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**AN ARTIFICIAL INTELLIGENCE BASED SYSTEM FOR MEDICINE DISPENSING**

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**ABSTRACT**

**AN ARTIFICIAL INTELLIGENCE BASED SYSTEM FOR  
MEDICINE DISPENSING**

The present invention relates to an artificial intelligence based system for medicine dispensing which reminds and inform the user to regularly take appropriate medicines on time and the proposed system comprises of user control unit (106), Raspberry pi kit (108), buzzer (105) and android application (109). As a reminder system blow the alarm in system box as well as on caretaker mobile. The proposed system makes the medicine dispensing easier and convenient for the patients who and his/ her caretaker are illiterate. Herein WI-FI module (111) is additional adapted which connect the system wirelessly through adaptive configuration to caretaker mobile phone. Following invention described in detail with the help of figure 1 of sheet 1 which shows a schematic diagram of the invented device.

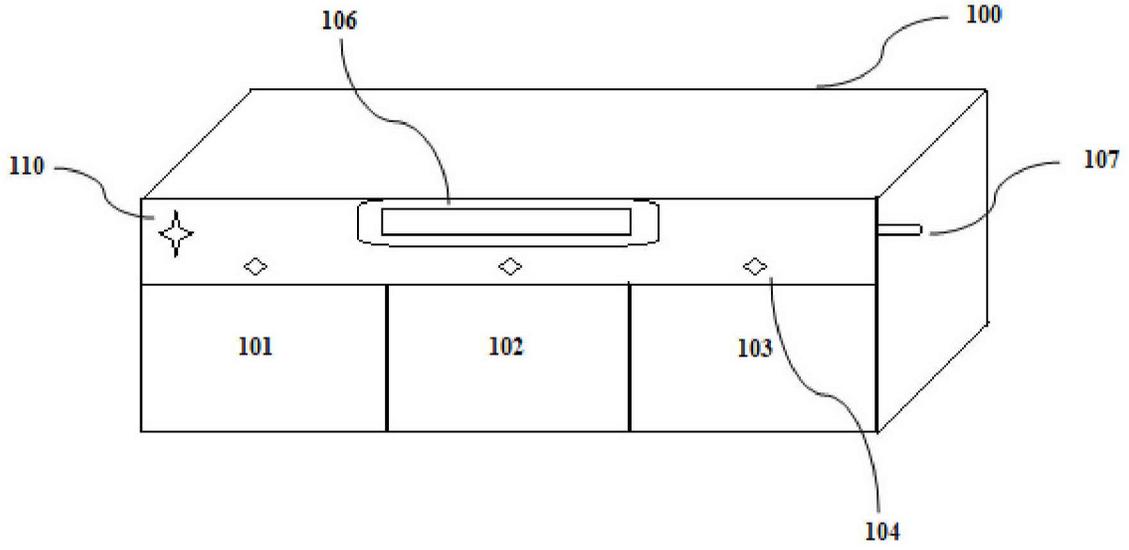


Figure 1

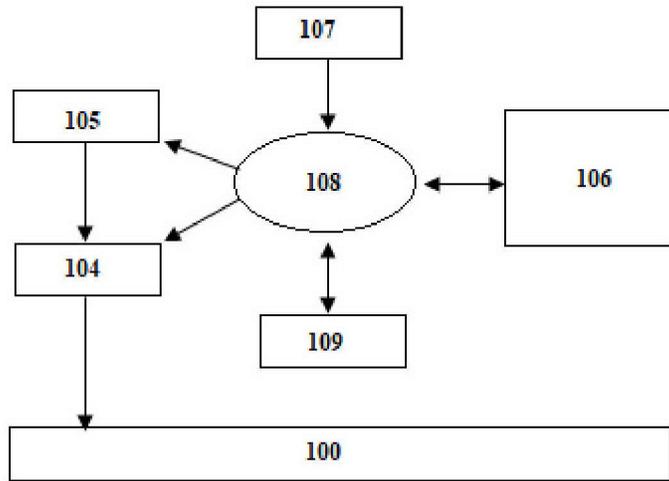


Figure 2

**AN ARTIFICIAL INTELLIGENCE BASED SYSTEM FOR**  
**MEDICINE DISPENSING**

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5 **Technical field of invention:**

[001] The present invention in general relates to the field of healthcare management. The proposed invention helps the patient to take their medicines on proper time by reminding them at that particular time.

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**Background of the invention:**

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[002] Of all the reasons for noncompliance, forgetfulness is the most common. A patient will typically try to remember times at which medications are to be taken. This mental calculation technique often works poorly. Even if the correct times are remembered, they are often missed. Poor vision has been identified as another significant factor leading to noncompliance. Patients who are unable to read the labels affixed to medication containers find it extremely difficult to follow a medication program. Physical impairments, such as arthritis, which make it difficult for patients to open medication containers, are yet another factor contributing to noncompliance.

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[003] Although the factors identified above affect people of all ages, noncompliance is particularly prevalent among the elderly. As more members of population achieve older ages, debilitating physical impairments and chronic mental disorders are becoming increasingly common. These elderly people are often on a rigorous medication program.

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[004] The use of daily medication is increasingly common today, particularly among the elderly. While some elderly patients are in nursing homes or are being attended by health care professionals, many others care for themselves. Those individuals must be careful to take the proper dosage of the correct medication at the appropriate time each day. This can be a difficult task for patients suffering memory loss and for those taking several different medications at various times throughout the day. Some patents can have trouble remembering and dealing with several different medications requiring different doses at different times and frequencies, and mistakes can lead to potential life threatening circumstances such as overdosing, under dosing

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or improper dosage combinations. The resulting loss of peace of mind and anxiety to both the elderly and their families and friends is tremendous.

5 [005] Numerous devices have been developed for automatically dispensing pills and medication at timed intervals. These devices range from simple machines, in which a timer controls rotation of a pill dispenser causing the dispensing of a pill at a pre-programmed time regardless of any action or confirmation of the patient, to complex machines that are controlled by a microprocessor and have the ability to remotely notify a physician or caregiver if the patient fails to take one of the dispensed medications.

0 [006] Although along with these many attempts are made for developing a sustainable system for automatic dispensing of medicine at given time interval and the existing systems are such as- US20090281657A1 discloses automatic medication reminder and dispensing device, system , and method therefor, US20170242977A1 discloses systems and methods for dispensing 5 prescription medication using a medication dispensing machine, US20060215495A1 discloses automated programmable medication reminder and dispensing system,US4695954A discloses modular medication dispensing system and apparatus utilizing portable memory device, US8552868B1 discloses systems, methods, and software for automated medication dispensing and compliance, US5502944A discloses medication dispenser system, US20140277702A1 10 discloses pill dispensing system and apparatus, WO2014008638A1 discloses pillbox, medication management system and medication dispensing system, US20060124655A1 discloses smart medicine container, US20130134180A1 discloses digital pill dispenser which vibrates and illuminates to remind the user to take their pills or medicine in regular intervals, US20060184271A1 discloses cartridge-loaded automatic prescription pill dispensing system 25 and dispensing unit and cartridge for use therein.

[007] Although useful, these devices have their drawbacks. Also some of the existing systems are inconvenient to use and complicated. Therefore there is need to develop and design an improved and efficient system for medicine dispenser which should remind and inform the user 30 to take appropriate medicine at regular time interval. Hence the present invention provides an artificial intelligence based system for medicine dispensing.

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**Summary of the invention:**

5 [008] Accordingly following invention provides an artificial intelligence based system for medicine dispensing. The preferred embodiment of present invention comprises of three rectangular shape compartments (101, 102 and 103).

0 [009] Further an objective of the present invention is to attempt to overcome the problems of the prior art and provide an efficient and cost effective an artificial intelligence based system for medicine dispensing.

[0010] In a preferred embodiment, the present invention provides an artificially intelligent system which helps the patient to take their medicines on proper time by reminding them at that particular time.

5 [0011] All three compartments are marked as morning (101), noon (102) and night (103) respectively and each compartment provided with LED's (104) and Buzzer (105) which is configured with pill box for indication to user.

10 [0012] Herein the system a Raspberry pi kit (108) based on a chip (SoC) including ARM compatible CPU with a speed ranging from 700 MHz to 1.2 GHz is adapted for functioning; and additionally a user control unit (106) comprises of touch display adapted to provide inputs to system architecture and to make setting according to the requirement.

25 [0013] The system sends the notification through the mobile application (109). In the notification module, a notification is send to the caretaker regarding the intake of the medicine.

**Brief Description of Drawings:**

30 [0014] Specific embodiments of the present invention will now be described, by way of example only, and with reference to the accompanying drawings in which:

[0015] Figure 1 of sheet 1 shows a schematic diagram of the present invention.

[0016] Figure 2 of sheet 1 shows system flow chart of proposed system.

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**Detailed description of the invention:**

5 [0017] While the invention has been described and illustrated with reference to certain particular embodiments thereof, those skilled in the art will appreciate that various adaptations, changes, modifications, substitutions, deletions, or additions of procedures and protocols may be made without departing from the spirit and scope of the invention.

0 [0018] The proposed system (100) consists of three rectangular shape compartments (101, 102 and 103), and the proposed invention can be used easily for their medicine dispensing purpose. Here in the medicine are placed into the pill box which contains raspberry pi kit (108), it will be updated and data will be stored in the database.

5 [0019] Herein said Raspberry pi kit (108) is based on a chip (SoC) including ARM compatible CPU with a speed ranging from 700 MHz to 1.2 GHz.

10 [0020] All three compartments are marked as morning (101), noon (102) and night (103) respectively and each compartment provided with LED's (104) and Buzzer (105). The system will indicate patient to take medicine and it will glow light (104) by buzzer (105) for fix period of time herein the buzzer (105) will continue until the patient takes medicine and presses off button (110).

[0021] In the preferred embodiment power supply (107) is provided for making the system (100) operable in all conditions.

25 [0022] The preferred embodiment of present invention comprises of raspberry pi kit (108), user control unit (106), display unit, LED (104), buzzer (105) and WI-FI module. The user control unit (106) comprises of touch display through user can provide inputs to system architecture and make setting according to the requirement.

30 [0023] Further an android based application (109) has been developed on which user have to register for the proposed system before using it.

[0024] Herein the system, initially the caretaker needs to fill the medicine in medicine box (101, 102 and 103) and sets time for medication. Thereafter system (100) will remind the patient via

Buzzer (105) and to care taker through notification on this mobile phone.

[0025] Once patient takes medicine system will notify the caretaker. Also will send notification to the caretaker when count of medicines is equal to threshold value.

[0026] Also in the proposed working system the caretaker can also set the medication alert to take the medicine using the mobile application (109). The caretaker has the option for setting a stock alert when the quantity reaches a particular predefined minimum level. A notification message will be sent to the mobile application (109). After receiving the notification caretaker can refill the medicine. The user will get the medicine type, quantity of medicine left in the stock as the stock alert.

[0027] As the system is alarm based, a buzzer (105) is attached to pill box which helps in alerting the patients. This buzzer (105) starts ringing as per the time which is set by the caretaker through the mobile application (109) for the particular medicine as prescribed by the doctor.

[0028] When the buzzer (105) starts ringing the patient gets to know that it is now time to take medicine. The ringing of the buzzer (105) turned off when the patient presses the button (110) from the medicine box (100) after taking the particular medicine.

[0029] The system sends the notification through the mobile application (109). In the notification module, a notification is send to the caretaker regarding the intake of the medicine. As the patient has his/her medicine the notification message is sent to the caretaker on the mobile application (109). The notification is sent when the patient presses the button from the medicine box when the buzzer (105) goes on.

[0030] Another notification is regarding the quantity or count of the medicines left in the medicine box. As the patient takes the medicine and presses the button (110) the count of medicine is decremented in the database.

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# Editorial Note

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There are only two pages of Claim

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**THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:**

1. An artificial intelligence based system for medicine dispensing comprises of;  
  
a pill box contains raspberry pi kit (108) in which machines are placed,  
  
a user control unit (106) consists of touch display through user can provide inputs to system architecture  
  
an adaptive configuration (109) implemented on which user have to register for using said system (100) through which caretaker can also set the medication alert to take the medicine;  
  
and a LED's (104) and Buzzer (105) is adapted for providing indication and notification to the user;  
  
wherein initially the caretaker needs to fill the medicine in medicine box and sets time for medication; thereafter system (100) will remind patient via the LED and the Buzzer (105) and to care taker through notification on this mobile phone.
2. The artificial intelligence based system for medicine dispensing as claimed in claim 1 wherein said Raspberry pi kit (108) is based on a chip (SoC) including ARM compatible CPU with a speed ranging from 700 MHz to 1.2 GHz.
3. The artificial intelligence based system for medicine dispensing as claimed in claim 1 wherein said pill box divided in three compartments, are marked as morning (101), noon (102) and night (103) respectively and each compartment provided with LED's (104) and Buzzer (105).
4. The system will indicate patient to take medicine and it will glow light (104) by buzzer (105) for fix period of time herein the buzzer (105) will continue until the patient takes medicine and presses off button (110).

5. The artificial intelligence based system for medicine dispensing as claimed in claim 1 wherein power supply (107) is provided for making the system (100) operable in all conditions.

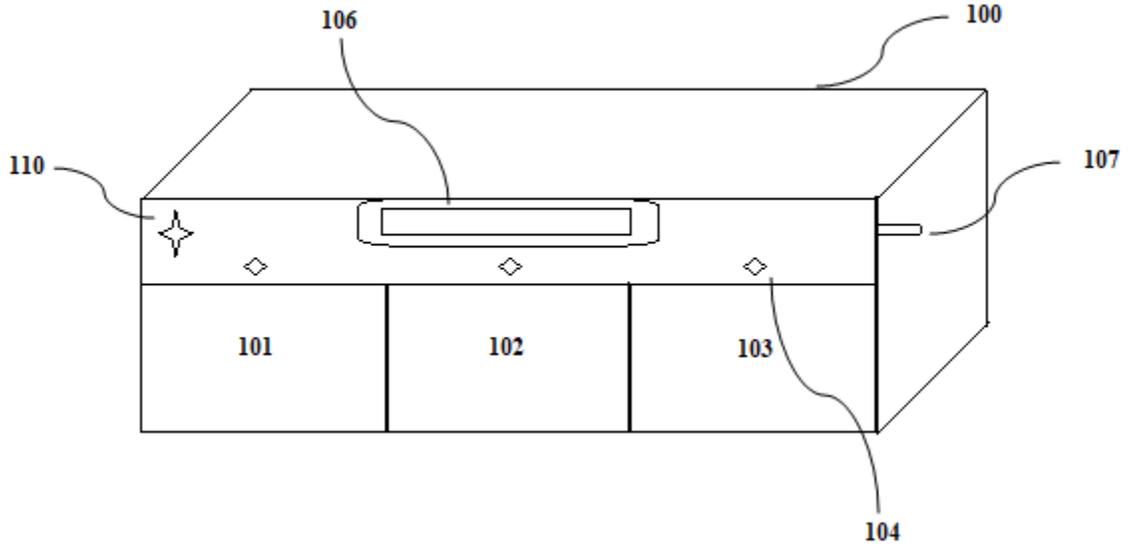


Figure 1

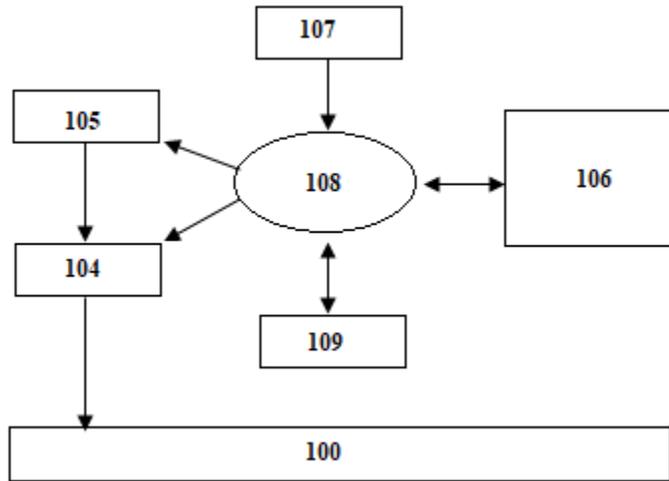


Figure 2