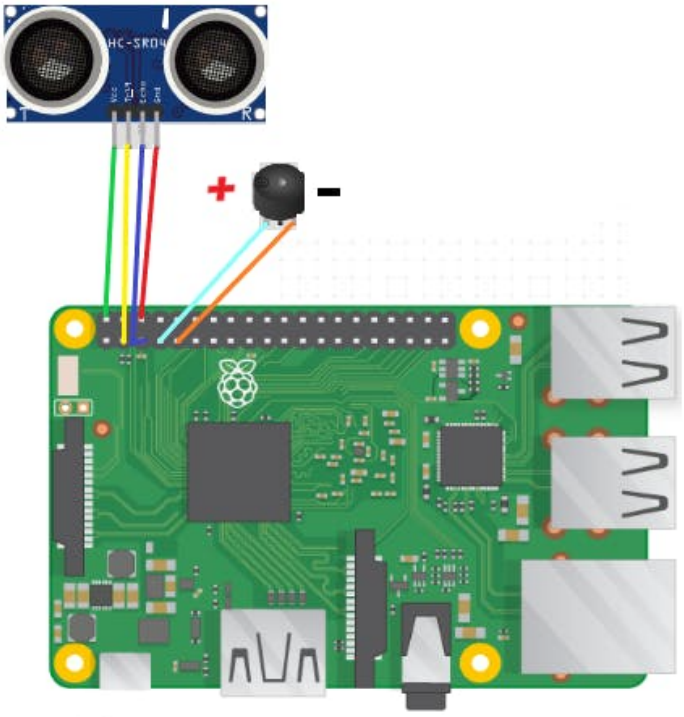
Experiment 10: Develop a water level depth detection system using Ultrasonic sensor.

Date : 8.10.2025

Circuit:



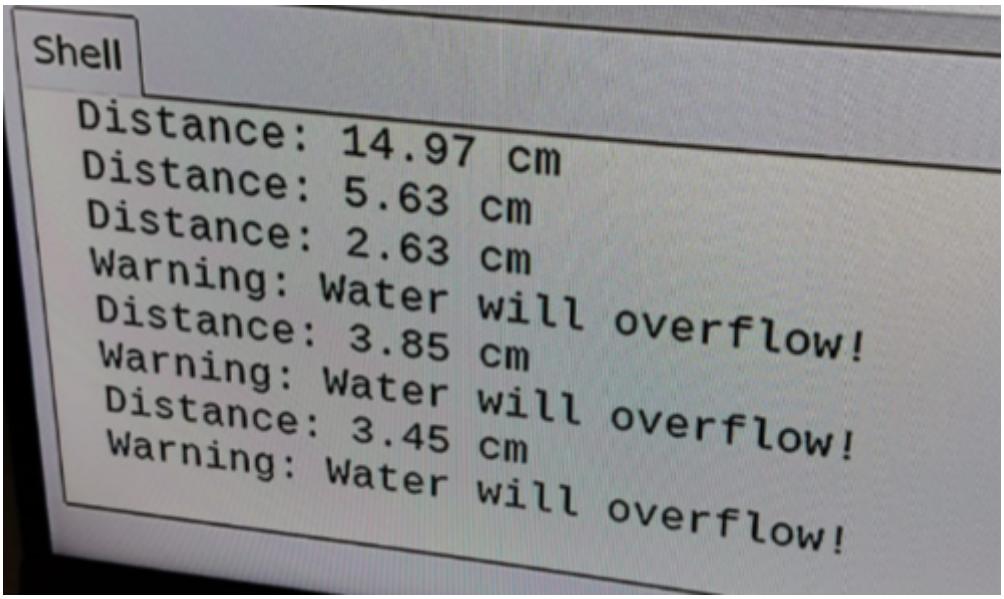
Code:

```
import RPi.GPIO as GPIO
import time


GPIO.setmode(GPIO.BCM)


TRIG = 2
ECHO = 3
i=0
```

```
GPIO.setup(TRIG ,GPIO.OUT)
GPIO.setup(ECHO,GPIO.IN)
GPIO.setup(4 ,GPIO.OUT)

GPIO.output(TRIG, False)
print("Starting.....")
time.sleep(2)

while True:
  GPIO.output(TRIG, True)
  time.sleep(0.00001)
  GPIO.output(TRIG, False)

  while GPIO.input(ECHO)==0:
    pulse_start = time.time()

  while GPIO.input(ECHO)==1:
    pulse_stop = time.time()

  pulse_time = pulse_stop - pulse_start

  distance = pulse_time * 17150
  print(round(distance, 2));

  time.sleep(1)

  if distance < 4:
     print("Water will overflow")
```

```
        GPIO.output(4, True);
        time.sleep(0.5)
        GPIO.output(4, False);
        time.sleep(0.5)
        GPIO.output(4, True);
        time.sleep(0.5)
        GPIO.output(4, False);
        time.sleep(0.5)
    else:
        GPIO.output(4, False);
```

Output:


Shell
Distance: 14.97 cm
Distance: 5.63 cm
Distance: 2.63 cm
Warning: Water will overflow!
Distance: 3.85 cm
Warning: Water will overflow!
Distance: 3.45 cm
Warning: Water will overflow!