



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

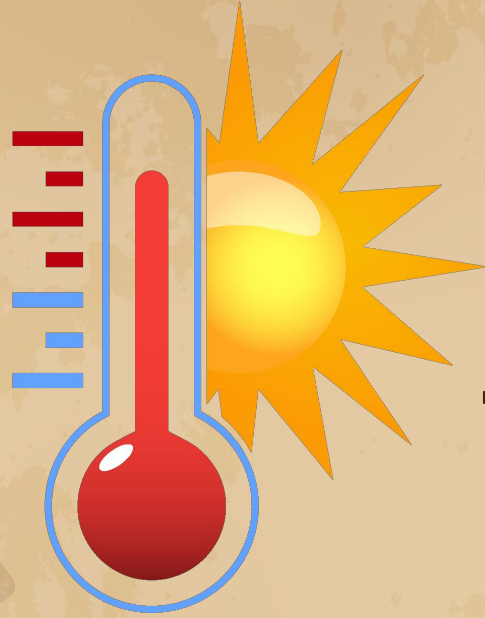
**Food & water
Management**

04

**Litter Moisture
Detection**

05

**Humidity & rain
Detection**



01

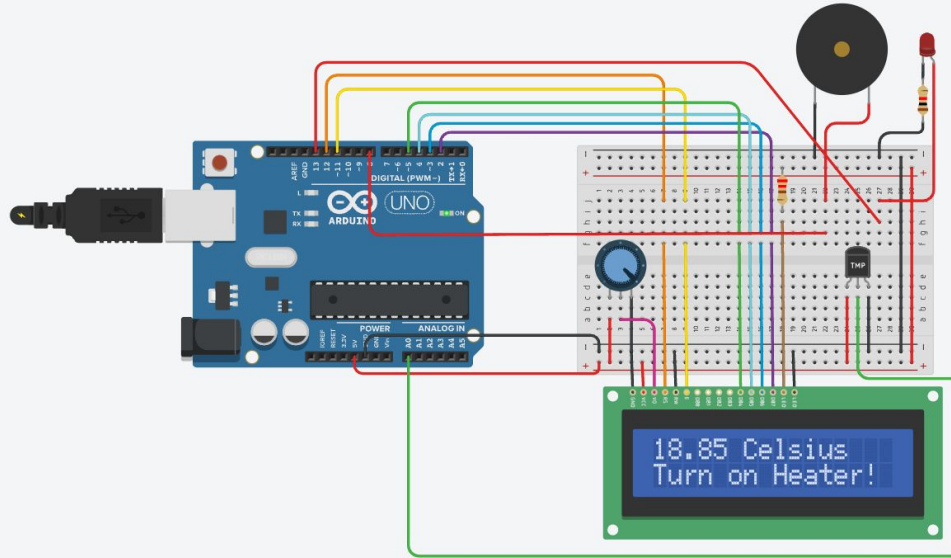
Temperature Alert

The background is a textured, light brown surface. On the left side, there are vertical brown lines representing pipes, with orange T-junctions and elbows. A small black gear is attached to one of the pipes. On the right side, there are several gears of different sizes and colors (orange, grey, yellow) scattered across the background.

Tools & Sensors

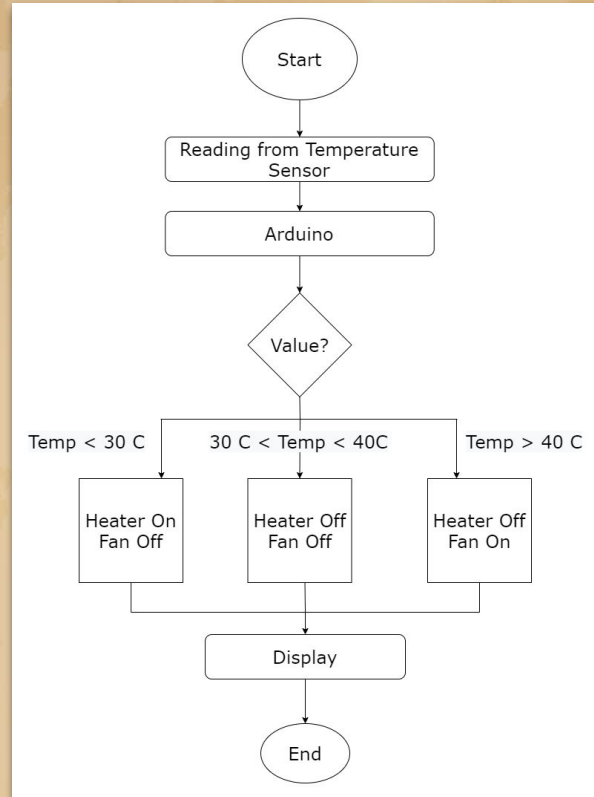
- Temperature Sensor [TMP36]
- Arduino Uno R3
- LCD Screen 16 x 2
- 250 k Ω Potentiometer
- 220 Ω Resistor
- Piezo
- Red LED
- 1 k Ω Resistor

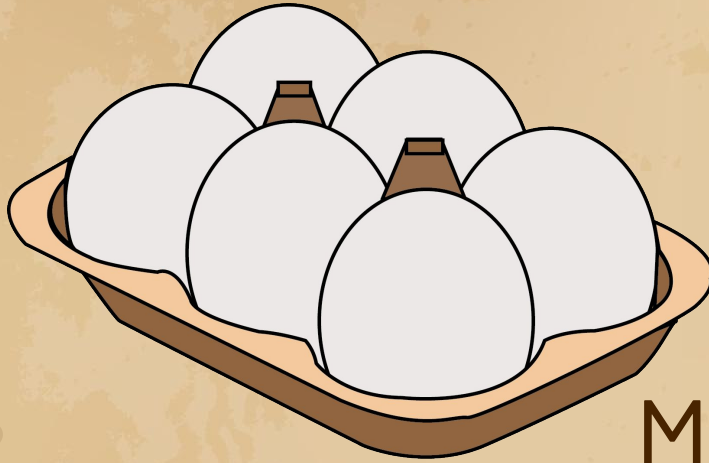
Circuit for Temperature Alert



[Tinkercad Link](#)

Workflow for Temperature Alert





02

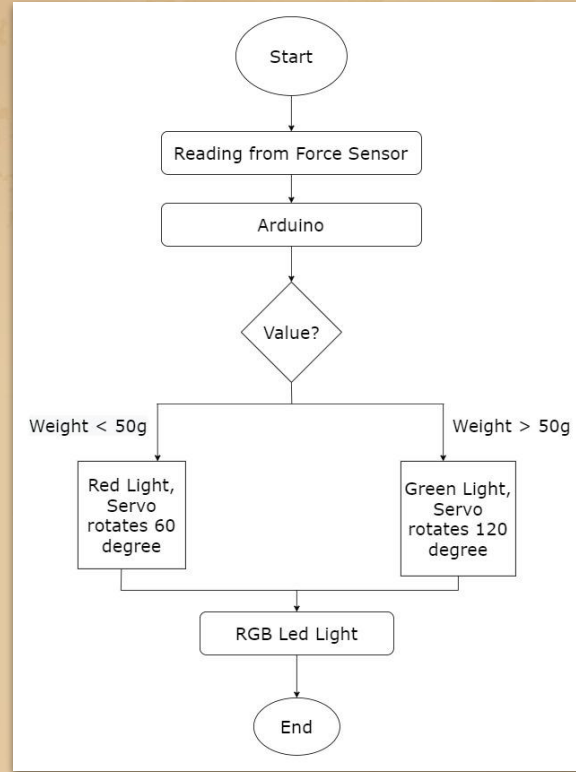
Egg Management

The background is a textured, light brown surface. On the left, there are vertical brown lines representing pipes, with orange T-junctions and elbows. A small black gear is attached to one of the pipes. On the right, there are several gears of different sizes and colors (orange, grey, yellow) floating in the background.

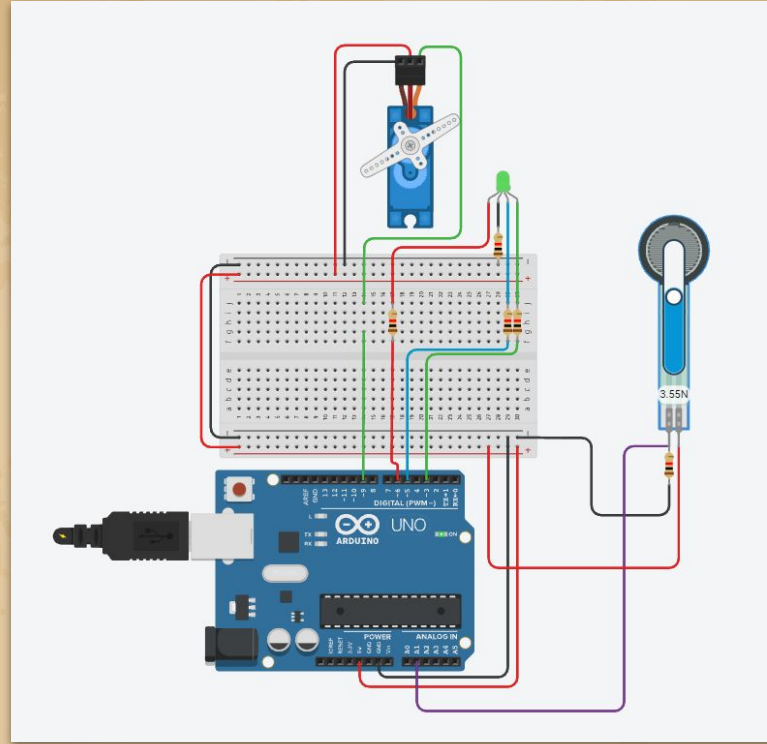
Tools & Sensors

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

Workflow for Egg Management



Circuit for Egg Management



[Tinkercad Link](#)



03

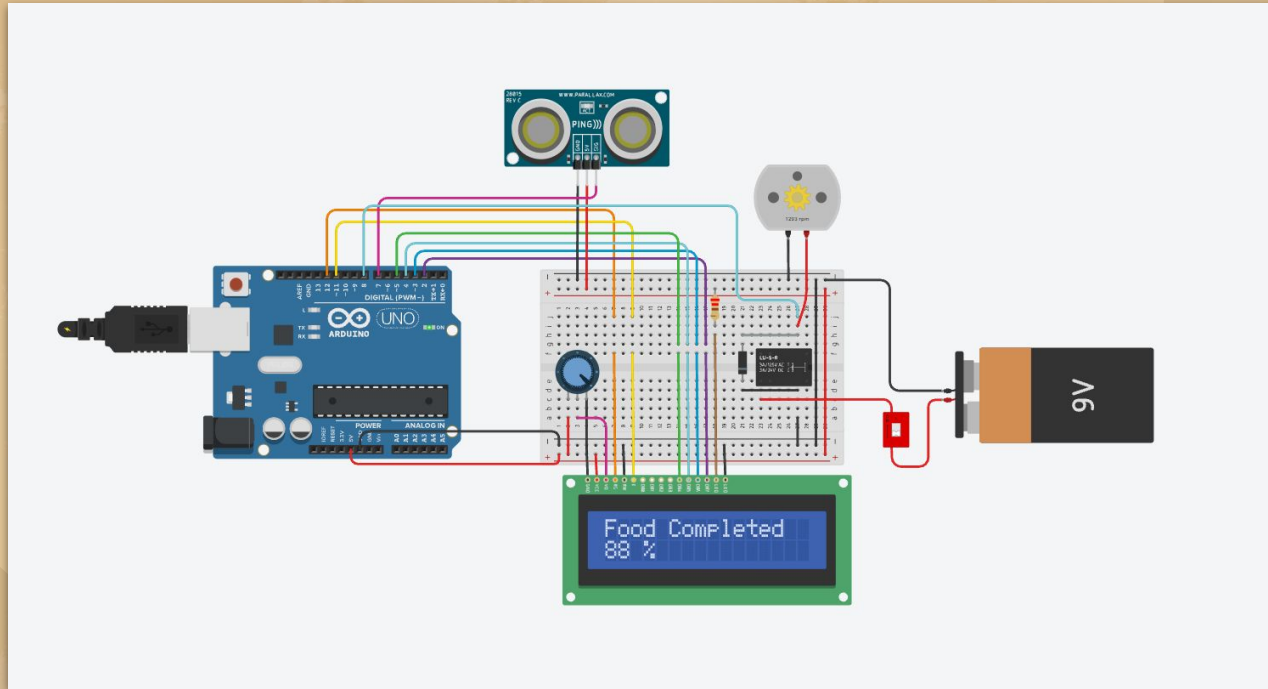
Food and Water Management

The background is a textured, light brown surface. On the left, there are vertical brown lines representing pipes, with orange T-junctions and elbows. A small black gear is at the bottom left, and a yellow gauge is on the middle left. On the right, there are several gears of different sizes and colors (orange, grey, yellow) scattered across the background.

Tools & Sensors

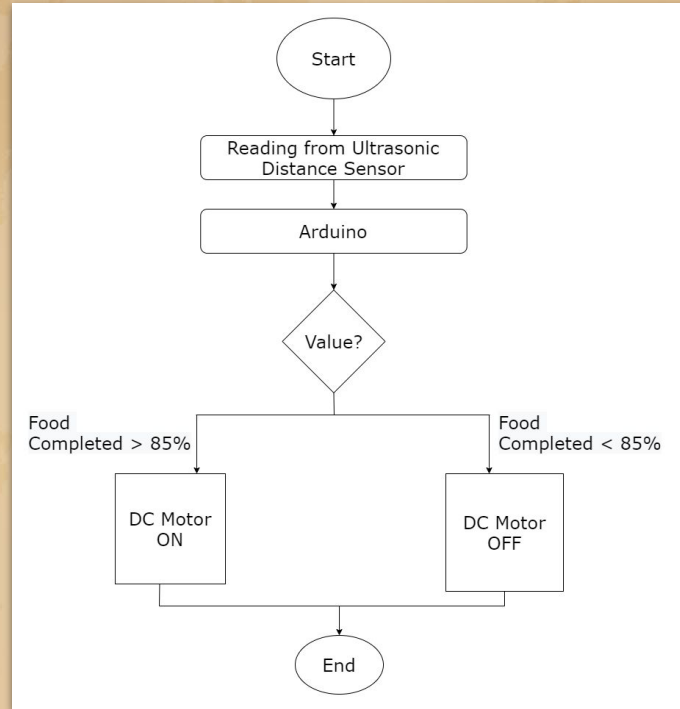
- Ultrasonic Distance Sensor
- Arduino Uno R3
- LCD 16 x 2
- 250 k Ω Potentiometer
- 220 Ω Resistor
- Relay SPDT
- Diode
- DC Motor
- 9V Battery
- DIP Switch DPST

Circuit for Food and Water Management



[Tinkercad Link](#)

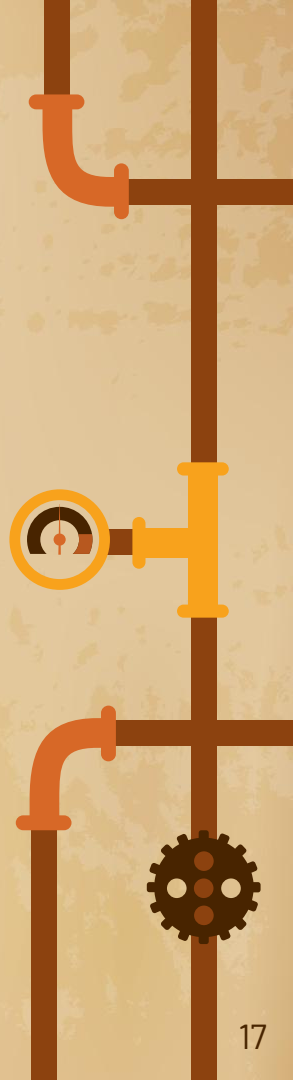
Workflow for Food & Water Management



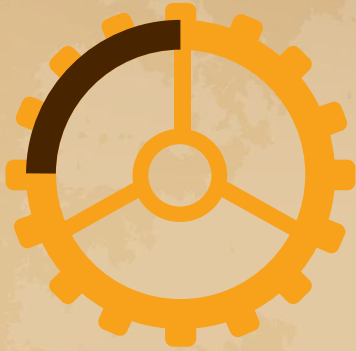


04

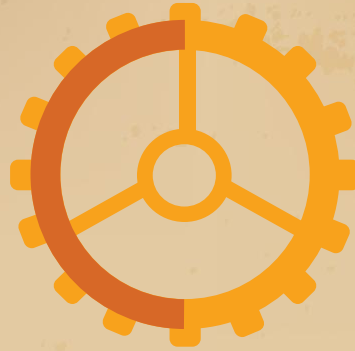
LITTER MOISTURE DETECTION



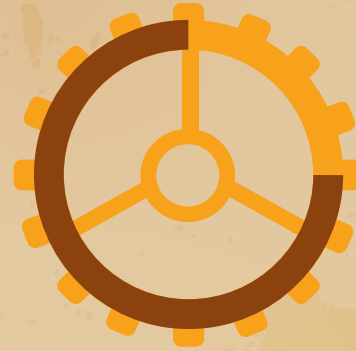
Tools and Sensors used



Arduino

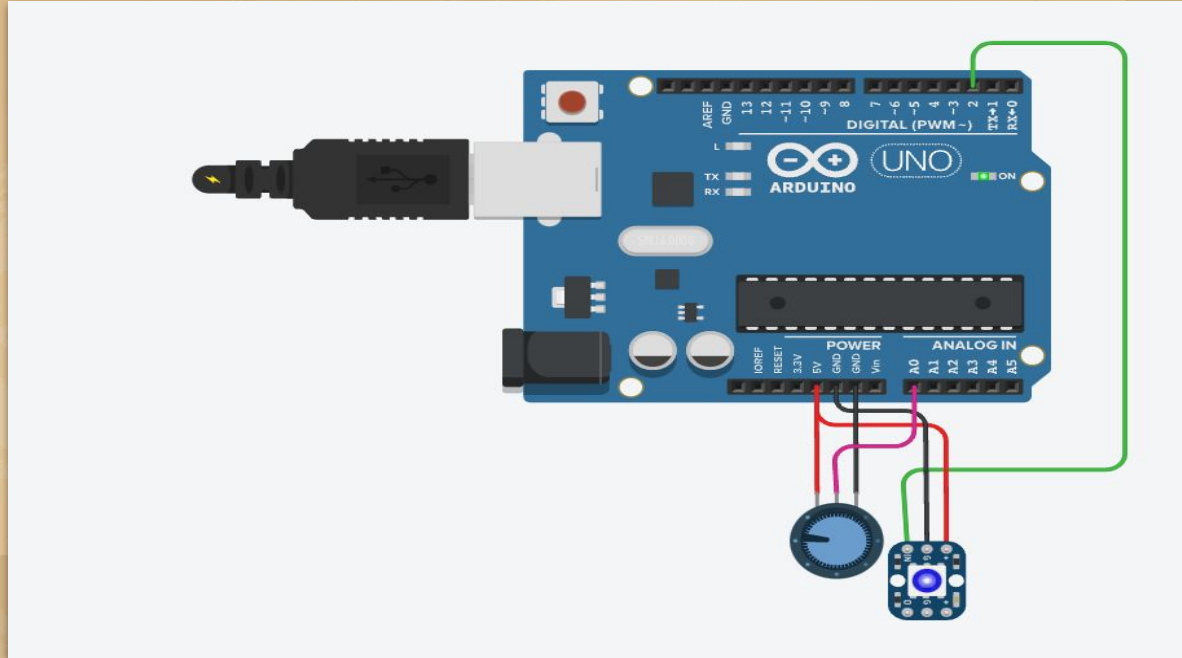


Potentiometer



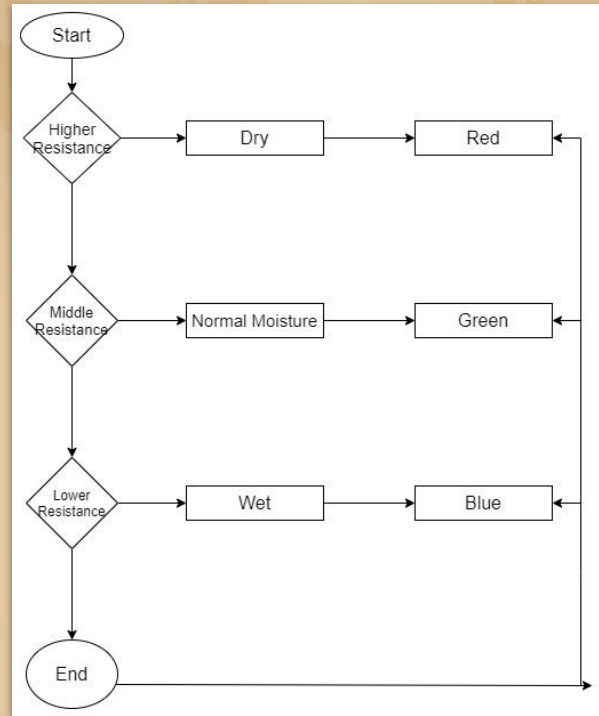
NeoPixel

Circuit for Litter Moisture Detection



[Tinkercad Link](#)

Workflow for Litter Moisture Detection



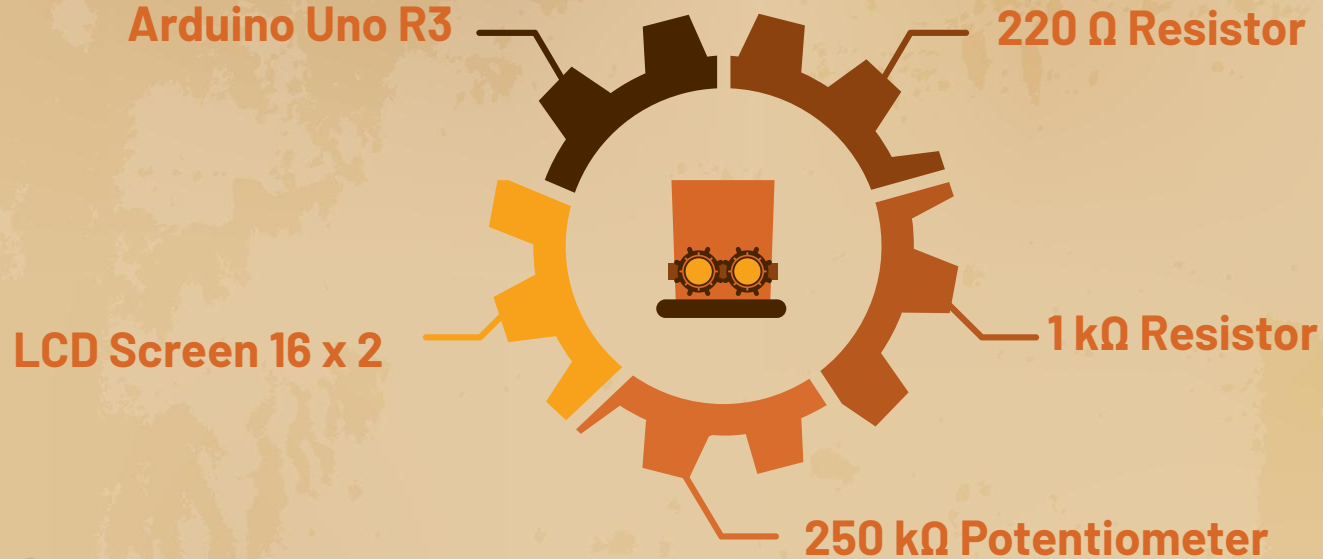
The background is a textured, light brown surface. On the left, there are several gears of different sizes and colors (grey, orange, yellow). On the right, there is a vertical pipe system with horizontal branches, featuring a yellow gauge and a black gear-like component.

05

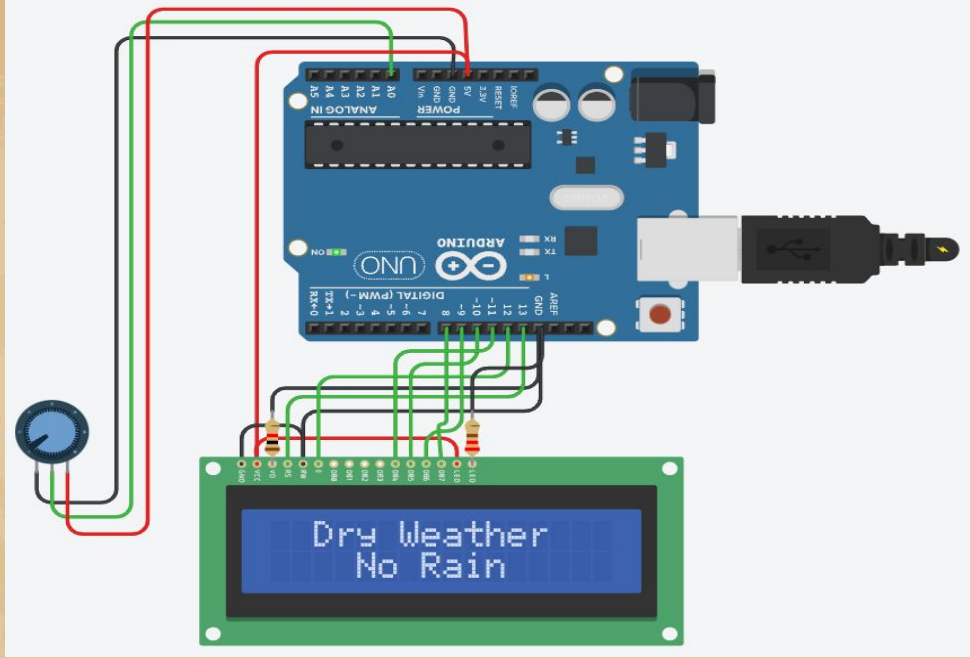
Humidity and Rain Detection



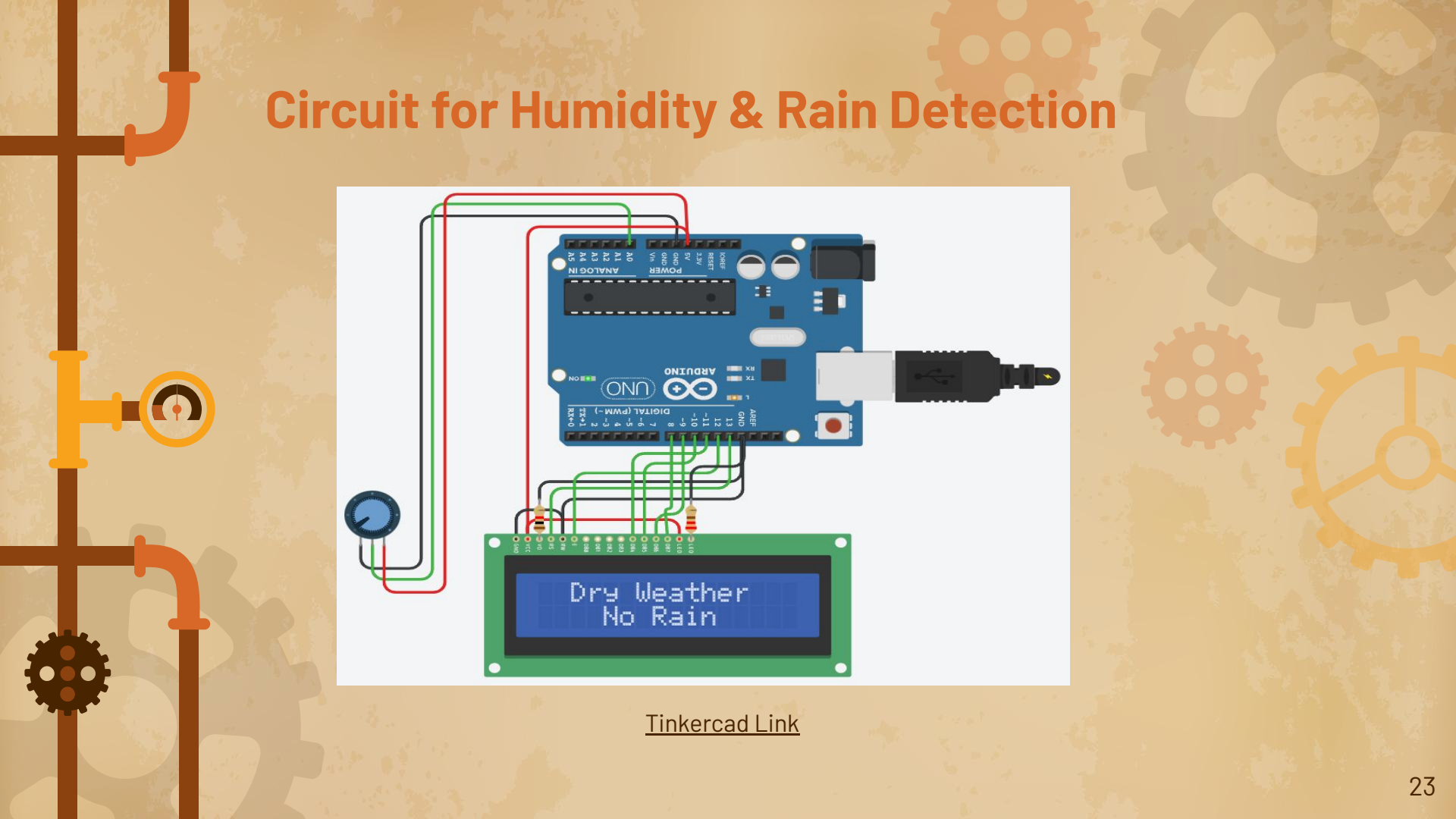
Tools & Sensors



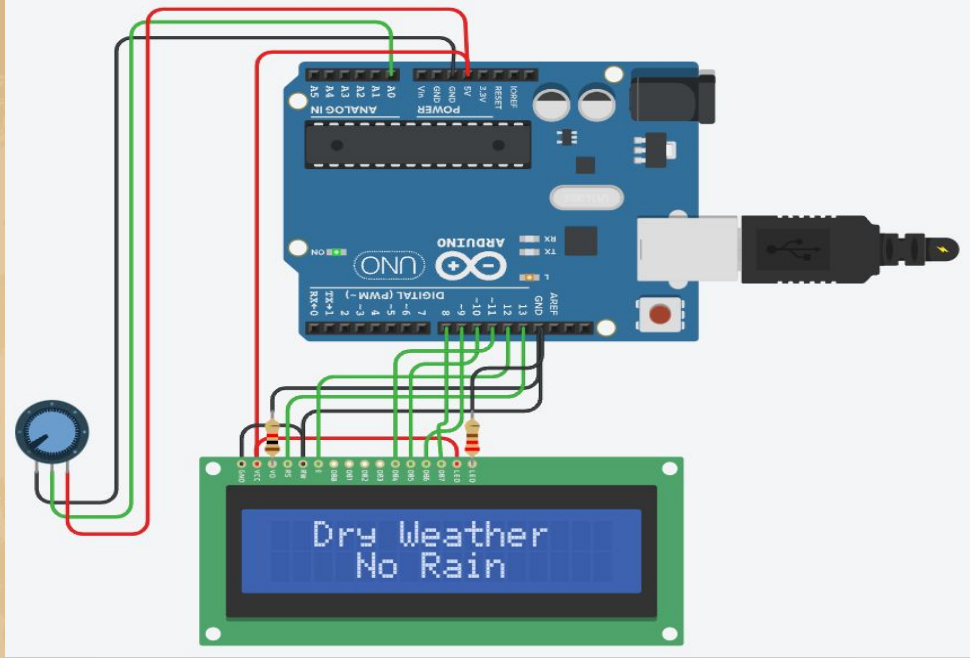
Circuit for Humidity & Rain Detection



[Tinkercad Link](#)

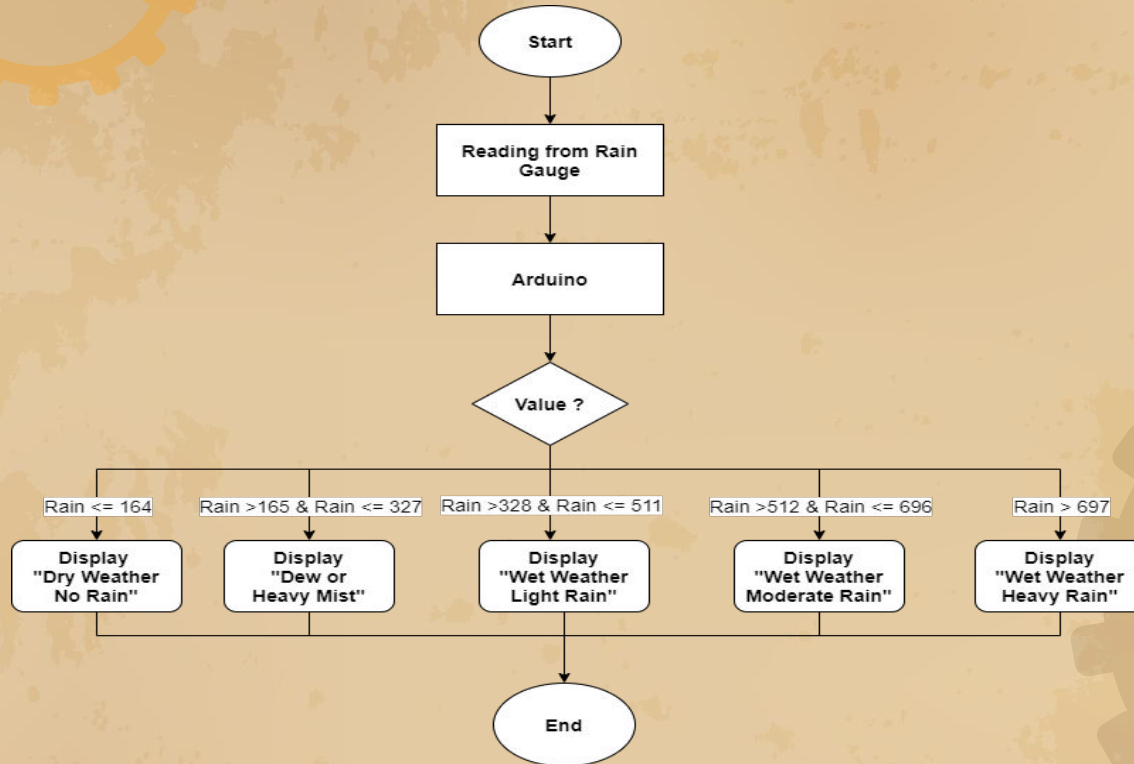


Circuit for Humidity & Rain Detection



[Tinkercad Link](#)

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!!**

