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MICROCONTROLLER-BASED IOT DESIGN FOR SMART MEDICINE APPLICATIONS

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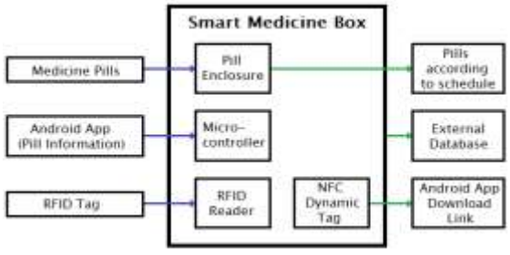
PROJECT DESCRIPTION

- Non-adherence to medication of people with dosing regimens has been rapidly increasing which may lead for chronic diseases to even progress
- With the Smart Medicine Box, it will provide users and/or patients for an automated method of organizing, monitoring, and taking up prescribed medicines at a scheduled time of intake

TECHNICAL CONTENT / BILL OF MATERIAL



Components		Price (USD)
STM32 Microcontroller	**NUCLEO-F401RE**	N/A
Wi-Fi Module	**X-NUCLEO-IDW01M1**	N/A
Dynamic NFC Tag	**X-NUCLEO-NFC01A1**	N/A
Arduino Board *	Gizduino X ATmega1281 2.0	12.00
Bluetooth Module*	HC-06	7.00
RFID Reader & Tag *	RFID-RC522	8.50
Stepper Motor		5.00
Wires, Cables, Buzzer, LEDs		6.50
Housing Assembly		53.00 *

**** Prototype version co-developed with students of FAITH College of Engineering***

PROJECT POTENTIAL BUSINESS

SMART MEDICAL DISPENSER

- Simple but efficient way of automating the medicine intake, at a much cheaper cost
- Features an NFC dynamic tag to easily connect to the device, a Wi-Fi module for internet connection, and RFID tag for additional user security

**** Prototype version co-developed with students of FAITH College of Engineering***

PROJECT USEFULNESS

- Project is intended for the benefit of people with chronic illnesses who are in need for continuous medical treatment as well as for the elderlies having troubles remembering to take their medications on time
- Project offers them another technological alternative to the other existing products at a much cheaper cost
- This will help them take their medications on time as it has a built in alarm buzzer to notify the users. The dispensing mechanism is simplified to an even rotation to ensure that the medicines would be free from any damage or breaking

CHALLENGES OVERCOME

- Since the team was new to the the STM32 platform and to the cloud platform, we took time in figuring out using it
- For the hardware, we took a while in finding a container that will house all the parts. The stepper motor also had to be accurate in rotation, so the division of the compartment was carefully mad