Automated Poultry Farm Management

Team Members

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Overview

Goal

- To develop an automated system for Poultry Farm Management
- To help farm owners to generate more profit and to maintain the daily activities of farms more easily.

Motivation

- Huge demand for poultry products in Bangladesh
- The weather in Bangladesh is highly appropriate for poultry farming. There are an estimated 150,000 poultry farms in Bangladesh in 2017.
- Meets the basic need of animal protein for Bangladeshi people. The farms annually produce 570 million tonnes of meat and 7.34 billion eggs.
- Commercial poultry farming can create employment opportunities

Project Modules

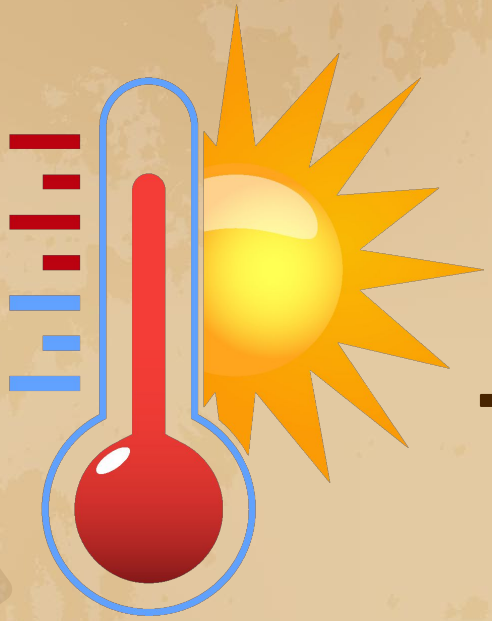
01
Temperature Alert

02
Egg Management

03
Food & water Management

04
Litter Moisture Detection

05
Humidity & rain Detection



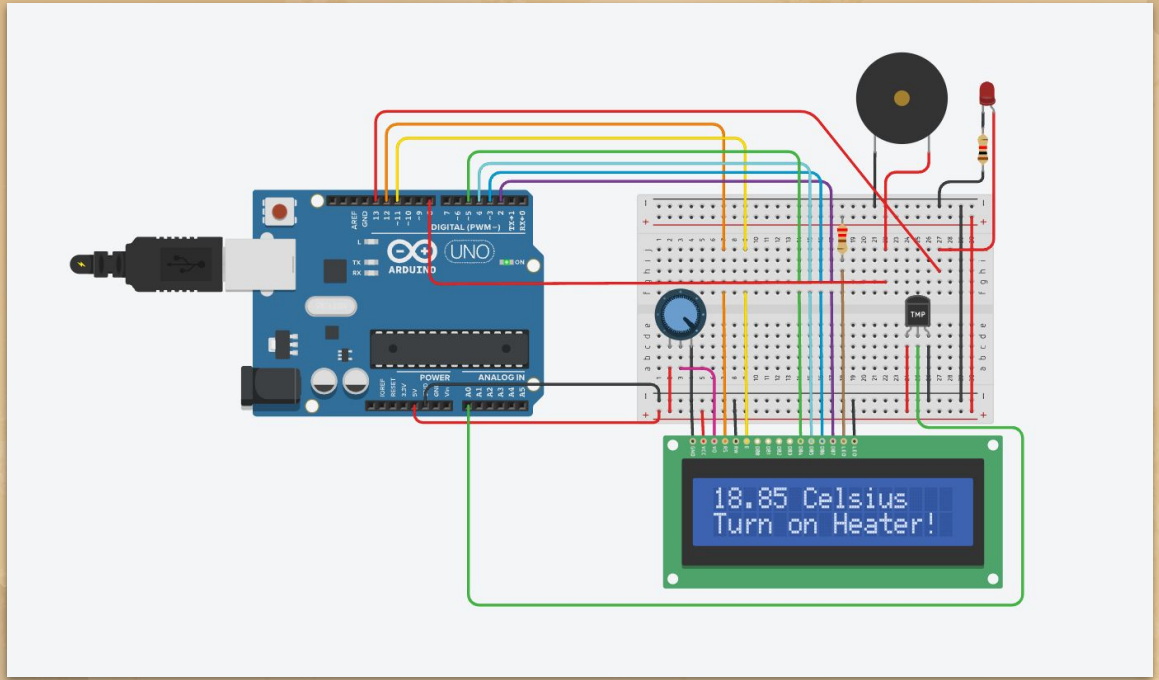
01

Temperature Alert

Tools & Sensors

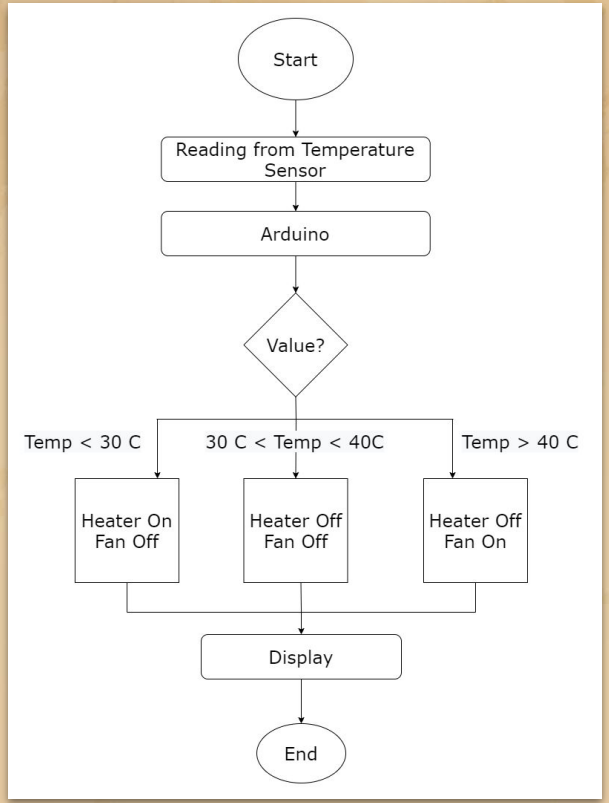
- Temperature Sensor [TMP36]
- Arduino Uno R3
- LCD Screen 16 x 2
- 250 kΩ Potentiometer
- 220 Ω Resistor
- Piezo
- Red LED
- 1 kΩ Resistor

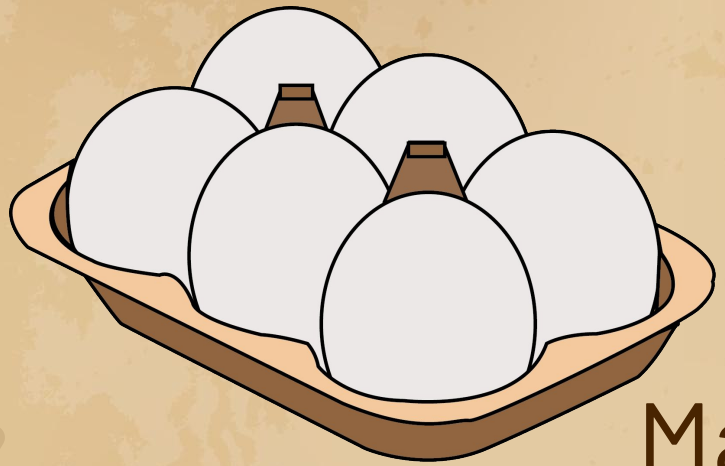
Circuit for Temperature Alert



Tinkercad Link

Workflow for Temperature Alert





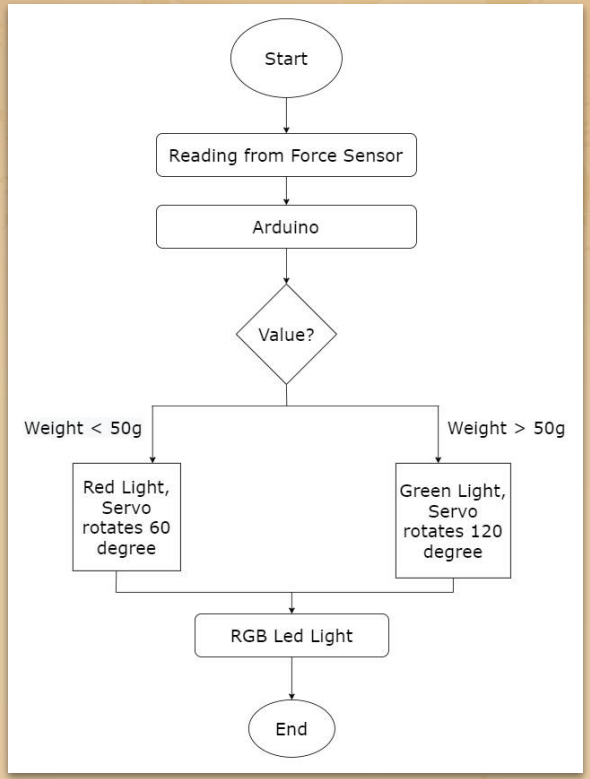
02

Egg Management

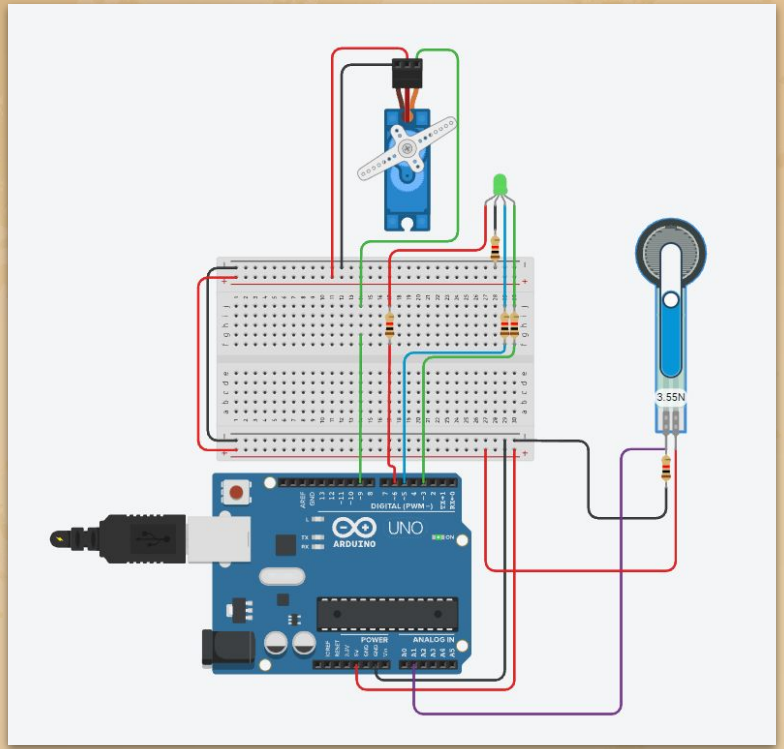
Tools & Sensors

- Force Sensor
- Arduino Uno R3
- 1 kΩ Resistor
- Positional Micro Servo
- LED RGB

Workflow for Egg Management



Circuit for Egg Management



Tinkercad Link

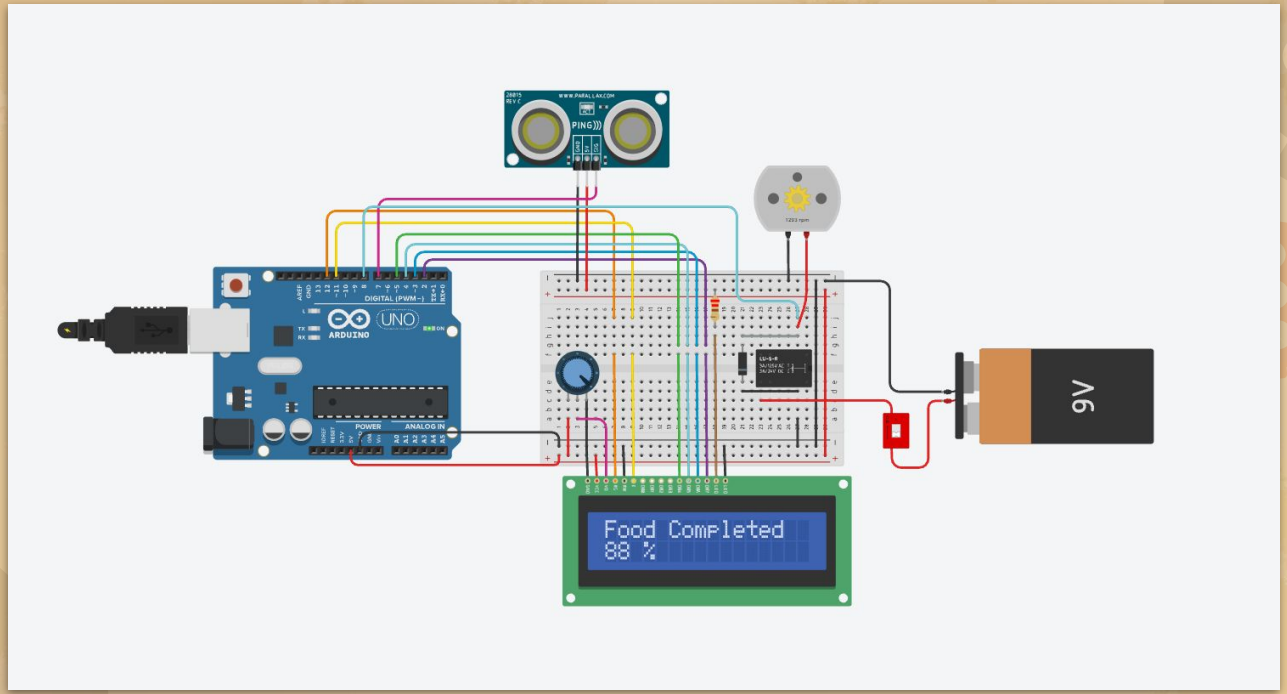
03

Food and Water Management

Tools & Sensors

- Ultrasonic Distance Sensor
- Arduino Uno R3
- LCD 16 x 2
- 250 kΩ Potentiometer
- 220 Ω Resistor
- Relay SPDT
- Diode
- DC Motor
- 9V Battery
- DIP Switch DPST

Circuit for Food and Water Management



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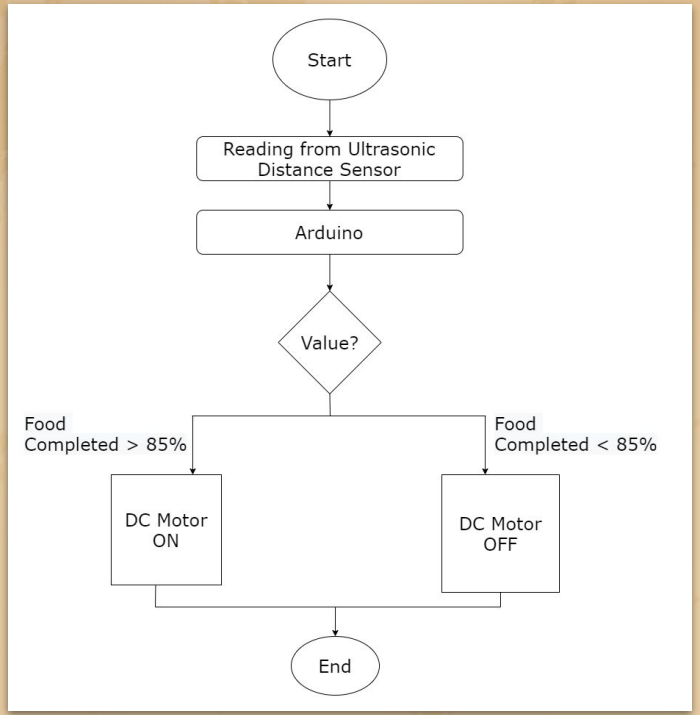
Workflow for Food & Water Management



04

LITTER MOISTURE DETECTION

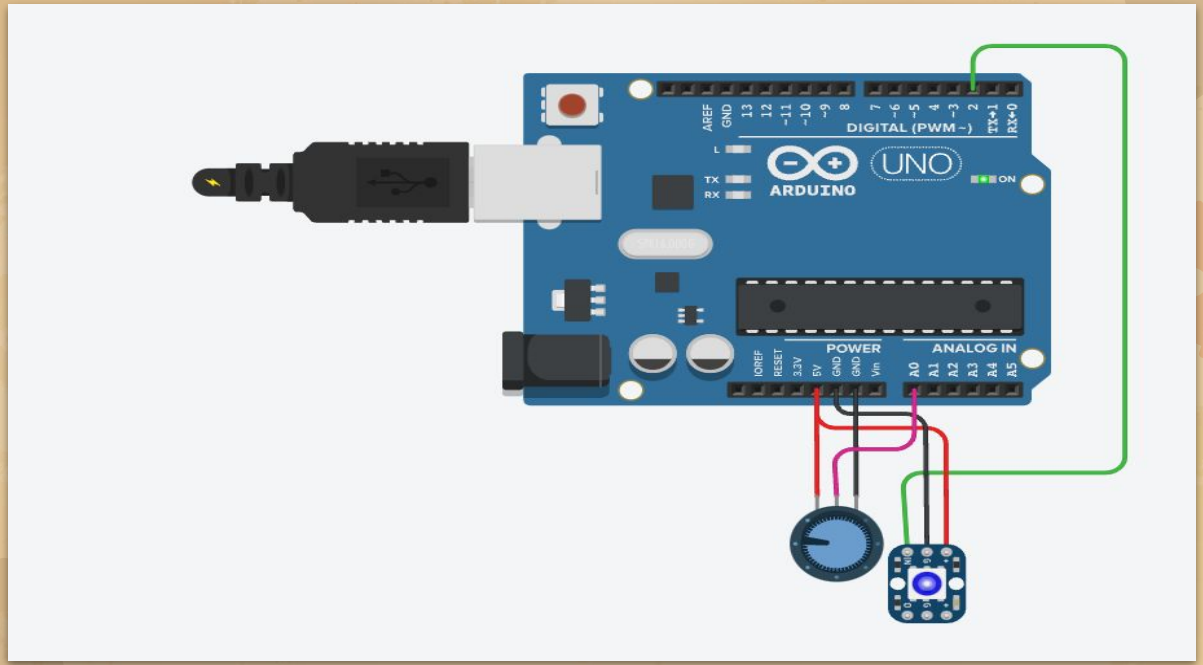
Tools and Sensors used

Arduino

Potentiometer

NeoPixel

Circuit for Litter Moisture Detection



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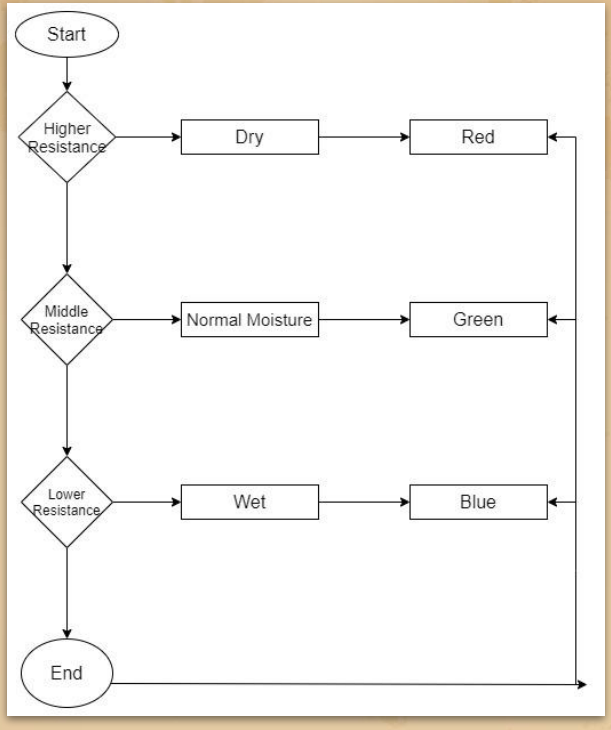
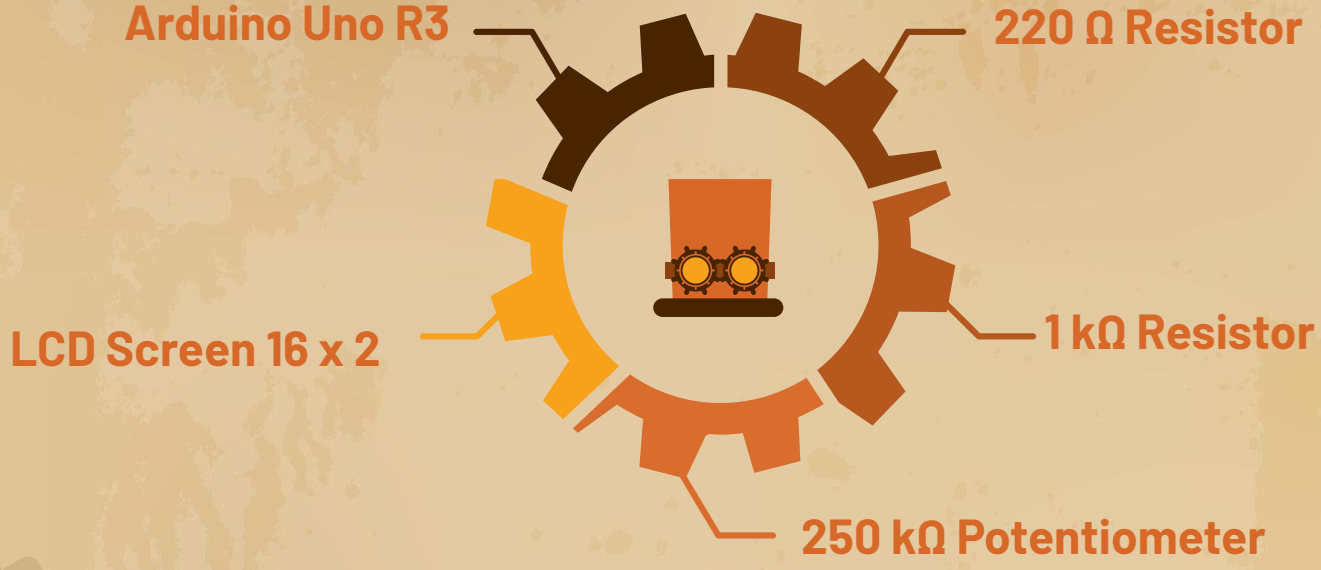
Workflow for Litter Moisture Detection



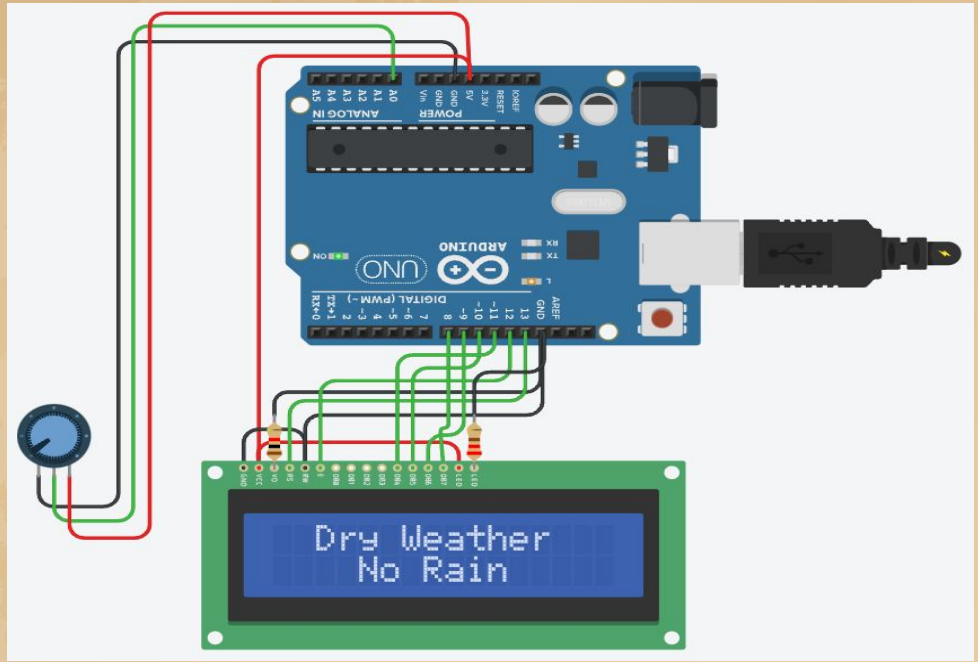
05

Humidity and Rain Detection

Tools & Sensors



Circuit for Humidity & Rain Detection



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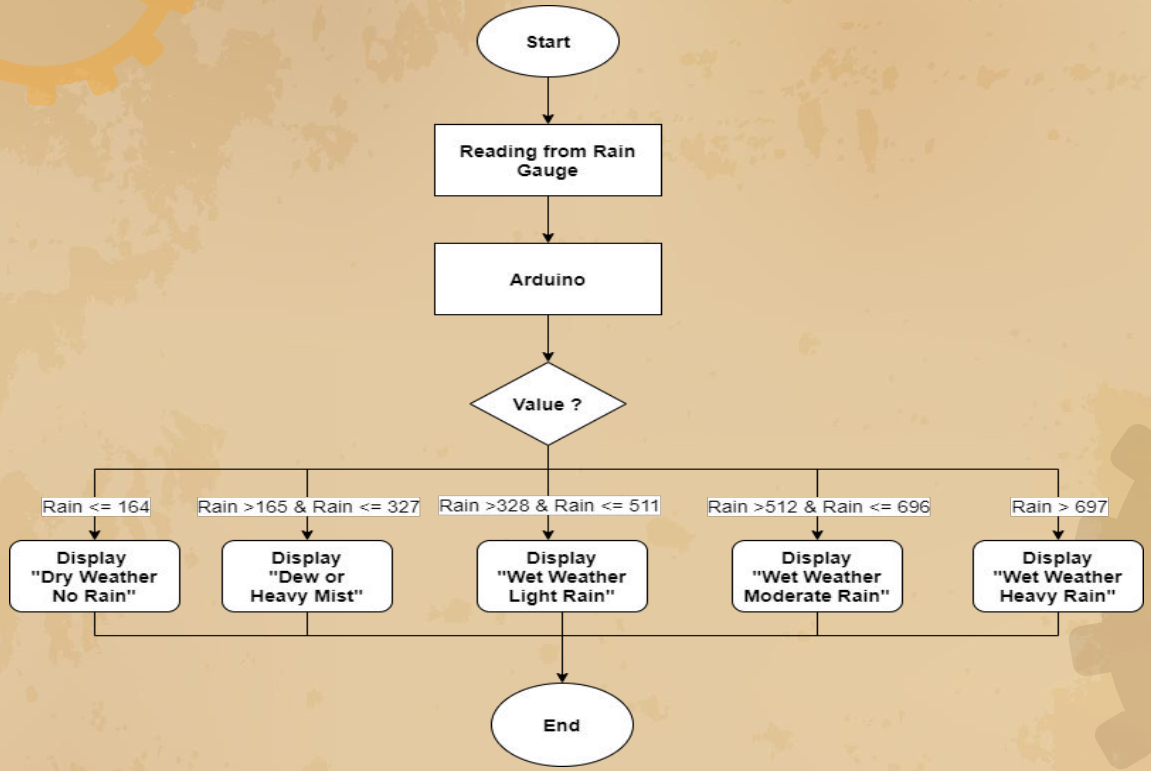
Workflow for Humidity & Rain Detection



Challenges

- Impossible to implement hardware facilities due to online academic activities
- Absence of accurate benchmark value in case of poultry farm management
- Finding appropriate sensors in the online simulators
- Online team collaboration

Thank you for your time!!