**Internet of Things**

**Lab Practical No. 3**

**Code :**

import RPi.GPIO as GPIO

import time

import Adafruit\_DHT

import BlynkLib

# GPIO SETUP

channel\_water = 21 # GPIO pin where your water level sensor is

connected

GPIO.setmode(GPIO.BCM)

GPIO.setup(channel\_water, GPIO.IN)

# DHT11 SETUP

DHT\_SENSOR = Adafruit\_DHT.DHT11

DHT\_PIN = 4 # GPIO pin where your DHT11 sensor is connected

# Blynk SETUP

BLYNK\_AUTH = 'vkMr4KfVd1dC2cLeZtN15hmmgl3410N-' #

Replace with your Blynk auth token

blynk = BlynkLib.Blynk(BLYNK\_AUTH)

# Callback function for water level

def water\_callback(channel):

if GPIO.input(channel):

print("Water Detected!")

blynk.virtual\_write(0, 1) # Set virtual pin V0 to 1 (indicating

water detected)

else:

print("Water Not Detected!")

blynk.virtual\_write(0, 0) # Set virtual pin V0 to 0 (indicating no

water)

# Event detection for water level

GPIO.add\_event\_detect(channel\_water, GPIO.BOTH,

bouncetime=1000)

GPIO.add\_event\_callback(channel\_water, water\_callback)

# Infinite loop

try:

while True:

humidity, temperature =

Adafruit\_DHT.read\_retry(DHT\_SENSOR, DHT\_PIN)

if humidity is not None and temperature is not None:

print(f'Temperature: {temperature}°C, Humidity: {humidity}%')

# Send temperature and humidity values to Blynk virtual pins

V1 and V2

blynk.virtual\_write(1, temperature)

blynk.virtual\_write(2, humidity)

else:

print("Failed to retrieve DHT11 data")

blynk.run()

time.sleep(2) # Sleep for 2 seconds between readings

except KeyboardInterrupt:

GPIO.cleanup()

**OUTPUT/CIRCUIT DIAGRAM:**

