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DEPARTMENT: COMPUTER ENGINEERING

A.

I) **Planning and Requirement**

 THIS IS A PROGRAM/ software to control the irrigation system of a farm precisely in ABUAD

DEFINITION:

 Irrigation is the process of supplying water to plants during their growth during a time line either in the morning or night .. The main purpose of irrigation is to enable that plants still grow during drought..

DESIGN :

 Algorithm:

 Start

 Boot system

 Enter password

 Determine soil temperature

 Monitoring and controlling system on

 At specific time (8.00 am & 6.00 on) Moisture soil (wet)

 If no

 Monitoring and controlling system on

 If yes

 Motor and solenoid valve turn on

 Read time moisture sensor

 Moisture reading >=600

 If yes

 Motor and solenoid valve turn off

 Stop

IV) **Building**

 The program is written with a language of the computer known as High level language which is the highest language in a computer

V) **Testing**

 The program is used during a test drive to outline all the errors and the bugs

HARDWARE COMPONENT:

Water pumps are the heart of the irrigation system. For smaller systems, you may have a single booster pump. However, most can count on the need for a multiple irrigation pumps depending on their design. While standard municipal water pressure is fine for running a garden hose to a sprinkler in the middle of the lawn, irrigation systems require a higher pressure to efficiently pump the water through the pipes and the sprinkler heads.

If you need to rebuild your Wayne sprinkler system pump, check out our rebuild kit .

Water Meter

The water meter, as you would assume, measures the amount of water used to irrigate the property. This allows you to ensure the proper amount of water is applied to the different zones.

But, the irrigation water meter can also be part of your water utility setup. Many municipalities assess a fee for water usage and for water sewage treatment. Under normal circumstances, the amount of water used is also the amount upon which sewage treatment fees are assessed. With irrigation systems, the water does not flow through the full cycle and is therefore not charged the treatment fee.

Different municipalities have different requirements, so be sure to check before you install an irrigation system.

Pump Controller

,. For lawn sprinkler systems, the control has two primary functions: 1) Manage the watering process, ensuring each zone receives the correct amount of water. 2) Monitor the system for possible malfunctions and alert when the happen, as well as shutdown the system if necessary. The pump controller is connected to the system and system sensors to monitor pressure and flow. Any drastic variance in these metrics and there is likely a problem. The controller's ability to pinpoint the problem will depend on how you distribute/place the sensors.

Valve box

Valve boxes are for more than just valves. Valve boxes are placed underground to house components of the sprinkler system. The valve box allows the owner easy access to the sprinkler valve, or other components (sensor, wires, etc), while protecting them from the elements, accidents (errant lawn mower), and pests. With the judicious use of valve boxes, well-designed sprinkler systems can be nearly invisible yet easily accessible for maintenance and repairs.

Sprinkler Shut-off valve

While the idea of a shut-off valve is simple, when incorporated into a well-designed sprinkler system, the sprinkler shut-off valve plays a key role in avoiding or mitigating potentially damaging problems. With a solenoid switch, proper power supply, and a well-designed controller, the system can shut down the water as soon as problems are detected. By properly planning the zones of your irrigation system, and installing the appropriate shut-off valves, you can minimize disruptions while maximizing system protection.

Backflow Prevention Device

When connected to a potable water supply, the backflow prevention devices (BPD) protect the source water from contamination and backup pressure should something go wrong. Municipalities will require a BPD be installed. Usually, when you install the water meter to separate irrigation usage from household usage, there will be a concurrent requirement to install a backflow prevention device.

Software setup :

The irrigation system will operate by setting and time and with the assist of moisture soil sensor to measure the level of soil moisture. The motor or water pump supplies water to the plants until the desired moisture level is reached…