

WATER TAPE

MEASURE | AWARE & CONSERVE |



Table of Contents

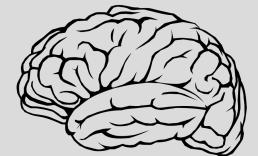
Team Members

Introduction to our project members



Problem Statement

Introduction to our journey on how we came to take up this project and our problem statement



Progress So Far

How will we implement our solution



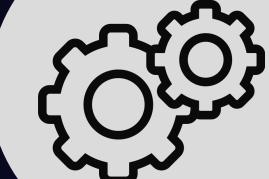
Roomwise Distribution

NodeMCU ESP8266
Water Flow Sensor



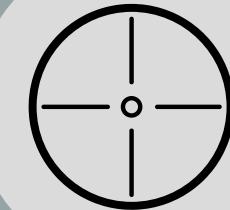
Work Flow

Complete development strategy and chronology of what to do



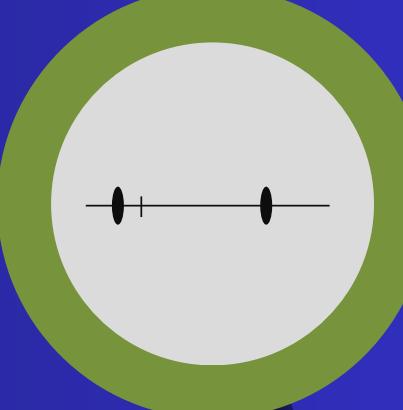
Technology used

To conclude our project



Future Scope

we want our project to be modular and expandable in the future

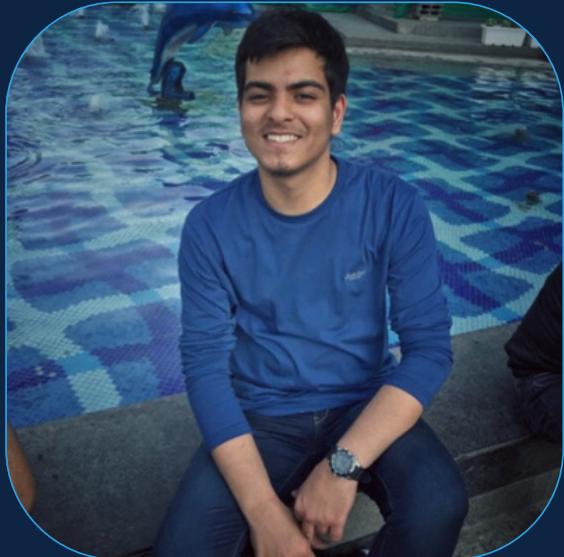


References

what inspired us and what did we trust for our information



Dr Tarun Chaudhary
TEAM DROP



Aashray Arora



Anurag Varshney



Akshat Sharma



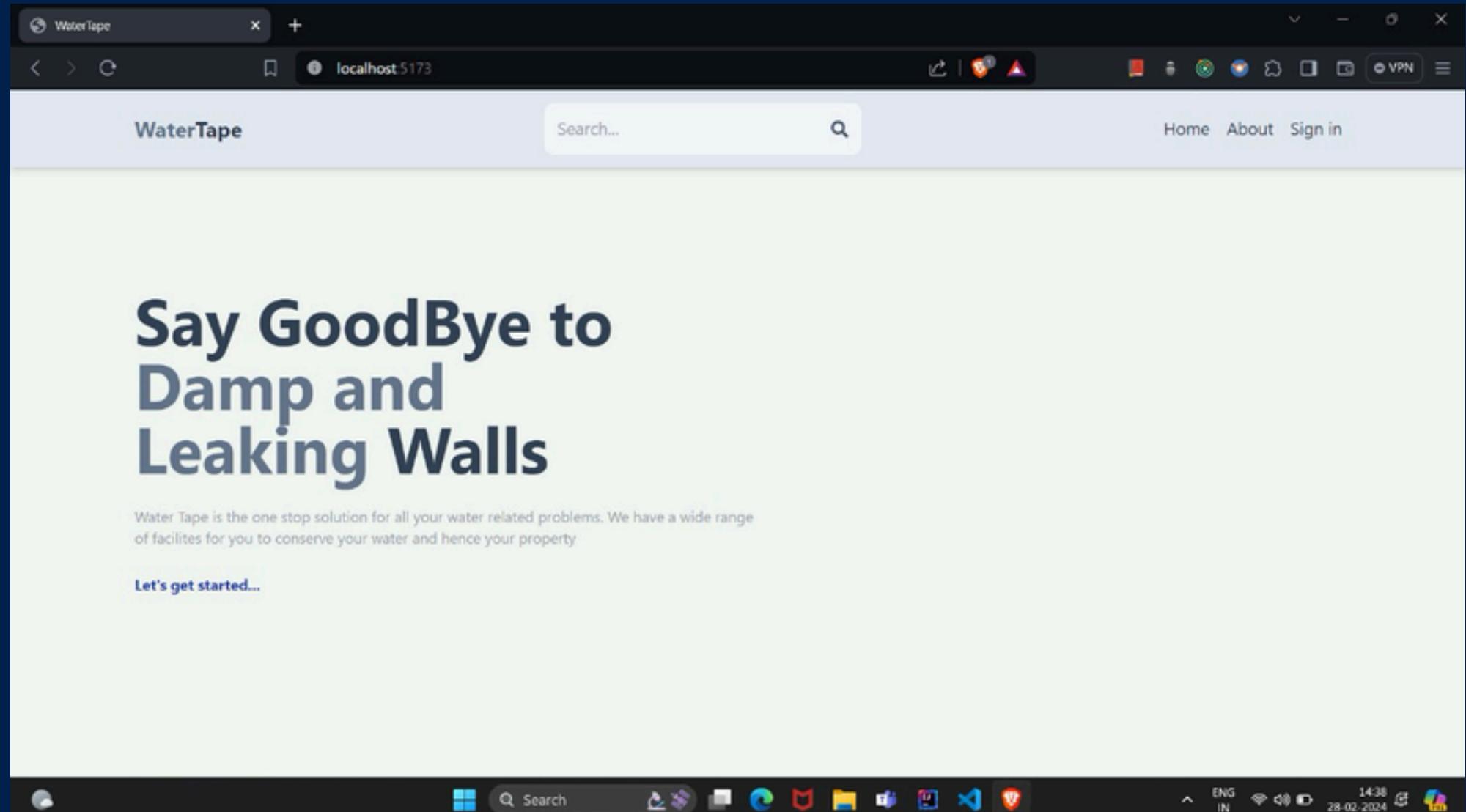
Abhinav Gupta

PROBLEM STATEMENT

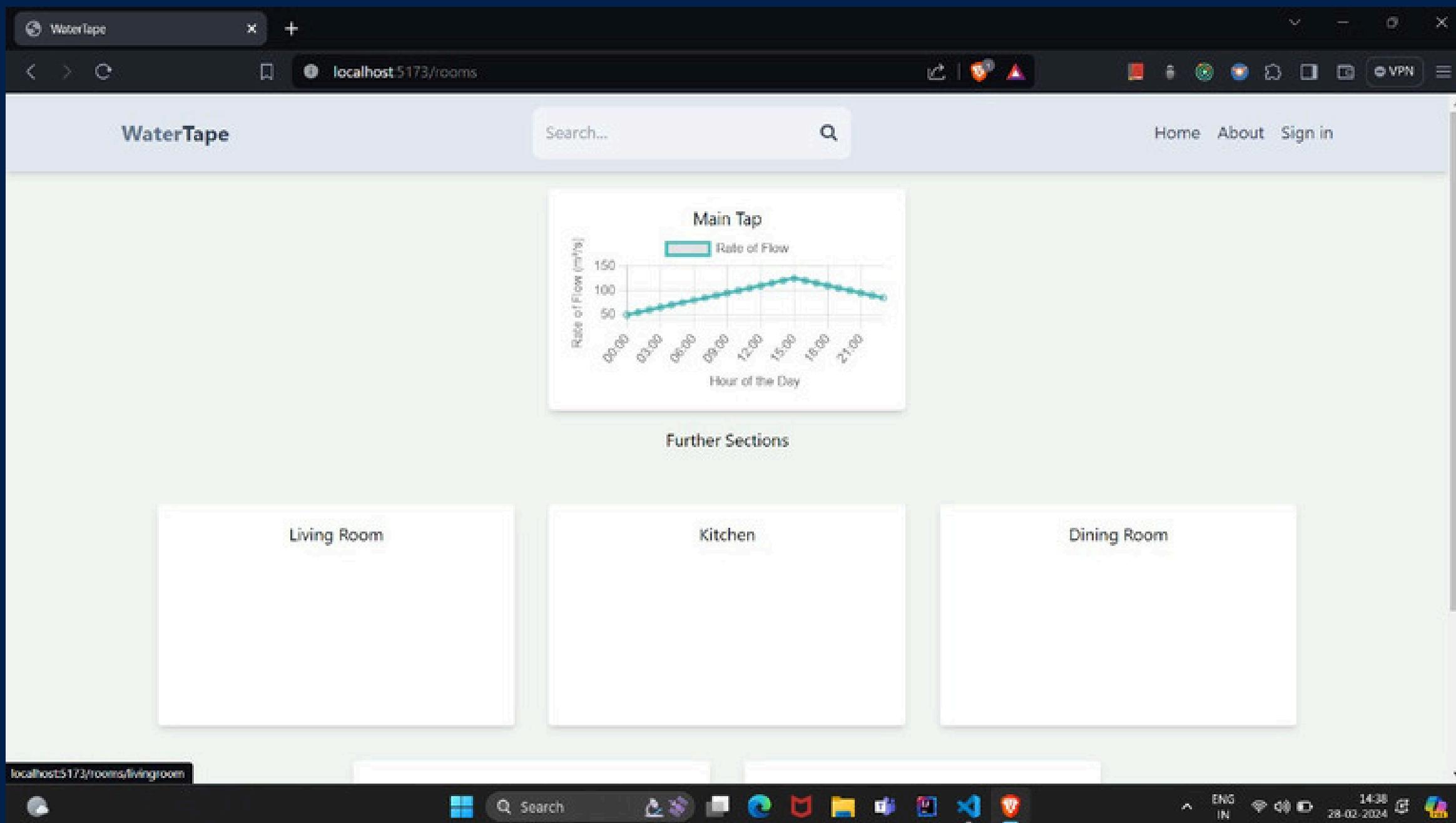
- Water wastage is a pressing issue caused by two primary factors: water leaks and excessive water usage.
- Water leaks can cause significant damage to your property and lead to high repair costs and water wastage.

WEBSITE

- Made the basic working of the website with all webpages working.
- All the charts working and live

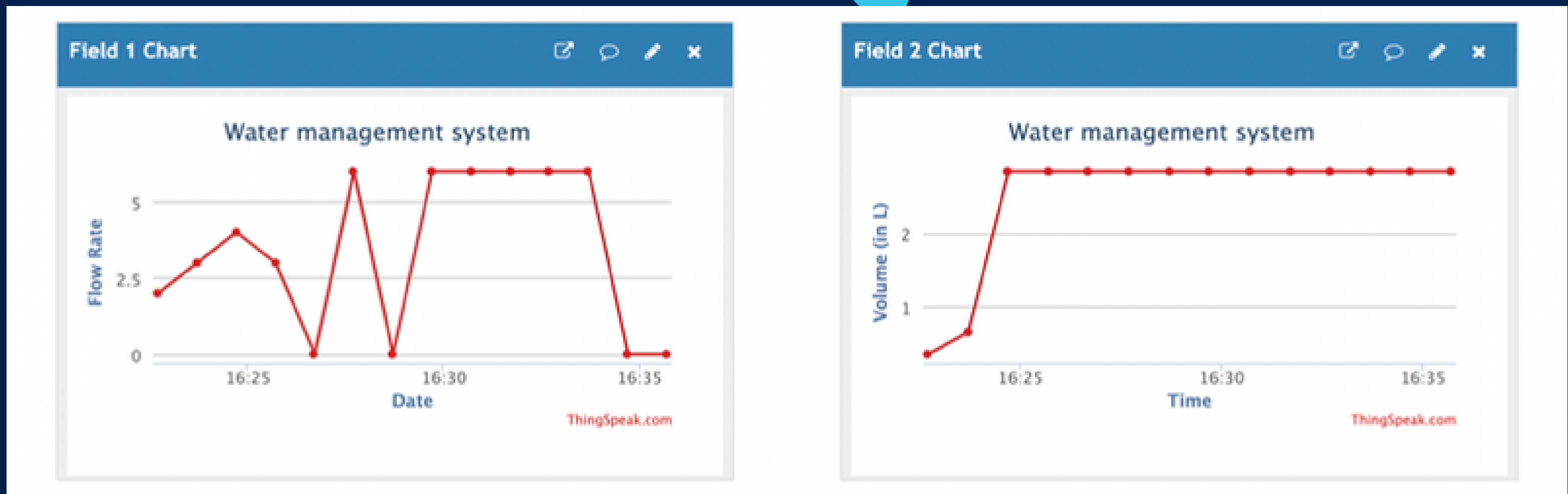


Roomwise Distribution

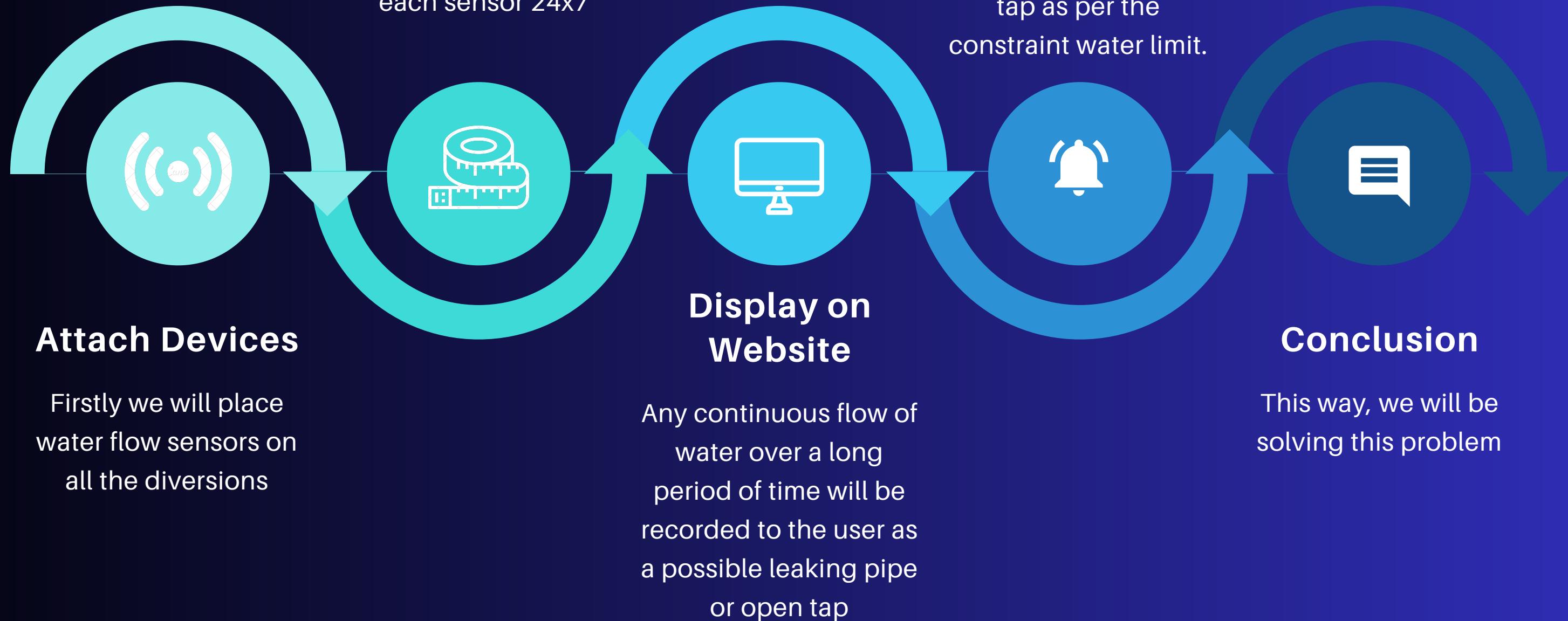


All charts will be
visible here
with the live info of
water usage

Data of each tap is
been recorded and
displayed in live time



WORK FLOW



Technology Used

- HTML
- CSS
- JavaScript
- React.js
- Redux.js
- Arduino IDE
- MATLAB



Notification code

```
% Write 10 values to each field of your channel along with timestamps
[Data,timestamps] = thingSpeakRead(channelID,'Fields',[1,2],NumPoints=14);
% thingSpeakWrite(channelID,data,'TimeStamp',timestamps,'WriteKey',writeAPIKey)

% Create timetable
timeStamps = datetime('now')-minutes(13):minutes(1):datetime('now');
timeStamps=timeStamps';
dataTable = timetable(timeStamps,tapData,Volumedata);

% Write 14 values to each field of your channel along with timestamps
thingSpeakWrite(channelID,dataTable,'WriteKey',writeAPIKey)
% Check to make sure the data was read correctly from the channel.
if (check==1)
    alertBody = 'Tap running for more than 10 minutes. Please check if leaking or left running';
    try
        webwrite(alertUrl , "body", alertBody, "subject", alertSubject, options);
    catch someException
        fprintf("Failed to send alert: %s\n", someException.message);
    end

end
disp(data);

% Catch errors so the MATLAB code does not disable a TimeControl if it fails
```

TECHNOLOGY USED

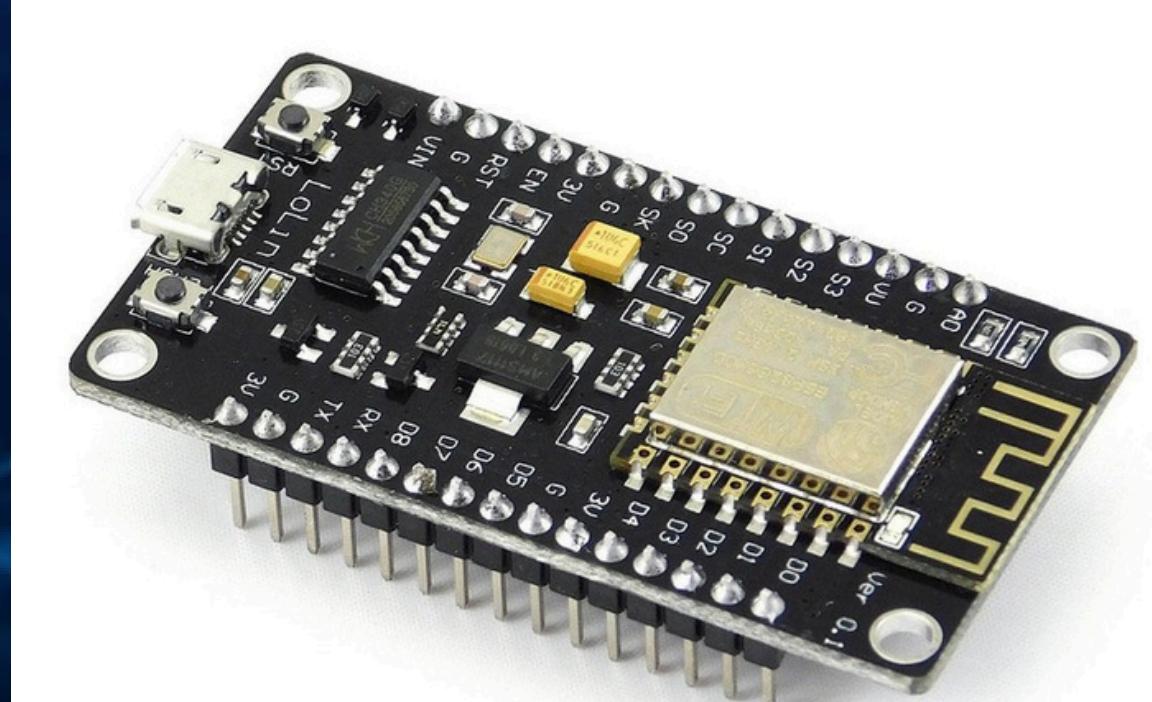


- Used to monitor and measure the amount of water being supplied.
- Easily interfaced with microcontrollers like nodemcu.
- Compatible with 1 inch water pipes commonly used in houses.

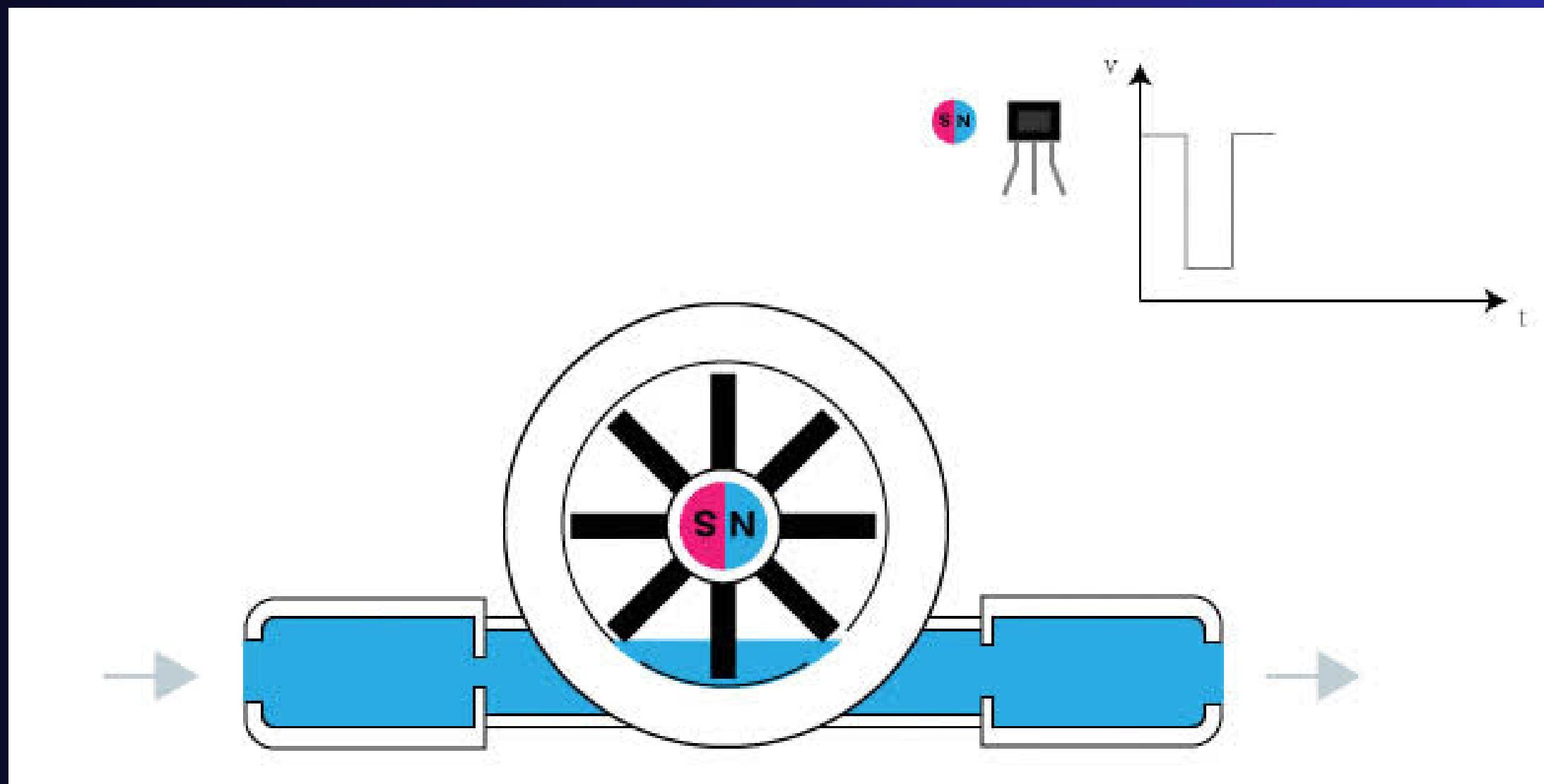
WATER FLOW SENSOR

- Open-source software and hardware development environment built around an inexpensive SoC called the ESP8266
- Consists of built in internet wifi
- Ideal choice for wireless connectivity between sensor and computer via io.adafruit.com

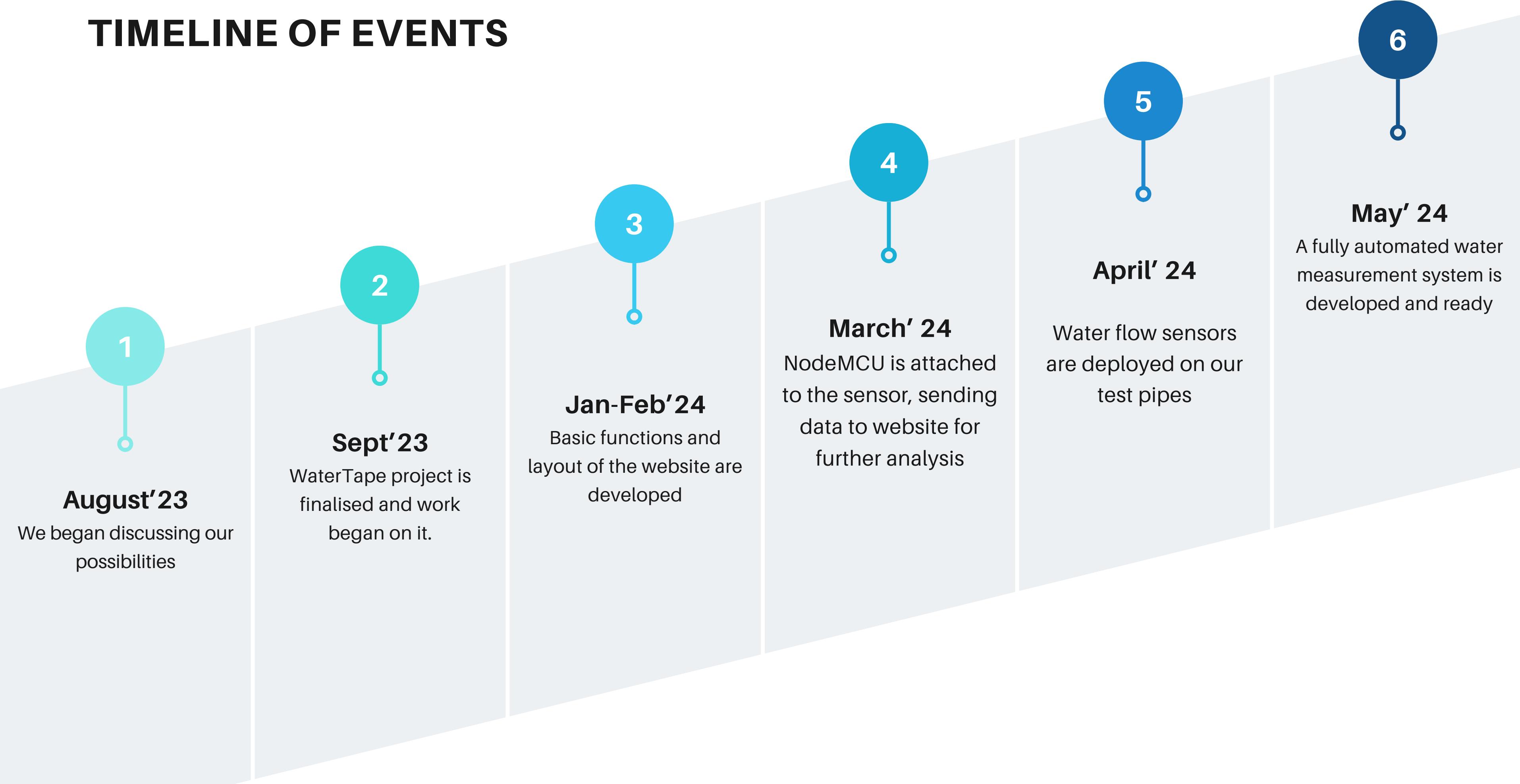
NodeMCU ESP8266



How the sensor works:



TIMELINE OF EVENTS



Conclusion

- Water leaks can cause significant damage to your property.
- By knowing the signs, methods, and technology solutions for water leak detection, you can prevent leaks and protect your property.
- Early detection is essential, and technology solutions offer promising advancements for the future.



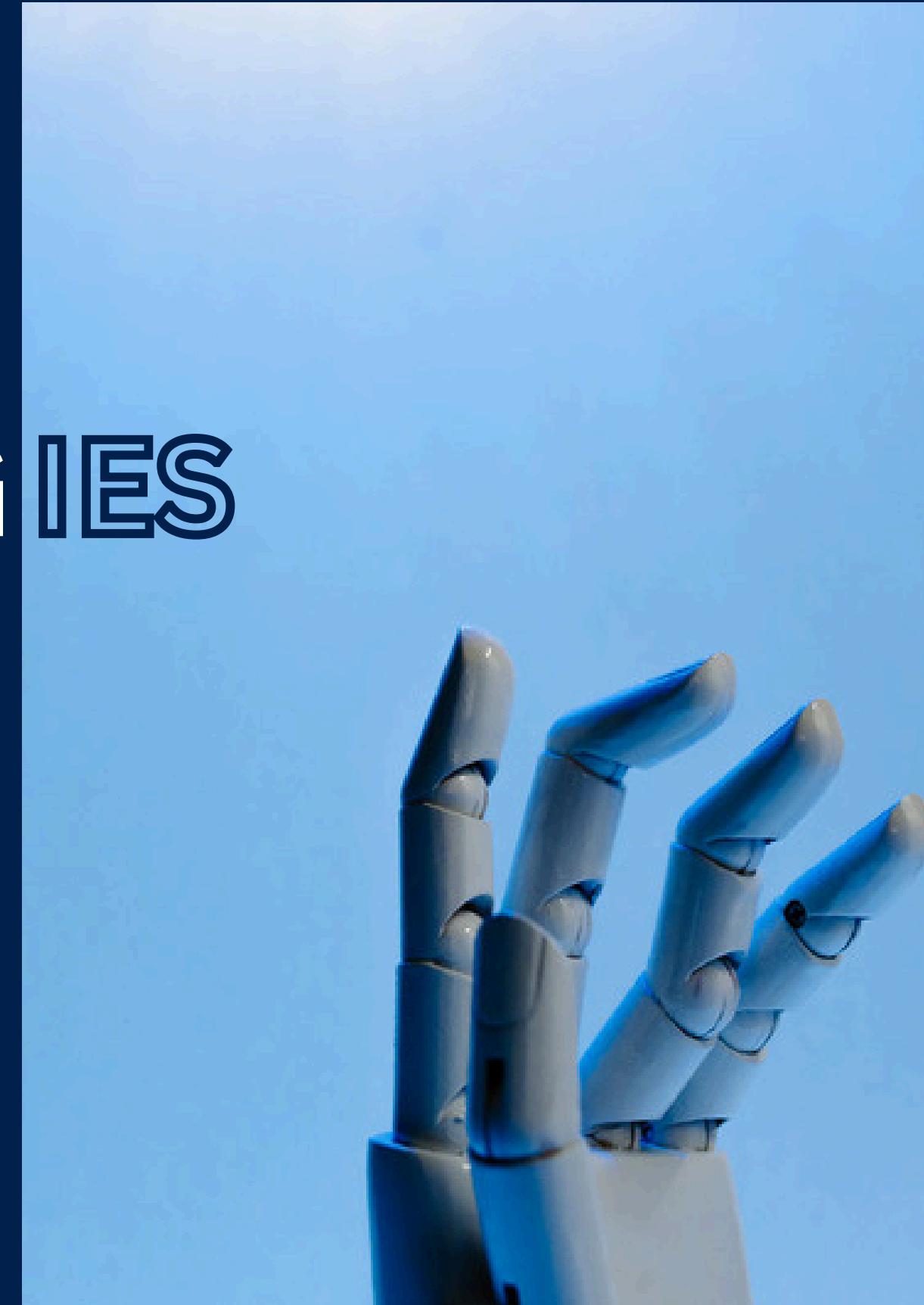
FUTURE SCOPE

- Our website takes water leakage seriously. When it detects a certain amount of leakage, it automatically sends the data to local government authorities. This helps ensure that the issue is addressed promptly and penalties may be charged to the responsible party.

Early detection can help users avoid these penalties.

- Our website can detect water leaks on your property and provide you with precautionary measures to address the issue. Additionally, it will provide contact information for plumbers or other helpers who can assist you in resolving the problem. For now, we are telling problem, in future, we will be providing solutions too.

USING FUTURISTIC TECHNOLOGIES



AI algorithms can analyze water usage patterns and detect leaks or abnormal water usage using their algorithms, potentially replacing the sensor technology currently in use.

Artificial Intelligence-based Leak Detection

REFERENCES

- <https://ieeexplore.ieee.org/abstract/document/7530612>
- https://www.nodemcu.com/index_en.html
- <https://www.electronicsforu.com/resources/gsm-module>
- <https://www.annualreviews.org/doi/abs/10.1146/annurev-environ-013113-142651>
- <https://www.unicef.org>

*Thank
you!*