US 20170083281A1

(19) United States

(12) Patent Application Publication

SHIN

(10) Pub. No.: US 2017/0083281 A1

(43) Pub. Date: Mar. 23, 2017

(54) METHOD AND ELECTRONIC DEVICE FOR PROVIDING CONTENT

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(21) Appl. No.: **15/269,406**

(22) Filed: **Sep. 19, 2016**

(30) **Foreign Application Priority Data**

Sep. 18, 2015 (KR) 10-2015-0132488

Publication Classification

(51) **Int. Cl.**

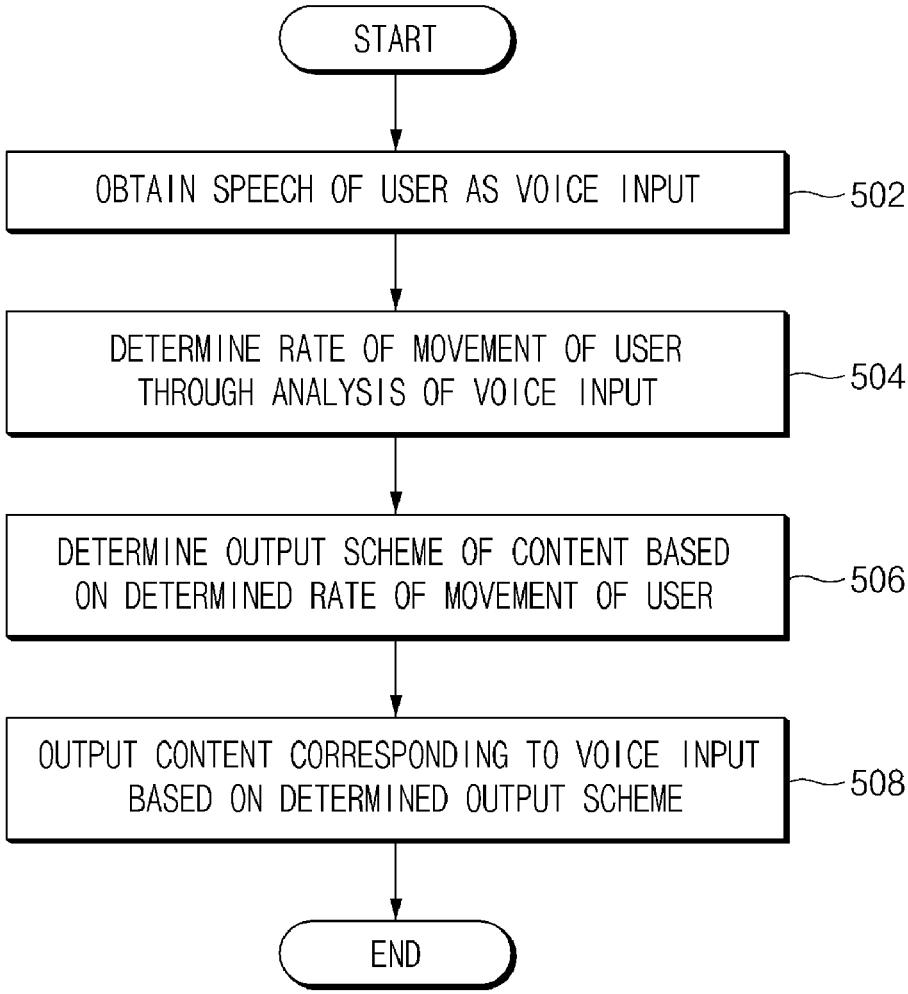
G06F 3/16	(2006.01)
G10L 25/63	(2006.01)
G10L 25/78	(2006.01)

(52) **U.S. Cl.**

CPC ***G06F 3/165*** (2013.01); ***G10L 25/78*** (2013.01); ***G10L 25/63*** (2013.01)

(57) **ABSTRACT**

An electronic device and a method are provided. The electronic device includes an audio input module configured to receive a speech of a user as a voice input, an audio output module configured to output content corresponding to the voice input, and a processor configured to determine an output scheme of the content based on at least one of a speech rate of the speech, a volume of the speech, and a keyword included in the speech, which is obtained from an analysis of the voice input.



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US Patent 11,244,675
Amazon Ex. 1003

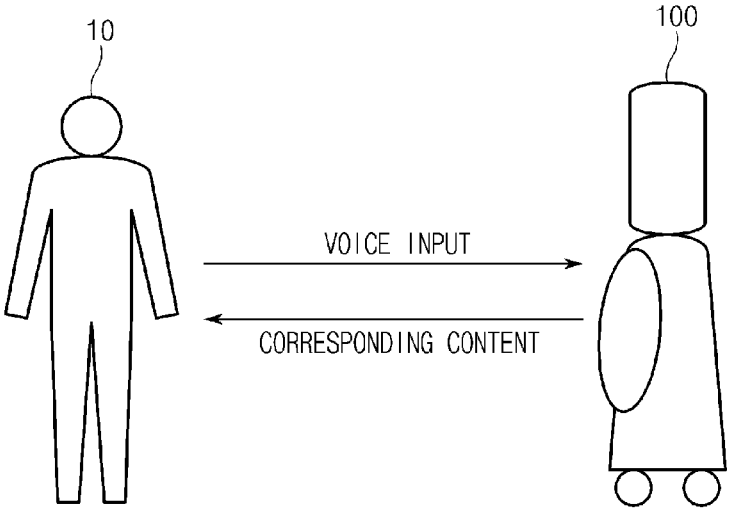
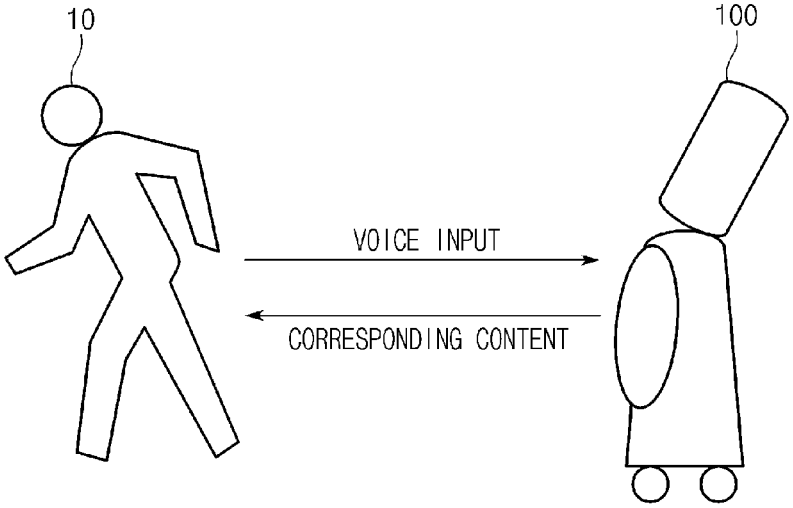

10
100
VOICE INPUT
CORRESPONDING CONTENT

FIG.1A


10
100
VOICE INPUT
CORRESPONDING CONTENT

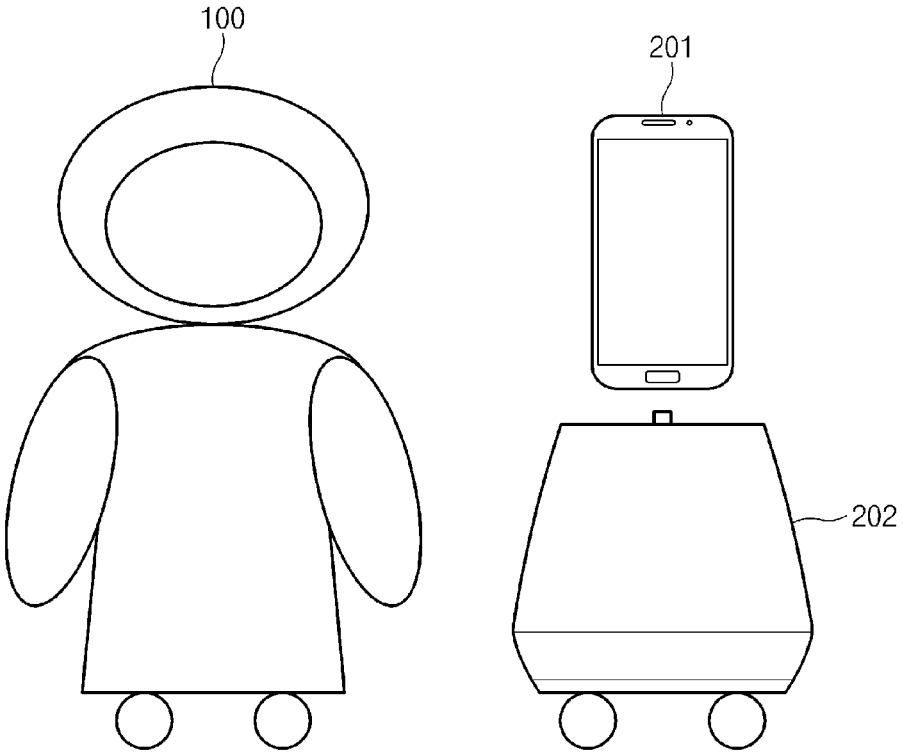


FIG.2

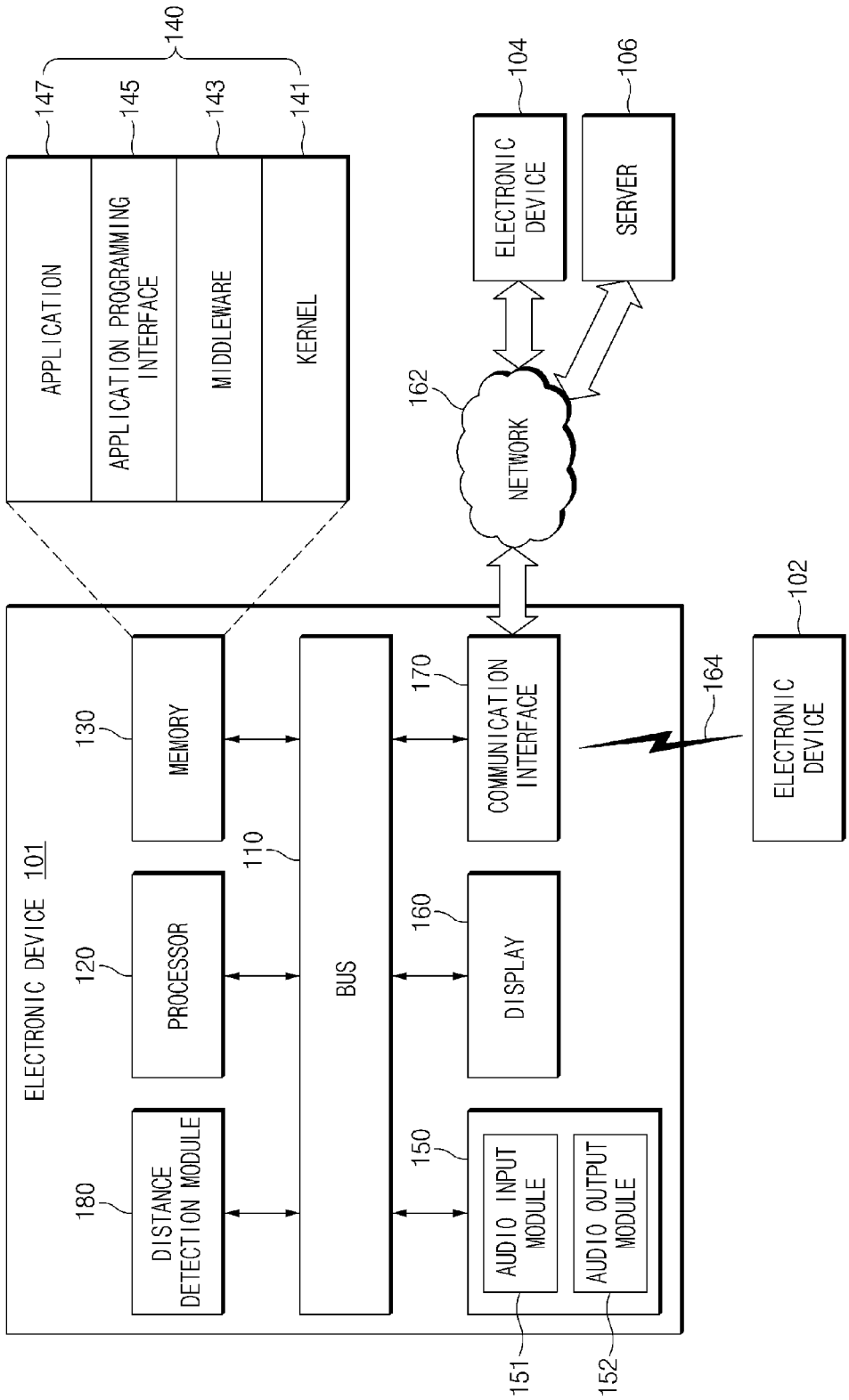

140
147
145
143
141
APPLICATION
APPLICATION PROGRAMMING INTERFACE
MIDDLEWARE
KERNEL
104
106
ELECTRONIC DEVICE
SERVER
162
NETWORK
102
ELECTRONIC DEVICE 101
130
MEMORY
110
BUS
170
COMMUNICATION INTERFACE
164
ELECTRONIC DEVICE
120
PROCESSOR
160
DISPLAY
180
DISTANCE DETECTION MODULE
150
AUDIO INPUT MODULE
AUDIO OUTPUT MODULE
151
152

FIG.3

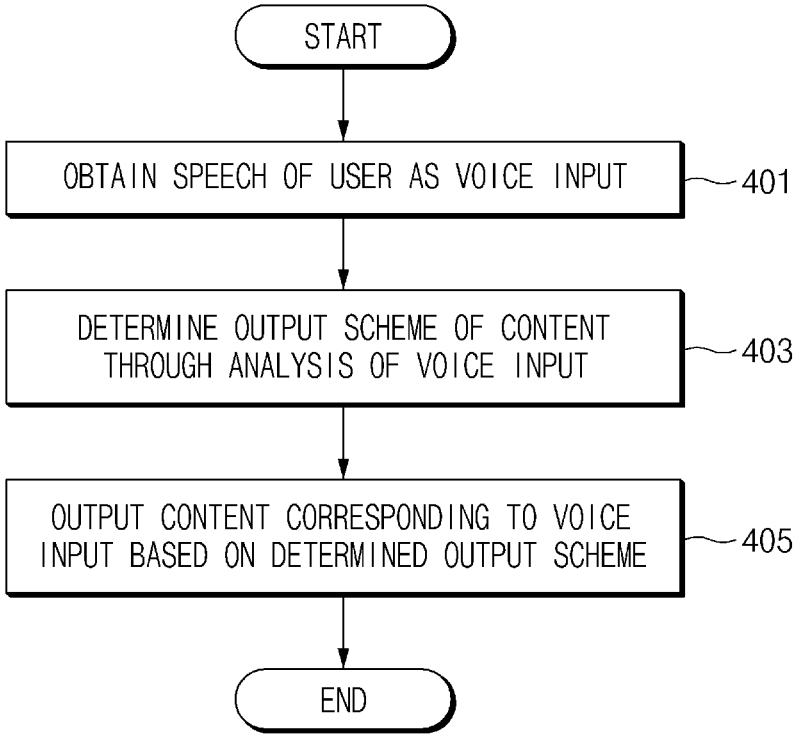

START
OBTAIN SPEECH OF USER AS VOICE INPUT
401
DETERMINE OUTPUT SCHEME OF CONTENT THROUGH ANALYSIS OF VOICE INPUT
403
OUTPUT CONTENT CORRESPONDING TO VOICE INPUT BASED ON DETERMINED OUTPUT SCHEME
405
END

FIG.4

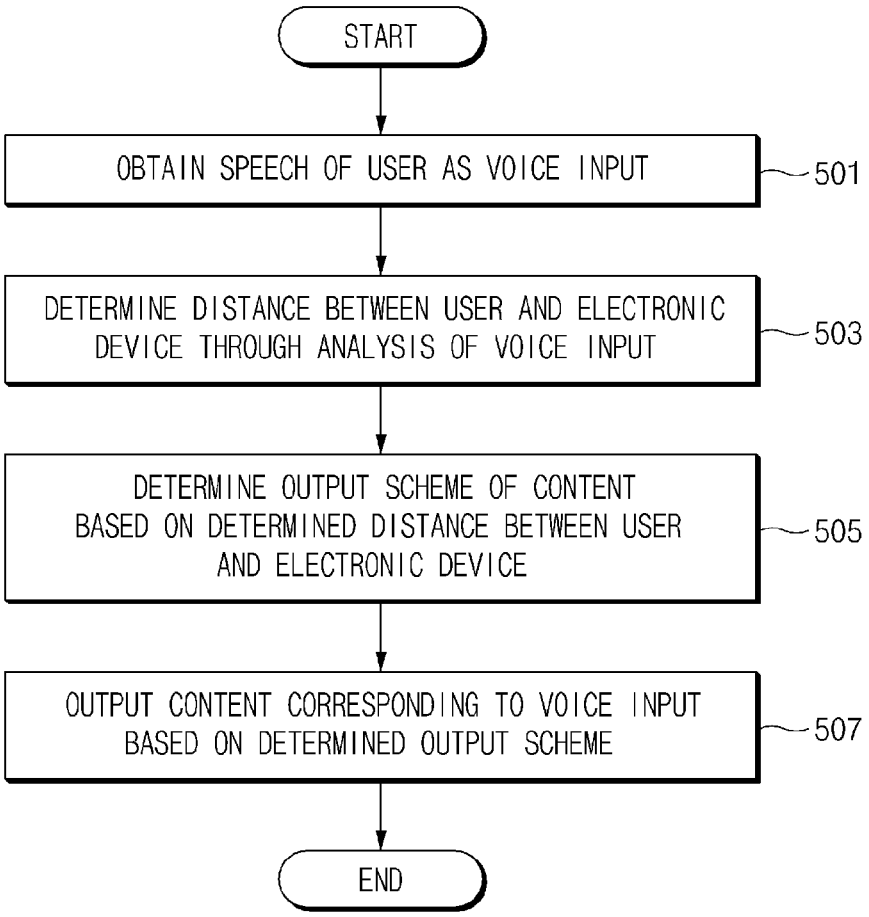

START
OBTAIN SPEECH OF USER AS VOICE INPUT
501
DETERMINE DISTANCE BETWEEN USER AND ELECTRONIC DEVICE THROUGH ANALYSIS OF VOICE INPUT
503
DETERMINE OUTPUT SCHEME OF CONTENT BASED ON DETERMINED DISTANCE BETWEEN USER AND ELECTRONIC DEVICE
505
OUTPUT CONTENT CORRESPONDING TO VOICE INPUT BASED ON DETERMINED OUTPUT SCHEME
507
END

FIG.5A

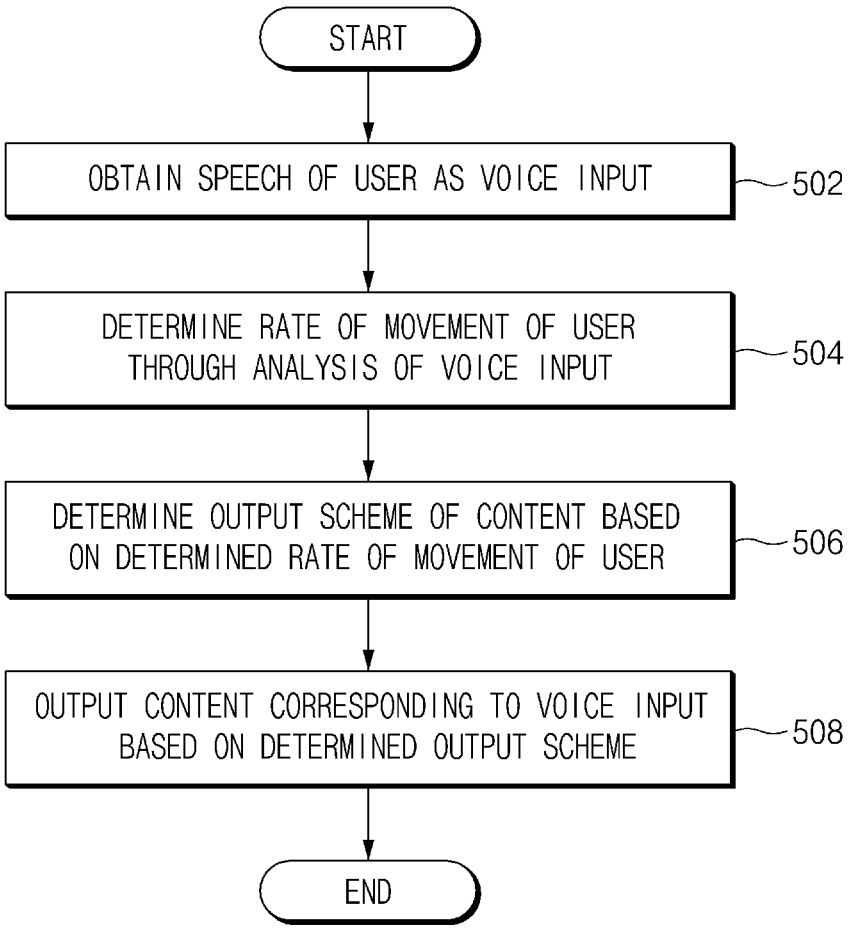

START
OBTAIN SPEECH OF USER AS VOICE INPUT
502
DETERMINE RATE OF MOVEMENT OF USER THROUGH ANALYSIS OF VOICE INPUT
504
DETERMINE OUTPUT SCHEME OF CONTENT BASED ON DETERMINED RATE OF MOVEMENT OF USER
506
OUTPUT CONTENT CORRESPONDING TO VOICE INPUT BASED ON DETERMINED OUTPUT SCHEME
508
END

FIG.5B

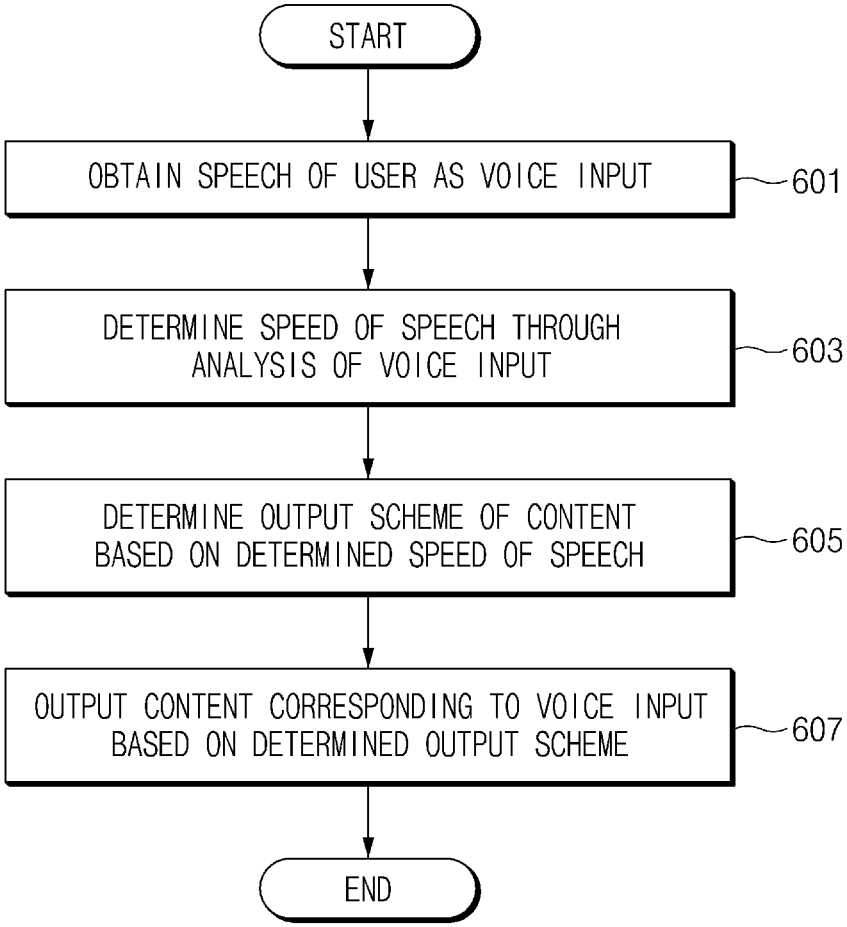

START
OBTAIN SPEECH OF USER AS VOICE INPUT
601
DETERMINE SPEED OF SPEECH THROUGH ANALYSIS OF VOICE INPUT
603
DETERMINE OUTPUT SCHEME OF CONTENT BASED ON DETERMINED SPEED OF SPEECH
605
OUTPUT CONTENT CORRESPONDING TO VOICE INPUT BASED ON DETERMINED OUTPUT SCHEME
607
END

FIG.6

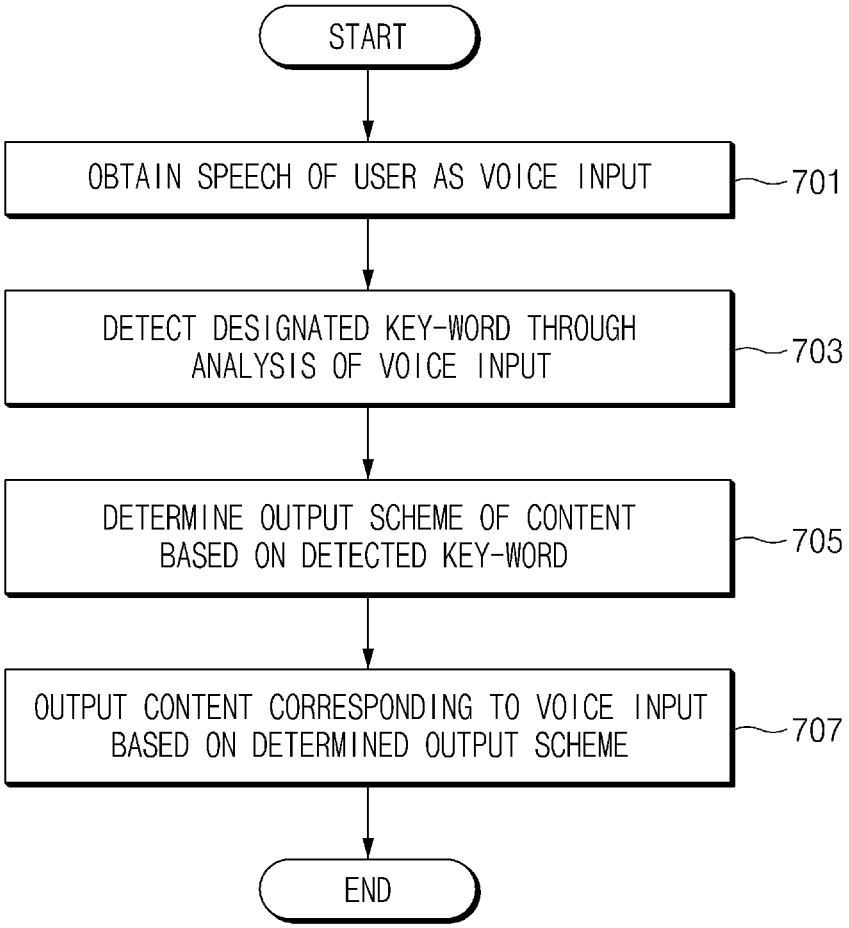

START
OBTAIN SPEECH OF USER AS VOICE INPUT
701
DETECT DESIGNATED KEY-WORD THROUGH ANALYSIS OF VOICE INPUT
703
DETERMINE OUTPUT SCHEME OF CONTENT BASED ON DETECTED KEY-WORD
705
OUTPUT CONTENT CORRESPONDING TO VOICE INPUT BASED ON DETERMINED OUTPUT SCHEME
707
END

FIG.7

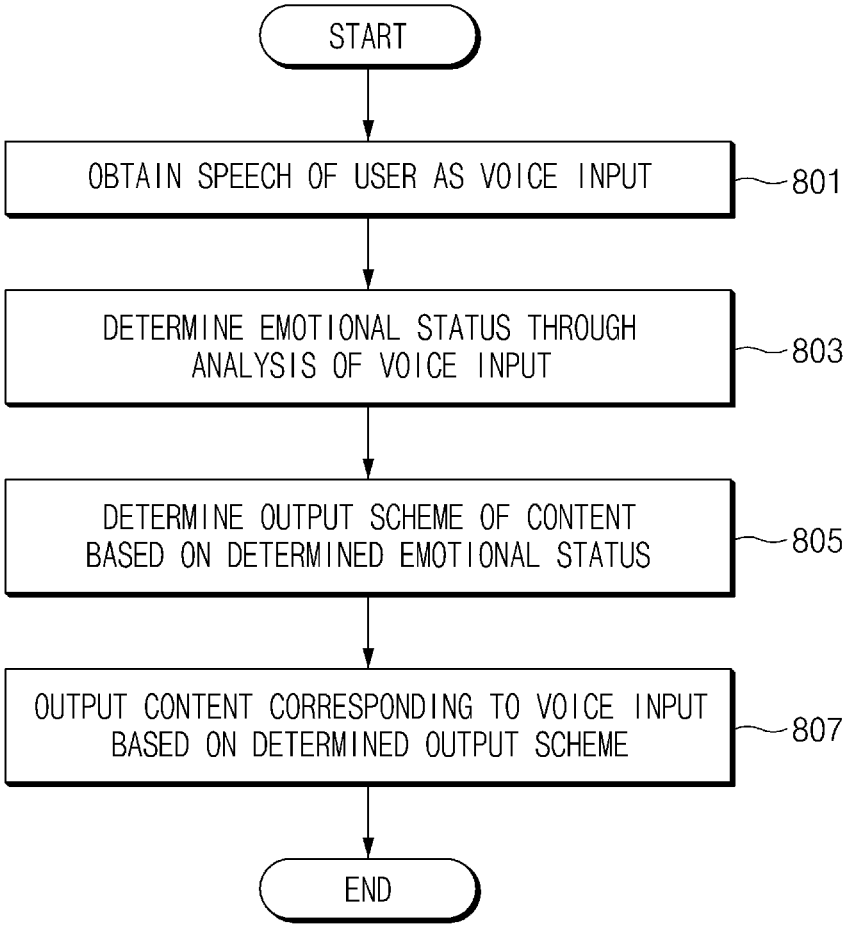

START
OBTAIN SPEECH OF USER AS VOICE INPUT
801
DETERMINE EMOTIONAL STATUS THROUGH ANALYSIS OF VOICE INPUT
803
DETERMINE OUTPUT SCHEME OF CONTENT BASED ON DETERMINED EMOTIONAL STATUS
805
OUTPUT CONTENT CORRESPONDING TO VOICE INPUT BASED ON DETERMINED OUTPUT SCHEME
807
END

FIG.8

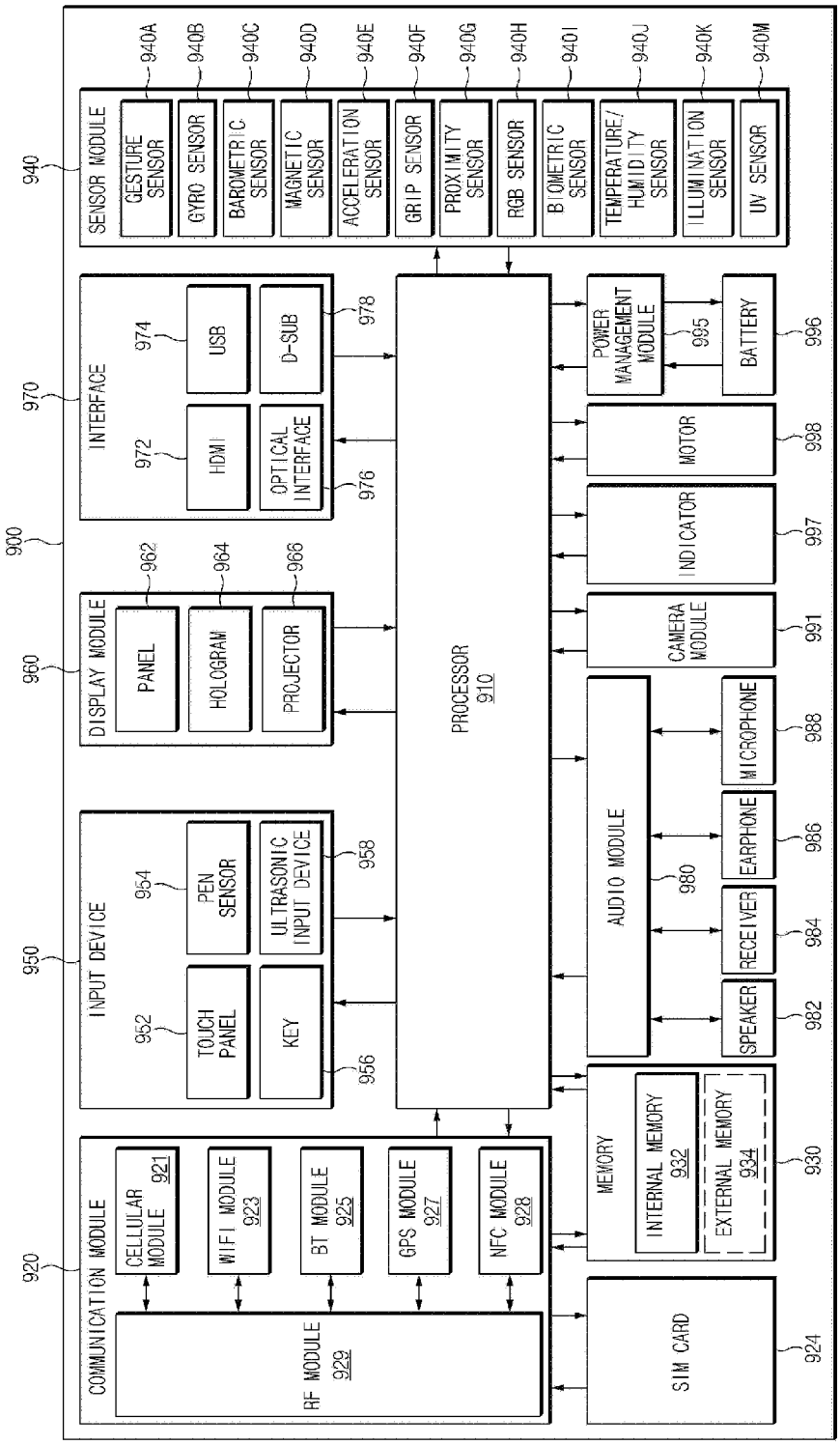

900
920
COMMUNICATION MODULE
CELLULAR MODULE 921
WIFI MODULE 923
BT MODULE 925
GPS MODULE 927
NFC MODULE 928
RF MODULE 929
950
INPUT DEVICE
952
TOUCH PANEL
954
PEN SENSOR
956
KEY
958
ULTRASONIC INPUT DEVICE
960
DISPLAY MODULE
962
PANEL
964
HOLOGRAM
966
PROJECTOR
970
INTERFACE
972
HDMI
974
USB
976
OPTICAL INTERFACE
978
D-SUB
940
SENSOR MODULE
940A
GESTURE SENSOR
940B
GYRO SENSOR
940C
BAROMETRIC SENSOR
940D
MAGNETIC SENSOR
940E
ACCELERATION SENSOR
940F
GRIP SENSOR
940G
PROXIMITY SENSOR
940H
RGB SENSOR
940I
BIOMETRIC SENSOR
940J
TEMPERATURE/ HUMIDITY SENSOR
940K
ILLUMINATION SENSOR
940M
UV SENSOR
PROCESSOR 910
MEMORY 930
INTERNAL MEMORY 932
EXTERNAL MEMORY 934
SIM CARD 924
AUDIO MODULE 980
SPEAKER 982
RECEIVER 984
EARPHONE 986
MICROPHONE 988
CAMERA MODULE 991
INDICATOR 997
MOTOR 998
POWER MANAGEMENT MODULE 995
BATTERY 996

FIG.9

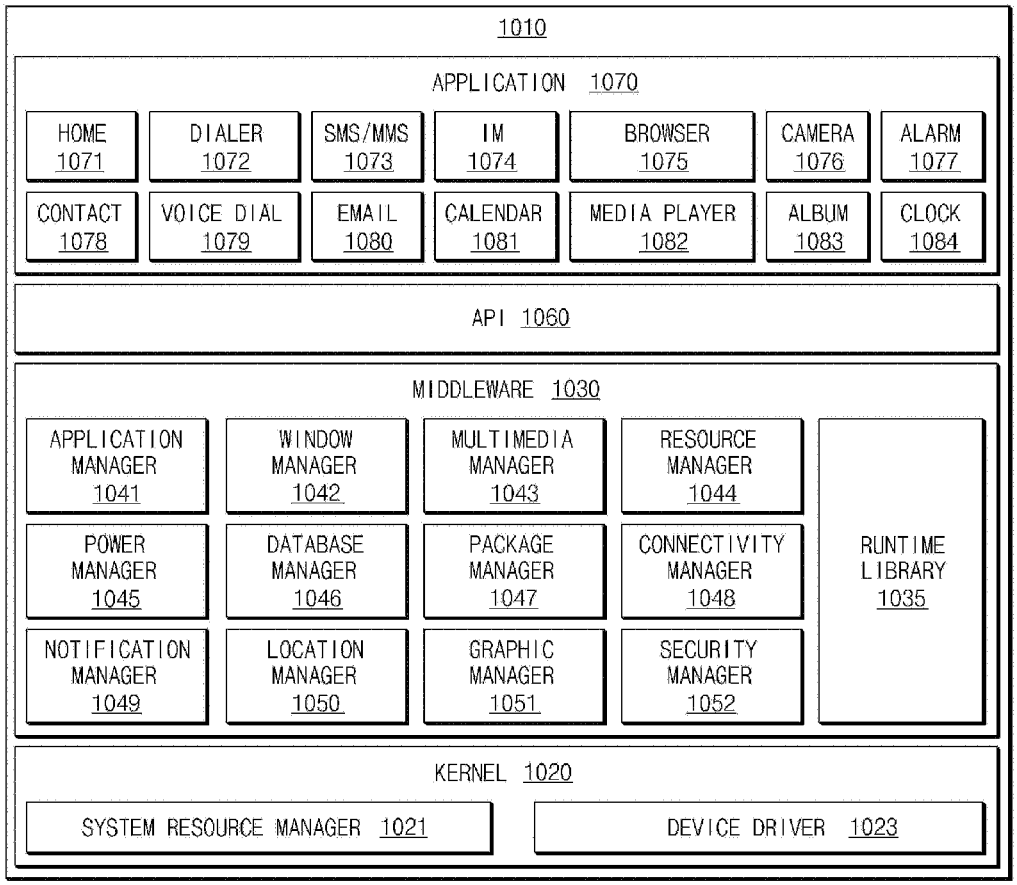

1010
APPLICATION 1070
HOME 1071
DIALER 1072
SMS/MMS 1073
IM 1074
BROWSER 1075
CAMERA 1076
ALARM 1077
CONTACT 1078
VOICE DIAL 1079
EMAIL 1080
CALENDAR 1081
MEDIA PLAYER 1082
ALBUM 1083
CLOCK 1084
API 1060
MIDDLEWARE 1030
APPLICATION MANAGER 1041
WINDOW MANAGER 1042
MULTIMEDIA MANAGER 1043
RESOURCE MANAGER 1044
POWER MANAGER 1045
DATABASE MANAGER 1046
PACKAGE MANAGER 1047
CONNECTIVITY MANAGER 1048
NOTIFICATION MANAGER 1049
LOCATION MANAGER 1050
GRAPHIC MANAGER 1051
SECURITY MANAGER 1052
RUNTIME LIBRARY 1035
KERNEL 1020
SYSTEM RESOURCE MANAGER 1021
DEVICE DRIVER 1023

FIG.10

METHOD AND ELECTRONIC DEVICE FOR PROVIDING CONTENT

PRIORITY

[0001] This application claims priority under 35 U.S.C. §119(a) to a Korean Patent Application filed in the Korean Intellectual Property Office on Sep. 18, 2015 and assigned Serial number 10-2015-0132488, the entire disclosure of which is incorporated herein by reference.

BACKGROUND

[0002] 1. Field of the Disclosure

[0003] The present disclosure relates generally to voice input for an electronic device, and more particularly, to a method and an electronic device for providing content in response to a voice input.

[0004] 2. Description of the Related Art

[0005] Recently, user input interfaces applied to electronic devices have been capable of receiving user input based on voice input in addition to user input based on physical manipulations performed by a user (e.g., an input through a physical keypad, a keyboard, a mouse, or touch panel)

[0006] An electronic device that implements a voice input interface receives a user's speech as voice input, converts the voice input into an electrical signal, and provides content to the user based on the converted electrical signal.

[0007] Electronic devices that supports voice input interfaces are capable of providing, for example, content to a user by outputting sound (e.g., outputting a voice). However, the user does not share an emotional connection with the electronic device, with respect to the content provided in response to the voice input, because the electronic device provides the content with a uniform speed, a monotonous tone, and a preset volume, regardless of the user's condition while providing the voice input. Furthermore, since the electronic device does not consider nuances according to a form of the user's speech, it is difficult for the electronic device to provide content appropriate for the user's condition.

SUMMARY

[0008] An aspect of the present disclosure is to address at least the above-mentioned problems and/or disadvantages and to provide at least the advantages described below. Accordingly, an aspect of the present disclosure is to provide a content providing method that analyzes a voice input of a user's speech and determine an output scheme of content based on the various speech features obtained from results of the analysis and an electronic device performing the same.

[0009] In accordance with an aspect of the present disclosure, an electronic device is provided. The electronic device includes an audio input module configured to receive a speech of a user as a voice input, an audio output module configured to output content corresponding to the voice input, and a processor configured to determine an output scheme of the content based on at least one of a speech rate of the speech, a volume of the speech, or a keyword included in the speech, which is obtained from an analysis of the voice input.

[0010] In accordance with another aspect of the present disclosure, a content providing method of an electronic device is provided. The method includes receiving a speech of a user as a voice input, determining an output scheme of content based on at least one of a speech rate of the speech, a volume of the speech, or a keyword included in the speech, which is obtained from an analysis of the voice input, and outputting the content corresponding to the voice input based on the determined output scheme.

[0011] In accordance with another aspect of the present disclosure, an instruction, which is recorded on a non-transitory computer-readable recording medium and executed by at least one processor, is configured to cause the at least one processor to perform a method. The method includes obtaining a speech of a user as a voice input, determining an output scheme of content based on at least one of a speech rate of the speech, a volume of the speech, or a keyword included in the speech, which is obtained from an analysis of the voice input, and outputting the content corresponding to the voice input based on the determined output scheme.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The above and other aspects, features, and advantages of certain embodiments of the present disclosure will be more apparent from the following description taken in conjunction with the accompanying drawings, in which:

[0013] FIGS. **1**A and **1**B are diagrams illustrating an environment in which an electronic device operates, according to an embodiment of the present disclosure;

[0014] FIG. **2** is a diagram illustrating an electronic device according to an embodiment of the present disclosure;

[0015] FIG. **3** is a block diagram illustrating an electronic device according to an embodiment of the present disclosure;

[0016] FIG. **4** is a flow chart illustrating a content providing method according to an embodiment of the present disclosure;

[0017] FIG. **5**A is a flow chart illustrating a content providing method based on a distance according to an embodiment of the present disclosure;

[0018] FIG. **5**B is a flow chart illustrating a content providing method based on a rate of movement of a user according to an embodiment of the present disclosure;

[0019] FIG. **6** is a flow chart illustrating a content providing method based on a speech rate of a user's speech according to an embodiment of the present disclosure;

[0020] FIG. **7** is a flow chart illustrating a content providing method based on a keyword according to an embodiment of the present disclosure;

[0021] FIG. **8** is a flow chart illustrating a content providing method based on an emotional status of a user according to an embodiment of the present disclosure;

[0022] FIG. **9** is a block diagram illustrating an electronic device according to embodiments of the present disclosure; and

[0023] FIG. **10** is a block diagram illustrating a program module according to embodiments of the present disclosure.

DETAILED DESCRIPTION

[0024] Embodiments of the present disclosure may be described with reference to accompanying drawings. Accordingly, those of ordinary skill in the art will recognize that modifications, equivalents, and/or alternatives to the embodiments described herein can be variously made without departing from the scope and spirit of the present

disclosure. With regard to description of drawings, similar components may be marked by similar reference numerals.

[0025] Herein, the expressions "have", "may have", "include", "comprise", "may include", and "may comprise" indicate the existence of corresponding features (e.g., elements such as numeric values, functions, operations, or components) but do not exclude presence of additional features.

[0026] Herein, the expressions "A or B", "at least one of A or/and B", "one or more of A or/and B", and the like may refer to any and all combinations of one or more of the associated listed items. For example, the terms "A or B", "at least one of A and B", and "at least one of A or B" may refer to cases in which at least one A is included, at least one B is included, or both of at least one A and at least one B are included.

[0027] The terms, such as "first", "second", and the like, as used herein, may refer to various elements of embodiments of the present disclosure, but do not limit the elements. For example, "a first user device" and "a second user device" indicate different user devices, regardless of the order or priority of the devices. For example, without departing the scope of the present disclosure, a first element may be referred to as a second element, and similarly, a second element may be referred to as a first element.

[0028] When an element (e.g., a first element) is referred to as being "(operatively or communicatively) coupled with/to" or "connected to" another element (e.g., a second element), the element may be directly coupled with/to or connected to the other element or an intervening element (e.g., a third element) may be present. By contrast, when an element (e.g., a first element) is referred to as being "directly coupled with/to" or "directly connected to" another element (e.g., a second element), it should be understood that there are no intervening element (e.g., a third element).

[0029] Depending on the situation, the expression "configured to", as used herein, may have a definition equivalent to "suitable for", "having the capacity to", "designed to", "adapted to", "made to", or "capable of". The term "configured to" is not limited to being defined as "specifically designed to" with respect to hardware. Instead, the expression "a device configured to" may indicate that the device is "capable of" operating together with another device or other components. For example, a "processor configured to perform A, B, and C" may refer to a dedicated processor (e.g., an embedded processor) for performing a corresponding operation or a generic-purpose processor (e.g., a central processing unit (CPU) or an application processor) that may perform corresponding operations by executing one or more software programs that are stored in a memory device.

[0030] Terms used herein are used to describe specified embodiments of the present disclosure and are not intended to limit the scope of the present disclosure. Singular forms of terms may include plural forms unless otherwise specified. Unless otherwise defined herein, all the terms used herein, which include technical or scientific terms, may have the same definition that is generally understood by a person skilled in the art. It will be further understood that terms that are defined in a dictionary and commonly used should also be interpreted according to customary definitions in the relevant related art and not in an idealized or overly formal definitions, unless expressly so defined herein with respect to embodiments of the present disclosure. In some cases, terms that are defined in the specification may not be interpreted in a manner that excludes embodiments of the present disclosure.

[0031] An electronic device according to an embodiment of the present disclosure may include at least one of smartphones, tablet personal computers (PCs), mobile phones, video telephones, electronic book readers, desktop PCs, laptop PCs, netbook computers, workstations, servers, personal digital assistants (PDAs), portable multimedia players (PMPs), Motion Picture Experts Group (MPEG-1 or MPEG-2) Audio Layer 3 (MP3) players, mobile medical devices, cameras, or wearable devices. The wearable device may include at least one of an accessory type (e.g., watches, rings, bracelets, anklets, necklaces, glasses, contact lens, or head-mounted-devices (HMDs), a fabric or garment-integrated type (e.g., an electronic apparel), a body-attached type (e.g., a skin pad or tattoos), or an implantable type (e.g., an implantable circuit).

[0032] According to an embodiment of the present disclosure, the electronic device may be a home appliance. The home appliances may include at least one of, for example, televisions (TVs), digital versatile disc (DVD) players, audios, refrigerators, air conditioners, cleaners, ovens, microwave ovens, washing machines, air cleaners, set-top boxes, TV boxes (e.g., Samsung HomeSync™, Apple TV™, or Google TV™), game consoles (e.g., Xbox™ and PlayStation™), electronic dictionaries, electronic keys, camcorders, electronic picture frames, and the like.

[0033] According to embodiments of the present disclosure, the electronic devices may include at least one of medical devices (e.g., various portable medical measurement devices (e.g., a blood glucose monitoring device, a heartbeat measuring device, a blood pressure measuring device, a body temperature measuring device, and the like)), a magnetic resonance angiography (MRA) device, a magnetic resonance imaging (MRI) device, a computed tomography (CT) device, scanners, and ultrasonic devices), navigation devices, global navigation satellite system (GNSS) receivers, event data recorders (EDRs), flight data recorders (FDRs), vehicle infotainment devices, electronic equipment for vessels (e.g., navigation systems and gyrocompasses), avionics, security devices, head units for vehicles, industrial or home robots, automatic teller machines (ATMs), points of sales (POS) devices, or Internet of things (IoT) devices (e.g., light bulbs, various sensors, electric or gas meters, sprinkler devices, fire alarms, thermostats, street lamps, toasters, exercise equipment, hot water tanks, heaters, boilers, and the like).

[0034] According to embodiments of the present disclosure, the electronic devices may include at least one of parts of furniture or buildings/structures, electronic boards, electronic signature receiving devices, projectors, or various measuring instruments (e.g., water meters, electricity meters, gas meters, or wave meters, and the like). The electronic device may be one of the above-described devices or a combination thereof. An electronic device may be a flexible electronic device. Furthermore, an electronic device may not be limited to the above-described electronic devices and may include other electronic devices and new electronic devices according to the development of new technologies.

[0035] Hereinafter, electronic devices according to embodiments of the present disclosure will be described with reference to the accompanying drawings. The term "user" used herein may refer to a person who uses an

electronic device or may refer to a device (e.g., a device implementing an artificial intelligence) that uses an electronic device.

[0036] FIGS. **1**A and **1**B are diagrams illustrating an environment in which an electronic device operates, according to an embodiment of the present disclosure.

[0037] Referring to FIG. **1**A, a user **10**, who is spaced apart from an electronic device **100** by a specific distance and is at a standstill, may speak to the electronic device **100**. The speech of the user **10** may be provided to the electronic device **100** as a voice input. For example, the user **10** may speak "Let me know what time it is now." with a moderate volume and at a moderate speech rate, and the speech may be provided to the electronic device **100** as a voice input. The electronic device **100** may receive the voice input through an embedded audio input module (e.g., a microphone) and may generate content corresponding to a result of analyzing the voice input. For example, the electronic device **100** may generate content, such as "The current time is nine ten AM", in response to a voice input, such as "Let me know what time it is now." The electronic device **100** may provide the generated content as sound through an embedded audio output module (e.g., a speaker). In this case, since the user **10** provides a voice input with a moderate volume and at a moderate speech rate at a standstill, the electronic device **100** may provide the content as sound with a moderate output volume level and at a moderate output speed. As such, the user **10** may be provided with the content corresponding to the voice input.

[0038] Referring to FIG. **1**B, the user **10** who moves away from the electronic device **100** may speak to the electronic device **100**. For example, the user **10** may be very busy with getting ready for work. Therefore, for example, the user **10** may make a speech, such as "What time is it now?", with a louder volume than usual and a faster speech rate than usual. The speech may be provided to the electronic device **100** as a voice input.

[0039] The electronic device **100** may receive the voice input through the embedded audio input module and may generate content corresponding to a result of analyzing the voice input. For example, the electronic device **100** may generate content, such as "nine ten", in response to the voice input, such as "What time is it now?" The electronic device **100** may provide the generated content as sound through the embedded audio output module. In this case, since the user **10** provides a voice input with a louder volume than usual and at a faster speech rate than usual while the user **10** moves away from the electronic device **100**, the electronic device **100** may provide the content as sound with a relatively louder output volume level and at a relatively faster output speed. As such, the user **10** may be provided with content corresponding to a voice input.

[0040] FIG. **2** is a diagram illustrating an electronic device according to an embodiment of the present disclosure.

[0041] Referring to FIG. **2**, an electronic device according to an embodiment of the present disclosure may be implemented with the dedicated electronic device **100** that operates inside a house. The dedicated electronic device **100** may include various modules (e.g., elements of FIG. **3**) for implementing embodiments according to the present disclosure, such as a driving system that is capable of providing the mobility to the electronic device **100** (e.g., a driving motor, various types of articulated joints for robots (e.g. a bipedal, quadrupedal robot), a wheel, a propeller, and the like), a camera that is capable of recognizing a user, an audio input module that is capable of receiving a voice input, and the like.

[0042] Furthermore, the electronic device according to embodiments of the present disclosure may be implemented in a form in which a smartphone **201** and a docking station **202** are coupled to each other. For example, the smartphone **201** may provide a function for implementing embodiments of the present disclosure through various modules (e.g., a processor, a camera, a sensor, and the like) embodied therein. Furthermore, for example, the docking station **202** may include a charging module (and power supplying terminal) that is capable of providing power to the smartphone **201**, a driving system that is capable of providing the mobility (e.g., a driving motor, various types of articulated robotic joints, a wheel, a propeller, and the like), a high-power speaker, and the like.

[0043] A configuration of the electronic device, which is implementable in various ways as described above, will be described below with reference to FIG. **3**. Elements to be described in FIG. **3** may be included, for example, in the electronic device **100** of FIG. **2** or in the smartphone **201** and/or the docking station **202**. A content providing method of the electronic device **100** will be described with reference to FIGS. **4** to **8**.

[0044] FIG. **3** is a block diagram illustrating an electronic device according to an embodiment of the present disclosure.

[0045] Referring to FIG. **3**, an electronic device **101** according to an embodiment of the present disclosure includes a bus **110**, a processor **120**, a memory **130**, an audio module **150**, a display **160**, a communication interface **170** and a distance detection module **180**. The electronic device **101** may not include at least one of the above-described elements or may further include other element(s). For example, the electronic device **101** may include an input/output interface that provides an instruction or data, which is inputted from a user or another external device, to any other element(s) of the electronic device **101**.

[0046] For example, the bus **110** may interconnect the above-described elements **110** to **180** and may include a circuit for conveying communications (e.g., a control message and/or data) among the above-described elements.

[0047] The processor **120** may include one or more of a central processing unit (CPU), an application processor (AP), or a communication processor (CP). For example, the processor **120** may perform an arithmetic operation or data processing associated with control and/or communication of at least other elements of the electronic device **101**. For example, the processor **120** may execute a voice recognition application (e.g., S-Voice) to perform a content providing method according to an embodiment of the present disclosure.

[0048] According to embodiments of the present disclosure, the processor **120** may analyze a voice input received through an audio input module **151** and may output content corresponding to the voice input through an audio output module **152** in various schemes. For example, the content may be provided to a user as sound based on a text to speech (TTS) technology.

[0049] According to an embodiment of the present disclosure, the processor **120** may determine an output scheme of the content based on at least one of a speech rate of a user's speech, a volume of a user's speech, and a keyword included

in the user's speech, which is obtained from an analysis of the voice input. For example, the output scheme may include an output volume level, an output speed, and an output amount of information of the content to be provided as sound.

[0050] For example, the output volume level of the content may correspond to a volume level when the content is provided as sound by the audio output module **152**. For example, the output speed of the content may correspond to a speed when the content is played back as sound by the audio output module **152**. For example, the output amount of information of the content may correspond to an amount of information when the content corresponding to a voice input is provided as sound to a user.

[0051] For example, with regard to the output amount of information, the content may be classified into detailed content that includes rich and extended information and abstract content that includes only a gist of the response corresponding to the voice input (a related example is described later herein). The detailed content and the abstract content may be classified dichotomously. However, embodiments of the present disclosure may not be limited thereto. For example, the content may be divided into several levels that range from a format (a format in which the output amount of information is the greatest), in which the content is described most precisely, to a format in which the output amount of information is the least and in which the content is described most simply. For example, the processor **120** may vary or adjust an output amount of information by extracting and reconfiguring a portion of the content that describes the content most precisely. As such, the processor **120** may adaptively generate content that has various amounts of information.

[0052] Furthermore, according to embodiments of the present disclosure, the processor **120** may adjust an output speed of content based on an output amount of information of content. For example, as an output amount of information of content to be outputted through the audio output module **152** increases, an output speed of content may also increase under control of the processor **120**. For example, an output speed of content may be adjusted depending on a change of the above-described content abbreviation level.

[0053] According to embodiments of the present disclosure, the processor **120** may determine an output scheme of corresponding content based on a distance between a user and the electronic device **101**. For example, the processor **120** may determine a distance between the user and the electronic device **101** based on at least one of the volume of the user's speech obtained through an analysis of a voice input or the distance computed, calculated, or measured by the distance detection module **180**. The processor **120** may adjust at least one of an output volume level of content, an output speed of the content, or an output amount of information of the content based on the determined distance between the user and the electronic device **101**.

[0054] Furthermore, according to embodiments of the present disclosure, the processor **120** may determine an output scheme of corresponding content based on a rate of movement of a user. For example, the processor **120** may determine a rate of movement of the user based on at least one of the volume of the speech obtained through an analysis of a voice input, a frequency shift of the voice input (e.g., in the case of using Doppler effect), or a fluctuation of the distance computed by the distance detection module **180**. A method for determining the rate of movement of the user may not be limited to the above-mentioned embodiment of the present disclosure, and various voice processing technologies for determining the rate of movement of the user may be used. The processor **120** may adjust at least one of an output volume level of content, an output speed of the content, or an output amount of information of the content based on the determined rate of movement of the user.

[0055] Furthermore, according to embodiments of the present disclosure, the processor **120** may determine an output scheme of corresponding content based on a speech rate of a user's speech. For example, the processor **120** may adjust at least one of an output speed of content or an output amount of information of the content based on the speech rate of the user's speech obtained through an analysis of a voice input.

[0056] Furthermore, according to embodiments of the present disclosure, the processor **120** may determine an output scheme of corresponding content based on a keyword included in a user's speech. For example, if an analysis of a voice input indicates that a designated keyword is included in a user's speech, the processor **120** may adjust at least one of an output speed of content, an output volume level of the content, or an output amount of information of the content.

[0057] Furthermore, according to embodiments of the present disclosure, the processor **120** may determine an output scheme of corresponding content based on an emotional status that is determined based on a speech of a user.

[0058] Furthermore, according to embodiments of the present disclosure, the processor **120** may adjust an output amount of information of corresponding content based on whether a user has an interest in specific content. For example, when outputting the content corresponding to a voice input, the processor **120** may determine whether a user has an interest in specific content based on whether an additional question (i.e., an additional voice input) associated with the content is received after the initial voice input, a term frequency of the keyword included in the additional question, or the like.

[0059] For example, when it is determined that a user has an interest in the specific content, the processor **120** may provide more detailed information by increasing an output amount of information with respect to the content in which the user has an interest. By contrast, for example, the processor **120** may decrease the output amount of information with respect to the content that is determined as content in which the user does not have an interest. That is, the processor **120** of the electronic device **101** may adjust an output amount of information of content based on a user's interest, a user's condition, a context, or the like.

[0060] The memory **130** may include a volatile and/or nonvolatile memory. For example, the memory **130** may store instructions or data associated with at least one other element(s) of the electronic device **101**. According to an embodiment of the present disclosure, the memory **130** may store software and/or a program **140**. The program **140** includes, for example, a kernel **141**, a middleware **143**, an application programming interface (API) **145**, and/or an application program (or an application) **147**. At least a part of the kernel **141**, the middleware **143**, or the API **145** may be called an "operating system (OS)". According to an embodiment of the present disclosure, the application **147** may include a voice recognition application (e.g., S-Voice)

that is capable of analyzing a voice input, and generating and/or providing the content corresponding to the voice input.

[0061] The audio module **150** includes, for example, the audio input module **151** and the audio output module **152**. The audio module **150** may include a driver for driving the audio input module **151** and the audio output module **152** and/or an interface that is connected to an external audio device.

[0062] The audio input module **151** may be implemented with a microphone and the like, for example. The audio input module **151** may obtain a user's speech as a voice input. The audio output module **152** may be, for example, implemented with a speaker and the like and may output the content corresponding to the voice input as sound.

[0063] The display **160** may include, for example, a liquid crystal display (LCD), a light-emitting diode (LED) display, an organic LED (OLED) display, a microelectromechanical systems (MEMS) display, or an electronic paper display. The display **160** may display, for example, various content (e.g., a text, an image, a video, an icon, a symbol, and the like) to a user. The display **160** may include a touch screen and may receive, for example, a touch, gesture, proximity, or hovering input using an electronic pen or a part of a user's body.

[0064] The communication interface **170** may establish communication between the electronic device **101** and an external device (e.g., a first external electronic device **102**, a second external electronic device **104**, or a server **106**). For example, the communication interface **170** may be connected to a network **162** through wireless communication or wired communication to communicate with the external device (e.g., the second external electronic device **104** or the server **106**).

[0065] The wireless communication may include at least one of, for example, long-term evolution (LTE), LTE Advanced (LTE-A), Code Division Multiple Access (CDMA), Wideband CDMA (WCDMA), Universal Mobile Telecommunications System (UMTS), Wireless Broadband (WiBro), Global System for Mobile Communications (GSM), or the like, as cellular communication protocol. Furthermore, the wireless communication may include, for example, a local area network **164**. The local area network **164** may include at least one of, for example, a Wi-Fi network, a Bluetooth network, a near field communication (NFC) network, or a global navigation satellite system (GNSS). The GNSS may include at least one of a global positioning system (GPS), a global navigation satellite system (Glonass), Beidou Navigation Satellite System (Beidou), or the European global satellite-based navigation system (Galileo) based on an available region, a bandwidth, or the like. Herein, "GPS" and "GNSS" may be interchangeably used. The wired communication may include at least one of, for example, a universal serial bus (USB), a high definition multimedia interface (HDMI), a recommended standard232 (RS-232), a plain old telephone service (POTS), or the like. The network **162** may include at least one of telecommunications networks, for example, a computer network (e.g., LAN or WAN), an Internet, or a telephone network.

[0066] The distance detection module **180** may include a depth camera like a time-of-flight (TOF) camera, a stereo camera computing depth information using triangulation, a charge coupled device (CCD) camera computing a distance through an image processing, or the like. Additionally or alternatively, the distance detection module **180** may include various sensors, such as an infra-red sensor, an RF sensor, an ultrasonic sensor, and the like. The distance detection module **180** may compute a distance between a user and the electronic device based on image data obtained from the cameras or the sensors by using a computing resource of an embedded controller IC. Alternatively, the processor **120** may compute the distance between the user and the electronic device based on image data obtained from the distance detection module **180** by using its computing resource.

[0067] Each of the first and second external electronic devices **102** and **104** may be the same or different type of device as that of the electronic device **101**. According to an embodiment of the present disclosure, the server **106** may include a group of one or more servers. According to embodiments of the present disclosure, all or a part of operations that the electronic device **101** will perform may be executed by another or plural electronic devices (e.g., the first and second external electronic devices **102** and **104** and the server **106**). When the electronic device **101** executes any function or service automatically or in response to a request, the electronic device **101** may not perform the function or the service internally, but, alternatively or additionally, the electronic device **101** may request at least a part of a function associated with the electronic device **101** at other device (e.g., the first external electronic device **102**, the second external electronic device **104**, or the server **106**). The other electronic device (e.g., the first external electronic device **102**, the second external electronic device **104**, or the server **106**) may execute the requested function or an additional function and may provide the execution result to the electronic device **101**. The electronic device **101** may provide the requested function or service using the received result or may additionally process the received result to provide the requested function or service. To this end, for example, cloud computing, distributed computing, or client-server computing may be used.

[0068] FIG. **4** is a flow chart illustrating a content providing method according to an embodiment of the present disclosure.

[0069] Referring to FIG. **4**, a content providing method according to an embodiment of the present disclosure may include operations **401** to **405**. For example, operations **401** to **405** may be performed by the electronic device **101** of FIG. **3**.

[0070] In operation **401**, the electronic device **101** receives a user's speech as a voice input through the audio input module **151**.

[0071] In operation **403**, the electronic device **101** obtains at least one of a speech rate of the speech made by the user, a volume of the speech, and a keyword included in the speech by analyzing the voice input received in operation **401**. The electronic device **101** may determine an output scheme of content based on at least one of the speech rate of the speech made by the user, the volume of the speech, or the keyword included in the speech. For example, the output scheme of the content may include adjusting an output volume level of the content, an output speed of the content, or an output amount of information of the content.

[0072] In operation **405**, the electronic device **101** outputs the content corresponding to the received voice input as sound through the audio output module **152** based on the output scheme determined in operation **403**.

[0073] FIG. **5**A is a flow chart illustrating a content providing method according to an embodiment of the present disclosure.

[0074] Referring to FIG. **5**A, a content providing method according to an embodiment of the present disclosure may include operations **501** to **507**. For example, operations **501** to **507** may be performed by the electronic device **101** of FIG. **3**.

[0075] In operation **501**, the electronic device **101** receives a user's speech as a voice input through the audio input module **151**. According to embodiments of the present disclosure, in operation **501**, the electronic device **101** may measure a distance between the user and the electronic device **101** through the distance detection module **180**.

[0076] In operation **503**, the processor **120** of the electronic device **101** obtains a volume of the speech made by the user by analyzing the voice input received in operation **501** and may determine the distance between the user and the electronic device **101** based on the obtained volume of the speech. For example, the processor **120** of the electronic device **101** may determine the distance by using a database, which is stored in the memory **130** and in which a volume of a user's speech is correlated with a distance between the user and the electronic device **101**.

[0077] According to embodiments of the present disclosure, the processor **120** of the electronic device **101** may determine a distance between the user and the electronic device **101** based on the distance derived from the volume of the speech and the distance computed by the distance detection module **180**. Since the electronic device **101** determines the distance based on both the distance derived from the volume of the speech and the distance computed by the distance detection module **180**, the accuracy of the distance measurement may be improved.

[0078] In operation **505**, the processor **120** of the electronic device **101** determines an output scheme of content based on the distance between the user and the electronic device **101** determined in operation **503**.

[0079] According to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may determine an output scheme of content such that an output volume level of the corresponding content increases as a distance between the user and the electronic device **101** increases and such that the output volume level of the corresponding content decreases as the distance between the user and the electronic device **101** decreases.

TABLE 1

Distance (D) between user and electronic device	Output volume level of content
D < 1 m	40 dB
1 m ≤ D < 2 m	45 dB
. . .	. . .
D ≥ 5 m	65 dB

[0080] For example, as shown in Table 1, the electronic device **101** may set an output volume level of the content to 40 dB when the distance between the user and the electronic device **101** is less than 1 m and may increase the output volume level by 5 dB whenever the distance increases by 1 m. For example, a user who is far away from the electronic device **101** may be provided with corresponding content as sound of a suitable output volume level.

[0081] Furthermore, Table 1 is merely provided as an example, but embodiments of the present disclosure are not limited to the example of Table 1. For example, a distance between the user and the electronic device **101** and an output volume level of content according to the distance may be subdivided, and the difference in the output volume level between sections may be diversified.

[0082] According to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may determine an output scheme of the content such that an output speed of the content increases as a distance between the user and the electronic device **101** increases and such that the output speed of the content decreases as the distance between the user and the electronic device **101** decreases.

TABLE 2

Distance (D) between user and electronic device	Output speed of content
D < 1 m	150 WPM
1 m ≤ D < 2 m	160 WPM
2 m ≤ D < 3 m	170 WPM
. . .	. . .
D ≥ 5 m	200 WPM

[0083] For example, as shown in Table 2, the electronic device **101** may set an output speed of the content to a standard speed (e.g., 150 word per minute (WPM)) when a distance between the user and the electronic device **101** is less than 1 m and may increase the output speed by 10 WPM whenever the distance increases by 1 m. However, when the distance between the user and the electronic device **101** is at least equal to 5 m, the output speed of the content may not increase above a specific speed (e.g., 200 WPM) even though the distance between the user and the electronic device **101** increases further.

[0084] For example, in most cases, a user who requests content with a voice input to the electronic device **101** while being far away from the electronic device **101** may want a quick response. For this reason, the user may be provided with corresponding content as sound of a suitable output speed.

[0085] Furthermore, as in Table 1, Table 2 is provided as an example. For example, a distance between the user and the electronic device **101** and an output speed of content according to the distance may be set in more detail.

[0086] Furthermore, according to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may determine an output scheme of the content such that an output amount of information of the content decreases as a distance between the user and the electronic device **101** increases and such that the output amount of information of the content increases as the distance between the user and the electronic device **101** decreases.

TABLE 3

Distance (D) between user and electronic device	Output amount of information of content
D < 1 m	Amount of information of original content
1 m ≤ D < 2 m	Content of first abbreviation level
2 m ≤ D < 3 m	Content of second abbreviation level

TABLE 3-continued

Distance (D) between user and electronic device	Output amount of information of content
3 m ≤ D < 4 m	Content of third abbreviation level
D ≥ 4 m	Content of fourth abbreviation level (abstract content)

[0087] For example, as shown in Table 3, when a distance between the user and the electronic device **101** is less than 1 m, an output amount of information of the content may be set highest. For example, the content that has the greatest output amount of information may correspond to the most detailed original content corresponding to a voice input. Whenever the distance increases by 1 m, the electronic device **101** may decrease the output amount of information by making the abbreviation level of the original content high.

[0088] For example, original content corresponding to a voice input, such as "Let me know today's weather.", may correspond to "The weather in Jul. 1, 2015 is ((1)) rainy after cloudy ((2)). The highest temperature is 28° C., and the lowest temperature is 18° C. ((3)), the rainfall is 10 mm ((4)). Prepare your umbrella when you go out. ((5))" In this case, the content of a first abbreviation level may include information of (1), (2), (3), and (4) of the original content while excluding (5), and the content of a second abbreviation level may include information of (1), (2) and (4) while excluding (3) and (5). Furthermore, the content of a third abbreviation level may only include information of (1) and (2), and the content of a fourth abbreviation level (abstract content) may only include information of (2). As such, an output amount of information of content may vary or be adjusted by reconfiguring a portion of the original content that describes the content most precisely.

[0089] For example, in most cases, a user who requests content with a voice input to the electronic device **101** while being far away from the electronic device **101** may want core content corresponding to the voice input rather than detailed content. For this reason, the user may be provided with corresponding content in a suitable output amount of information based on a distance between the user and the electronic device **101**.

[0090] Furthermore, embodiments of the present disclosure are not limited to the examples of Table 1, Table 2, and Table 3. For example, a distance between the user and the electronic device **101** may be set in more detail, and an abbreviation level for each distance section may be set in various ways.

[0091] In operation **507**, the electronic device **101** outputs the content corresponding to the received voice input as sound through the audio output module **152** based on the output scheme determined in operation **505**.

[0092] FIG. **5**B is a flow chart illustrating a content providing method according to an embodiment of the present disclosure.

[0093] Referring to FIG. **5**B, a content providing method according to an embodiment of the present disclosure may include operations **502** to **508**. For example, operations **502** to **508** may be performed by the electronic device **101** of FIG. **3**.

[0094] In operation **502**, the electronic device **101** receives a user's speech as a voice input through the audio input module **151**. According to embodiments of the present disclosure, in operation **502**, the electronic device **101** measures a distance between the user and the electronic device **101** through the distance detection module **180**. For example, the distance between the electronic device **101** and the user may be measured in real time according to a specific period.

[0095] In operation **504**, the processor **120** of the electronic device **101** determines a rate of movement of the user (a distance variation per unit time, i.e., speed or velocity) by analyzing the voice input received in operation **501**. For example, the processor **120** may compute a rate of movement based on a frequency fluctuation of the voice input, a volume fluctuation of a speech, and the like or may determine a rate of movement of a user through well-known various voice processing.

[0096] According to embodiments of the present disclosure, the processor **120** of the electronic device **101** may determine a rate of movement of the user by analyzing a fluctuation (e.g., a time derivative of the measured distance, and the like) of the distance measured through the distance detection module **180**. Furthermore, the processor **120** may determine the rate of movement of the user in consideration of the rate of movement derived from an analysis of the voice input and the rate of movement based on the measured distance. Since the electronic device **101** considers both a rate of movement derived from a voice input and a rate of movement based on the measured distance, a measurement accuracy of a rate of movement may be improved.

[0097] In operation **506**, the processor **120** determines an output scheme of corresponding content based on the rate of movement of the user determined in operation **504**. For example, the processor **120** may adjust at least one of an output volume level of content, an output speed of the content, or an output amount of information of the content based on the determined rate of movement of the user.

[0098] According to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may adjust an output volume level of corresponding content based on a direction of a rate of movement of a user (e.g., a direction in which the user moves closer to or away from the electronic device **101**) and/or a magnitude of the rate of movement. For example, an output volume level of content according to a rate of movement of a user may correspond to Table 4.

TABLE 4

Rate of movement of user	Output volume level of content
Approaching with speed of 5 km/h or higher	35 dB
Approaching with speed of 2 km/h or higher and less than 5 km/h	40 dB
Approaching with speed of less than 2 km/h	45 dB
0 km/h (standstill state)	50 dB
Moving away with speed of less than 2 km/h	55 dB
Moving away with speed of 2 km/h or higher and less than 5 km/h	60 dB
Moving away with speed of 5 km/h or higher and less than 8 km/h	65 dB
Moving away with speed of 8 km/h or higher	70 dB

[0099] Referring to Table 4, while a user is at a standstill (i.e., a rate of movement of the user is equal to "0"), the

electronic device **101** may set the output volume level of content to 50 dB and may decrease the output volume level as the speed at which the user approaches the electronic device **101** increases. Furthermore, as the speed at which the user moves away from the electronic device **101** increases, the electronic device **101** may increase the output volume level. For example, a user may be provided with corresponding content as sound of a suitable output volume level based on a rate of movement.

[0100] Table 4 is provided as an example. For example, a rate of movement of a user and an output volume level of content according to the rate of movement may be set in more detail, and the difference in the output volume level between sections of the rate of movement may be variously set.

[0101] Furthermore, according to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may adjust an output volume level of corresponding content based on a direction of a rate of movement of a user (e.g., a direction in which the user moves closer to or away from the electronic device **101**) and/or a magnitude of the rate of movement. For example, an output speed of content according to a rate of movement of a user may correspond to Table 5.

TABLE 5

Rate of movement of user	Output speed of content
Approaching with speed of 5 km/h or higher	135 WPM
Approaching with speed of 2 km/h or higher and less than 5 km/h	140 WPM
Approaching with speed of less than 2 km/h	145 WPM
0 km/h (standstill state)	150 WPM
Moving away with speed of less than 2 km/h	160 WPM
Moving away with speed of 2 km/h or higher and less than 5 km/h	170 WPM
Moving away with speed of 5 km/h or higher and less than 8 km/h	180 WPM
Moving away with speed of 8 km/h or higher	190 WPM

[0102] For example, as shown in Table 5, while a user is at a standstill (i.e., a rate of movement of the user is equal to "0"), the electronic device **101** may set the output speed of the content to a standard speed (e.g., 150 WPM) and may decrease the output speed as the speed at which the user approaches the electronic device **101** becomes faster. Furthermore, as the speed at which the user moves away from the electronic device **101** becomes faster, the electronic device **101** may increase the output speed. However, when a speed at which the user approaches to the electronic device **101** is at least equal to 5 km/h or when a speed at which the user moves away from the electronic device **101** is at least equal to 8 km/h, the previously decreased/increased output speed may be maintained.

[0103] For example, in most cases, a user who requests content with a voice input from the electronic device **101** while quickly moving away from the electronic device **101** may want a quick response. In this case, the user may be provided with corresponding content with an output speed that is appropriate for his/her moving situation.

[0104] Furthermore, as in Table 4, Table 5 is provide as an example. For example, an output speed of a user and an output speed of content according to the distance may be set in more detail.

[0105] Furthermore, according to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may adjust an output volume level of corresponding content based on a direction of a rate of movement of a user (e.g., a direction in which the user moves closer to or away from the electronic device **101**) and/or a magnitude of the rate of movement. For example, an output amount of information of content according to a rate of movement of a user may correspond to Table 6.

TABLE 6

Rate of movement of user	Output amount of information of content
Approaching with speed of 5 km/h or higher	Amount of information of original content
Approaching with speed of 2 km/h or higher and less than 5 km/h	Amount of information of original content
Approaching with speed of less than 2 km/h	Amount of information of original content
0 km/h (standstill state)	Amount of information of original content
Moving away with speed of less than 2 km/h	Content of first abbreviation level
Moving away with speed of 2 km/h or higher and less than 5 km/h	Content of second abbreviation level
Moving away with speed of 5 km/h or higher and less than 8 km/h	Content of third abbreviation level
Moving away with speed of 8 km/h or higher	Content of fourth abbreviation level (abstract content)

[0106] Referring to Table 6, as a rate of movement of a user becomes faster in a direction in which the user moves away from the electronic device **101**, an abbreviation level of an output amount of information may increase. That is, if the user moves more rapidly, the user may be provided with content of a higher abbreviation level. By contrast, when a user is at a standstill or when the user moves closer to the electronic device **101**, the user may be provided with original content that is not abbreviated at all (the most detailed). As such, an output amount of information of content may vary or be adjusted by reconfiguring a portion of the original content that describes corresponding content most precisely.

[0107] For example, in most cases, a user who requests content with a voice input from the electronic device **101** while quickly moving away from the electronic device **101** may want core content rather than detailed content. According to the embodiment of the present disclosure, the electronic device **101** may be capable of providing the user with the content that has an output amount of information appropriate for a moving situation of the user.

[0108] Furthermore, as in Table 4 and Table 5, Table 6 is provided as an example. For example, a rate of movement of a user may be set in more detail, and the abbreviation level for each speed section may be set in various ways.

[0109] In operation **508**, the electronic device **101** outputs the content corresponding to the received voice input as sound through the audio output module **152** based on the output scheme determined in operation **506**.

[0110] FIG. **6** is a flow chart illustrating a content providing method according to an embodiment of the present disclosure.

[0111] Referring to FIG. **6**, a content providing method according to an embodiment of the present disclosure may include operations **601** to **607**. For example, operations **601** to **607** may be performed by the electronic device **101** of FIG. **3**.

[0112] In operation **601**, the electronic device **101** receives a user's speech as a voice input through the audio input module **151**.

[0113] In operation **603**, the processor **120** of the electronic device **101** obtains a speech rate of the speech made by the user by analyzing the voice input received in operation **601**. For example, the speech rate of the speech may correspond to a recognition speech rate of the word recognized by applying speech-to-text (STT) technology to a voice input.

[0114] In operation **605**, the processor **120** of the electronic device **101** determines an output scheme of content based on the speech rate of the user's speech determined in operation **603**.

[0115] According to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may determine an output scheme of the content such that an output speed of corresponding content increases as the speech rate of the speech made by the user increases and such that the output speed of the corresponding content decreases as the speech rate of the speech decreases.

TABLE 7

Speech Rate (S) of speech of user	Output speed of content
S < 150 WPM	150 WPM
150 WPM ≤ S < 160 WPM	160 WPM
160 WPM ≤ S < 170 WPM	170 WPM
. . .	. . .
240 WPM ≤ S < 250 WPM	250 WPM
S ≥ 250 WPM	250 WPM

[0116] For example, as shown in Table 7, when the speech rate of the speech made by the user is less than 150 WPM, the electronic device **101** may set an output speed of content to 150 WPM. As the speech rate of the speech made by the user increases, the electronic device **101** may increase the output speed of the content by 10 WPM for each 10 WPM section. However, if the speech rate of the speech made by the user is faster than a specific speech rate (e.g., 250 WPM), the electronic device **101** may not proportionally increase the output speed of the content even though the speech rate of the speech made by the user further increases. With this method, a user who provides a voice input with respect to the electronic device **101** may be provided with corresponding content as sound of a suitable output speed.

[0117] Table 7 is merely provided as an example, but embodiments of the present disclosure are not limited to the example of Table 7. For example, an output speed of the content may be set to continuously increase in proportion of the speech rate of the user's speech. Furthermore, a section of the speech rate of the user's speech and an output speed of the content corresponding to this may be set in more detail, and the output speed for each section may be variously set.

[0118] Furthermore, according to an embodiment of the present disclosure, the processor **120** of the electronic device **101** may determine an output scheme of the content such that the output amount of information of the content decreases as the speech rate of the speech made by the user increases and such that the output amount of information of the content increases as the speech rate of the speech decreases.

TABLE 8

Speed (S) of speech of user	Output amount of information of content
S < 170 WPM	Amount of information of original content
170 WPM ≤ S < 190 WPM	Amount of information of content of first abbreviation level
190 WPM ≤ S < 210 WPM	Amount of information of content of second abbreviation level
210 WPM ≤ S < 230 WPM	Amount of information of content of third abbreviation level
S ≥ 230 WPM	Amount of information of content of fourth abbreviation level

[0119] For example, as shown in Table 8, when the speech rate of the user's speech is less than 170 WPM, the output amount of information of the content may be set highest. For example, content that has the greatest output amount of information may correspond to the most detailed original content corresponding to a voice input. Whenever the speech rate of the speech increases by 20 WPM, the electronic device **101** may decrease the output amount of information by making the abbreviation level of the original content high.

[0120] A user who requests content with a fast speech rate of a speech with respect to the electronic device **101** may correspond to a user who wants to be provided with core content fast. In this case, the electronic device **101** may provide corresponding content that has a suitable output amount of information in response to the user's intention.

[0121] Furthermore, embodiments of the present disclosure are not limited to the example of Table 8. For example, a distance between the user and the electronic device **101** may be set in more detail, and the abbreviation level for each section may be set in various ways.

[0122] In operation **607**, the electronic device **101** outputs the content corresponding to the received voice input as sound through the audio output module **152** based on the output scheme determined in operation **605**.

[0123] FIG. **7** is a flow chart illustrating a content providing method according to an embodiment of the present disclosure.

[0124] Referring to FIG. **7**, a content providing method according to an embodiment of the present disclosure may include operations **701** to **707**. For example, operations **701** to **707** may be performed by the electronic device **101** of FIG. **3**.

[0125] In operation **701**, the electronic device **101** receives a user's speech as a voice input through the audio input module **151**.

[0126] In operation **703**, the processor **120** of the electronic device **101** detects a designated keyword from the speech made by the user by analyzing the voice input received in operation **701**. For example, a speech rate of the speech may correspond to a recognition speech rate of the word recognized through an analysis of a voice input.

[0127] In operation **705**, the processor **120** of the electronic device **101** determines an output scheme of content based on the keyword detected in operation **703**.

[0128] For example, if a designated first keyword is included in a user's speech, the processor **120** may increase

an output speed of the content. If a second keyword is included, the processor **120** may decrease the output speed of the content. Furthermore, for example, if a designated third keyword is included in the speech of the user, the processor **120** may increase an output volume level of the content. If a fourth keyword is included, the processor **120** may decrease the output volume level of the content. Furthermore, for example, if a designated fifth keyword is included in the speech of the user, the processor **120** may increase an output amount of information of the content. If a designated sixth keyword is included, the processor **120** may decrease the output amount of information of the content.

TABLE 9

Designated keyword	Output scheme of content
First keyword: "quickly" "promptly" "immediately" and the like	Increase output speed of content
Second keyword: "slowly" "leisurely" and the like	Decrease output speed of content
Third keyword: "loudly" "aloud" and the like	Increase output volume level of content
Fourth keyword: "quietly" "softly" and the like	Decrease output volume level of content
Fifth keyword: "minutely" "deeply" and the like	Increase output amount of information of content
Sixth keyword: "briefly" "concisely" and the like	Decrease output amount of information of content

[0129] Table 9is an example in which the first to sixth keywords correspond to various content output schemes. Through the keywords as described above, a user who provides a voice input with respect to the electronic device **101** may be provided with corresponding content as sound with an output scheme according with the intention.

[0130] The correspondence between the first to sixth keywords and content output schemes, which is described in Table 9, may be, but is not limited to, an example. For example, the first to sixth keywords may include a variety of analogous terms in addition to the proposed keywords, and the output scheme may also be set in various ways. According to an embodiment of the present disclosure, the first to sixth keywords may be designated by a user in advance or may be automatically set through machine learning using pattern recognition. Furthermore, the first to sixth keywords may be implemented with a phrase or a sentence, but are not limited to a word.

[0131] In operation **707**, the electronic device **101** outputs the content corresponding to the received voice input as sound through the audio output module **152** based on the output scheme determined in operation **705**.

[0132] FIG. **8** is a flow chart illustrating a content providing method according to an embodiment of the present disclosure.

[0133] Referring to FIG. **8**, a content providing method according to an embodiment of the present disclosure may include operations **801** to **807**. For example, operations **801** to **807** may be performed by the electronic device **101** of FIG. **3**.

[0134] In operation **801**, the electronic device **101** receives a user's speech as a voice input through the audio input module **151**.

[0135] In operation **803**, the processor **120** of the electronic device **101** determines an emotional status of the user by analyzing the voice input received in operation **801**. There may be various methods for determining an emotional status by analyzing the voice input.

[0136] For example, an emotional status of a user may be determined by applying a support vector machine (SVM) pattern classifier to a characteristic vector based on characteristics (e.g., energy, formant, tempo, duration, frequency jitter, amplitude shimmer, and the like) extracted from a voice input signal. Generally, the emotional status may be classified into six kinds of emotions, that is, angry, bored, happy, neutral, sad, and surprised.

[0137] In addition to the above-described emotions, an emotional status of a user may be determined according to at least one of a speech rate of a user's speech, a volume of the speech, and a keyword included in the speech. For example, if a speech rate of a user's speech becomes greater than a specific speech rate and if a volume of the speech becomes greater than a specific volume, the processor **120** may determine an emotional status of the user as an "excited" state. The emotional status may be automatically set through machine learning using pattern recognition. For example, in determining a state of "excited" or "non-excited (normal)", the specific speech rate of the speech and/or the specific volume of the speech may be automatically set through a data history accumulated over a period of time.

[0138] In operation **805**, the processor **120** of the electronic device **101** determines an output scheme of content based on the emotional status of the user determined in operation **803**. For example, the processor **120** may adjust an output speed, an output volume level, or an output amount of information of the most appropriate content in response to the emotional status of the user determined in operation **803**.

[0139] In operation **807**, the electronic device **101** outputs the content corresponding to the received voice input as sound through the audio output module **152** based on the output scheme determined in operation **805**.

[0140] Even though respective operations described in FIGS. **4** to **8** are independently described, according to embodiments of the present disclosure, a portion of or all the operations may be combined in various ways and may be performed at the same time or at a different time. As such, the electronic device **101** may provide corresponding content in an output scheme that is most appropriate for a condition of a user who performs a voice input.

[0141] According to an embodiment of the present disclosure, it may be possible to effectively provide content corresponding to a voice input by analyzing the voice input of a speech made by the user. Besides, a variety of effects directly or indirectly understood through the present disclosure may be provided.

[0142] FIG. **9** is a block diagram of an electronic device according to an embodiment of the present disclosure.

[0143] Referring to FIG. **9**, an electronic device **901** may include, for example, all or a part of an electronic device **901** illustrated in FIG. **9**. All or a part of the electronic device **901** may be included in the electronic device **100** illustrated in FIG. **1***a*, FIG. **1***b*, or FIG. **2**, or the smartphone **201**. Also, all or a part of the electronic device **901** may be included in the electronic device **101**.

[0144] The electronic device **901** includes one or more processors (e.g., an AP) **910**, a communication module **920**, a subscriber identification module **924**, a memory **930**, a sensor module **940**, an input device **950**, a display module **960**, an interface **970**, an audio module **980**, a camera

module **991**, a power management module **995**, a battery **996**, an indicator **997**, and a motor **998**.

[0145] The processor **910** may drive an operating system (OS) or an application to control a plurality of hardware or software components connected to the processor **910** and may process and compute a variety of data. The processor **910** may be implemented with a System on Chip (SoC), for example. According to an embodiment of the present disclosure, the processor **910** may further include a graphic processing unit (GPU) and/or an image signal processor. The processor **910** may include at least a part (e.g., a cellular module **921**) of components illustrated in FIG. **9**. The processor **910** may load and process an instruction or data, which is received from at least one of other components (e.g., a nonvolatile memory), and may store a variety of data at a nonvolatile memory.

[0146] The communication module **920** may be configured the same as or similar to a communication interface **970** of FIG. **9**. The communication module **920** includes a cellular module **921**, a Wi-Fi module **923**, a Bluetooth (BT) module **925**, a GNSS module **927** (e.g., a GPS module, a Glonass module, a Beidou module, or a Galileo module), a near field communication (NFC) module **928**, and a radio frequency (RF) module **929**.

[0147] The cellular module **921** may provide voice communication, video communication, a character service, an Internet service, or the like through a communication network. According to an embodiment of the present disclosure, the cellular module **921** may perform discrimination and authentication of the electronic device **901** within a communication network using the subscriber identification module **924** (e.g., a SIM card), for example. The cellular module **921** may perform at least a part of functions that the processor **910** provides. The cellular module **921** may include a communication processor (CP).

[0148] Each of the Wi-Fi module **923**, the BT module **925**, the GNSS module **927**, and the NFC module **928** may include a processor for processing data exchanged through a corresponding module, for example. According to an embodiment of the present disclosure, at least a part (e.g., two or more components) of the cellular module **921**, the Wi-Fi module **923**, the BT module **925**, the GPS module **927**, and the NFC module **928** may be included within one Integrated Circuit (IC) or an IC package.

[0149] The RF module **929** may transmit and receive data, for example, a communication signal (e.g., an RF signal). The RF module **929** may include a transceiver, a power amplifier module (PAM), a frequency filter, a low noise amplifier (LNA), an antenna, or the like. According to embodiments of the present disclosure, at least one of the cellular module **921**, the Wi-Fi module **923**, the BT module **925**, the GNSS module **927**, or the NFC module **928** may transmit and receive an RF signal through a separate RF module.

[0150] The subscriber identification module **924** may include unique identify information (e.g., integrated circuit card identifier (ICCID)) or subscriber information (e.g., integrated mobile subscriber identity (IMSI)).

[0151] The memory **930** (e.g., the memory **130** in FIG. **3**) includes an internal memory **932** and an external memory **934**. For example, the embedded memory **932** may include at least one of a volatile memory (e.g., a dynamic random access memory (DRAM), a static RAM (SRAM), or a synchronous DRAM (SDRAM)), a nonvolatile memory (e.g., a one-time programmable read only memory (OTPROM), a programmable ROM (PROM), an erasable and programmable ROM (EPROM), an electrically erasable and programmable ROM (EEPROM), a mask ROM, a flash ROM, a NAND flash memory, or a NOR flash memory), a hard drive, or a solid state drive (SSD).

[0152] The external memory **934** may further include a flash drive such as compact flash (CF), secure digital (SD), micro secure digital (Micro-SD), mini secure digital (Mini-SD), extreme digital (xD), a multimedia card (MMC), a memory stick, or the like. The external memory **934** may be functionally and/or physically connected to the electronic device **901** through various interfaces.

[0153] The sensor module **940** may measure, for example, a physical quantity or may detect an operation state of the electronic device **901**. The sensor module **940** may convert the measured or detected information to an electric signal. For example, the sensor module **940** may include at least one of a gesture sensor **940**A, a gyro sensor **940**B, a pressure sensor **940**C, a magnetic sensor **940**D, an acceleration sensor **940**E, a grip sensor **940**F, a proximity sensor **940**G, a red, green, blue (RGB) sensor **940**H, a living body sensor **9401**, a temperature/humidity sensor **940**J, an illuminance sensor **940**K, or an UV sensor **940**M. The sensor module **940** may further include, for example, an E-nose sensor, an electromyography sensor (EMG) sensor, an electroencephalogram (EEG) sensor, an electrocardiogram (ECG) sensor, a photoplethysmographic (PPG) sensor, an infrared (IR) sensor, an iris sensor, a fingerprint sensor, and the like. The sensor module **940** may further include a control circuit for controlling at least one or more sensors included therein. According to an embodiment of the present disclosure, the electronic device **901** may further include a processor which is a part of the processor **910** or independent of the processor **910** and is configured to control the sensor module **940**. The processor may control the sensor module **940** while the processor **910** remains at a sleep state.

[0154] The input device **950** includes a touch panel **952**, a (digital) pen sensor **954**, a key **956**, and an ultrasonic input unit **958**. The touch panel **952** may use at least one of capacitive, resistive, infrared and ultrasonic detecting methods. Also, the touch panel **952** may further include a control circuit. The touch panel **952** may further include a tactile layer to provide a tactile reaction to a user.

[0155] The (digital) pen sensor **954** may be, for example, a part of a touch panel or may include an additional sheet for recognition. The key **956** may include, for example, a physical button, an optical key, a keypad, and the like. The ultrasonic input device **958** may detect (or sense) an ultrasonic signal, which is generated from an input device, through a microphone **988** and may make sure of data corresponding to the detected ultrasonic signal.

[0156] The display **960** (e.g., a display **160** in FIG. **3**) includes a panel **962**, a hologram device **964**, and a projector **966**. The panel **962** may be configured to be the same as or similar to a display **160** illustrated in FIG. **3**. The panel **962** may be implemented to be flexible, transparent or wearable, for example. The panel **962** and the touch panel **952** may be integrated into a single module. The hologram device **964** may display a stereoscopic image in a space using a light interference phenomenon. The projector **966** may project light onto a screen so as to display an image. The screen may be arranged in the inside or the outside of the electronic device **901**. According to an embodiment of the present

disclosure, the display **960** may further include a control circuit for controlling the panel **962**, the hologram device **964**, or the projector **966**.

[0157] The interface **970** includes, for example, a high-definition multimedia interface (HDMI) **972**, a universal serial bus (USB) **974**, an optical interface **976**, and a D-subminiature (D-sub) **978**. The interface **970** may be included, for example, in the communication interface **970** illustrated in FIG. **9**. The interface **970** may include, for example, a mobile high definition link (MHL) interface, a SD card/multi-media card (MMC) interface, or an infrared data association (IrDA) standard interface.

[0158] The audio module **980** may convert a sound and an electric signal in dual directions. At least a part of the audio module **980** may be included, for example, in an input/output interface **950** illustrated in FIG. **9**. The audio module **980** may process, for example, sound information that is inputted or outputted through a speaker **982**, a receiver **984**, an earphone **986**, or the microphone **988**.

[0159] The camera module **991** for shooting a still image or a video may include, for example, at least one image sensor (e.g., a front sensor or a rear sensor), a lens, an image signal processor (ISP), or a flash (e.g., an LED or a xenon lamp).

[0160] The power management module **995** may manage, for example, power of the electronic device **901**. According to an embodiment of the present disclosure, a power management integrated circuit (PMIC), a charger IC, or a battery gauge may be included in the power management module **995**. The PMIC may have a wired charging method and/or a wireless charging method. The wireless charging method may include, for example, a magnetic resonance method, a magnetic induction method or an electromagnetic method and may further include an additional circuit, for example, a coil loop, a resonant circuit, or a rectifier, and the like. The battery gauge may measure, for example, a remaining capacity of the battery **996** and a voltage, current or temperature thereof while the battery is charged. The battery **996** may include, for example, a rechargeable battery and/or a solar battery.

[0161] The indicator **997** may display a specific state of the electronic device **901** or a part thereof (e.g., the processor **120** in FIG. **3**), such as a booting state, a message state, a charging state, and the like. The motor **998** may convert an electrical signal into a mechanical vibration and may generate the following effects: vibration, haptic, and the like. A processing device (e.g., a GPU) for supporting a mobile TV may be included in the electronic device **901**. The processing device for supporting a mobile TV may process media data according to the standards of digital multimedia broadcasting (DMB), digital video broadcasting (DVB), MediaFlo™, or the like.

[0162] Each of the above-described elements of electronic devices according to embodiments of the present disclosure may be configured with one or more components, and the names of the elements may be changed according to the type of the electronic device. Electronic devices according to embodiments of the present disclosure may include at least one of the above-mentioned elements, and some elements may be omitted or other additional elements may be added. Furthermore, some of the elements of electronic devices according to embodiments of the present disclosure may be combined with each other so as to form a single entity that performs the functions of the individual elements in the same manner as before the combination.

[0163] FIG. **10** is a block diagram illustrating a program module according to an embodiment of the present disclosure.

[0164] Referring to FIG, **10**, according to an embodiment of the present disclosure, a program module **1010** (e.g., a program **140** in FIG. **3**) may include an operating system (OS) to control resources associated with the electronic device **101** in FIG. **3**, and/or diverse applications (e.g., an application program **947**) driven on the OS. The OS may be, for example, Android™, iOS™, Windows™, Symbian™, Tizen™, or Bada™.

[0165] The program module **1010** may include a kernel **1020**, a middleware **1030**, an application programming interface (API) **1060**, and/or an application **1070**. At least a part of the program module **1010** may be preloaded on an electronic device or may be downloadable from the first external electronic device **102**, the second external electronic device **104**, a server **106** in FIG. **3**, and the like.

[0166] The kernel **1020** (e.g., a kernel **141** in FIG. **3**) includes, for example, a system resource manager **1021** or a device driver **1023**. The system resource manager **1021** may perform control, allocation, or retrieval of system resources. According to an embodiment of the present disclosure, the system resource manager **1021** may include a process managing part, a memory managing part, or a file system managing part. The device driver **1023** may include, for example, a display driver, a camera driver, a Bluetooth driver, a common memory driver, an USB driver, a keypad driver, a Wi-Fi driver, an audio driver, or an inter-process communication (IPC) driver.

[0167] The middleware **1030** may provide, for example, a function which the application **1070** needs in common, or may provide diverse functions to the application **1070** through the API **1060** to allow the application **1070** to efficiently use limited system resources of the electronic device. According to an embodiment of the present disclosure, the middleware **1030** (e.g., a middleware **43** in FIG. **3**) includes, for example, a runtime library **1035**, an application manager **1041**, a window manager **1042**, a multimedia manager **1043**, a resource manager **1044**, a power manager **1045**, a database manager **1046**, a package manager **1047**, a connectivity manager **1048**, a notification manager **1049**, a location manager **1050**, a graphic manager **1051**, and a security manager **1052**.

[0168] The runtime library **1035** may include, for example, a library module which is used by a compiler to add a new function through a programming language while the application **1070** is being executed. The runtime library **1035** may perform input/output management, memory management, or capacities about arithmetic functions.

[0169] The application manager **1041** may manage, for example, a life cycle of at least one application of the application **1070**. The window manager **1042** may manage a GUI resource which is used in a screen. The multimedia manager **1043** may identify a format necessary for playing diverse media files, and may perform encoding or decoding of media files by using a codec suitable for the format. The resource manager **1044** may manage resources such as a storage space, memory, or source code of at least one application of the application **1070**.

[0170] The power manager **1045** may operate, for example, with a basic input/output system (BIOS) to man-

age a battery or power, and may provide power information for an operation of an electronic device. The database manager **1046** may generate, search for, or modify database which is to be used in at least one application of the application **1070**. The package manager **1047** may install or update an application which is distributed in the form of package file.

[0171] The connectivity manager **1048** may manage, for example, wireless connection such as Wi-Fi or Bluetooth. The notification manager **1049** may display or notify an event such as arrival message, promise, or proximity notification in a mode that does not disturb a user. The location manager **1050** may manage location information of an electronic device. The graphic manager **1051** may manage a graphic effect that is provided to a user, or manage a user interface relevant thereto. The security manager **1052** may provide a general security function necessary for system security or user authentication. According to an embodiment of the present disclosure, when an electronic device **101** includes a telephony function, the middleware **1030** may further includes a telephony manager for managing a voice or video call function of the electronic device.

[0172] The middleware **1030** may include a middleware module that combines diverse functions of the above-described components. The middleware **1030** may provide a module specialized to each OS kind to provide differentiated functions. Additionally, the middleware **1030** may remove a part of the preexisting components, dynamically, or may add a new component thereto.

[0173] The API **1060** (e.g., the API **145** in FIG. **3**) may be, for example, a set of programming functions and may be provided with a configuration which is variable depending on an OS. For example, when an OS operating in a device is Android™ or iOS™, it may be permissible to provide one API set per platform. When an OS operating in a device is Tizen™, it may be permissible to provide two or more API sets per platform.

[0174] The application **1070** (e.g., the application program **147** in FIG. **3**) may include, for example, one or more applications capable of providing functions for a home **1071**, a dialer **1072**, an SMS/MMS **1073**, an instant message (IM) **1074**, a browser **1075**, a camera **1076**, an alarm **1077**, a contact **1078**, a voice dial **1079**, an e-mail **1080**, a calendar **1081**, a media player **1082**, am album **1083**, and a timepiece **1084**, or for offering health care (e.g., measuring an amount of exercise or blood sugar level) or environment information (e.g., atmospheric pressure, humidity, or temperature).

[0175] According to an embodiment of the present disclosure, the application **1070** may include an information exchanging application to support information exchange between the electronic device **101** and the first external electronic device **102**, or the second external electronic device **104**. The information exchanging application may include, for example, a notification relay application for transmitting specific information to the external electronic device, or a device management application for managing the external electronic device.

[0176] For example, the information exchanging application may include a function of transmitting notification information, which arise from other applications (e.g., applications for SMS/MMS, e-mail, health care, or environmental information), to the first external electronic device **102** or the second external electronic device **104**. Additionally, the information exchanging application may receive, for example, notification information from an external electronic device and provide the notification information to a user.

[0177] The device management application may manage (e.g., install, delete, or update), for example, at least one function (e.g., turn-on/turn-off of an external electronic device itself (or a part of components) or adjustment of brightness (or resolution) of a display) of the first external electronic device **102** or the second external electronic device **104**, which communicates with the electronic device, an application running in the external electronic device, or a service (e.g., a call service, a message service, or the like) provided from the external electronic device.

[0178] According to an embodiment of the present disclosure, the application **1070** may include an application (e.g., a health care application) which is assigned in accordance with an attribute (e.g., an attribute of a mobile medical device as a kind of electronic device) of the first external electronic device **102** or the second external electronic device **104**. The application **1070** may include an application which is received from the server **106**, the first external electronic device **102**, or the second external electronic device **104**. The application **1070** may include a preloaded application or a third party application which is downloadable from a server. The component titles of the program module **1010** according to the embodiment of the present disclosure may be modifiable depending on kinds of OSs.

[0179] According to an embodiment of the present disclosure, at least a part of the program module **1010** may be implemented by software, firmware, hardware, or a combination of two or more thereof. At least a part of the program module **1010** may be implemented (e.g., executed), for example, by the processor **910**. At least a part of the program module **1010** may include, for example, modules, programs, routines, sets of instructions, or processes, or the like for performing one or more functions.

[0180] The term "module", as used herein, may represent, for example, a unit including one or more combinations of hardware, software and firmware. The term "module" may be used interchangeably with the terms "unit", "logic", "logical block", "component" and "circuit". A module may be a minimum unit of an integrated component or may be a part thereof. A module may be a minimum unit for performing one or more functions or a part thereof. A module may be implemented mechanically or electronically. For example, a module may include at least one of an application-specific IC (ASIC) chip, a field-programmable gate array (FPGA), and a programmable-logic device for performing some operations, which are known or will be developed.

[0181] At least a part of an apparatus (e.g., modules or functions thereof) or a method (e.g., operations) according to embodiments of the present disclosure may be, for example, implemented by instructions stored in a computer-readable storage media in the form of a program module. The instruction, when executed by one or more processors (e.g., a processor **120** in FIG. **3**), may cause the one or more processors to perform a function corresponding to the instruction. The computer-readable storage media, for example, may be the memory **130** in FIG. **3**.

[0182] A computer-readable recording medium may include a hard disk, a magnetic media, a floppy disk, a magnetic media (e.g., a magnetic tape), an optical media (e.g., a compact disc read only memory (CD-ROM) and a

digital versatile disc (DVD), a magneto-optical media (e.g., a floptical disk), and hardware devices (e.g., a read only memory (ROM), a random access memory (RAM), or a flash memory). Also, the program instructions may include not only a mechanical code such as things generated by a compiler but also a high-level language code executable on a computer using an interpreter. The above hardware unit may be configured to operate via one or more software modules for performing an operation of the present disclosure, and vice versa.

[0183] A module or a program module according to embodiments of the present disclosure may include at least one of the above elements, or a part of the above elements may be omitted, or additional other elements may be further included. Operations performed by a module, a program module, or other elements according to embodiments of the present disclosure may be executed sequentially, in parallel, repeatedly, or in a heuristic method. Also, some operations or portions of operations may be executed in different sequences, omitted, or other operations may be added.

[0184] While the present disclosure has been shown and described with reference to certain embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the present disclosure as defined by the appended claims and their equivalents.

What is claimed is:

1. An electronic device comprising:

an audio input module configured to receive a speech of a user as a voice input;

an audio output module configured to output content corresponding to the voice input; and

a processor configured to determine an output scheme of the content based on at least one of a speech rate of the speech, a volume of the speech, and a keyword included in the speech, which is obtained from an analysis of the voice input.

2. The electronic device of claim **1**, wherein the processor is further configured to determine a rate of movement of the user based on the volume of the speech and to adjust an output volume level of the content based on the rate of movement of the user.

3. The electronic device of claim **1**, wherein the processor is further configured to determine a rate of movement of the user based on the volume of the speech and to adjust an output speed of the content based on the rate of movement of the user.

4. The electronic device of claim **1**, wherein the processor is further configured to determine a rate of movement of the user based on the volume of the speech and to adjust an output amount of information of the content based on the rate of movement of the user.

5. The electronic device of claim **2**, further comprising:

a distance detection module configured to compute a distance between the user and the electronic device,

wherein the processor is further configured to determine the rate of movement of the user based on the volume of the speech and a fluctuation of the computed distance.

6. The electronic device of claim **1**, wherein the processor is further configured to determine a distance between the user and the electronic device based on the volume of the speech and to adjust an output volume level of the content based on the distance between the user and the electronic device.

7. The electronic device of claim **1**, wherein the processor is further configured to determine a distance between the user and the electronic device based on the volume of the speech and to adjust an output speed of the content based on the distance between the user and the electronic device.

8. The electronic device of claim **1**, wherein the processor is further configured to determine a distance between the user and the electronic device based on the volume of the speech and to adjust an output amount of information of the content based on the distance between the user and the electronic device.

9. The electronic device of claim **6**, further comprising:

a distance detection module configured to compute the distance between the user and the electronic device,

wherein the processor is further configured to determine the distance between the user and the electronic device based on the volume of the speech and the computed distance.

10. The electronic device of claim **1**, wherein the processor is configured to adjust an output speed of the content based on the speech rate of the speech.

11. The electronic device of claim **1**, wherein the processor is configured to adjust an output amount of information of the content based on the speech rate of the speech.

12. The electronic device of claim **11**, wherein the processor is further configured to adjust the output amount of information by extracting and reconfiguring a portion of the content.

13. The electronic device of claim **1**, wherein if a designated keyword is included in the speech, the processor is configured to adjust an output speed of the content, an output volume level of the content, or an output amount of information of the content.

14. The electronic device of claim **1**, wherein the processor is further configured to further determine an emotional status of the user through the analysis of the voice input and to determine the output scheme of the content based on the emotional status of the user.

15. A content providing method of an electronic device, the method comprising:

receiving a speech of a user as a voice input;

determining an output scheme of content based on at least one of a speech rate of the speech, a volume of the speech, and a keyword included in the speech, which is obtained from an analysis of the voice input; and

outputting the content corresponding to the voice input based on the determined output scheme.

16. The method of claim **15**, wherein determining the output scheme comprises:

determining a rate of movement of the user based on the volume of the speech; and

adjusting at least one of an output volume level of the content, an output speed of the content, or an output amount of information of the content based on the rate of movement of the user.

17. The method of claim **15**, wherein determining the output scheme comprises:

determining a distance between the user and the electronic device based on the volume of the speech; and

adjusting at least one of an output volume level of the content, an output speed of the content, or an output

amount of information of the content based on the distance between the user and the electronic device.

18. The method of claim **15**, wherein determining the output scheme comprises:

adjusting an output speed of the content or an output amount of information of the content based on the speech rate of the speech.

19. The method of claim **15**, wherein if a designated keyword is included in the speech, the determining of the output scheme comprises:

adjusting an output speed of the content, an output volume level of the content, or an output amount of information of the content.

20. A non-transitory computer-readable recording medium having recorded thereon instruction, the instruction, which is executed by at least one processor, causing the at least one processor to:

obtain a speech of a user as a voice input;

determine an output scheme of content based on at least one of a speech rate of the speech, a volume of the speech, and a keyword included in the speech, which is obtained from an analysis of the voice input; and

output the content corresponding to the voice input based on the determined output scheme.

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