WATER LEAKAGE MANAGEMENT SYSTEM

INTRODUCTION:

- One the most common and least productive wastes of water is a leaky pipe.
- An average family can waste 180 gallons per week.
- A report that the average household can leak more than 10,000 gallons of water per year

OUR VISION:

- Our motto is to save the water.
- Detecting the leakage of water.
- Immediate action taken for controlling purpose.
- Alerting system for user.

MAJOR COMPONENTS:

- ESP 8266 (NODE MCU).
- Flow Meter.
- Solenoid Valve and relay.

TECH STACK:

- IOT

ESP 8266:

- The Node MCU project incorporates firmware with a prototyping board (which in turn has an MCU module board mounted on it). The name "Node MCU" combines "node" and "MCU" (micro-controller unit).
- Arduino-like buttons
- Interactive, Programmable, low cost
- ESP8266 with inbuilt WIFI hardware
- Port Reset/Flash.

RELAY:

- A relay is an electrically operated switch. It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals.
- Digital output controllable Compatible with any 5V microcontroller such as Arduino.
- Control signal: TTL level;
- Rated through-current: 10A (NO) 5A (NC).

WATER FLOW SENSOR:

- This sensor sit in line with your water line, and uses a pinwheel sensor to measure how much liquid has moved through it.
- Measure liquid/water flow for your solar, water conservation systems, storage tanks, water recycling home applications, irrigation systems and much more.

- The sensors are solidly constructed and provide a digital pulse each time an amount of water passes through the pipe.
- The output can easily be connected to a microcontroller for monitoring water usage and calculating the amount of water remaining in a tank etc.

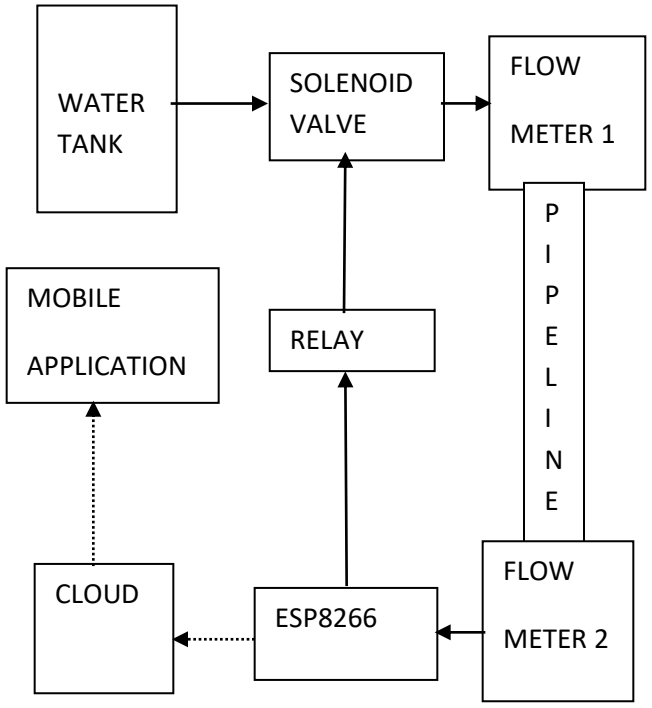
SOLENOID VALVE:

- Solenoid valve is an electro-mechanical valve that is commonly employed to control the flow of liquid .

Can also be used in :

- Water and fuel supply
- Treatment of drinking water
- Waste water treatment
- Firing systems

BLOCK DIAGRAM:



USE CASES:

- HOME
- OFFICE
- APARTMENTS

ADVANTAGES:

- Economical and installation process is easy
- By closing the valve water can be saved in a efficient manner
- With the help of alerting system repairing can be done quickly

FUTURE DEVELOPMENT:

- Detecting the particular location of leakage
- By further development we can also use it for detecting leakages in larger pipeline systems.