CODE IMPLEMENTATION

import time

import pyrebase

WIFI\_SSID = "use\_me"

WIFI\_PASSWORD = "12345678"

FIREBASE\_HOST = "your\_firebase\_host"

FIREBASE\_AUTH = "your\_firebase\_auth\_token"

SOIL\_MOISTURE\_PIN = 0

WATER\_PUMP\_PIN = 5

soil\_moisture\_threshold = 500

config = {

"apiKey": FIREBASE\_AUTH,

"authDomain": FIREBASE\_HOST,

"databaseURL": FIREBASE\_HOST,

"storageBucket": FIREBASE\_HOST

}

firebase = pyrebase.initialize\_app(config)

db = firebase.database()

def setup():

print("Connecting to WiFi...")

while True:

try:

wifi = pywifi.PyWiFi()

iface = wifi.interfaces()[0]

iface.disconnect()

time.sleep(1)

profile = pywifi.Profile()

profile.ssid = WIFI\_SSID

profile.auth = const.AUTH\_ALG\_OPEN

profile.akm.append(const.AKM\_TYPE\_WPA2PSK)

profile.cipher = const.CIPHER\_TYPE\_CCMP

profile.key = WIFI\_PASSWORD

iface.remove\_all\_network\_profiles()

tmp\_profile = iface.add\_network\_profile(profile)

iface.connect(tmp\_profile)

time.sleep(5)

if iface.status() == const.IFACE\_CONNECTED:

print("Connected to WiFi!")

break

except Exception as e:

print(e)

continue

def loop():

soil\_moisture\_level = analogRead(SOIL\_MOISTURE\_PIN)

if soil\_moisture\_level < soil\_moisture\_threshold:

digitalWrite(WATER\_PUMP\_PIN, HIGH) # Turn on the water pump

time.sleep(5) # Water for 5 seconds

digitalWrite(WATER\_PUMP\_PIN, LOW) # Turn off the water pump

db.child("soilMoistureLevel").set(soil\_moisture\_level)

db.child("waterPumpStatus").set(1)

else:

digitalWrite(WATER\_PUMP\_PIN, LOW) # Turn off the water pump

db.child("soilMoistureLevel").set(soil\_moisture\_level)

db.child("waterPumpStatus").set(0)

time.sleep(60) # Wait for a minute before checking again

setup()

while True:

loop(