Problem Statement

While thinking how to use and apply IoT in day to day life I came across an issue in my society (having 7 multistory building & approx. total 250 flats) of controlling wastage of water, even though the water tank is full of water and still water pump is on. Water tank Located on terrace (above top most floor). So 7 buildings have Individual one tank in short 7 building 7 water tank. So

Society have dedicated person to personally visit each building, check water level, ON the water pump and after tank is full OFF the pump. During this process / activity losing water each time once the tank is full as the person notified to OFF water pump only when overflow water observed.

We can think how much preventable water wastage is there currently. This is likely the problem 99 % of same kind of society.

Need of this?

Water is one of the most important basic needs for all living beings. But unfortunately a huge amount of water is being wasted by uncontrolled use.

An efficient automated water level monitoring and controlling system needs to establish which should be flexible, economical and easy configurable system which can solve our water losing problem.

Thought process

Just think we have monitor or smart phone on which we can see water level status of each tank and according to the level of water we ON the water pump and once the desired water level in tank either automatically OFF the pump or send the alert message to OFF the pump from smart device.

Water level monitoring and controlling system parts

1. Water Level Indicator
2. Water Level Sensor
3. Water Pump Controlling System
4. Microcontroller
5. Network, internet
6. Smart devices, monitors etc.
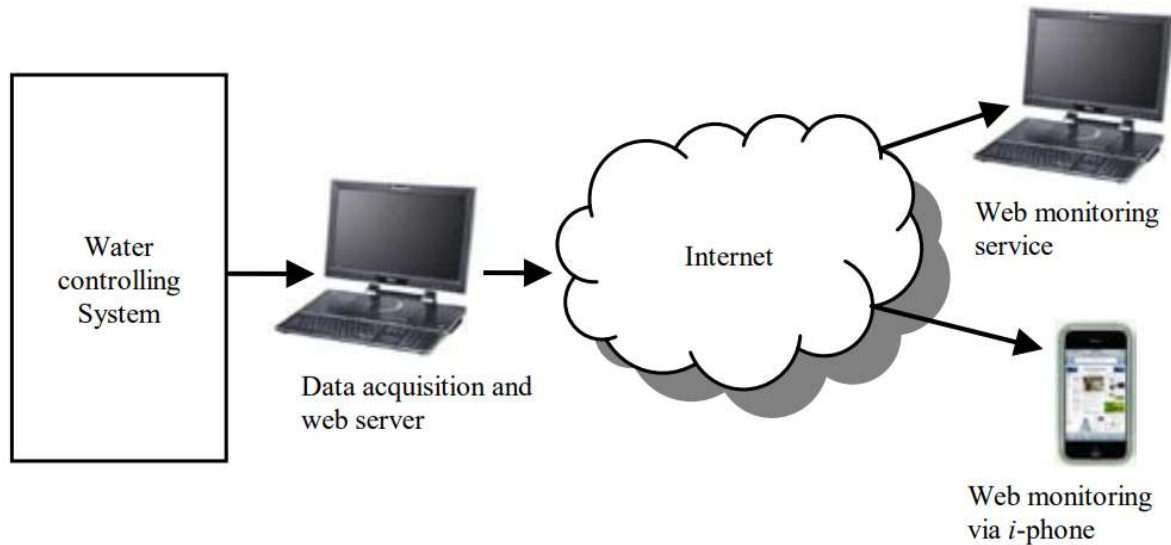
Can be work as follows -

Data communication, acquisition / collection , representation and Remote controlling

1) Data collection from water level sensors could be connected to a computer via wireless or USB cable.
2) Data should be taken in fixed time duration.
3) Each of these data represents different sensors activities. Data should be sent in the bit order.
4) Microcontroller should deliver data in datagram packet.
5) Data acquisition server should bind the specific port that is assigned from data communication protocol.
6) Received Data should store in buffer and process stored data to represent in web based application.
7) Data should be transformed into XML format. Data could be sending from server via SOAP data passing protocol.
8) Data representation should be in graphical user interface for users viewing - Symbolic representation so that just looking it we can understand the status.
9) In case of water level indication, notification message could be included in XML file.
10) Data sending method should maintain Interface serializability. Moreover,
11) PC server should support multi-client and store acquired data in buffer that user can access database and control microcontroller.
11) App Design for remote PC or mobile should display data in table format or in the graphical interface for integration of the wireless water level monitoring & controlling.
12) Display the available local connections and the stored remote connections through the internet.

Benefits

1) Save wastage of water.
2) Save power as water pump ON & OFF controlling preciously.
3) Act as Water Management system in small / big buildings .