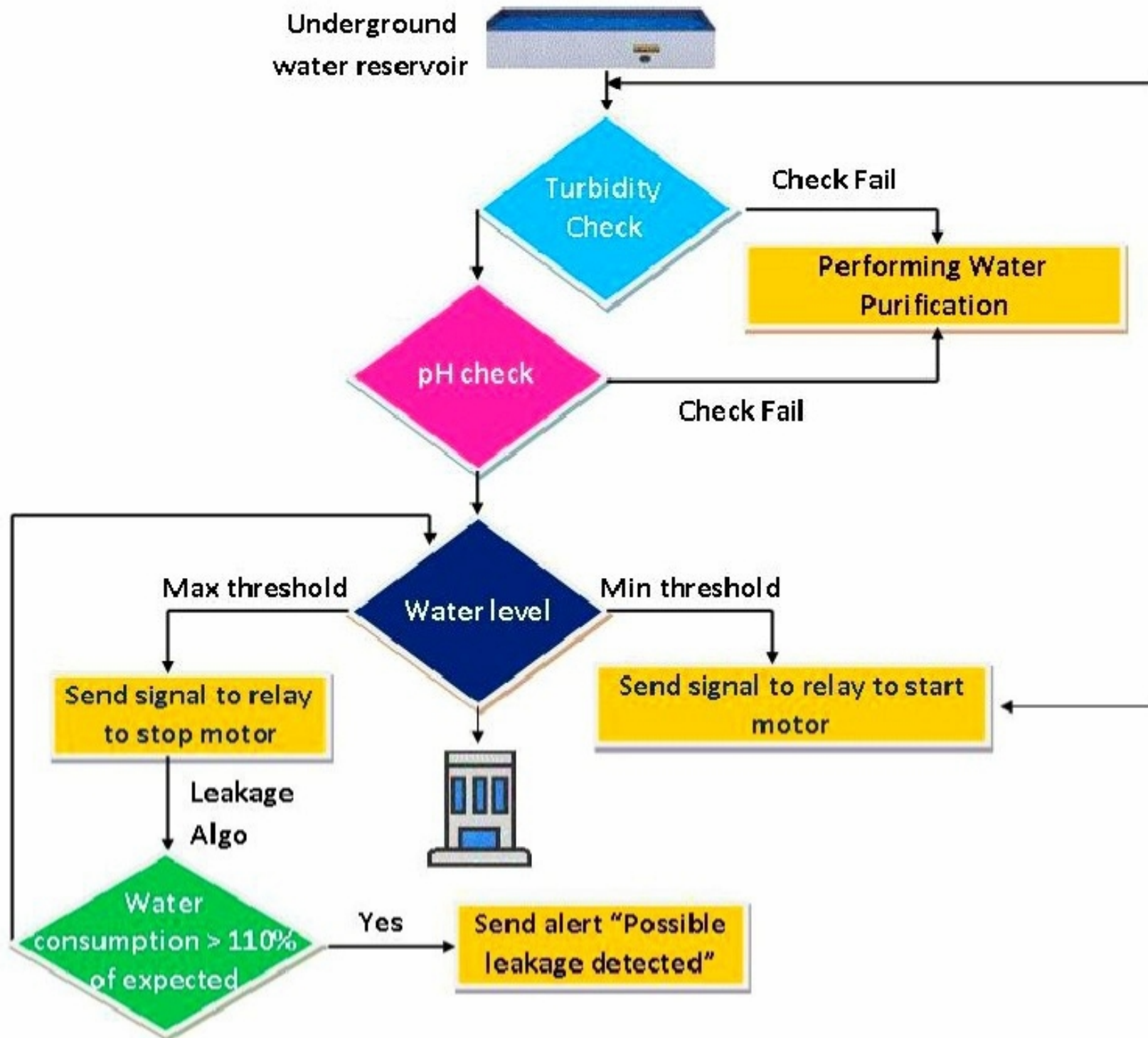# Group Members(G2)

- J_56_Shashank Agrawal (Leader)
- J_53_Ritik Srivastava
- J_48_Rahul Verma
- J_55_Shalini Kumari
- J_63_Tanisha Jain
- J_50_Ravi Rai
- J_65_Vaishnavi Chaurasia
- K_51_Vishal Jain
- J_49_Rakesh Yadav
- J_61_Suryansh Saxena
- J_67_Vanshika Agrawal
- J_54_Satyam Merothiya

Waterproof Ultrasonic Sensor

A device used to find the level of water in tank.

A sensor used to find the pH level of water.

A sensor used to find the turbidity of the liquid.

A device which automatically activates the motor.

Relay

4

5

7

3

6

Building 1

Turbidity Sensor

pH sensor

2

1

Reservoir

Underground water reservoir

Turbidity Check

Check Fail

Performing Water Purification

pH check

Check Fail

Max threshold

Water level

Min threshold

Send signal to relay to stop motor

Send signal to relay to start motor

Leakage Algo

Water consumption > 110% of expected

Yes

Send alert "Possible leakage detected"

Water leakage :

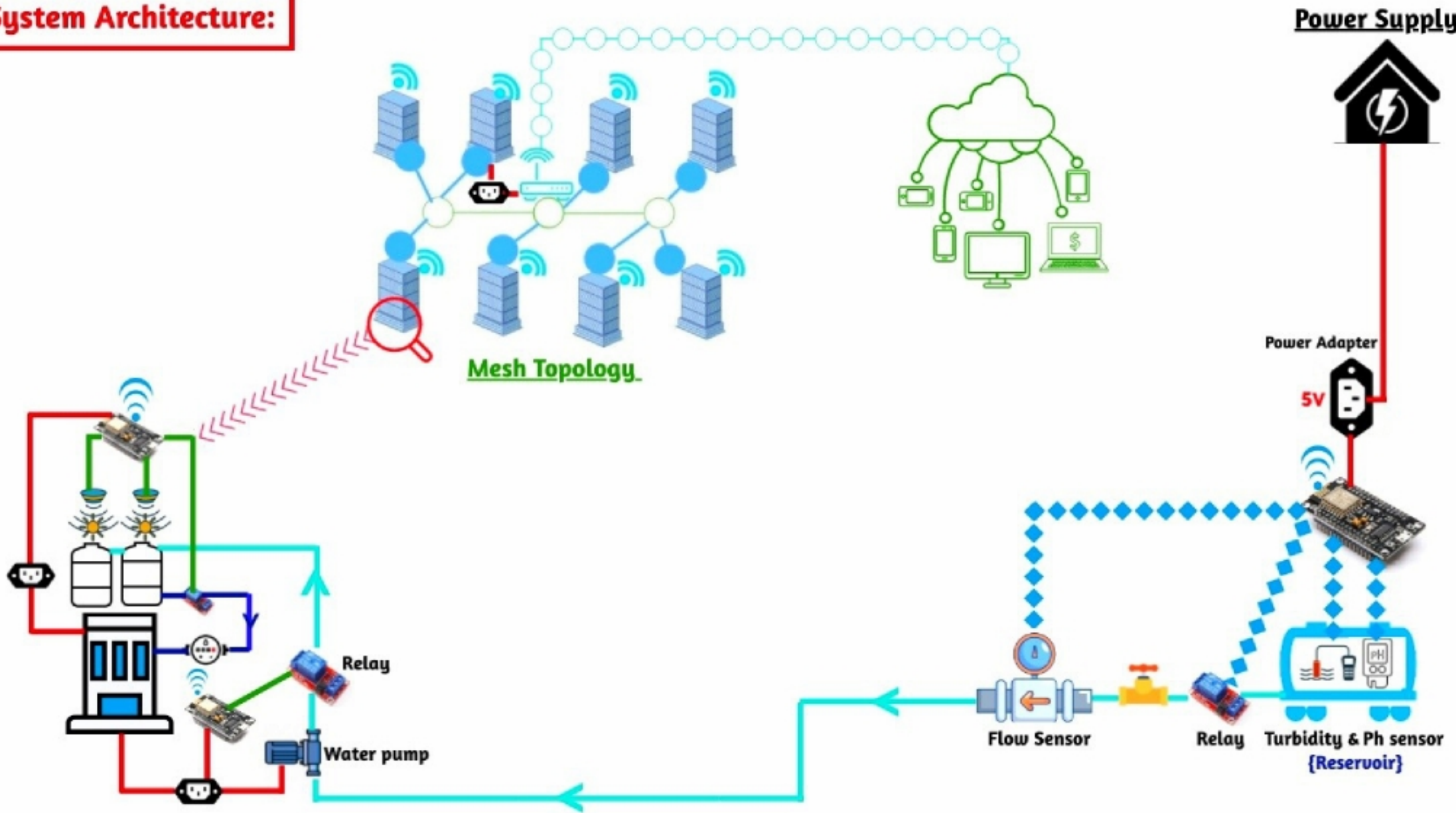|	Specific Area	Methods	If leakage appear
Part - 1 From reservoir to tank	Flats	**Tank filling at 6l/min** **Net consumption at 2l/min** **Effective tank filling at 4l/min**	Relay will stop the valve at reservoir
Part - 2 From tank to meter.	Flat-1 Flat-2 Flat-3	**Fixed pipe vol =** **Tank vol – (Tank remaining+Flats consumption)**	Relay will stop the valve at tank
Part - 3 Inside Flats.	Flat	**If all taps are closed then if** **meter value increases hence leakage reported**	Relay will stop the valve at tank

50 ft

90ft

Mesh Topology

Local Server

Client's Devices
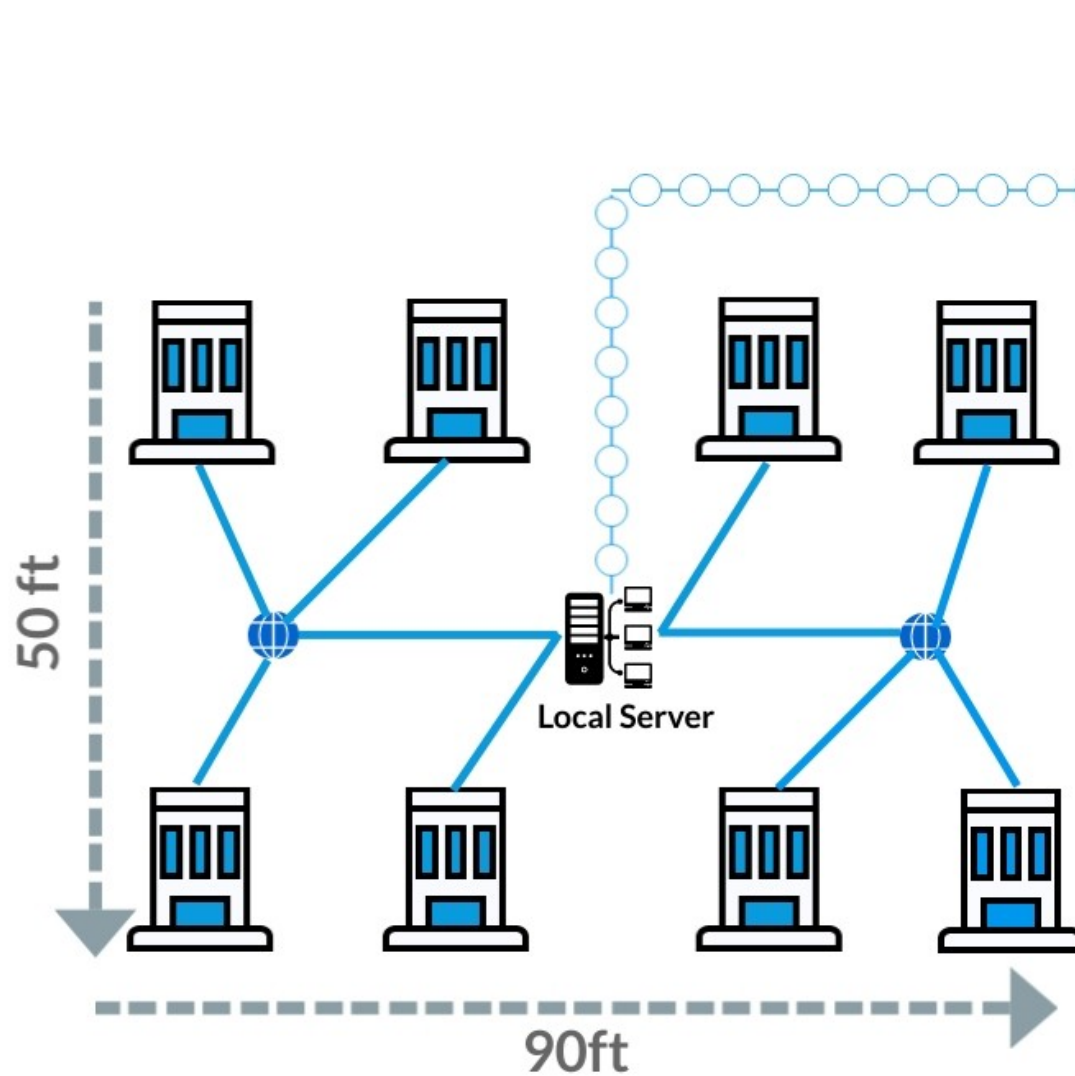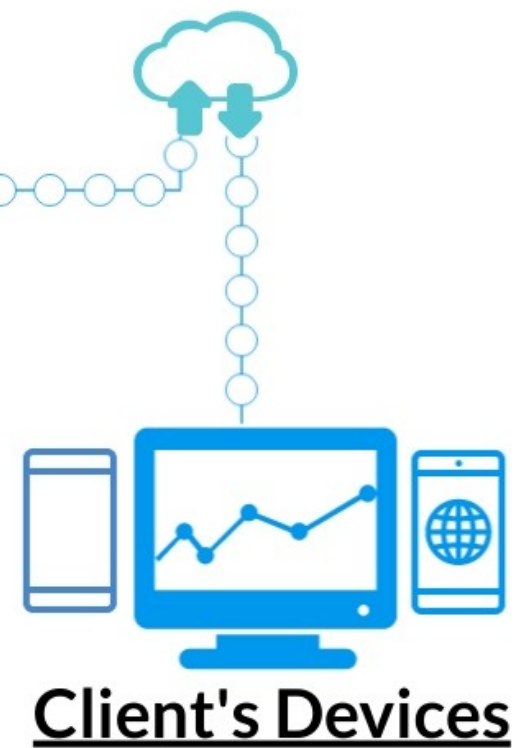
Protocols
*MQTT
*Wi-Fi
*UART

System Architecture:

Power Supply

Power Adapter

5V

Mesh Topology

Relay

Water pump

Flow Sensor

Relay

Turbidity & Ph sensor
{Reservoir}

SMART WATER APP:

Hardware Costing:

S.No.	Component Name	Price (Rs.)	Qty	Total Price (Rs.)	Life Span (yr)	Resources
1.	Ultrasonic Sensor	368	16	5888	1	Link
2.	Relay	40	17	680	1	Link
3.	NodeMCU	240	17	4080	1	Link
4.	PH Sensor	1765	1	1765	0.5-2	Link
5.	Turbidity Sensor	746	1	746	0.5-2	Link
6.	Flow Sensor	225	1	225	1-2	Link
7.	Adapter + USB	219	17	3723	1	Link
8.	Router	999	1	999	1-2	Link

Complete Costing:

S. No.	Requirements	Monthly charges (Rs.)	Yearly Charges (Rs.)
1.	Hardware	18106	18106
2.	Software (vultr)	187	2244
3.	Internet	69	828
4.	Electricity	100	1200
5.	Installation	600	600
6.	Maintenance	500	500
	Total	**19562**	**23478**

BENEFITS

Water quality is checked before supply

Early end to end leakage detection

Can be easily incorporated in existing infrastructure

24*7 remote access

Everything at your finger tip with complete visualization

Never run out of water with Automatic tank filling

Saves your water and electricity bills

Data on cloud for water consumption monitoring

Real time notifications and alerts

Technology that is pocket-friendly