SMART HOME AUTOMATION

PROBLEM

In many parts of India 24/7 water supply is unavailable. Water is supplied only in early hours of the morning and if one fails to wake up early and turn on the pump he/she may have to survive an entire day without water. One may buy water but that again is an costly affair for an everyday task. Some may suggest to keep the motor on beforehand but that will consume unnecessary power and will also cause depreciation of the motor pump.

SOLUTION

- We could easily solve the above problem using an Arduino board and a bit of our brain by writing an Arduino code which would run the water pump just before the water supply starts (lets say 6:00 am) and would close the pump as soon as the water gets filled by sensing the water level using a moisture sensor.

HARDWARE REQUIRED

- ARDUINO UNO

- RELAY / MOTOR DRIVER

- WATER PUMP

- BATTERIES

- MOISTURE SENSOR

- JUMPER WIRES

SOFTWARE REQUIRED

- ARDUINO IDE

CODE

```
Smart_Home_Automation §

int water,t=0;
void setup()
{
  pinMode(9,OUTPUT);
  pinMode(10,OUTPUT);//output pin for the motor driver, this will send signal to the motor driver
  pinMode(3,INPUT); //input pin coming from soil sensor
}
void loop()
{
  water = digitalRead(3);// reading the coming signal from the moisture sensor
  delay(1000);
  t++;//value of t increases by 1 second after a delay of 1 second
  if(t%86400==0)//one day has 86400 seconds
  {
    while(water==low)
    {
    digitalWrite(9,LOW);
    digitalWrite(10,HIGH); //high to continue proving signal and water supply
    }
  }
}
```

PROBLEMS FACED

Earlier when I tried to run the code the pump started and almost instantly got switched off I initially thought the problem was in motor driver but later realized that the code itself was incorrect and as the void loop was an infinitely running loop once I initialize the pump in an if statement the pump got switched off as soon as the code came out of the 'if' .To solve this I had to insert a while loop inside the if statement.

Also my relay stopped working so I had to use a motor driver instead and change my code accordingly.

INITIAL CODE


```
Smart_Home_Automation §
int water,t=0;
void setup()
{
  pinMode(6,OUTPUT);
  pinMode(5,OUTPUT);//output pin for the motor driver, this will send signal to the motor driver
  pinMode(3,INPUT); //input pin coming from soil sensor
}
void loop()
{
  water = digitalRead(3);// reading the coming signal from the moisture sensor
  delay(1000);
  t++;//value of t increases by 1 second after a delay of 1 second
  if(water == HIGH) // if water level is full then cut the relay
  {
    digitalWrite(5,LOW); // turns the pump off
    digitalWrite(6, LOW);
  }
  if(t%86400==0)//one day has 86400 seconds
  {
    digitalWrite(5,LOW);
    digitalWrite(6,HIGH); //high to continue proving signal and water supply
  }
}
```