



Document History

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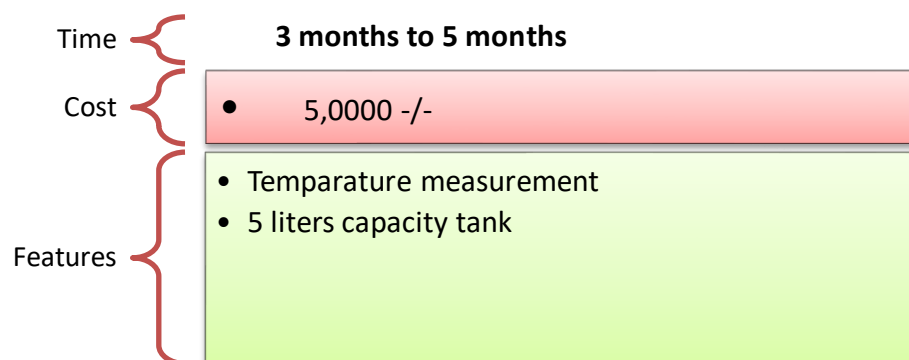
Case Study of Smart Sanitizer Dispenser

1. Requirements:

i. Empathize Research:

Smart sanitizer dispenser with Temperature checking device by hospital staff Maintaining hand hygiene is a simple and effective way to prevent infections. A smart sanitizer dispenser used by hand sanitizing for hospital staff is the best method to improve hand hygiene. Staff tends to improve hand hygiene when they are aware of hand sanitizing. The Smart sanitizer Dispenser is a simple and cost-effective device to display the temperature of the hospital staff before and after Entering the patient room. To create a safe working environment for hospital staff.

Analysis:



ii. High-Level Requirement:

ID	Description
HR01	Sanitizing
HR02	Temperature checking

iii. Low-Level Requirement:

ID	Description	Data sheet
LR01	Thermal Sensor data	Link
LR02	Ultra-sonic signal	Link
LR03	Sanitizer liquid Tank	Link
LR04	Motor Pump	Link

iv. SWOT Analysis:

Strengths :

1. portable sanitisation device
2. Temperature display
3. 5 liters of capacity
4. cost efficient

weaknesses :

1. space occupied
2. 5V power supply required

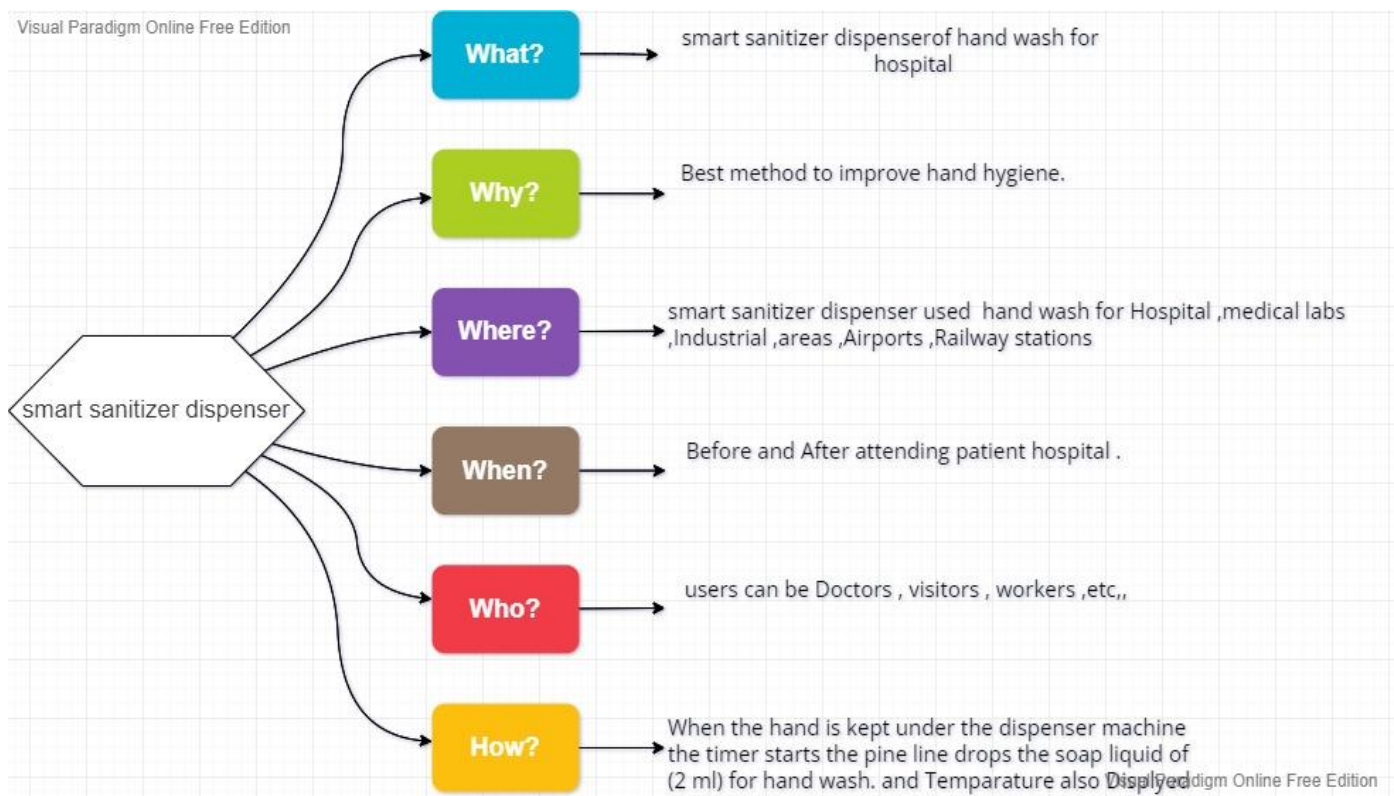
Opportunities :

1. Hospitals , medical lab staff
2. Shopping mall
4. Industrial Purpose ,
5. commercial purpose
6. Airports

Threats:

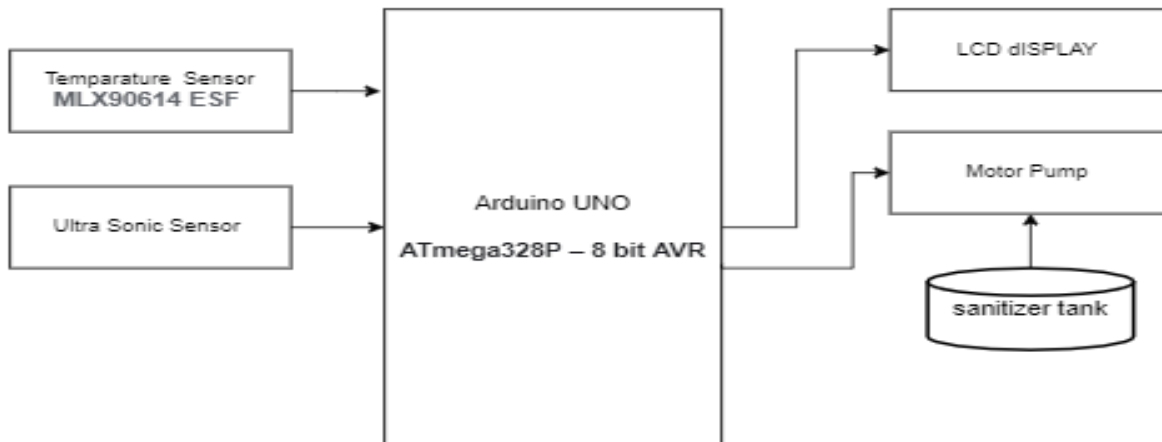
1. minimum range of a Requirement
2. tough competition
3. slow stock clearance sale

v. 5W 1H:

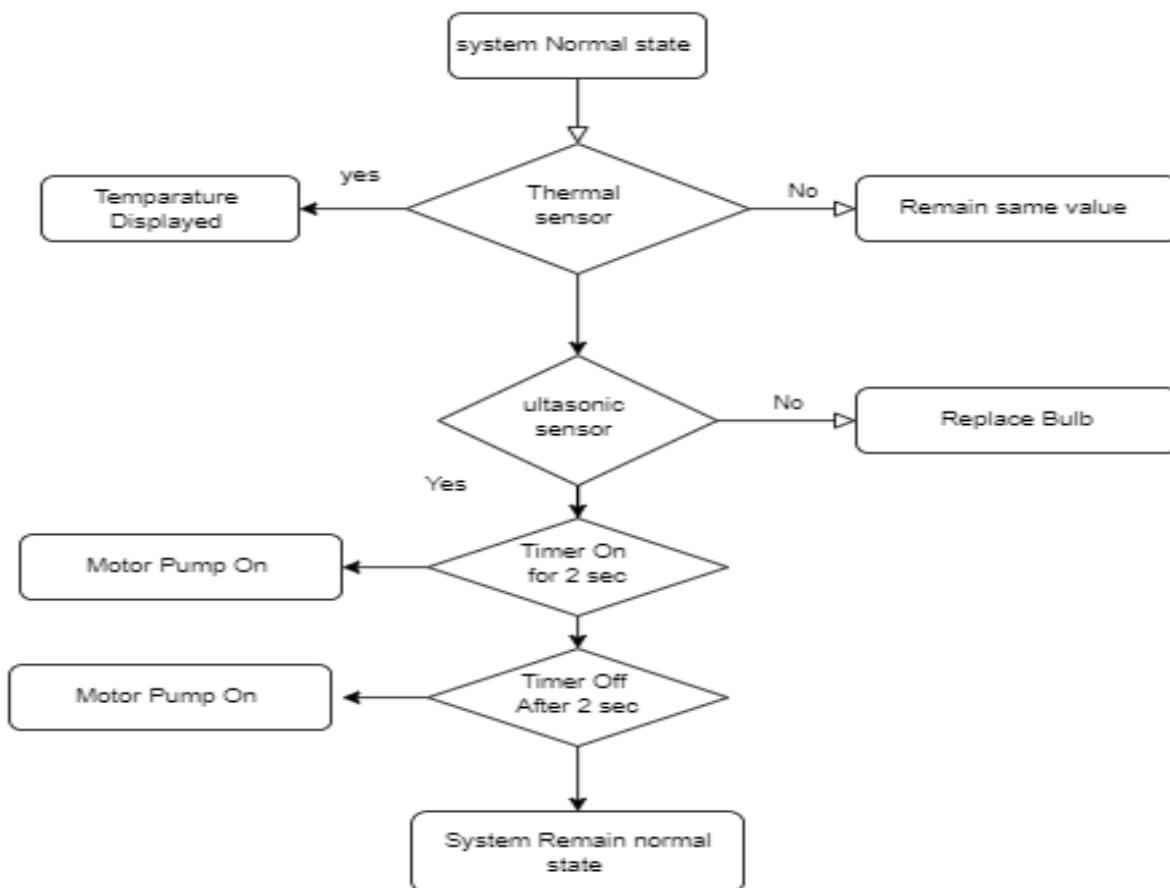


2. Design:

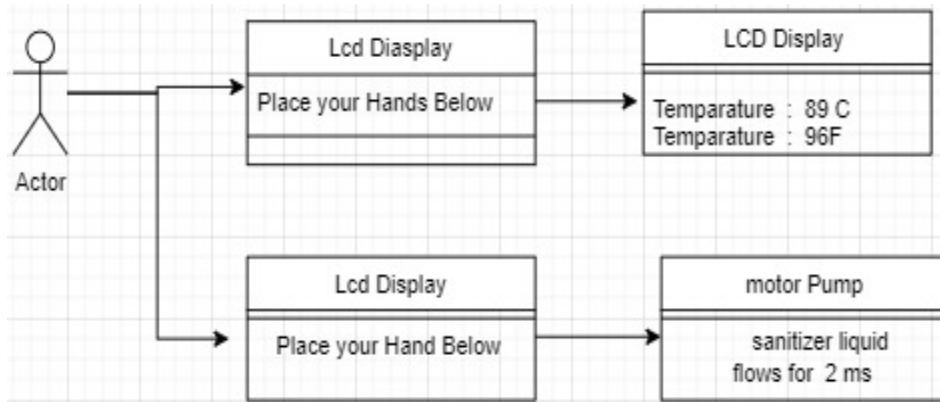
i. Block Diagrams:



ii. Structural Diagram:



iii. Behavioral Diagram:



3. Evaluation

i. Unit Testing:

Test case	Expected output	Actual output
Thermal sensor calibration	89.69	786
Ultra-sonic sensor distance	Distance 20 cm	340
Motor Pump Ton and Toff Period	delay (1000)	2 sec

4. Summary:

Automatic Smart sanitizer dispenser with Temperature checking device proposed in this paper is to avoid the virus infection prevention. Contactless sanitization & temperature detectors are used to reduce and spread of the COVID-19 virus and can also observe some necessary parameters like a person's body temperature using a contactless temperature sensor. The automatic touch-less hand sanitizer device demonstrated in this study is expected to play a key role in contactless hand disinfection in public places and reduce the spread of infectious diseases in society.

5. REFERCES

- [1] John M. Boyce, M.D and Didier Pittet (2019), "Measuring Health care worker Hand hygiene activity"", IEEE Xplore Part Number: CFP20N67-ART; ISBN: 978-17281-5374- 2 2 2 (ICIRCA-2020).

- [2] K. A. Biedermann, J. M. Morgan, "Efficacy of organic acids in hand cleansers for prevention of rhinovirus infections" (2019).