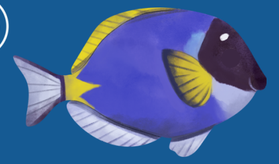
FISH-TECH

Enhancing Fish Care with Automated Monitoring and Control.



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Jaber & Mahmoud

Project Idea

we chose this project because it provides a solution to the problems that many fish lovers face in caring for it on a daily basis, such as monitoring the state of the water and providing food in a timely manner.

Objectives

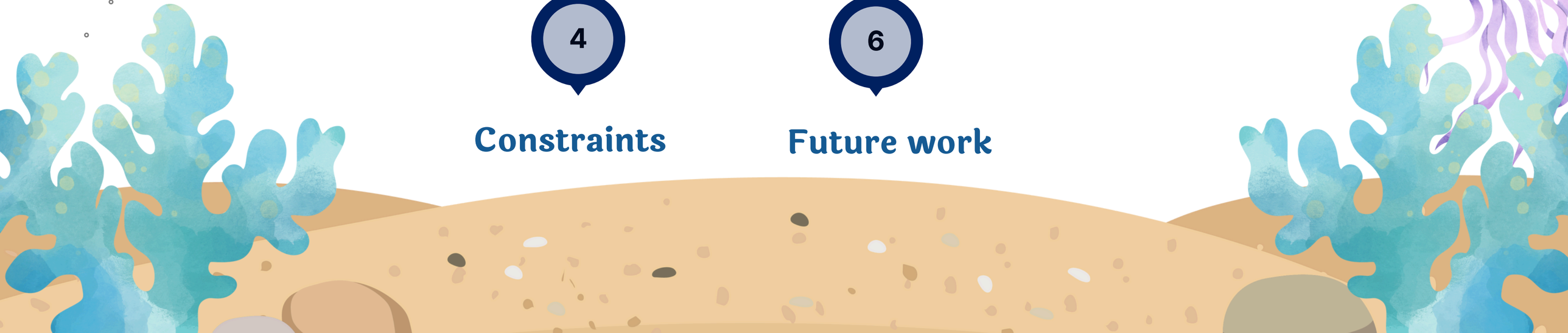
Maintain Water Cleanliness

Automated Feeding

Monitor Water Conditions

Outlines

1. Problems
2. Solution
3. Features
4. Constraints
5. Components
6. Future work



Problems

1

Maintaining the quality of water inside the aquarium.

2

Organized times for feeding fish.

3

Cleaning the aquarium after a period of time , to ensure health life for fish.

Solution

Designing a system that integrates all components in a smart form to feed fish and maintain water quality

FEATURES

FEEDER

Automatically dispenses the right amount of food at scheduled times, ensuring consistent and accurate feeding for the fish.

FILTER

Automatically removes impurities from the water, helping to maintain a clean and healthy environment for the fish.

WATER TEST

Regularly tests water quality parameters, ensuring the aquarium's conditions are optimal for the health of the fish

USER CONTROL

Allows control of the aquarium by entering commands via a keypad, with monitoring and adjustments available through a mobile app.

OXYGEN

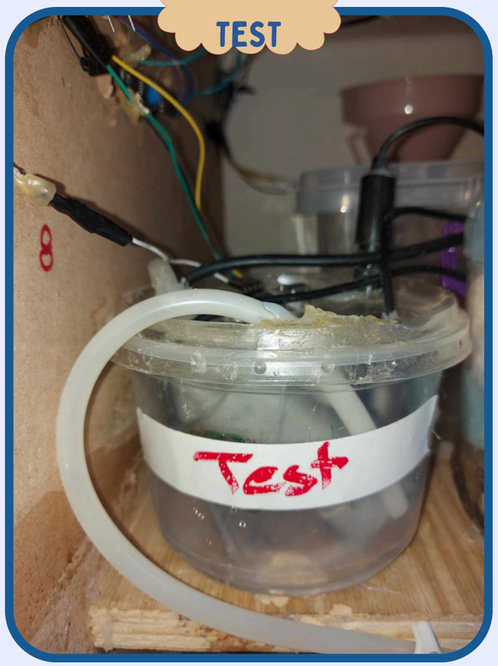
Generates air bubbles to oxygenate the water, ensuring adequate oxygen levels for the fish's health.

Design

FEEDER

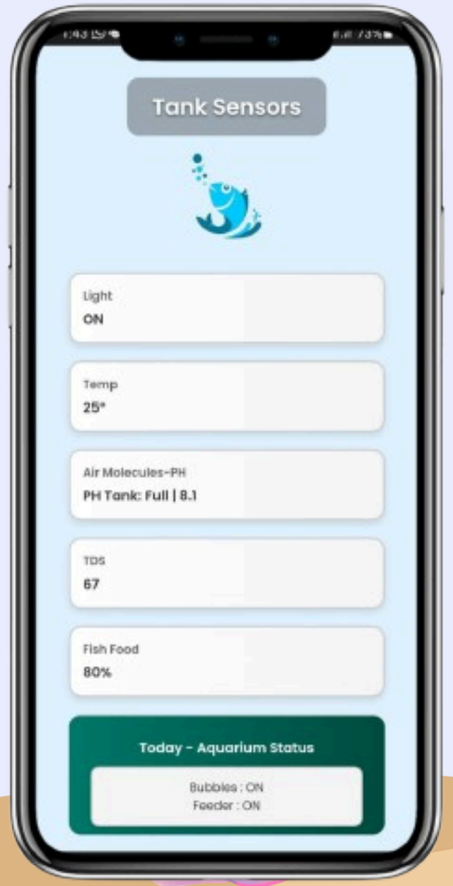
FILTER

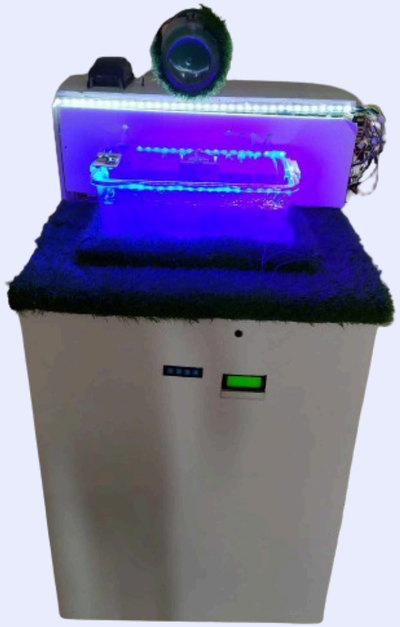
WATER TEST



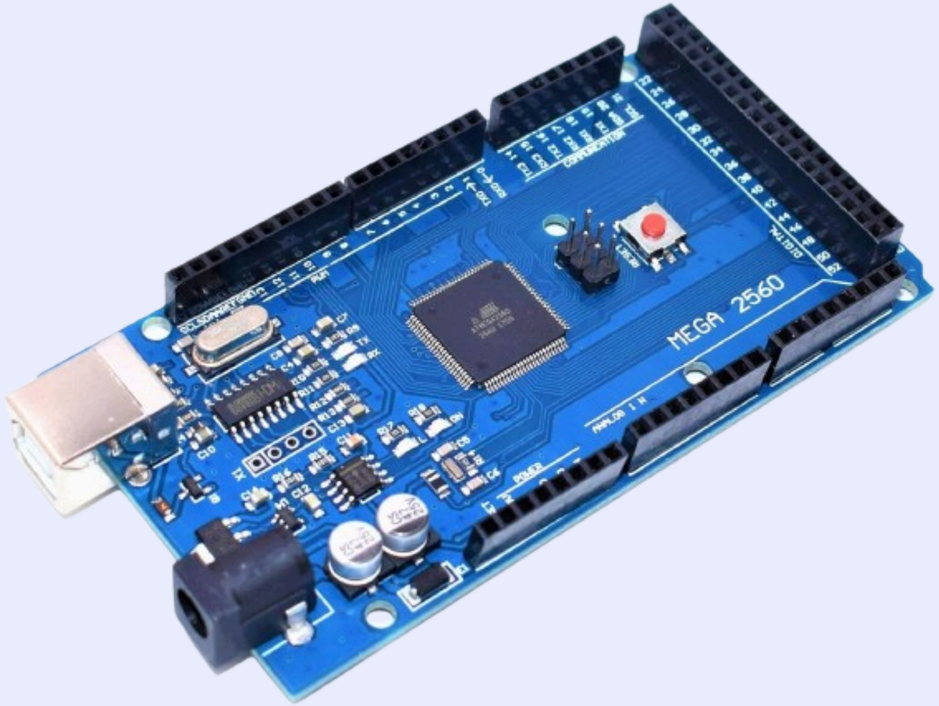
OXEGEN

User Monitor & Control

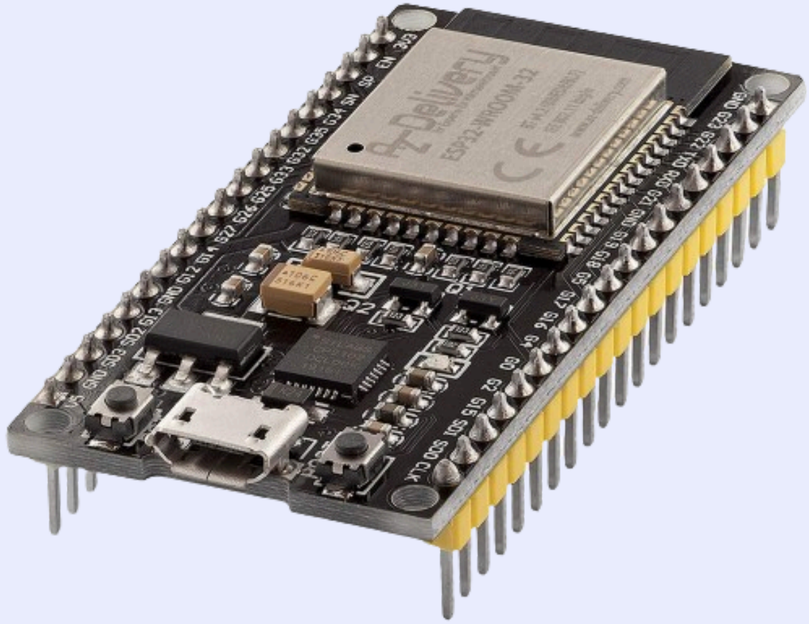




Microcontrollers

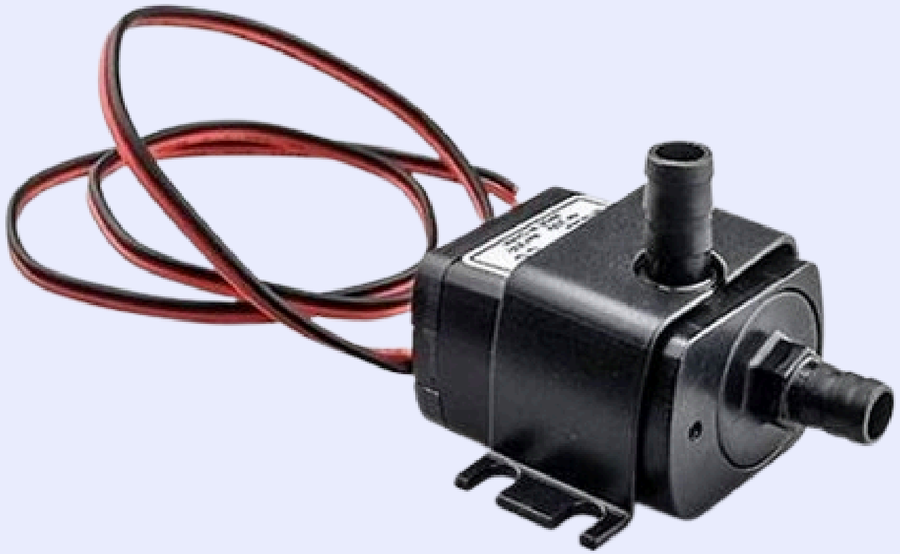


Arduino Mega

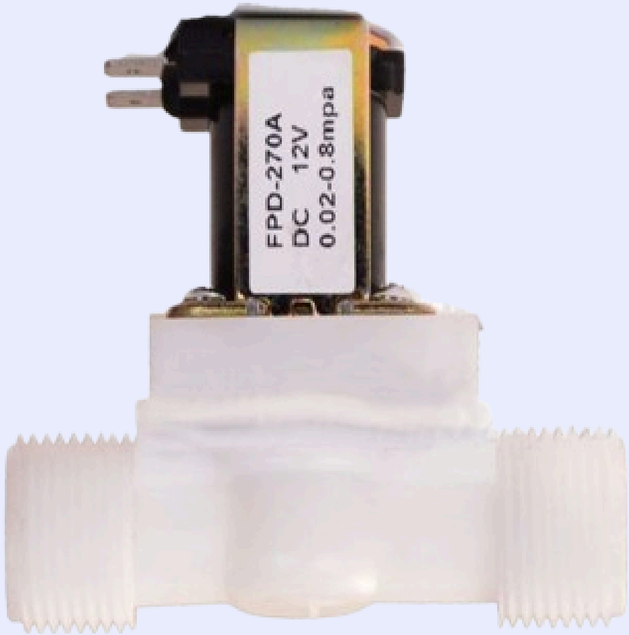


WiFiESP-WROOM-32

Main components

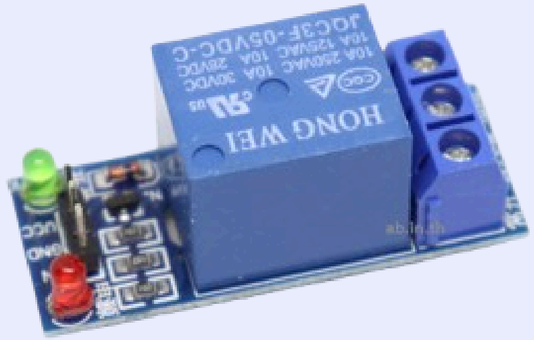


Water pump



Water valve

Main components

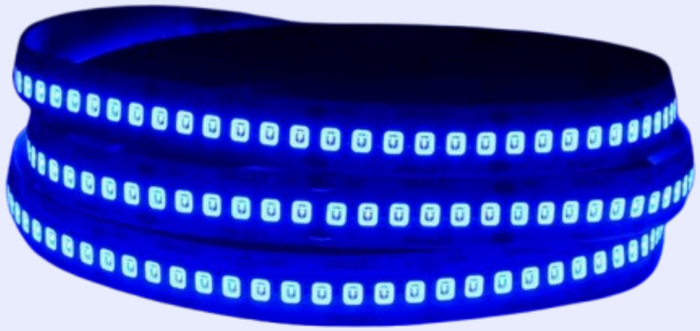


Relay

Servo motor

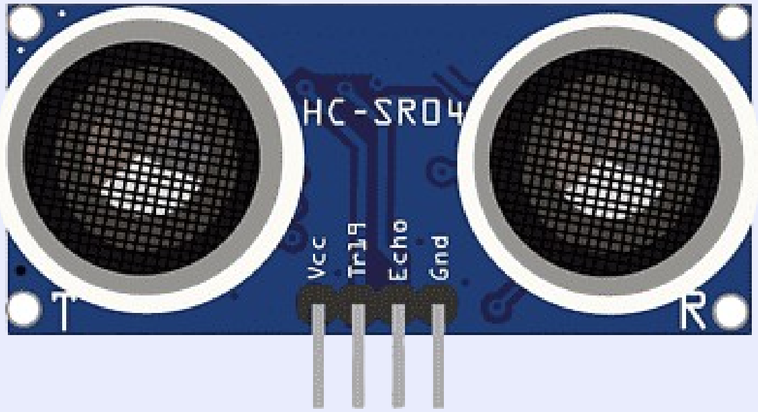
peltier

Main components



Light strip

Sensors



Ultrasonic

TDS

Sensors

pH

Temperature
(ds18b20)

CONSTRAINTS

Size and weight

Precision and accuracy

power distribution

short work time

Ideal readings

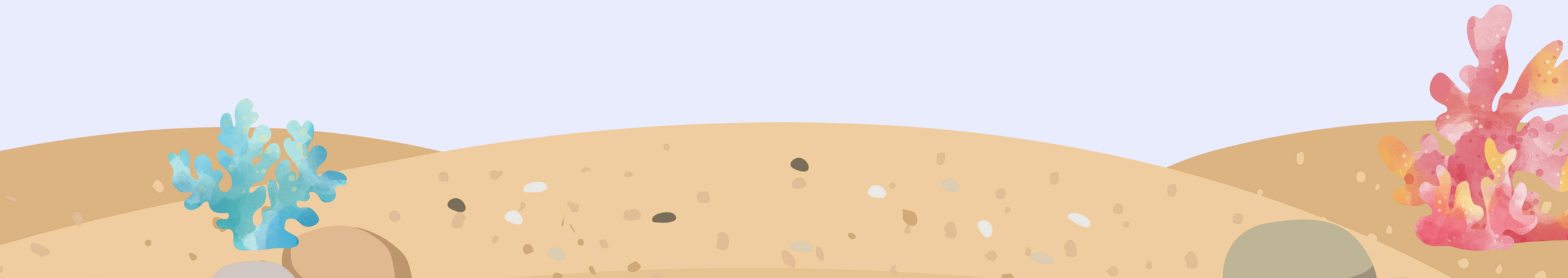
Problem	Value
ph	6.8-8.2
TDS	50-150 ppm
Temp	17C°-35C°
Cleaning water	Every two weeks
Feeding	Every 6 hours

Future work

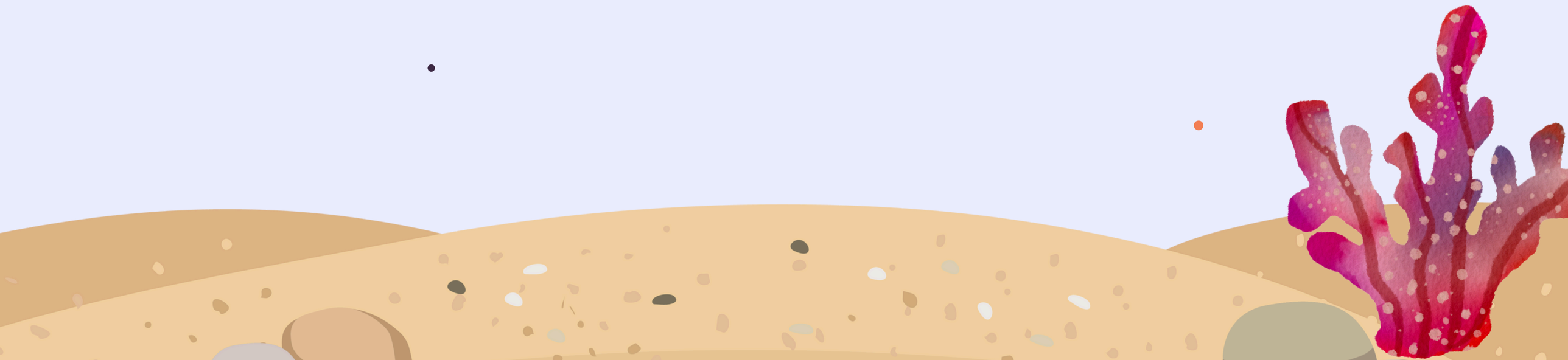
01 USE A CAMERA TO DETECT THE FISH IN THE AQUARIUM.

02 UPGRADE OUR APP TO ALLOW USERS TO CONTROL THE AQUARIUM MORE EASILY.

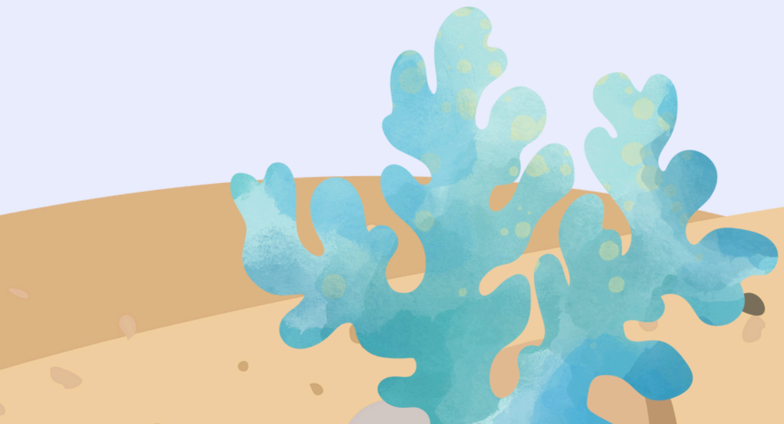
03 ADD MORE SENSORS TO MONITOR THE AQUARIUM'S WATER QUALITY , LIKE OXYGEN SENSOR AND NH3 SENSOR.



ANY QUESTIONS?



Thank You



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