

Automatic Feed Dispenser For Modern Aquaculture System

Goal of the project

- The aim behind this project is to design an Automatic Feed dispenser which automatically feed the fish with **accurate amount** at **predetermined time**.
- This provide the fish with **sufficient food** at right cycle for profitable yield.
- This system allows users to easily setup the **time** and **amount** of feed depending on the requirements of the fish.
- This is **more reliable** than human as the feed quantity and timing is on point.

Need for this Project

- The purpose of this project is to reduce the **manual work** and **labor cost, time** through making this system **automated**.
- To control the fish feeding activity by using a feed dispenser that combined the **mechanical** and **electrical** methods to form a system.
- Effective fish feeding is essential for proper **health** and **growth** of fishes
- This system is **very convenient** to the **fish owners** whom are away for a long time and having trouble knowing the situation of the tank or a pond

- The fish will be fed properly without leading to **overfeeding** or **underfeeding**.
- The food will **not spoil** the water since the equipment releases food in little quantities at regular intervals.

Feed Parameters

- Fish Weight

- The weight of the fish has to be considered to calculate the amount of food to be fed.

- Feed Frequency

- No of times the fishes are fed per day.

Feed Parameters

- **Body weight %**

- Ideally farmer tends to feed around 2% of the fish's body weight, but it depends on the farmer and breed of the fish.

- **Number of Fishes**

- Amount of the feed is calculated based on number of fishes in the tank

Feed Calculation

- Let suppose we have a tank with fishes of the following parameters:
- Number of fishes : 500
- Weight of each fish(average) : 1000g
- Body weight to feed percentage : 2%
- Feeding frequency per day : 4
- **Formula** : $\text{No. of fish} * \text{Average Weight} * \text{Percentage feed}/100 * 1/\text{Frequency}$

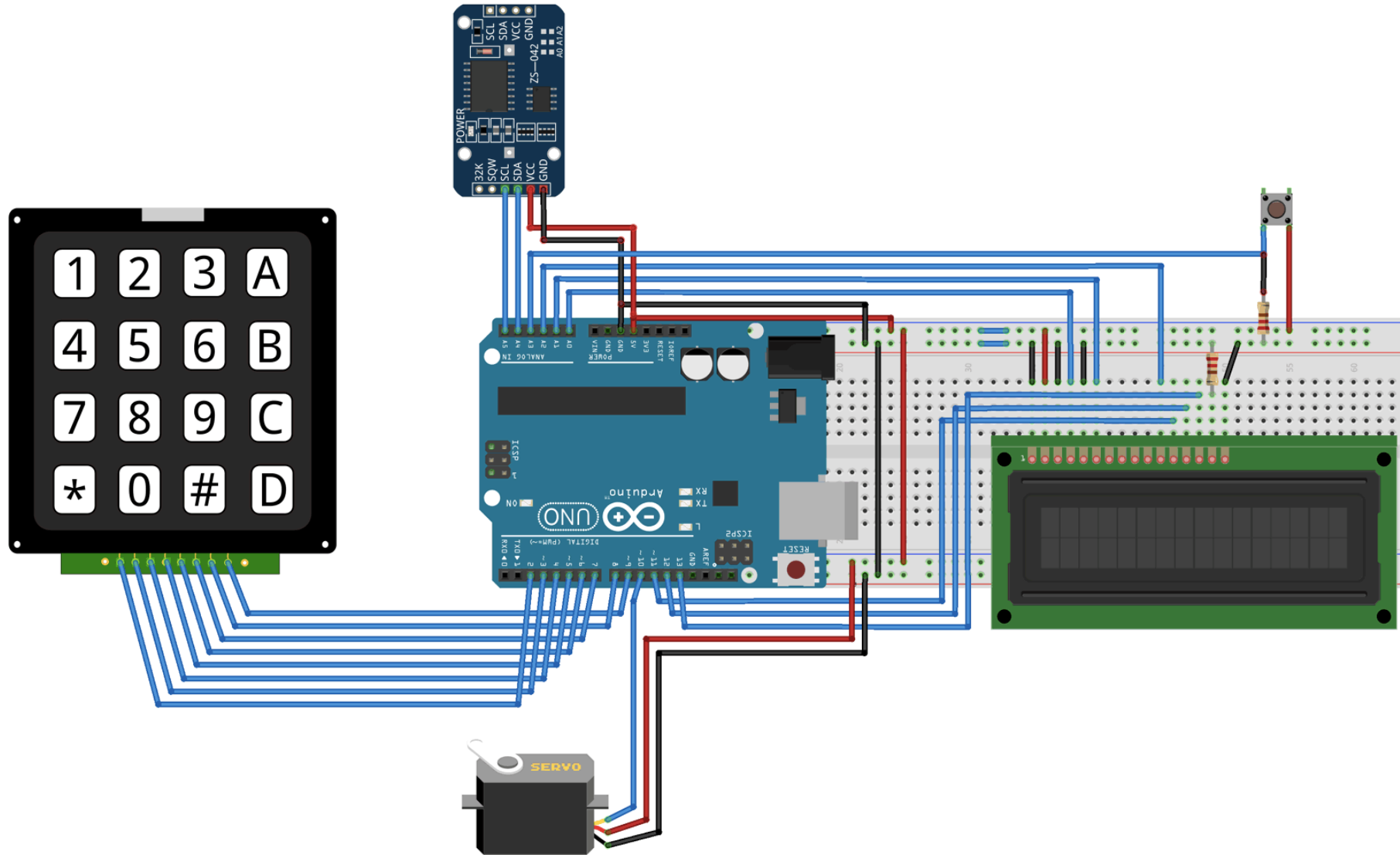
Feed Calculation Split

$$\text{Feed per day per fish : } 1000 \times \frac{2}{100} = 20g$$

$$\text{Feed for 500 fish() : } 20g \times 500 \text{ fishes} = 10000g$$

$$\text{Amount of feed per serve: } \frac{10kg}{\text{frequency}} = \frac{10000}{4} = 2500g$$

Circuit



Components

- Arduino UNO
- 4*4 Matrix keypad
- 16*2 LCD
- Push Button
- Servo Motor
- Resistor
- Connecting wires
- Breadboard

Prototype

