A MINI PROJECT REPORT ON

WATER LEVEL MONITOR

Submitted in fulfillment of the requirement

of Computer Communication Lab

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CERTIFICATE

This is to certify that Computer Communication Lab Mini Project entitled "**WATER LEVEL MONITOR**" Submitted by Sujal Chordiya (RA2111003010938), Pranjali Sharma (RA2111003010939), Priyamvada Jadon(RA2111003010950), Bhavya Malhotra(RA2111003010951), Jayatri Banarjee(RA2111003010958) for the partial fulfilment of therequirement for Semester IV Subject of Computer Communication Lab to the SRM Institute of Science and Technology, is a bonafide work carried out during Semester IV in Academic Year 2022-2023.

Dr. M.Gayathri

(Subject in charge)

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Declaration

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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ABSTRACT

Irrigation is the process of supplying water to the land at regular intervals by means of canals and other artificial methods, to enhance agricultural growth and maintain the landscape during periods of less average rainfall. A sprinkler is a device used to spray water. Sprinklers are used to water plants or grass, or to put out fires in buildings. A sprinkler system is important for this, as it is a very efficient method/form of watering the landscape. It helps to put in the water in exact amounts, at exact spots, even much better than hoses and movable sprinklers. In other words, only part of the water is used efficiently, and the rest of the water is lost for the crops on the fields that were to be irrigated. It releases water similar to rainfall through a small diameter nozzle placed in the pipes. Water is distributed through a system of pipes, sprayed into the air and irrigates in most the soil type due to the wide range of discharge capacity. In this project, we have used Cisco Packet Tracer to create a water level monitor. We have made this using two lawn sprinklers, a home gateway, water level monitor all this is being controlled using a smartphone

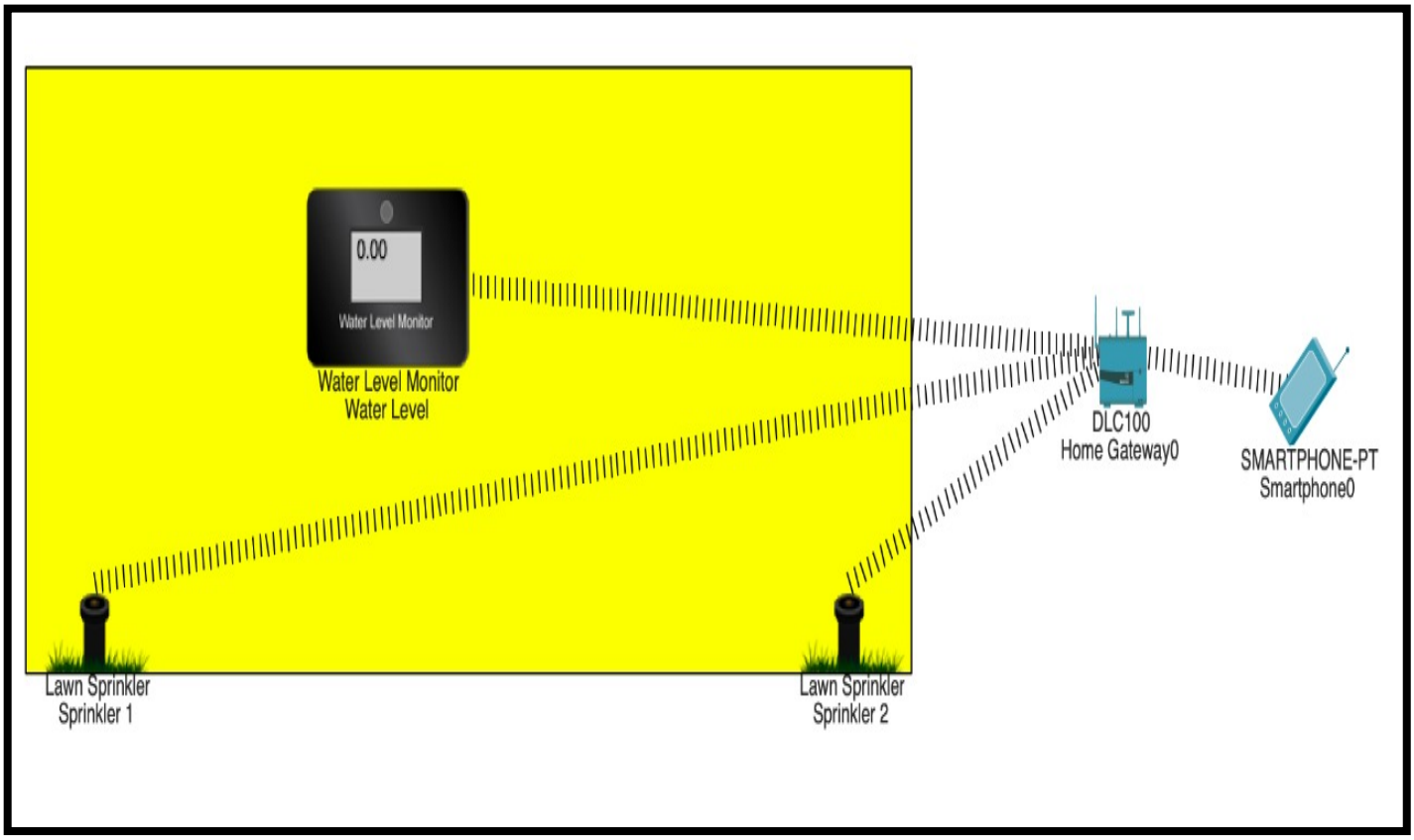
OBJECTIVE

Water is a limited resource and is also essential for agriculture, industry and for creature survival on the earth including human beings. Nowadays more water is being wasted in many uncontrolled ways. This leads to the extinction of water as it is a limited resource. Therefore efficient use and water monitoring are Essential. With the help of a water monitoring system, water wastage will be reduced, also power consumption gets reduced. Thereby, we can preserve water for the next generations. Through water level monitoring, we can avoid the over-flowing of water from the tank. Water level monitoring system application is more significant in-home applications. Internet of Things (IoT) is the network of physical devices, sensors, actuators and connectivity which enables these objects to connect and exchange data. "Things" in the IoT sense refers to various devices such as heart monitoring implants, biochip transponders, cameras, sensors, etc., These devices collect useful data with the help of various existing technologies and then autonomously flow the data between other devices. IoT allows objects to be sensed or controlled remotely across existing networks. IoT creates more opportunities for more direct integration of the physical world into computer-based systems which improves the efficiency and accuracy of the systems.

INTRODUCTION

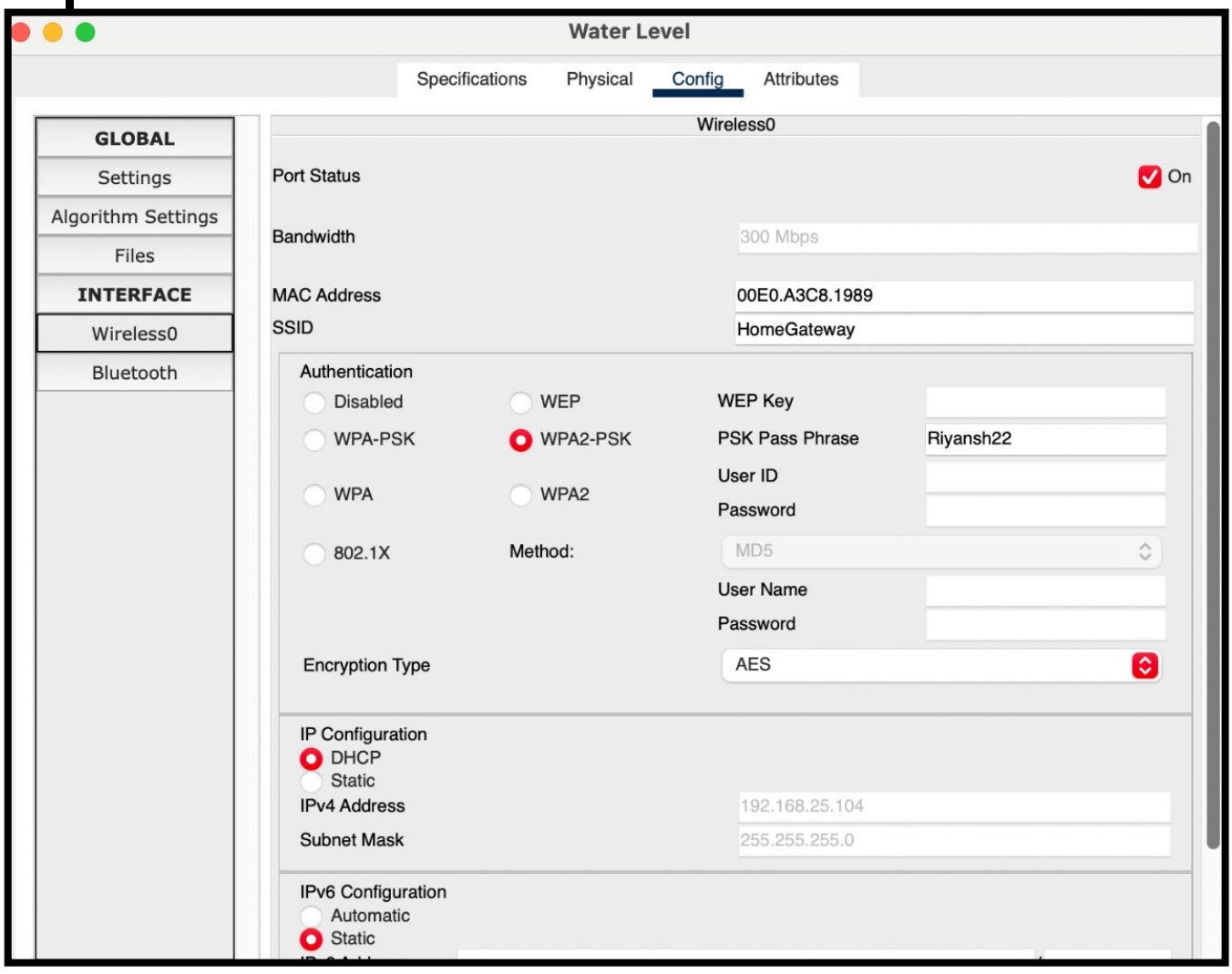
Water is distributed through a system of pipes, sprayed into the air and irrigates in most the soil type due to the wide range of discharge capacity. In this project, we have used Cisco Packet Tracer to create a water level monitor. We have made this using two lawn sprinklers, a home gateway, water level monitor all this is being controlled using a smartphone. These devices collect useful data with the help of various existing technologies and then autonomously flow the data between other devices. IoT allows objects to be sensed or controlled remotely across existing networks. IoT creates more opportunities for more direct integration of the physical world into computer-based systems which improves the efficiency and accuracy of the systems. Therefore, using CISCO PACKET TRACER we have built the water monitor model.

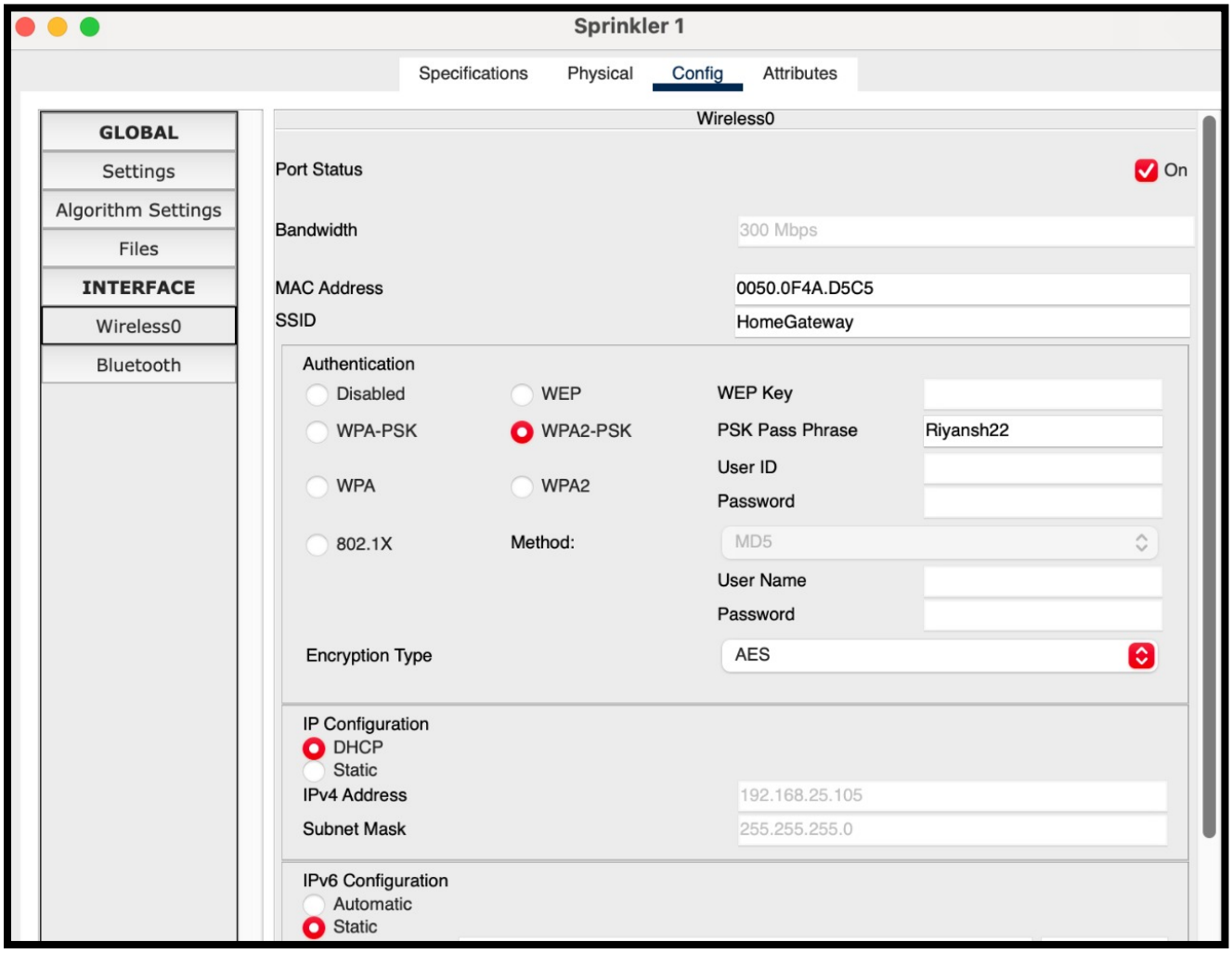
NETWORK TOPOLOGY DIAGRAM

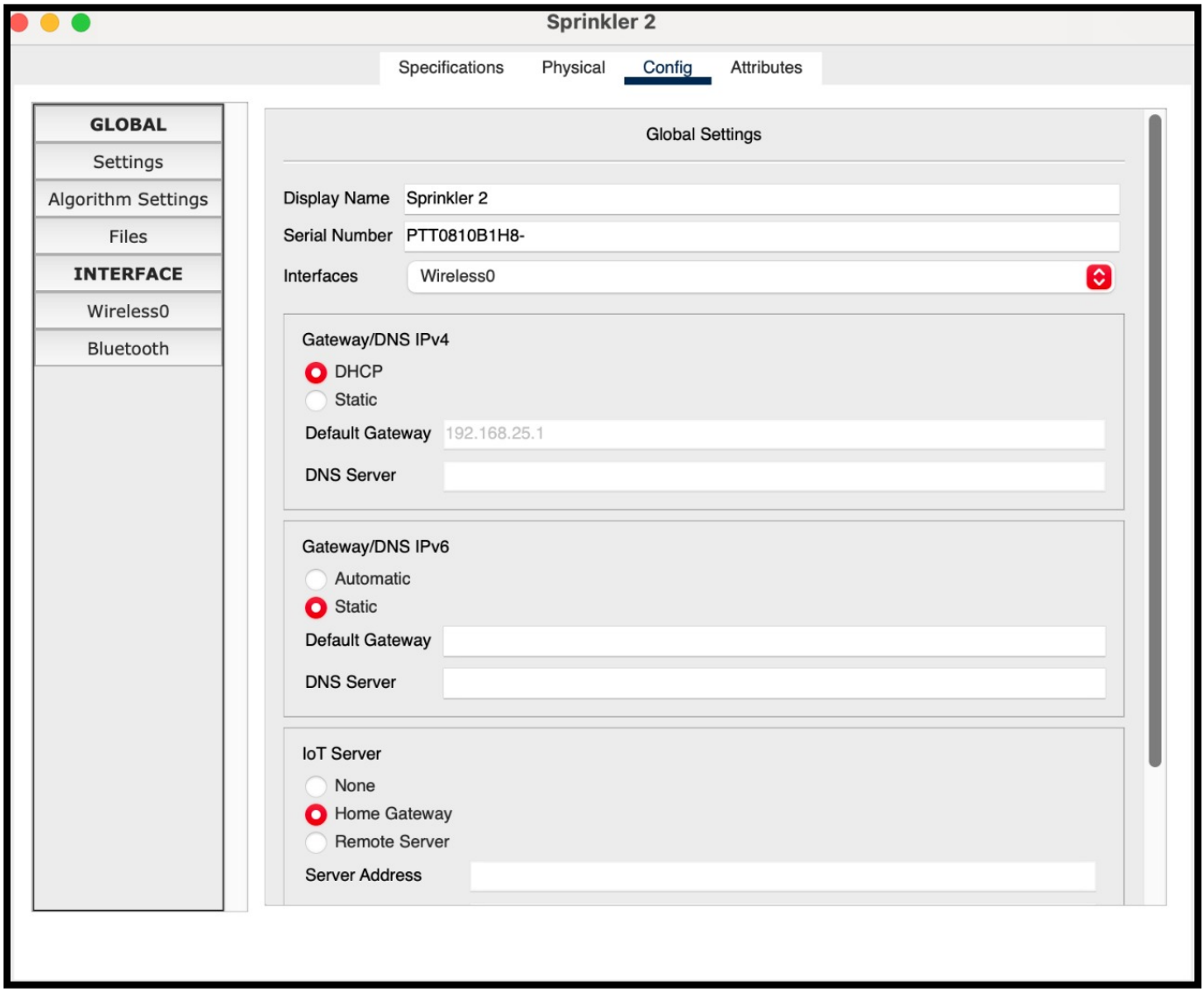


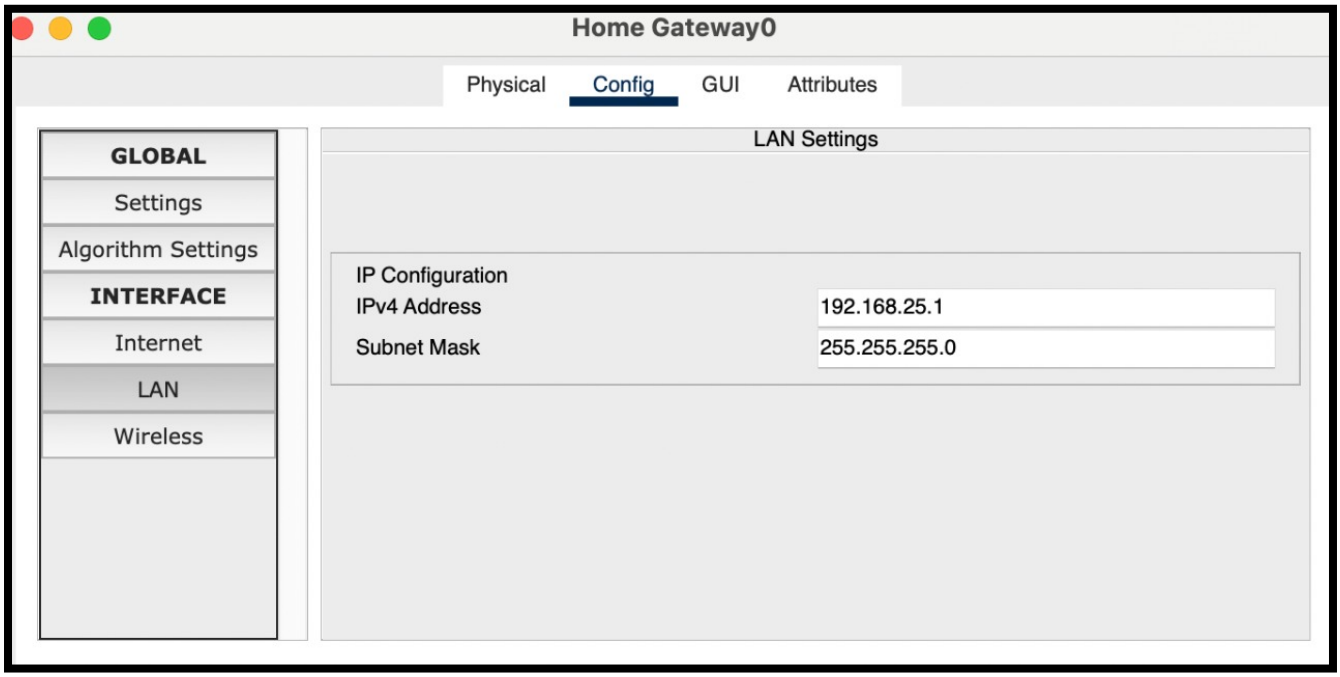
MODULE OF THE PROJECT

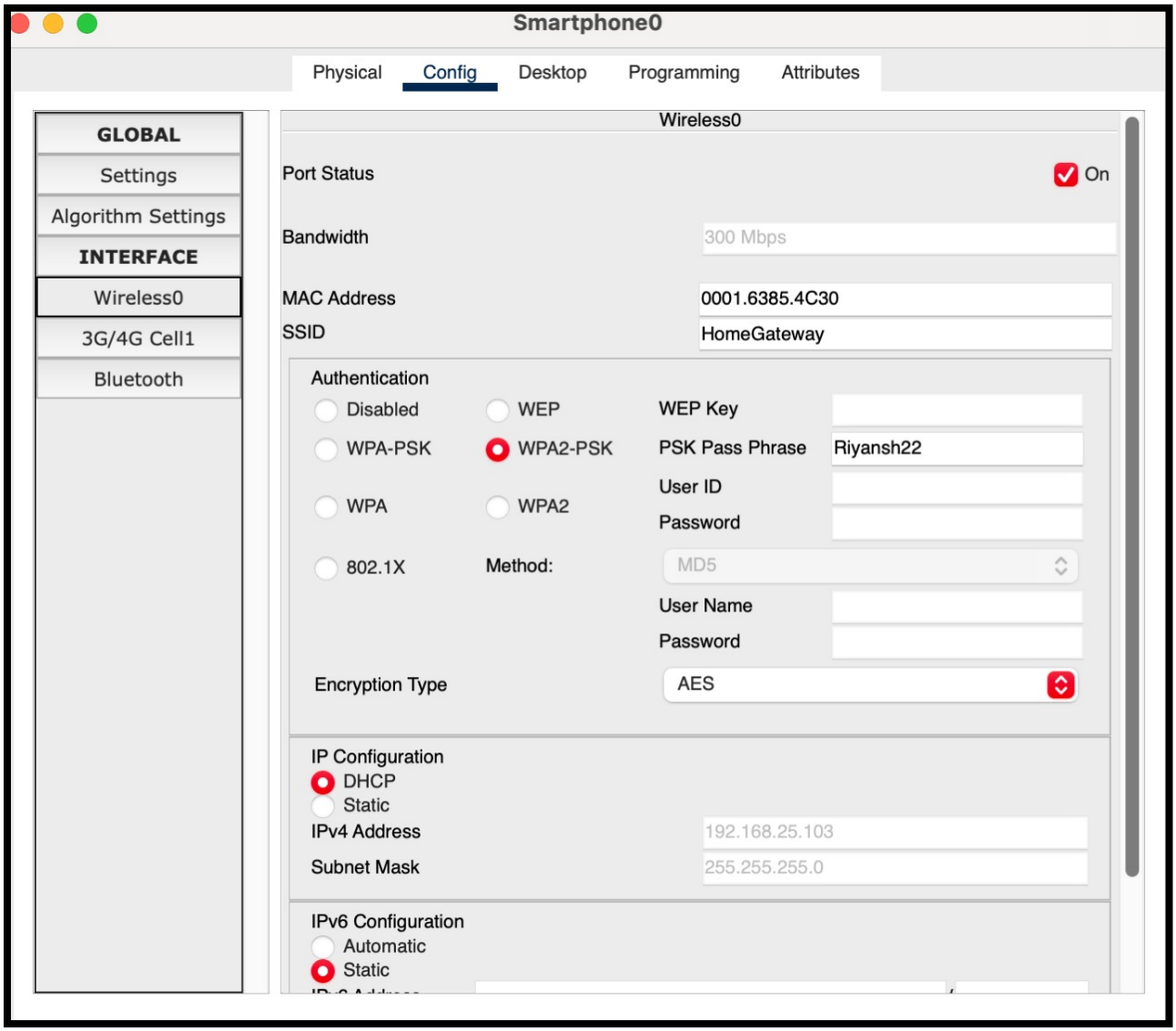
OUTPUT SCREENSHOTS



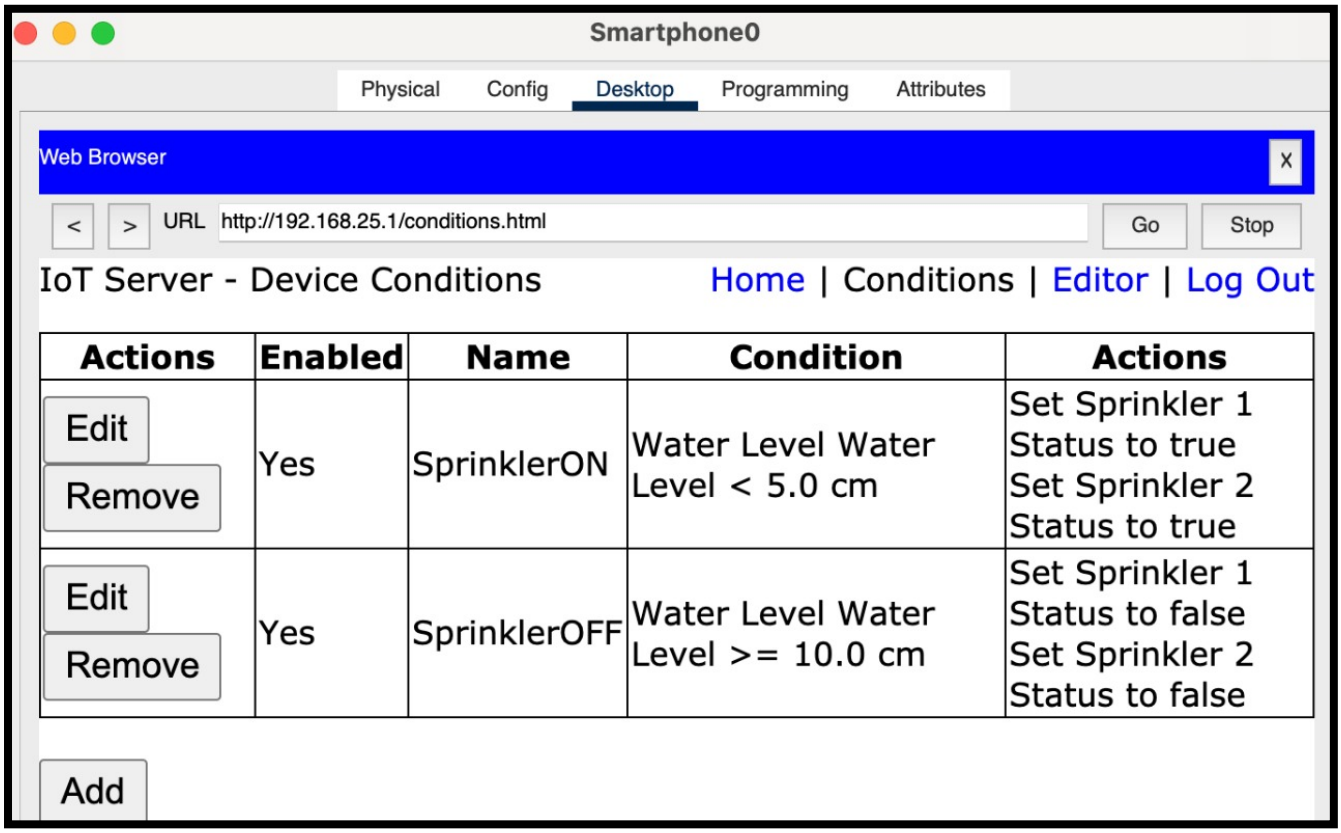

Sprinkler 1
Specifications
Physical
Config
Attributes
GLOBAL
Settings
Algorithm Settings
Files
INTERFACE
Wireless0
Bluetooth
Wireless0
Port Status
On
Bandwidth
300 Mbps
MAC Address
0050.0F4A.D5C5
SSID
HomeGateway
Authentication
Disabled
WEP
WEP Key
WPA-PSK
WPA2-PSK
PSK Pass Phrase
Riyansh22
User ID
WPA
WPA2
Password
802.1X
Method:
MD5
User Name
Password
Encryption Type
AES
IP Configuration
DHCP
Static
IPv4 Address
192.168.25.105
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static

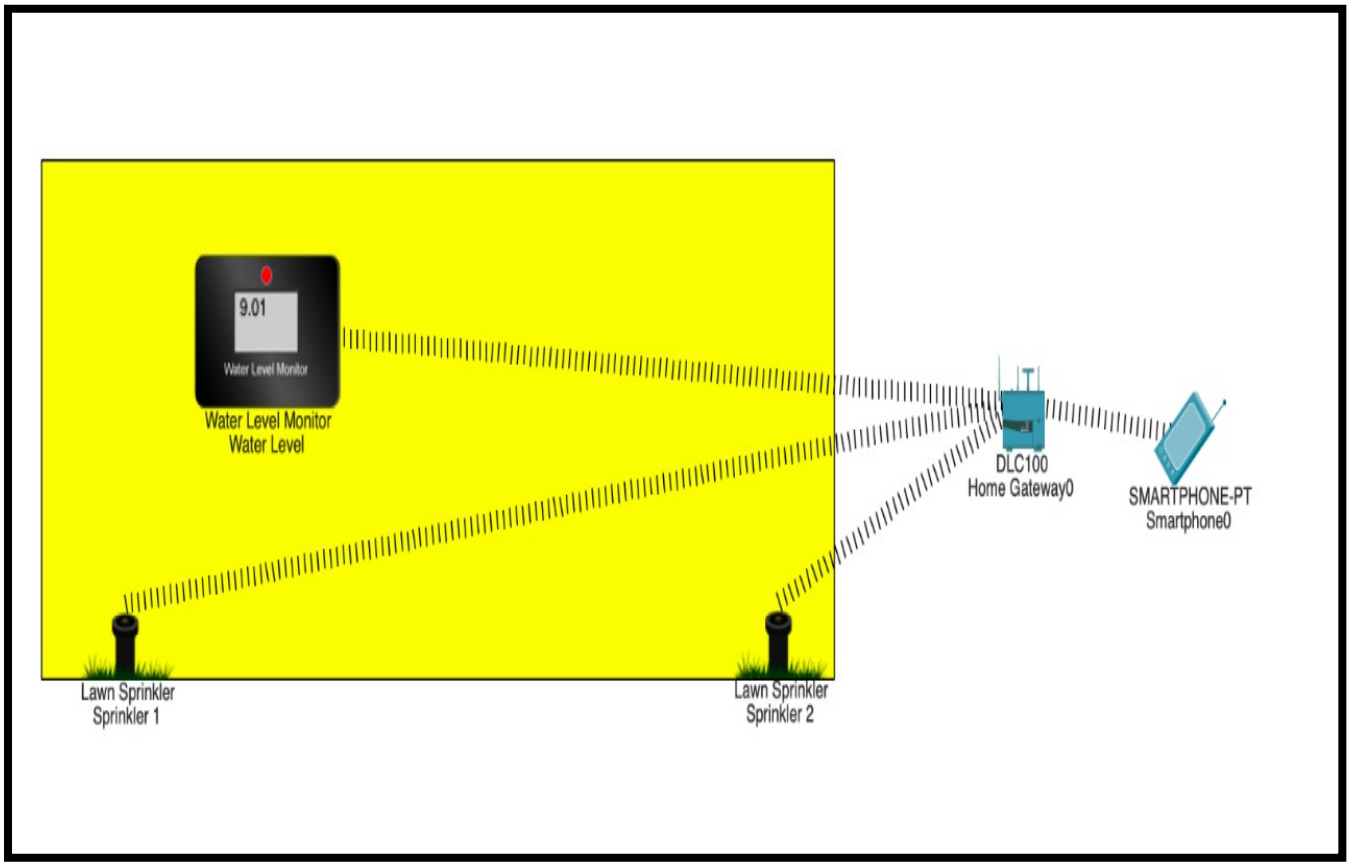

Sprinkler 2
Specifications
Physical
Config
Attributes
GLOBAL
Settings
Algorithm Settings
Files
INTERFACE
Wireless0
Bluetooth
Global Settings
Display Name
Sprinkler 2
Serial Number
PTT0810B1H8-
Interfaces
Wireless0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.25.1
DNS Server
Gateway/DNS IPv6
Automatic
Static
Default Gateway
DNS Server
IoT Server
None
Home Gateway
Remote Server
Server Address

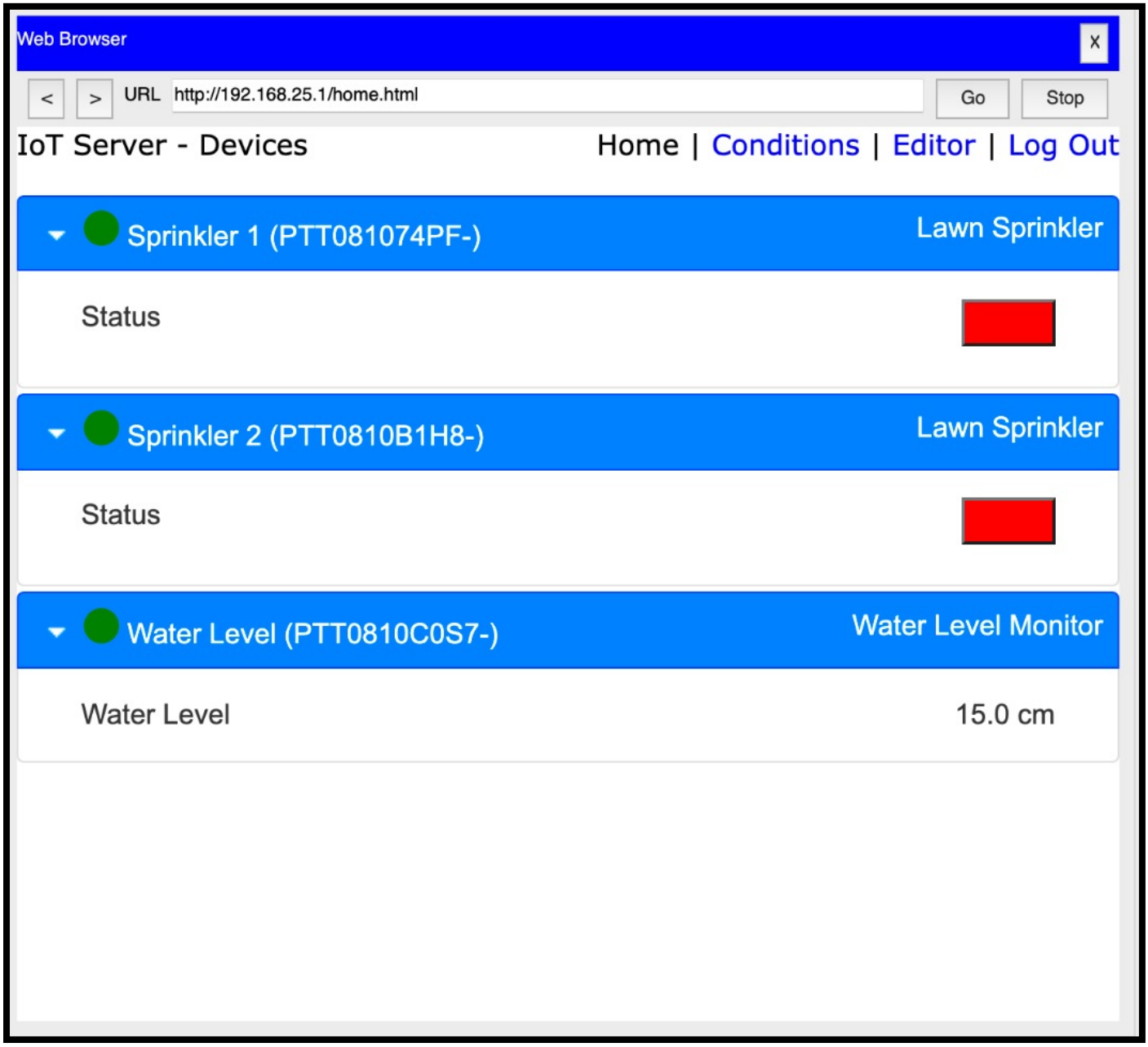

Home Gateway0
Physical
Config
GUI
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
Internet
LAN
Wireless
LAN Settings
IP Configuration
IPv4 Address
192.168.25.1
Subnet Mask
255.255.255.0

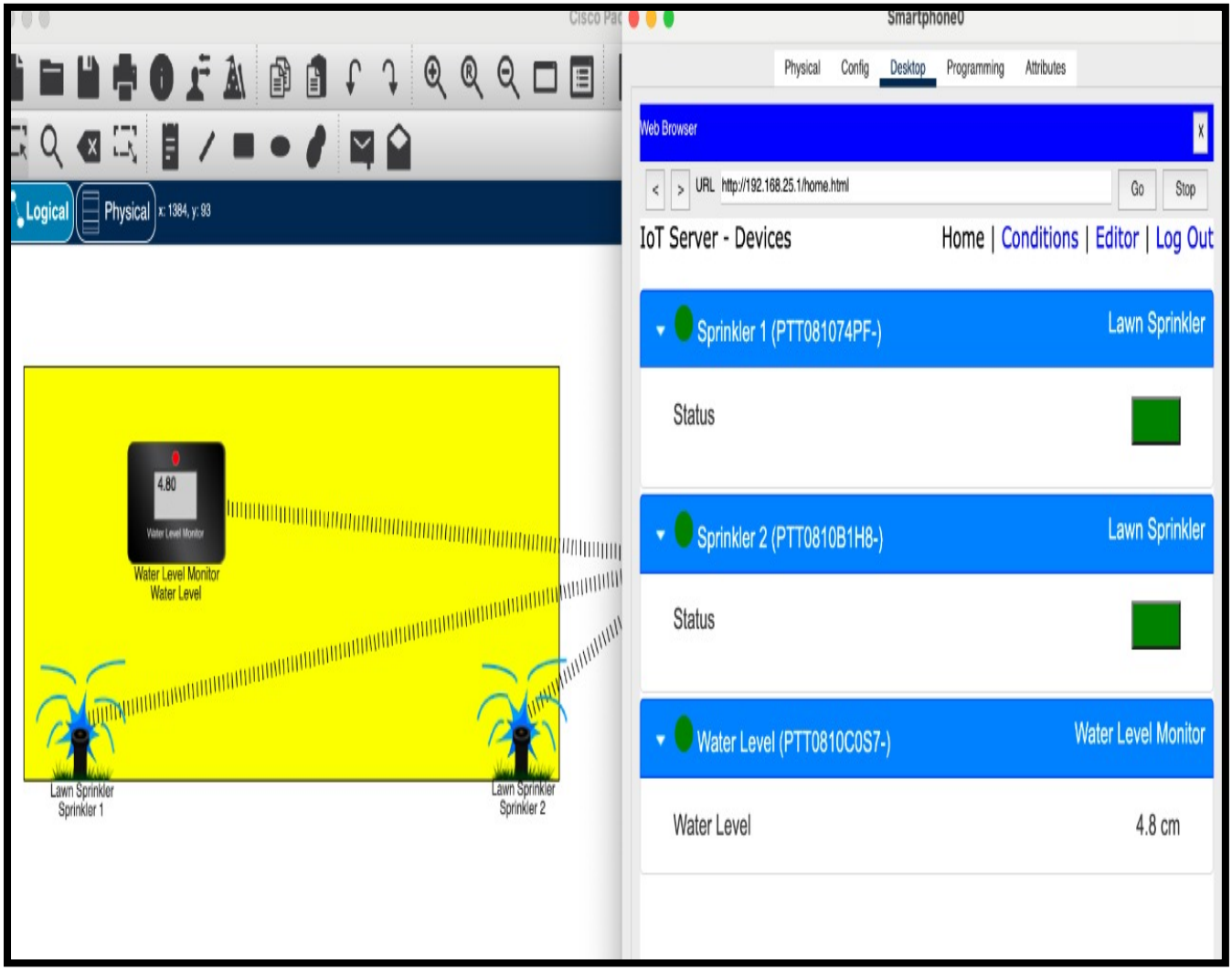

Smartphone0
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
Wireless0
3G/4G Cell1
Bluetooth
Wireless0
Port Status
On
Bandwidth
300 Mbps
MAC Address
0001.6385.4C30
SSID
HomeGateway
Authentication
Disabled
WEP
WEP Key
WPA-PSK
WPA2-PSK
PSK Pass Phrase
Riyansh22
User ID
WPA
WPA2
Password
802.1X
Method:
MD5
User Name
Password
Encryption Type
AES
IP Configuration
DHCP
Static
IPv4 Address
192.168.25.103
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static


Smartphone0
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://192.168.25.1
Go
Stop
Home Gateway Login
Username:
admin
Password:
•••••
Submit


Smartphone0
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://192.168.25.1/conditions.html
Go
Stop
IoT Server - Device Conditions
Home | Conditions | Editor | Log Out
Actions
Enabled
Name
Condition
Actions
Edit
Remove
Yes
SprinklerON
Water Level Water Level < 5.0 cm
Set Sprinkler 1 Status to true
Set Sprinkler 2 Status to true
Edit
Remove
Yes
SprinklerOFF
Water Level Water Level >= 10.0 cm
Set Sprinkler 1 Status to false
Set Sprinkler 2 Status to false
Add


9.01
Water Level Monitor
Water Level Monitor
Water Level
DLC100
Home Gateway0
SMARTPHONE-PT
Smartphone0
Lawn Sprinkler
Sprinkler 1
Lawn Sprinkler
Sprinkler 2


Web Browser
X
<
>
URL
http://192.168.25.1/home.html
Go
Stop
IoT Server - Devices
Home | Conditions | Editor | Log Out
Sprinkler 1 (PTT081074PF-)
Lawn Sprinkler
Status
Sprinkler 2 (PTT0810B1H8-)
Lawn Sprinkler
Status
Water Level (PTT0810C0S7-)
Water Level Monitor
Water Level
15.0 cm


Logical
Physical
x: 1384, y: 93
4.80
Water Level Monitor
Water Level Monitor
Water Level
Lawn Sprinkler
Sprinkler 1
Lawn Sprinkler
Sprinkler 2
Smartphone0
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://192.168.25.1/home.html
Go
Stop
IoT Server - Devices
Home | Conditions | Editor | Log Out
Sprinkler 1 (PTT081074PF-)
Lawn Sprinkler
Status
Sprinkler 2 (PTT0810B1H8-)
Lawn Sprinkler
Status
Water Level (PTT0810C0S7-)
Water Level Monitor
Water Level
4.8 cm

CONCLUSION

Hence a project was developed on the topic of Water Level Monitor to reduce the wastage of water and other resources using Cisco Packet Tracer.

REFERENCES

- **www.google.com**
- **www.wikipedia.com**
- **Cisco Packet Tracer**