



# SMART MEDICINE BOX

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**Abstract:** Smart medicine box is an innovative technology that combines traditional medication storage with advanced features such as reminders, automatic pill dispenses, etc. These smart medicines box is a new invention in the field of medical department. This Smart medicine box enhance medication management. These smart medicines boxes help patients to improve their health by taking medicines on time with proper dosage.

**Keywords:** smart medicine box, automatic pill dispense, reminders.

## I. INTRODUCTION

Our smart medicine box is a creative application of two basic circuits. We design our smart medicine in such a way that it will give reminder to the patient and dispense pill automatically. We use Arduino Uno as a microcontroller in our project and stepper motor to rotate the disc. Our smart medicine box is in the cylindrical shape divided in to three sections and each section is divided in to seven sub sections.

## II. NEED OF THE PROPOSED WORK

According to a study, Half of the population forget to take their medicines which is prescribed by the doctor. If they set an alarm on their androids then they set a reminder for taking medicines but then the question arises about the right dosage. These problems can't be resolved by market ordinary pill box. Generally, pill box available in the market has only section or sub sections. from those sections and sub sections it is hard to find right dosage for old age people.

## III. METHODOLOGY

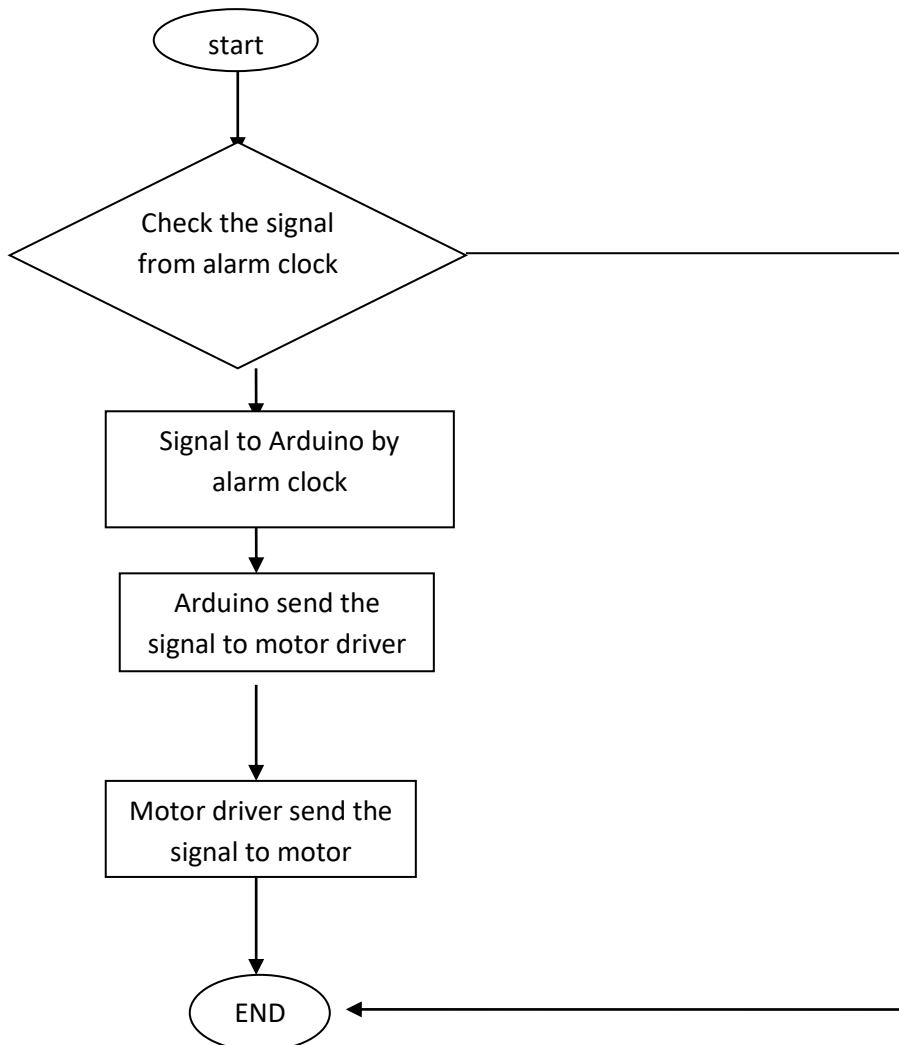
In our smart medicine box, we form a cylindrical shape as a base and our circuit has majorly two circuits one is digital alarm clock and other one is a connection of three stepper motor with Arduino which dispense pill automatically. Our smart medicine box is a cylindrical shape box divided into three sections with respect to morning, afternoon and evening. These three sections are divided into eight sections one is used as a initial point and rest are used for week days.



Figure: Smart Medicine Box



**Flow Chart:**



As you can see in this flow chart when power supply is given to the smart medicine box it first go to the Arduino uno and check the clock. It will check the time set by user and when time occur then clock send a signal in the form of sound to the patient as reminder and motor driver send the signal to motor by which motor starts rotating. Third rotation of motor results into automatic pill dispense.

**Block Diagram:**

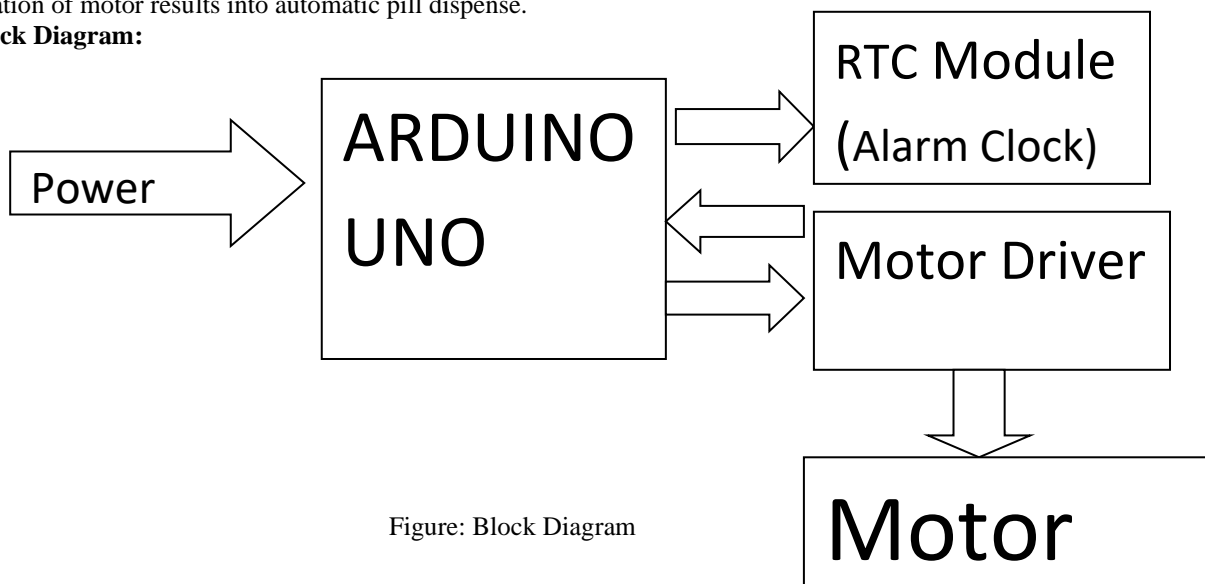


Figure: Block Diagram



As you can see in this block diagram, we use an Arduino UNO as a microcontroller. It controls each and every function of our smart medicine box. When signal is received by Arduino from digital alarm then a signal sends to the motor driver. We use ULN motor driver here for stepper motors. When current is received by motor driver then it will forward to motor. When motor receives signal then it will start their rotation. When rotation starts then the respective disc will start its rotation. This will result in to automatic pill dispense. This result can be use in hospitals by nurses to give proper dosage to a patient.

#### Future work:

1. Emergency button for a medical emergency.
2. Weight sensor is required to make a record of medicines taken.
3. We can add a small first aid kit to this box to check BP, diabetes etc.
4. We can add a speaker to it to say in words that what you have to actually do.
5. We can add or create a smart AI for checking the expiry of a medicine. So, that our patients never take expire medicines.

#### Applications:

1. You can't miss your right dosage.
2. You can't miss your medicines because of forgetting the time of medicines.
3. It is very helpful for nurses, old age patients and a person who is suffering from Alzheimer.
4. You can use this box in hospital for nurses.
5. You Can secure your medicines from children.

#### Limitation:

1. Seven days medicines can be store you can't store medicine for more than seven days
2. It can be limited to only morning, afternoon and evening.
4. If one motor is stop working then there is no backup for that section.
5. You can't hear in words what is the reminder is actually

## IV. RESULTS AND DISCUSSION

This proposed system results into two major functions one is reminder and other one is automatic pill dispense. This will help patients to take their medicine on time and with the right dosage. There are no. of features can be added in this smart medicine box in future like monitoring the medicines are taken or not, an emergency button which can call you or someone who can help patient . This will not help only old age people but also for nurses or doctors. In future you can add a no. of features. This a very useful project or u can say a concept for helping our elder one and because of the age factor their functions stop working and they are unable to get hundred percent output from their body.

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