SMART WATER FOUNTAIN

-A step towards more sustainable future

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Phase3: Development Part 1

The project aims to upgrade smart water fountains by deploying IoT devices and then developing a Python script on the IoT devices.

Building a smart water fountain with IoT devices and Python

To build a smart water fountain with IoT devices and Python, we will need the following:

- A microcontroller, such as Raspberry Pi or Arduino
- A water pump
- A water level sensor
- A power supply
- A breadboard and jumper wires

Steps to be followed:

1. Connect the water pump to the microcontroller.
2. Connect the water level sensor to the microcontroller.
3. Connect the power supply to the microcontroller and the water pump.
4. Write a Python script to control the water fountain.
5. Upload the Python script to the microcontroller.

Python script includes the following:

- A function to turn the water pump to turn on and off.
- A function to read the water level sensor.
- A loop that continuously checks the water level senser and turns the water pump on or off accordingly.

Python script for Smart Water Fountain:

```
import time

import board

import pwmio

#Define the pins for the water pump and water level sensor

water_pump_pin = board.d18

water_level_sensor_pin = board.A0

#Create a PWM object to control the water pump

water_pump_pwm = pwmio.PWMOut(water_pump_pin,
```

```
frequency=500)
#Create a function to turn the water pump on and off
def turn_water_pump_on():
    water_pump_pwm.duty_cycle = 100
def turn_water_pump_off():
    water_pump_pwm.duty_cycle = 0
#Create a function to read the water level sensor
def read_water_level_sensor():
    water_level =
pwmio.analog_in.AnalogIn(water_level_sensor_pin)
#Start a loop to continuously check the water level sensor and turn
the water pump on or off accordingly
while True:
    #Read the water level sensor
    water_level = read_water_level_sensor()
    #If the water level is low, turn the water pump on
    if water_level < 500:
        turn_water_pump_on()
    #If the water level is high, turn the water pump off
    elif water_level > 1000:
        turn_water_pump_off()
    #Wait for 1 second
```

```
Time.sleep(1)
```

Once the above code have written and uploaded to the microcontroller, then the smart water fountain is ready to use! We can now use our mobile phone to control the water fountain remotely.

THANK YOU