COLLEGE NAME : PRIYADARSHINI ENGINEERING COLLEGE

COLLEGE CODE : 5119

COURSE NAME : INTERNET OF THINGS (IOT)

GROUP NUMBER : GROUP 2

PROJECT TITLE : SMART WATER FOUNTAIN

PROJECT SUBMITTED TO : SKILL UP ONLINE

YEAR : 3

GROUP MEMBERS : 1.JANANI [511921106009]

2.JEEVITHA[511921106011]

3.RUBASHREE[511921106027]

4.SARITHA[511921106031]

GUIDED BY : Dr.A. BANUPRIYA

SPOC NAME : Dr. R. THENMOZHI

SMART WATER FOUNTAIN

Problems:

Due to excessive flow of water our daily life is affected. Plants are destroyed due to the excessive flow of water in agriculture land. The flow of water damages the people living areas along with all living beings

Solution:

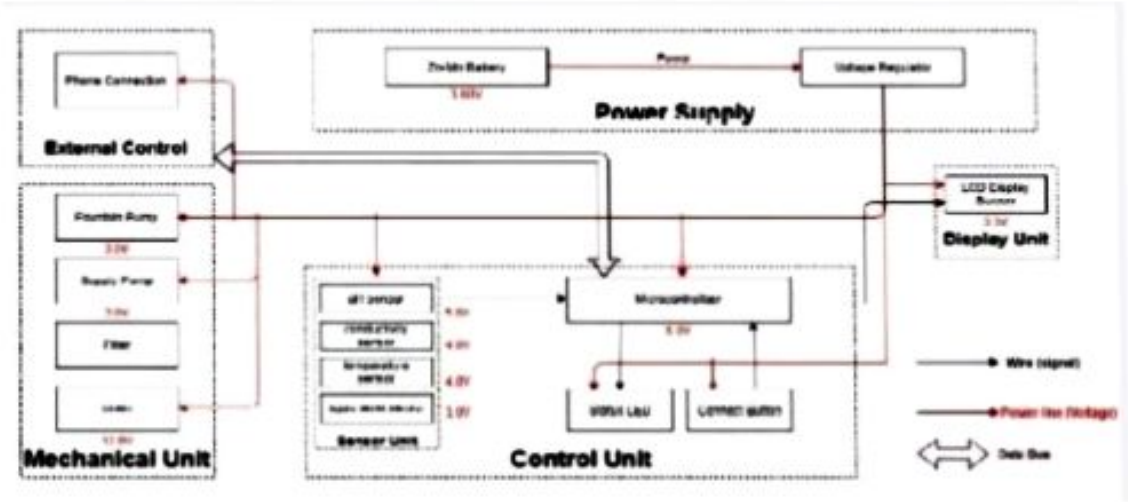
The project aims to enhance public water fountains by implementing IoT sensors to control water flow and defect malfunctions.

The primary objective is to provide real-time information about water fountain status to residents through a public platform.

The project includes defining objectives, designing the IoT sensor system, developing the water fountain status platform and integrating them using IoT technology and Python.

Our goal is to design a smart water fountain that can monitor the water quality and automatically replace water when polluted(not healthy) or running out.We will use sensor to measure the water quality.We choose temperature,Ph-value and conductance to be the three properties used for calculating water quality in our water fountain.These data will be collected,and reflected to the user in terms of "Good","Average" and "Bad".The water fountain is also designed to self-filter the water every time when water is pumped throught the submersible water pump.

Block Diagram:



Sensor Unit:

This block contains the four sensors.The data acquired from the sensors will be transmitted to the control unit.Control unit will then have some logic designed to send corresponding signals to control other blocks of the water fountain.

Temperature Sensor:

A water proof temperature sensor is going to be used.Part number from sparhfun

is:DS18B20[6].This temperature sensor is compatible with a relatively wide range of power supply from 3.0 to 5.5V.

PH-sensor:

PH-value is a valued indicator of water quality.This PH-sensor[7] works with 5V voltage,which is also compatible with the temperature sensor.

Power Supply Unit:

Zn-Mn Bttery

The Zn-Mn must be able to continuously support the functioning of the circuit, diplay, unit and the mechanical unit.

Voltage Regulator:

The integrated circuit will regulate the power supply for each module to maintain their functionality.

DEVELOPMENT:

THERE HAVE BEEN QUITE A LOT OF WATER FOUNTAIN PRODUCTS ON THE MARKET[4], WHILE MOST OF THEM HAVE ONLY FILTRATION AS AN EXTRA FUNCTION BESIDES PROVIDING RUNNING WATER. [5] THE SIZE OF THE WATER FOUNTAIN LIMITS THE CAPACITY OF THE WATER SOURCE THAT MOST WATER FOUNTAINS CANNOT STORE ENOUGH WATER FOR MULTIPLE PETS TO DRINK IN SEVERAL DAYS.

OUR WATER FOUNTAIN CAN BE CONNECTED TO AN EXTRA WATER SOURCE THAT PROVIDES ENOUGH WATER FOR LONG-TERM USAGE. THE LINK IS ADAPTABLE TO UNIVERSAL WATER BOTTLES FOR CONVENIENCE. THE SUFFICIENT WATER SOURCE AS WELL AS AUTOMATIC REPLACING AND REFILLING FUNCTION ENABLE PET OWNERS TO LEAVE HOME FOR SEVERAL DAYS WITHOUT WORRYING ABOUT WATER SUPPLY FOR PETS

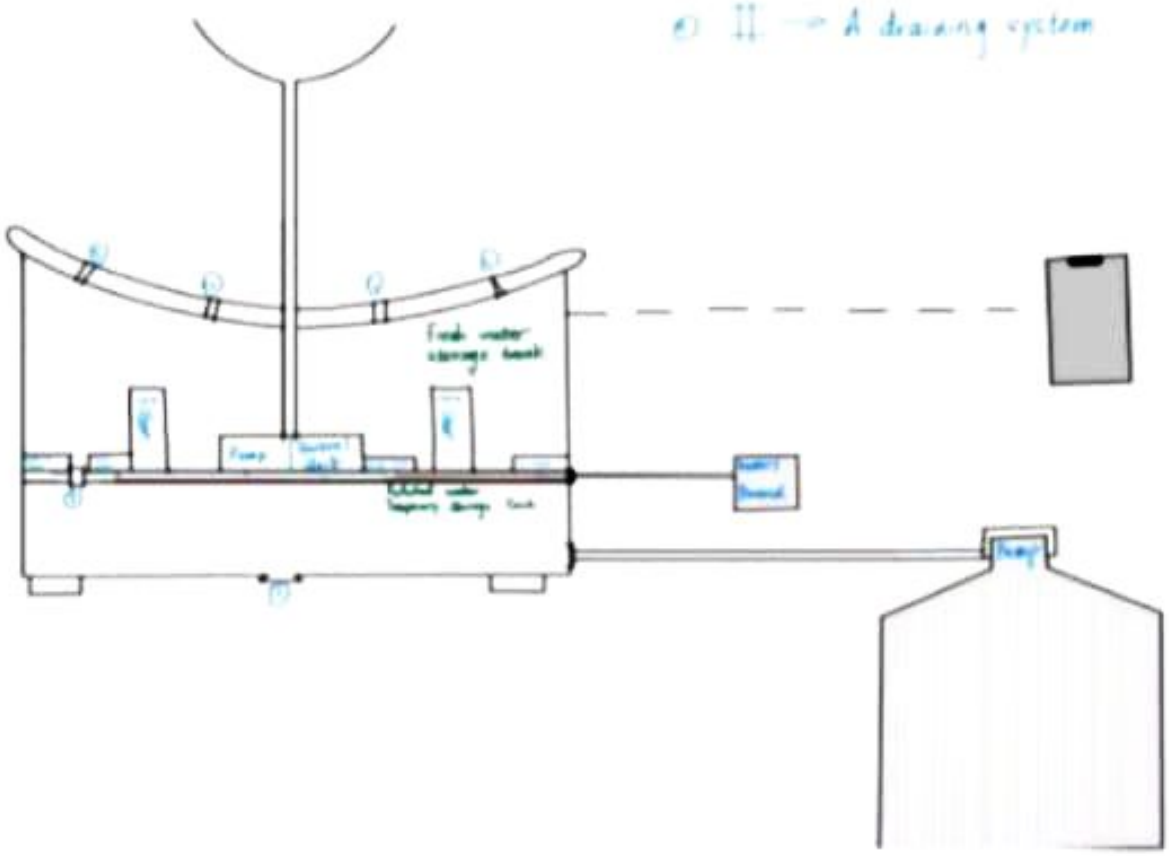


Figure 1 Smart Fountain Physical Diagram

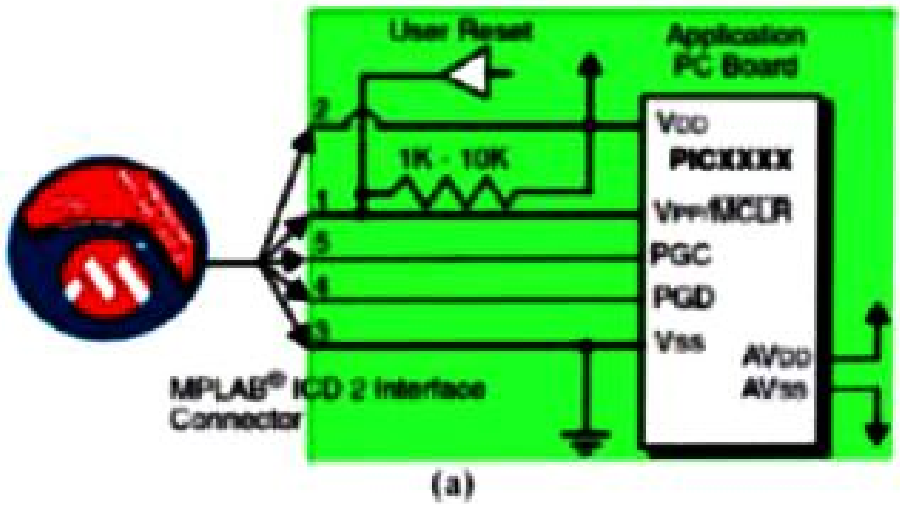
Development 2

1. Fountains wirelessly communicate
with base stations
Base stations collect and
transmit usage, filter, and system health information to the cloud via Ethernet
Wireless communications use
a low-power unlicensed band for improved security and power savings

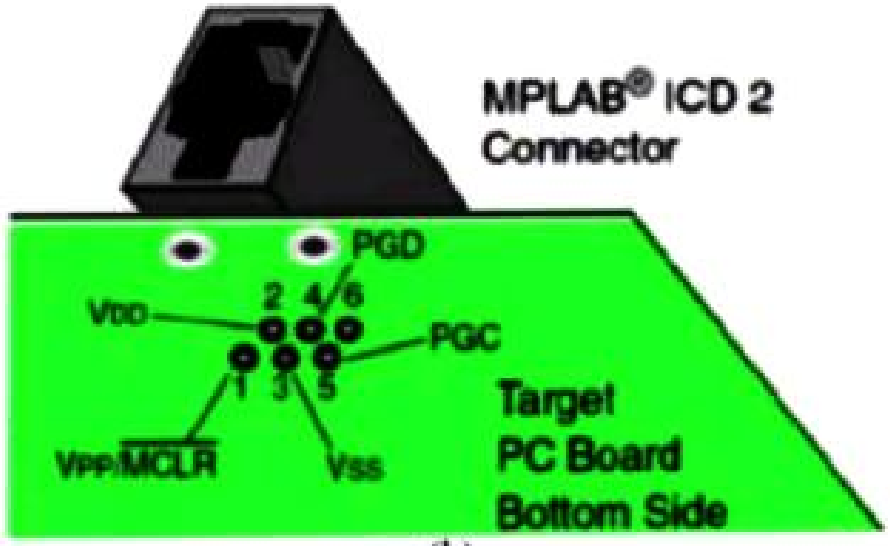
2. Connection between
the MPLAB ICD2 programmer and
the realized prototype of the control/driving system
(a) and a detailed scheme
of the used RJ25 (6 pins) connector

1. Hardware components

2. Software components



(a)



(b)