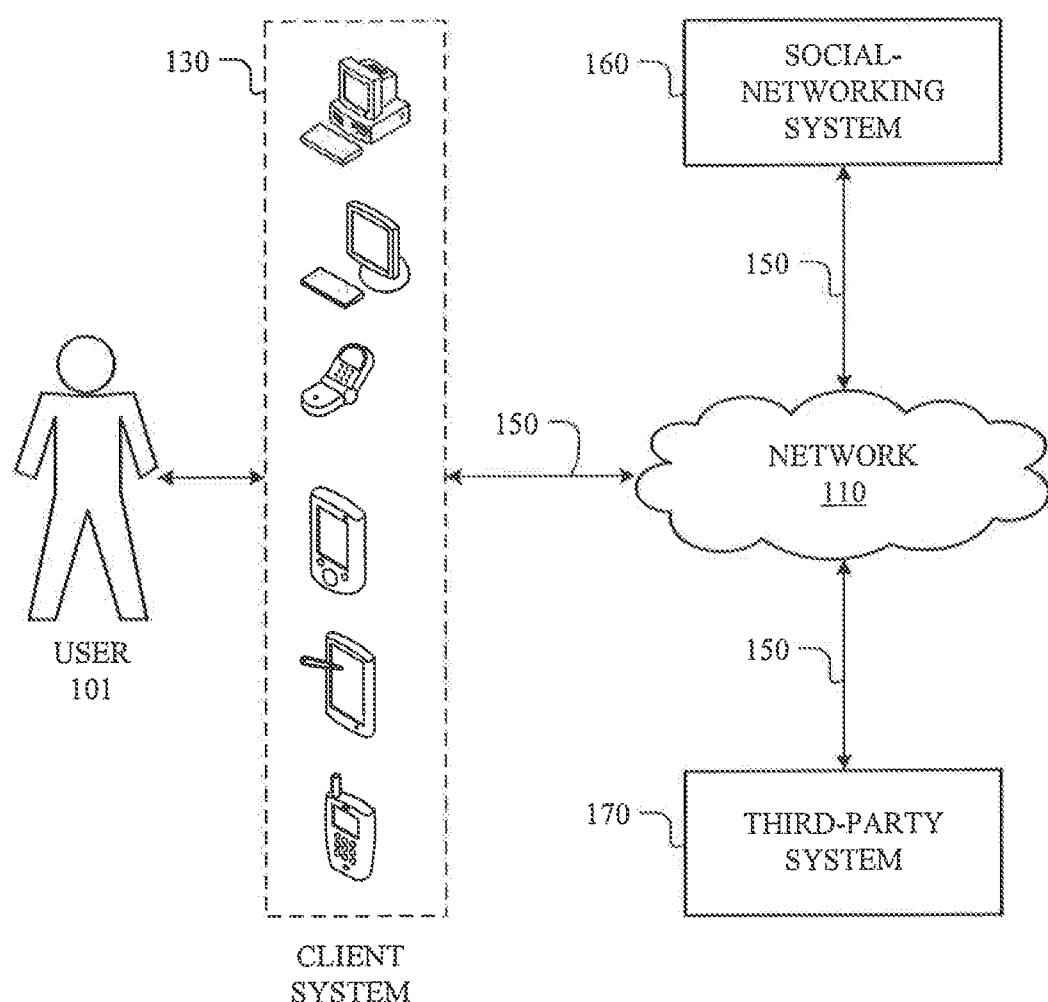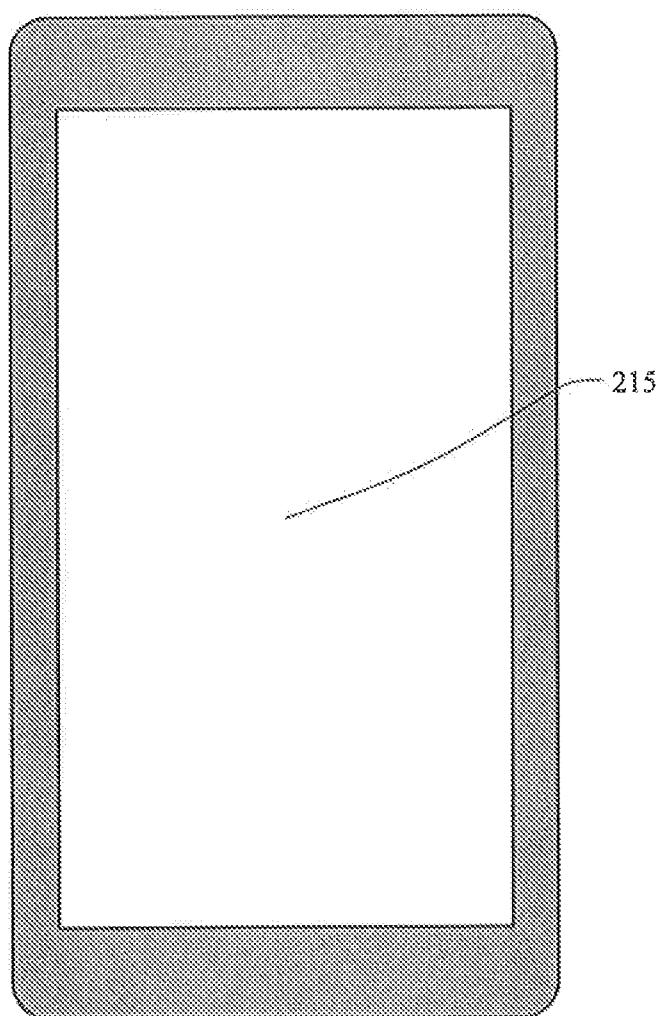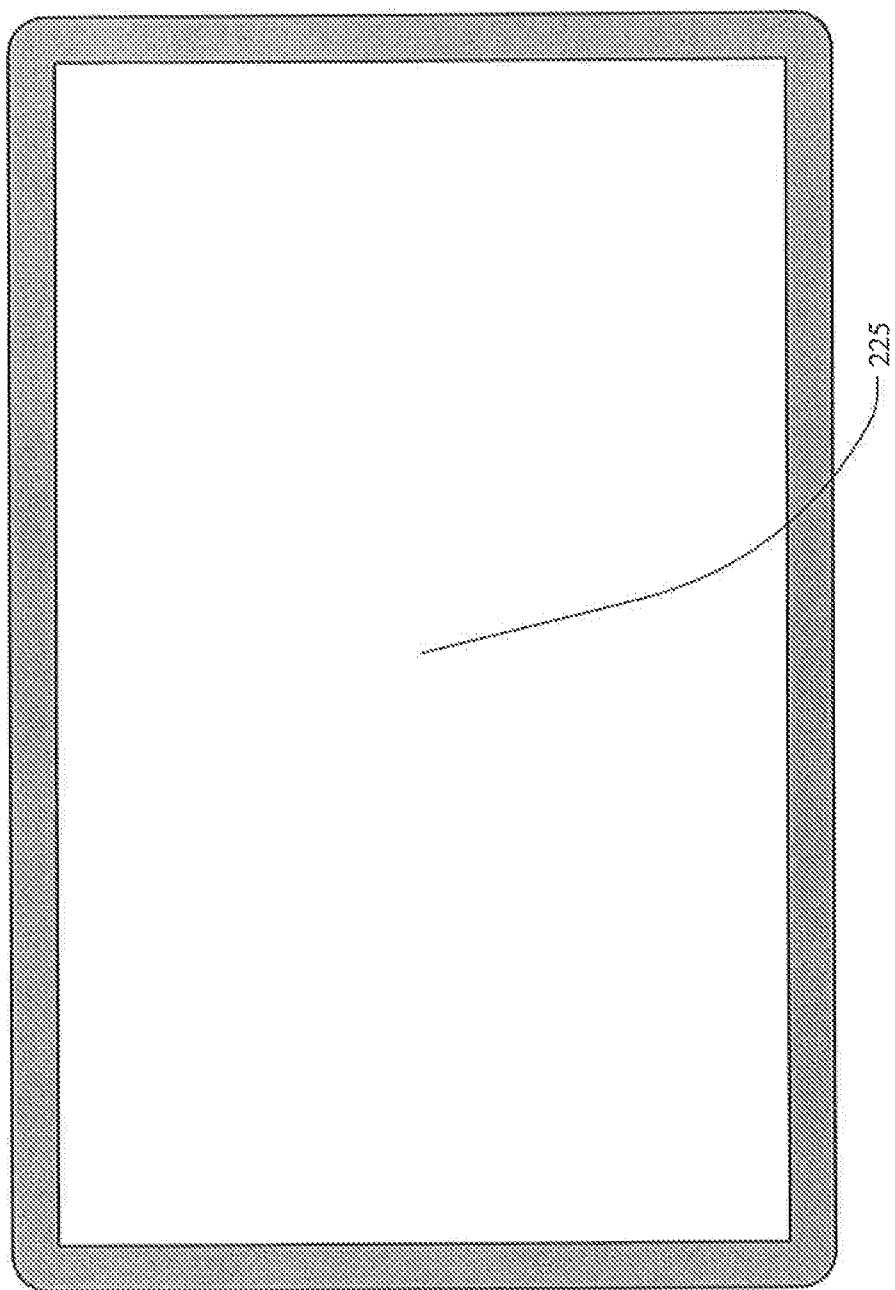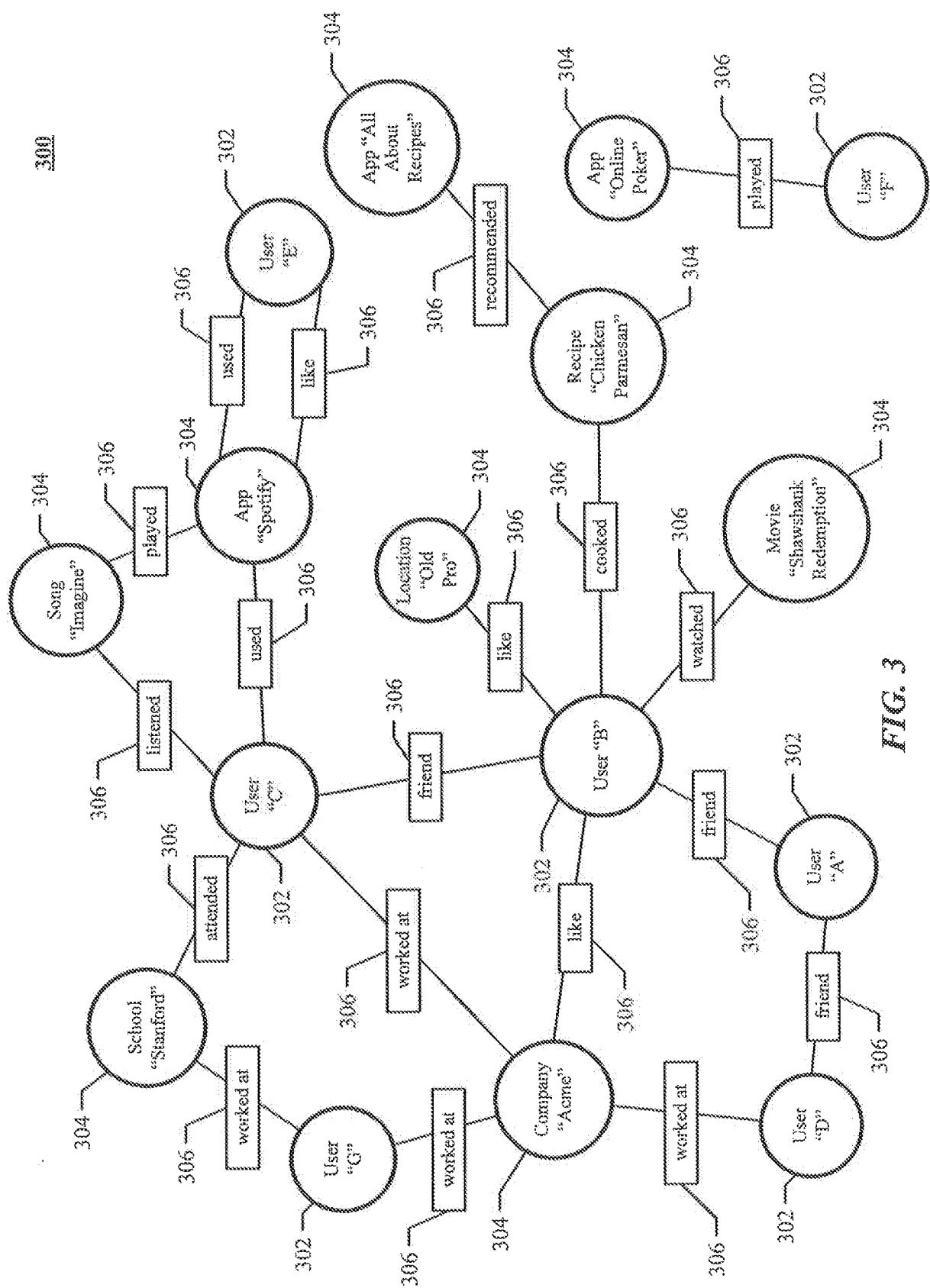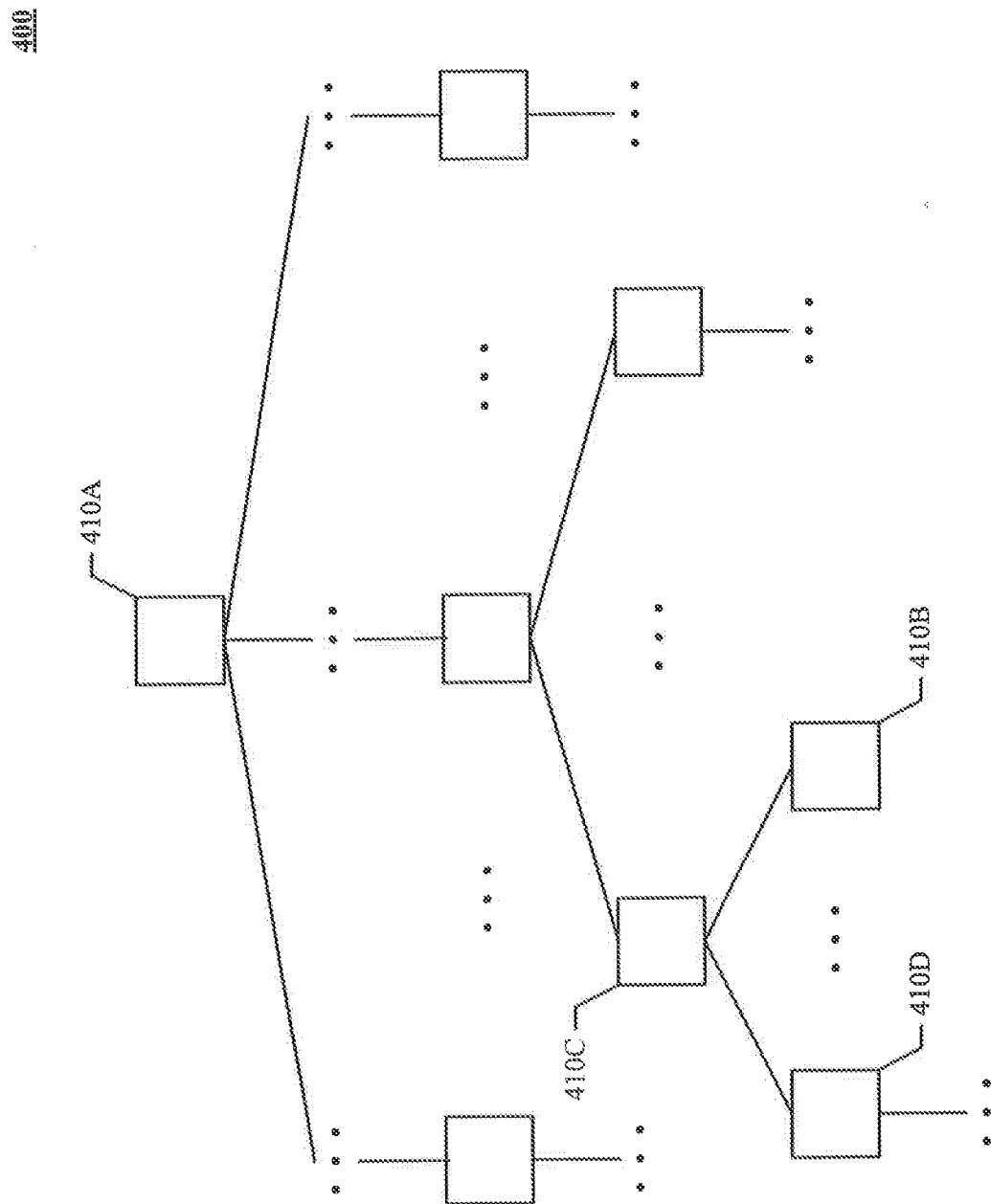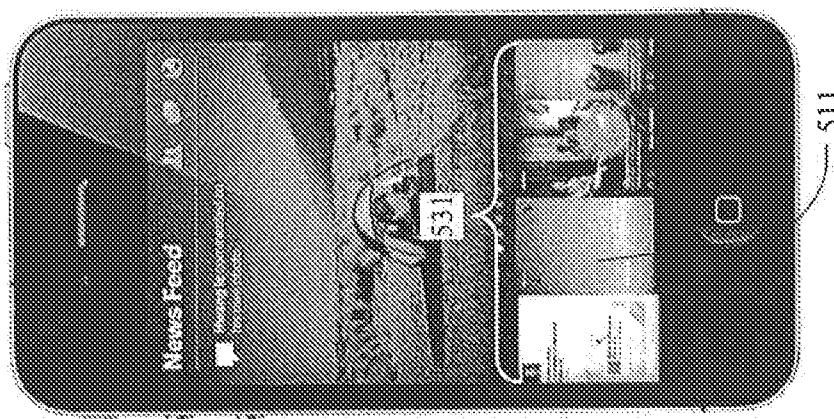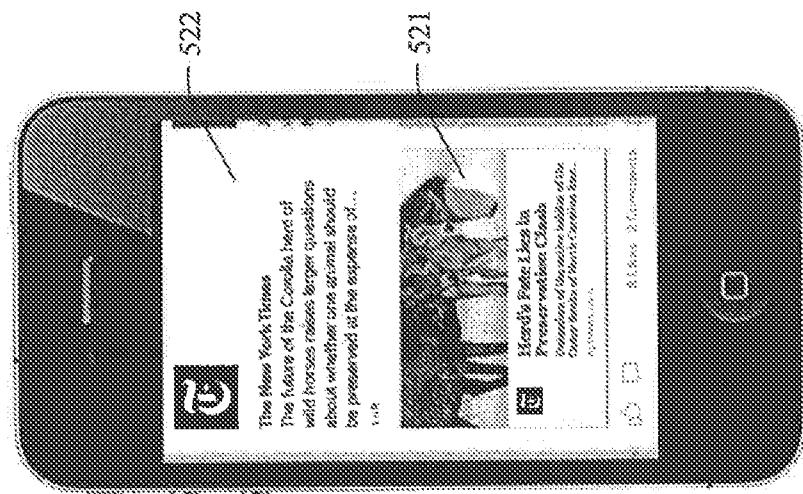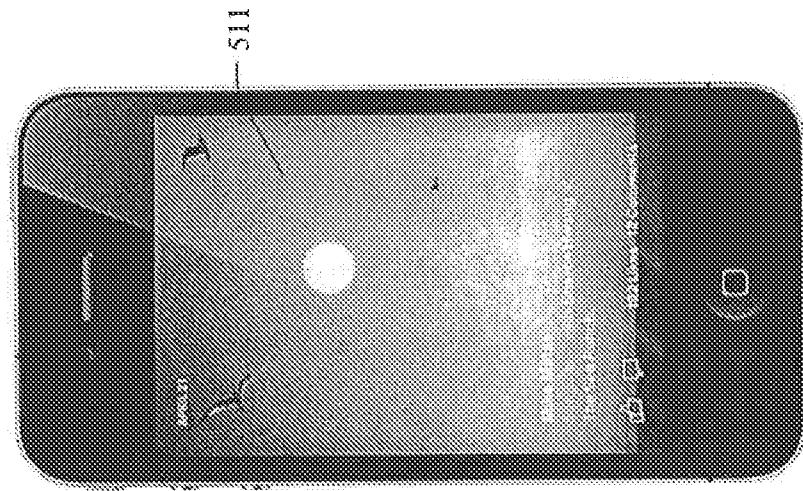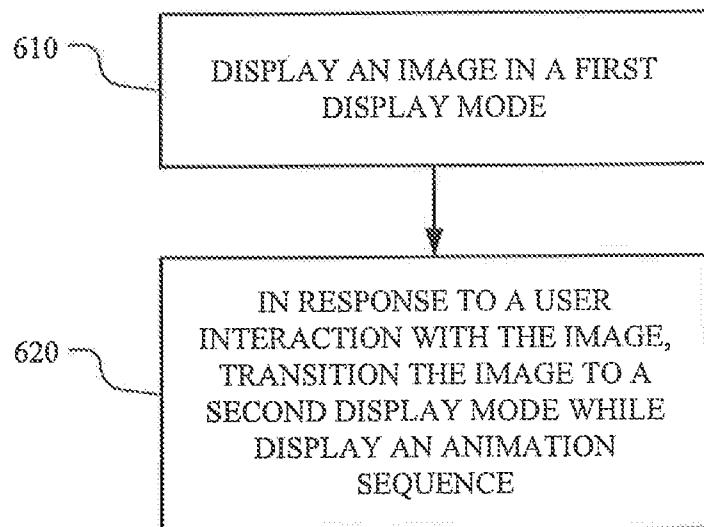
FIG. 6
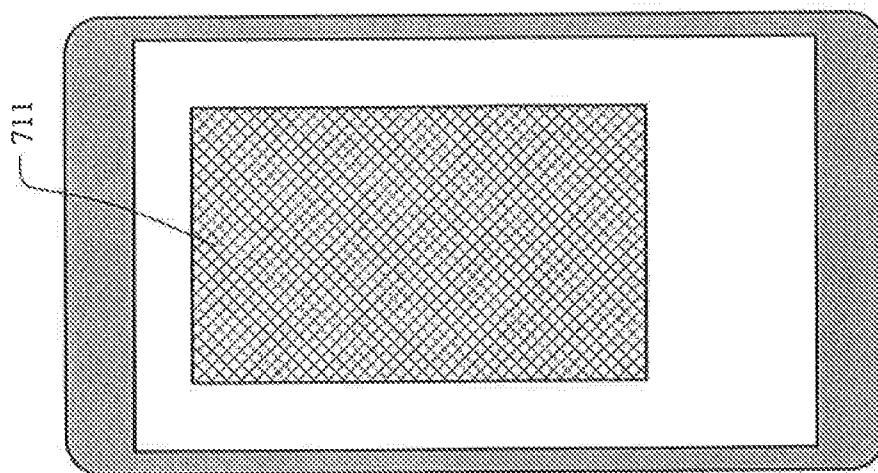
FIG. 7C

FIG. 7B

FIG. 7A

FIG. 7D
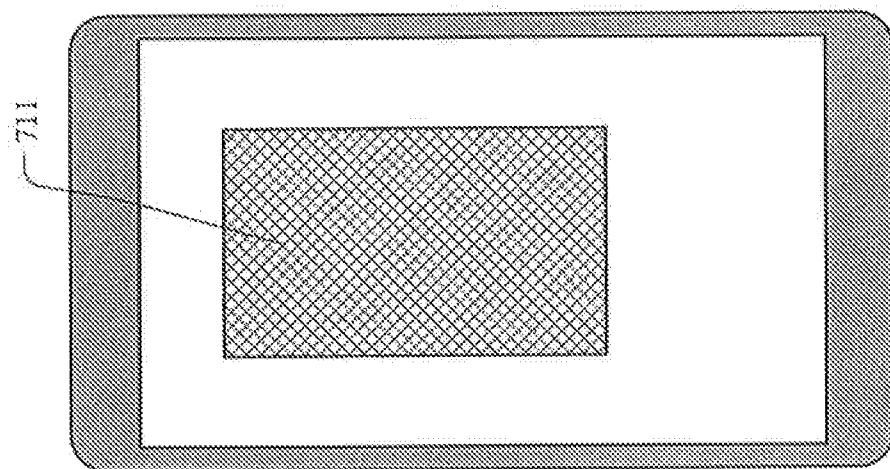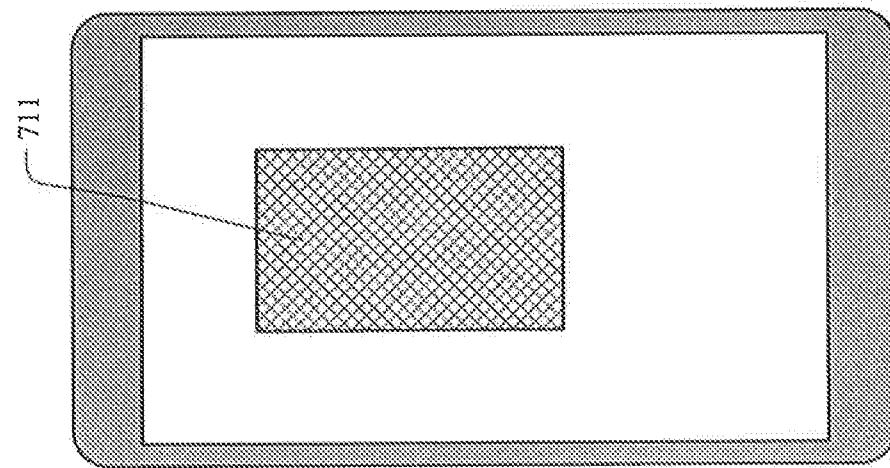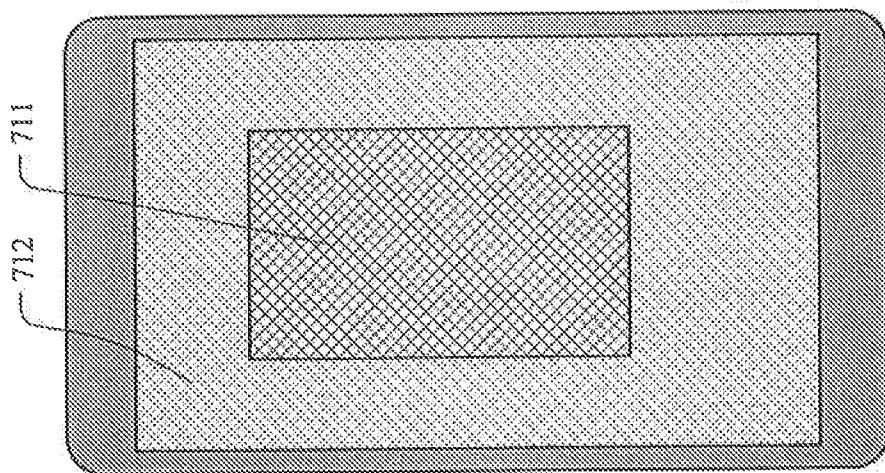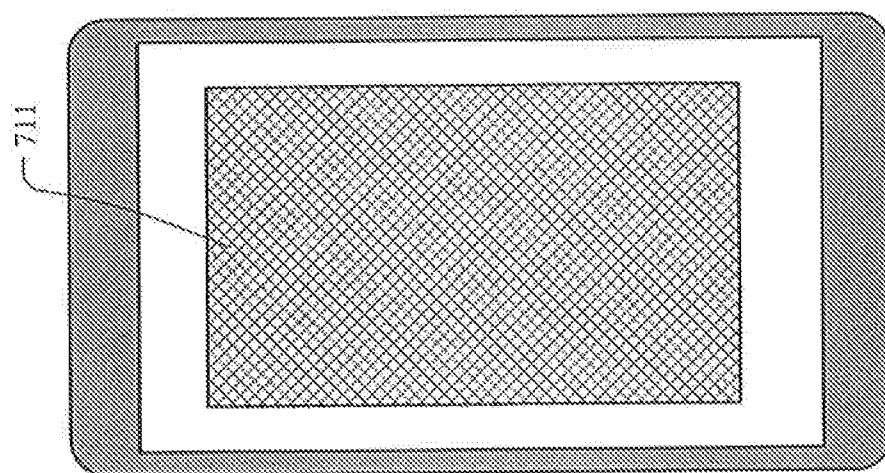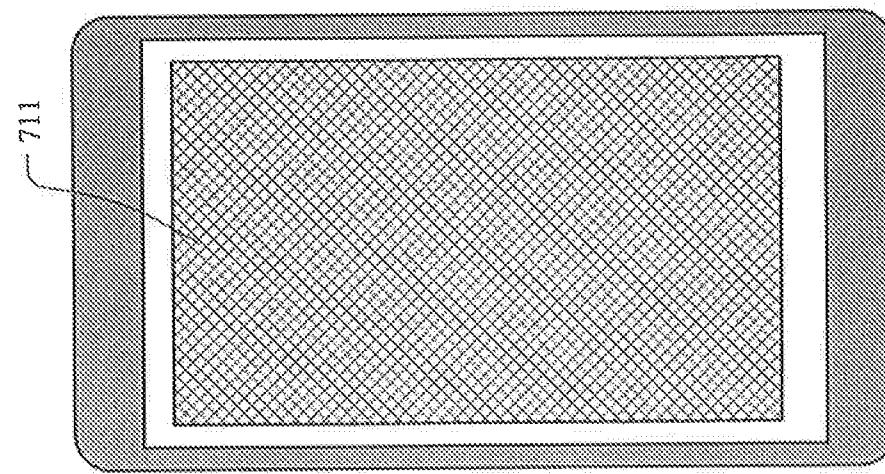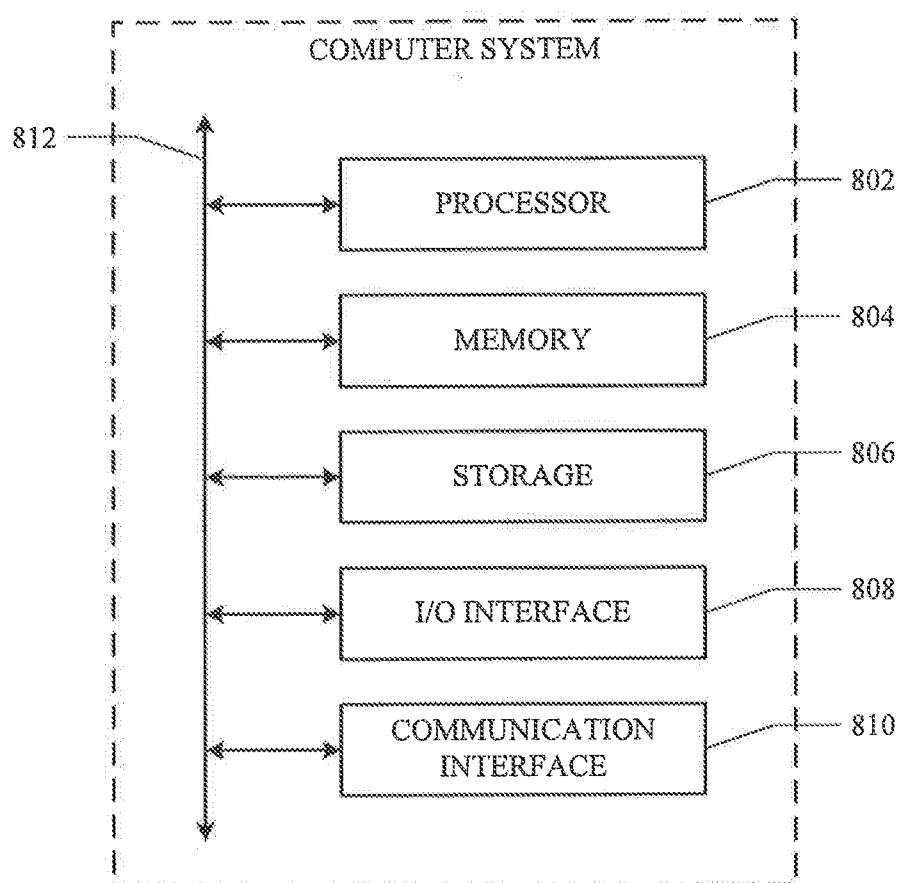
FIG. 7E

FIG. 7F

FIG. 7I

FIG. 7H

FIG. 7G

800

COMPUTER SYSTEM

812

PROCESSOR ——— 802

MEMORY ——— 804

STORAGE ——— 806

I/O INTERFACE ——— 808

COMMUNICATION INTERFACE ——— 810

FIG. 8

A. CLASSIFICATION OF SUBJECT MATTER

G06F 3/14(2006.01)i, G06F 3/048(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F 3/14; G06F 3/048; H04N 5/225; G06T 3/40; G06F 3/041

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: touch display, mode, image, increase, and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0313165 A1 (LOUCH, JOHN et al.) 09 December 2010 See paragraphs [0031], [0066], [0068], [0072]-[0073], and [0080]-[0081]; claims 1, 6, and 11; and figures 4A-4D, 7, and 9A-9B.	1-2,4-7,9-12,14-15
Y		3,8,13
Y	US 2007-0236477 A1 (RYU, DONG SEOK et al.) 11 October 2007 See paragraphs [0065] and [0085]; claims 1, 4, and 17.	3,8,13
A	KR 10-2006-0032793 A (SAMSUNG TECHWIN CO., LTD.) 18 April 2006 See claims 1 and 6-7; and figures 4 and 9-10.	1-15
A	US 2012-0179969 A1 (LEE, DONG-HEON et al.) 12 July 2012 See paragraphs [0083]-[0087] and [0103]-[0107]; claim 1; and figures 3 and 6.	1-15
A	US 2012-0169774 A1 (YU, KI HAN) 05 July 2012 See paragraphs [0031]-[0033]; claim 1; and figures 2-3.	1-15

☐ Further documents are listed in the continuation of Box C.   ☒ See patent family annex.

* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art "&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 January 2014 (29.01.2014)	**03 February 2014 (03.02.2014)**

Name and mailing address of the ISA/KR	Authorized officer
Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	NHO, Ji Myong Telephone No. +82-42-481-8528

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010-0313165 A1	09/12/2010	AU 2010-259089 A1 CN 102460370 A EP 2440992 A2 KR 10-2012-0027487 A KR 10-2013-0123465 A US 2010-0313156 A1 US 2010-0313164 A1 US 8555185 B2 US 8612883 B2 US 8621387 B2 WO 2010-144331 A2 WO 2010-144331 A3	19/01/2012 16/05/2012 18/04/2012 21/03/2012 12/11/2013 09/12/2010 09/12/2010 08/10/2013 17/12/2013 31/12/2013 16/12/2010 17/03/2011
US 2007-0236477 A1	11/10/2007	CN 101038524 A EP 1835386 A2 EP 1835386 A3 KR 10-0746874 B1	19/09/2007 19/09/2007 20/02/2013 01/08/2007
KR 10-2006-0032793 A	18/04/2006	KR 10-1058013 B1	19/08/2011
US 2012-0179969 A1	12/07/2012	EP 2474879 A2 KR 10-2012-0080922 A	11/07/2012 18/07/2012
US 2012-0169774 A1	05/07/2012	KR 10-2012-0079579 A	13/07/2012