Smart water management

Irrigation system

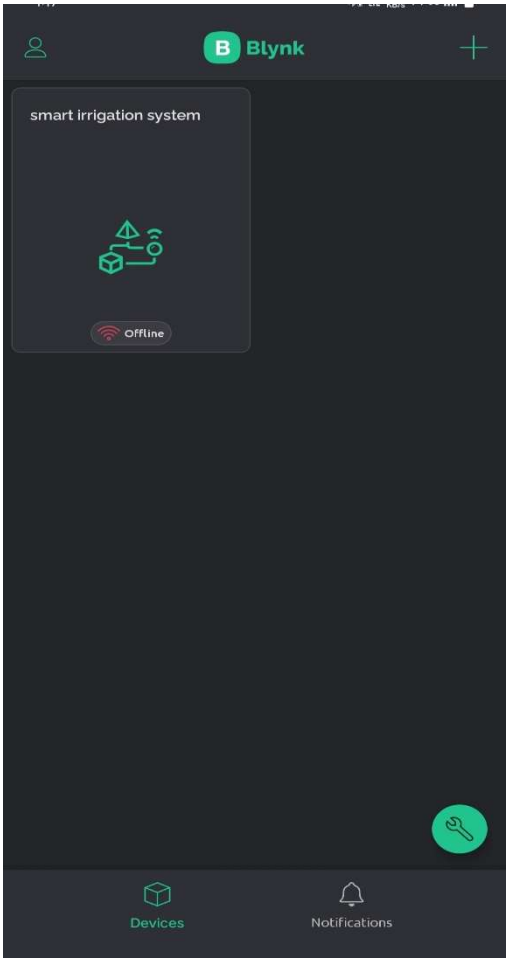
In this phase we are developing our project through the creating a server to store the our project for the access of remotely via Wi-Fi through mobile. In this project we are faced many struggles like components because sufficient components are not available for the project. And finally at last we have creating the platform for the project for smart irrigation system. Now we are used Blynk. Blynk is a IOT platform that allows to create apps for the users it will use to remotely control and monitor the device. Blynk is a cloud-based, hardware-agnostic internet of things (IoT) platform. Its available in android and IOS development.

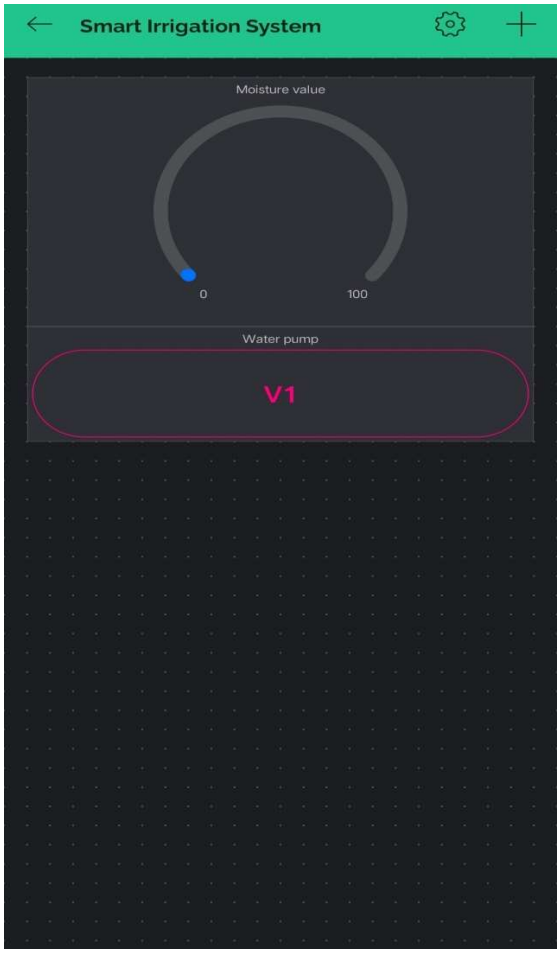
Here in smart irrigation system we are monitoring the plants moisture for the watering purpose and maintain the water level of plants for the growth. Its is used as in small area as well as large area too.

Here the code which have been connected through the blynk server

```
import BlynkLib
import time

BLYNK_AUTH = 'ly6gQPT3fOv6GRG6e9Km3_T2d5Ek2_zX'

blynk = BlynkLib.Blynk(BLYNK_AUTH)

def check_soil_moisture():
    # Read the soil moisture sensor value
    moisture_level = read_moisture_sensor()

    if moisture_level < 30: # Adjust this threshold as needed
        blynk.virtual_write(0, "Irrigation needed")
        turn_on_water_pump()
    else:
        blynk.virtual_write(0, "Soil is moist")
```

```
def turn_on_water_pump():
    # Code to activate the water pump
    # Add your water pump control logic here

@blynk.VIRTUAL_WRITE(1)
def manual_control(pin, value):
    if int(value[0]) == 1:
        turn_on_water_pump()
    else:
        # Turn off the water pump
        pass

while True:
    blynk.run()
    check_soil_moisture()
    time.sleep(300) # Check moisture level every 5 minutes
```





Like this we can control the divice through the platform.

1. Install the Blynk app on your mobile device.

2. Create a new project in the Blynk app and obtain an authentication token.

3. Add a button or a slider widget to your Blynk project to control the water pump.

4. In your NodeMCU code (Python script), you'll need to integrate with Blynk. Use the Blynk library to connect to the Blynk server using the authentication token and map the widget to the relay control.