Water Level Indicator

Introduction

Water level alarms provide a simple way of detecting and indicating if water is in the overhead tank and in other containers. Most homeowner/households store the water in overhead tanks by using pumps.

By using the water level indicator we can overcome the overflow of water from tankers. A water level indicator gets information about the level of water in tanks or reservoirs.
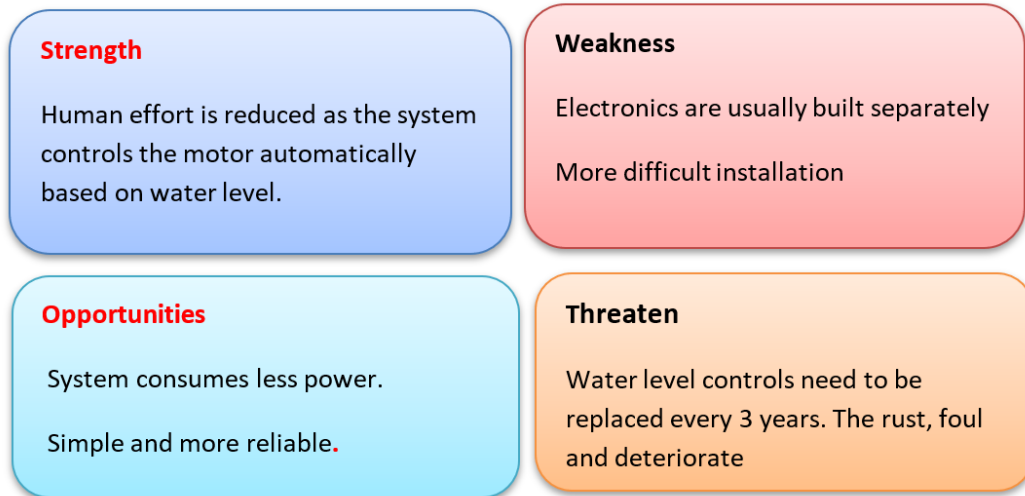
Components required

Microcontroller : Arduino Uno microcontroller is used here.

Comparator : An input of this comparator is provided by a variable resistor that decides when the buzzer is activated for a set water level.

Water level sensor : This float sensor was used to detect the level of water inside a water tank. Ideally, this sensor should be attached to the top lid of the water tank or liquid tank.When water level increases or decreases, the sensor's attached float moves up and down.

LCD display : In addition to the Red LED, a buzzer is also provided to visually indicate the threshold level. Both are activated at the same time.

SWOT analysis

Strength Human effort is reduced as the system controls the motor automatically based on water level.	**Weakness** Electronics are usually built separately More difficult installation
Opportunities System consumes less power. Simple and more reliable.	**Threaten** Water level controls need to be replaced every 3 years. The rust, foul and deteriorate

4W's and 1'H

Who

Hotels

Home apartments

Commercial complexes

Factories

What

Checking the water level in storge areas.

When

When there no one there to control and check the water level in certain area the water level indicator is used.

Where

Where cooling towers are used

Residential and commercial swimming pools

Anywhere water levels need to be controlled

How

Water level indicators work by using sensor probes to indicate water levels in a storage tank.

Applications of water level indicator

*The water level indicator is used in hotels, home apartments, commercial complexes, and   factories.

*The pumps used in the water level indicator are single phase motors, submersible motors, and three phase motors.

*The two motors, two sumps, and two overhead tanks cannot be controlled with a single circuit. *The pump automatically turns ON/OFF when the water level in the tank is low and high.

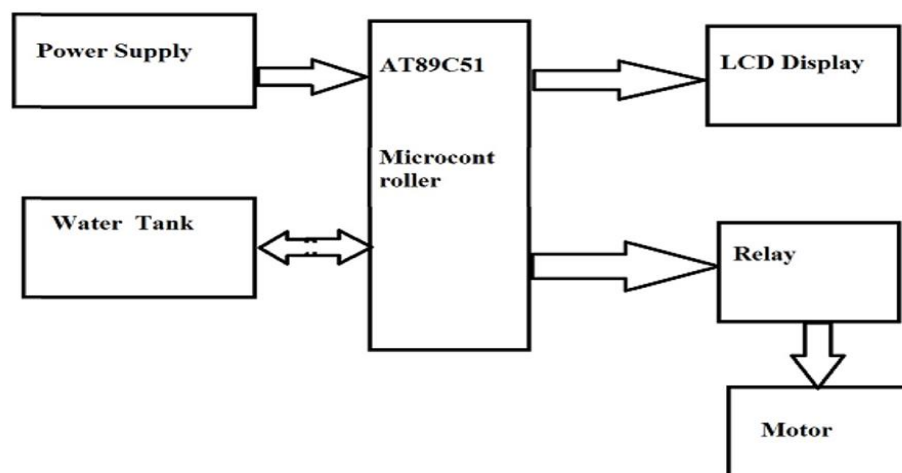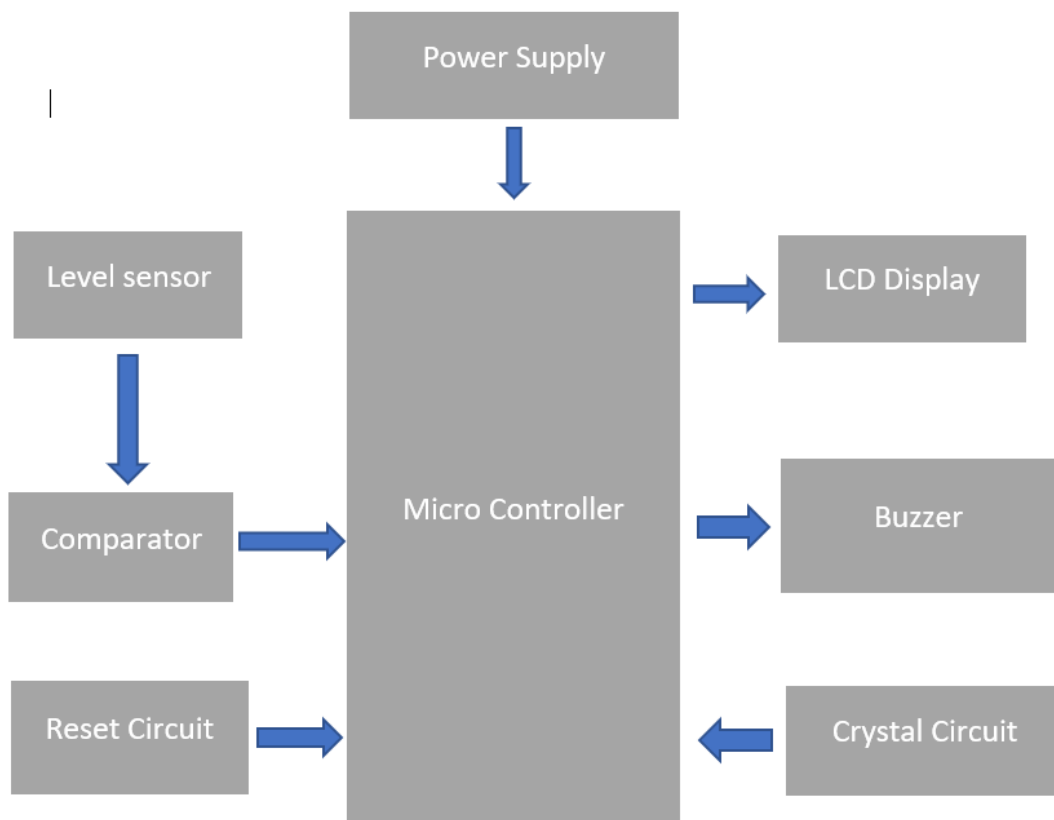*Fuel level in motor vehicles can also be measured with the liquid level containers found in most companies

Advantages of water level indicator

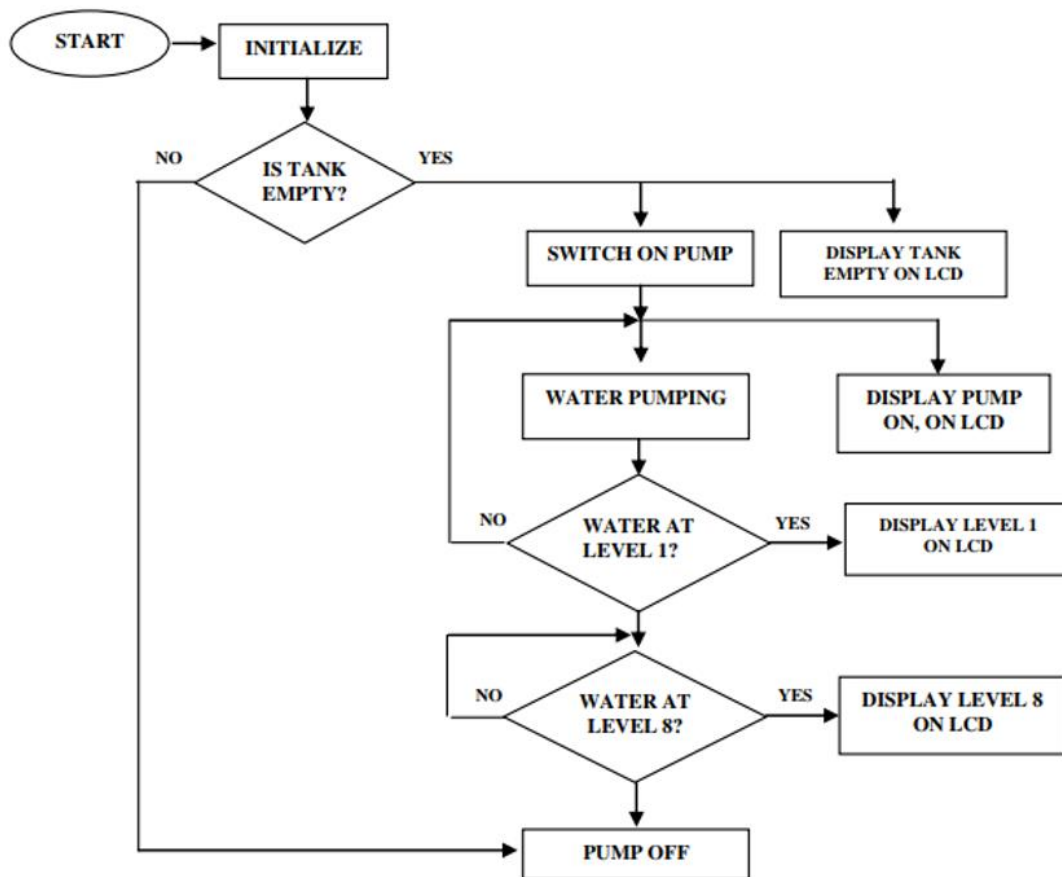*Water level indicators are available for a small price in the market.

*Anyone can identify the water level by hearing the beep sound.

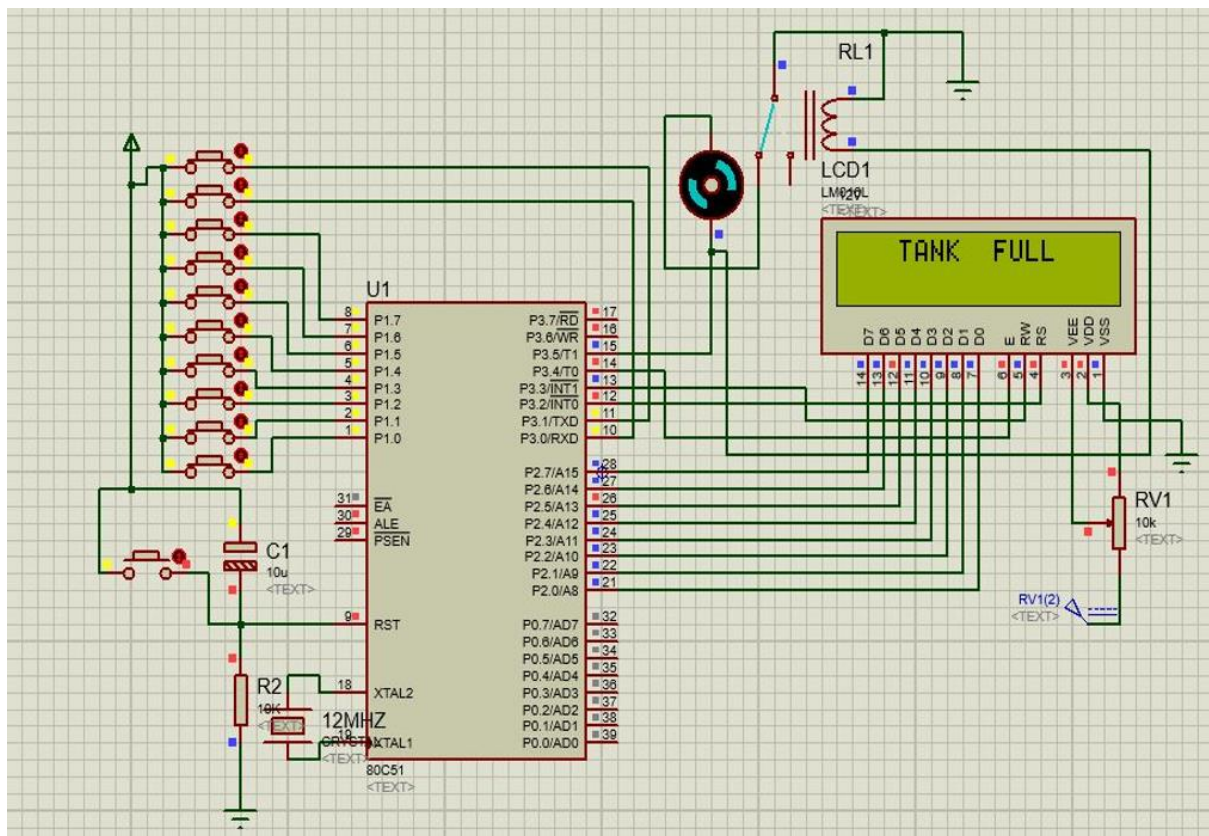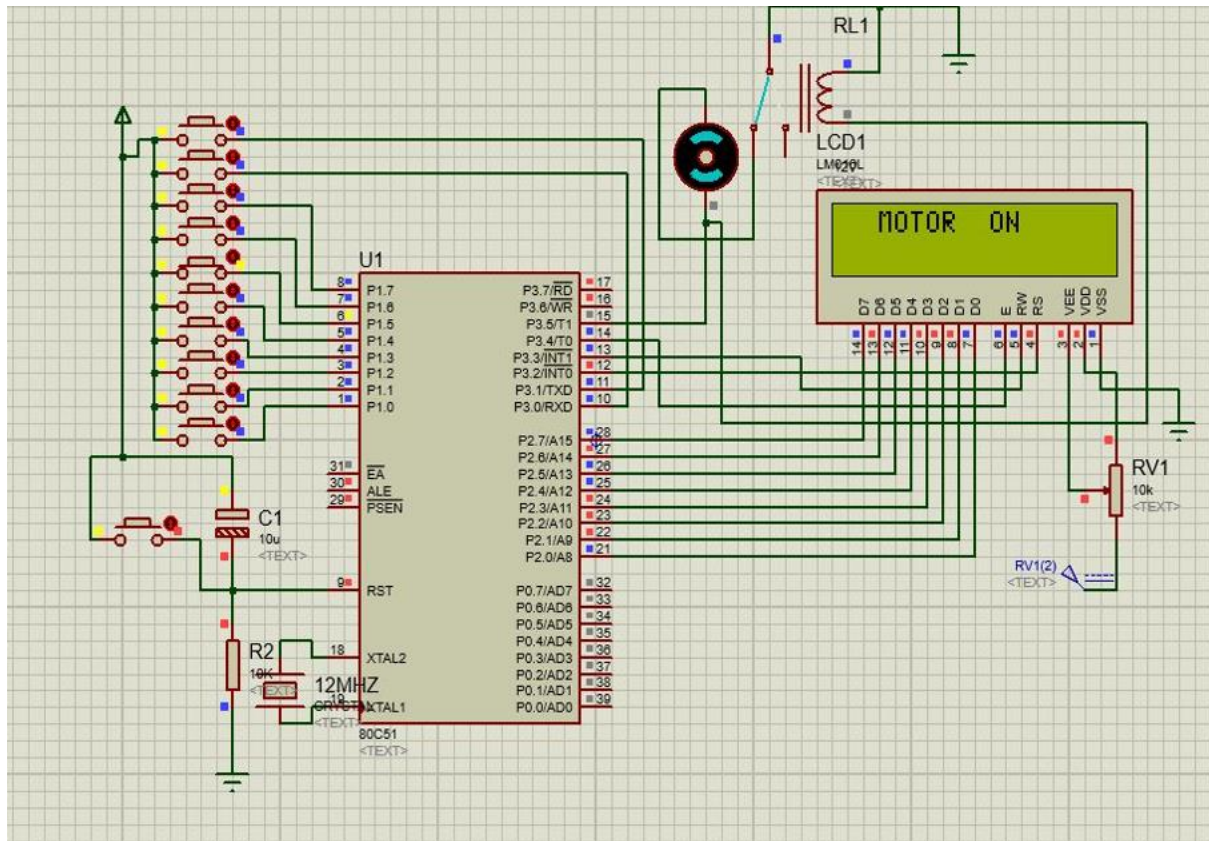*This allows us to control the water level safely and easily.

Block Diagram

Flow chart

START → INITIALIZE

IS TANK EMPTY?
- NO
- YES → SWITCH ON PUMP / DISPLAY TANK EMPTY ON LCD

WATER PUMPING → DISPLAY PUMP ON, ON LCD

WATER AT LEVEL 1?
- NO
- YES → DISPLAY LEVEL 1 ON LCD

WATER AT LEVEL 8?
- NO
- YES → DISPLAY LEVEL 8 ON LCD

PUMP OFF

Simulide

References

[1] https://en.wikipedia.org/wiki/Intel_8086

[2] integrated electronic.blogspot