**PROJECT TITLE :**  FLOOD MONITORING AND EARLY WARNING SYSTEM

**PHASE IV PROJECT**

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**SOURCE CODE**

import time

# Simulated sensor functions

def read\_ultrasonic\_sensor():

# Simulated ultrasonic sensor (adjust as needed)

return 20 + (time.time() % 10)

def read\_rain\_sensor():

# Simulated rain sensor (adjust as needed)

return time.time() % 2

def send\_warning\_message():

print("Flood detected! Sending warning message...")

# Main monitoring loop

while True:

try:

ultrasonic\_distance = read\_ultrasonic\_sensor()

rain\_intensity = read\_rain\_sensor()

if rain\_intensity > 0.5:

print("Rain detected. Flood risk!")

if ultrasonic\_distance < 30:

print(f"Flood detected. Water level: {ultrasonic\_distance} cm")

send\_warning\_message()

time.sleep(1) # Adjust the interval as needed

except KeyboardInterrupt:

break

**// C++ code**

//

int PIR = 0;

int Distance = 0;

long readUltrasonicDistance(int triggerPin, int echoPin)

{

pinMode(triggerPin, OUTPUT); // Clear the trigger

digitalWrite(triggerPin, LOW);

delayMicroseconds(2);

// Sets the trigger pin to HIGH state for 10 microseconds

digitalWrite(triggerPin, HIGH);

delayMicroseconds(10);

digitalWrite(triggerPin, LOW);

pinMode(echoPin, INPUT);

// Reads the echo pin, and returns the sound wave travel time in microseconds

return pulseIn(echoPin, HIGH);

}

void setup()

{

pinMode(13, INPUT);

pinMode(12, OUTPUT);

pinMode(6, OUTPUT);

}

void loop()

{

PIR = digitalRead(13);

delay(10); // Wait for 10 millisecond(s)

if (PIR == HIGH) {

digitalWrite(12, HIGH);

delay(1); // Wait for 1 millisecond(s)

} else {

digitalWrite(12, LOW);

}

Distance = 0.01723 \* readUltrasonicDistance(5, 4);

if (Distance <= 100) {

tone(6, 880, 125); // play tone 69 (A5 = 880 Hz)

delay(125); // Wait for 125 millisecond(s)

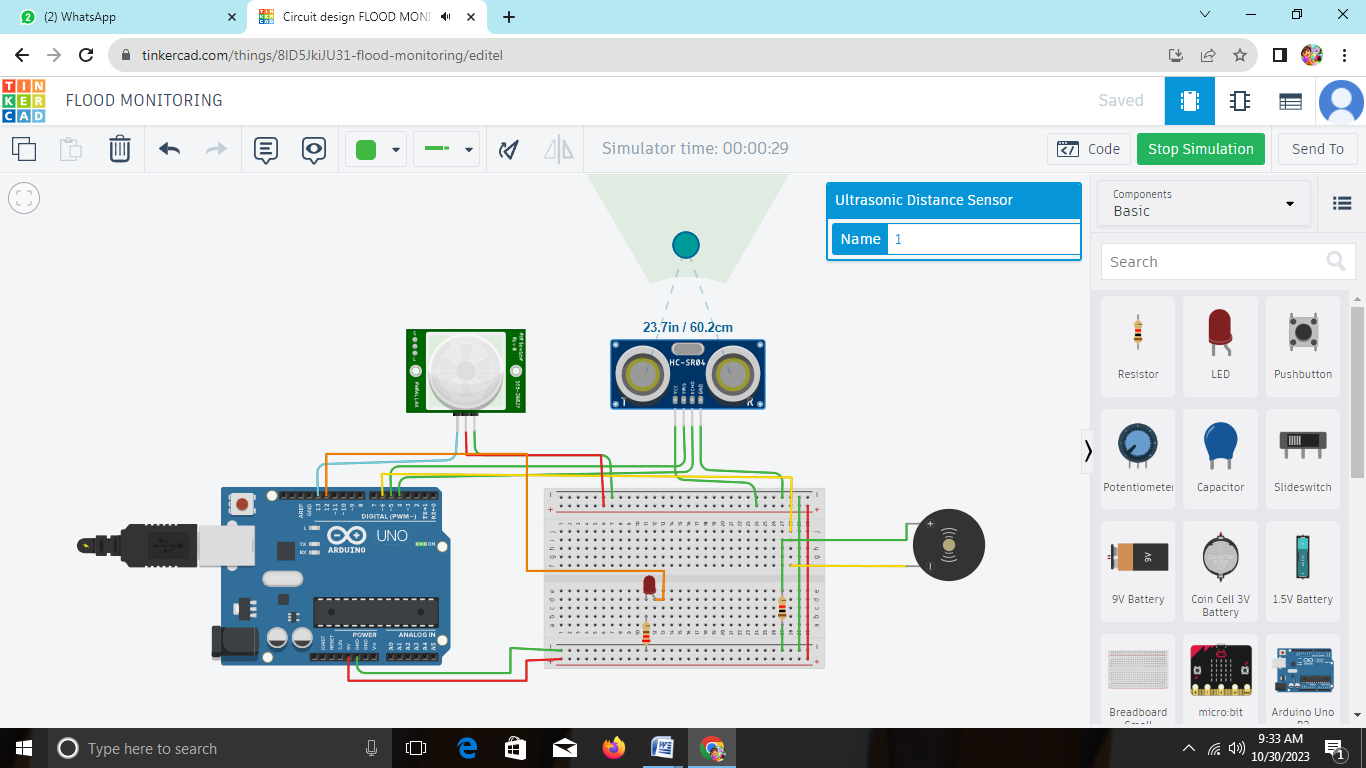
} else {

noTone(6);

}

}

**OUTPUT**

****