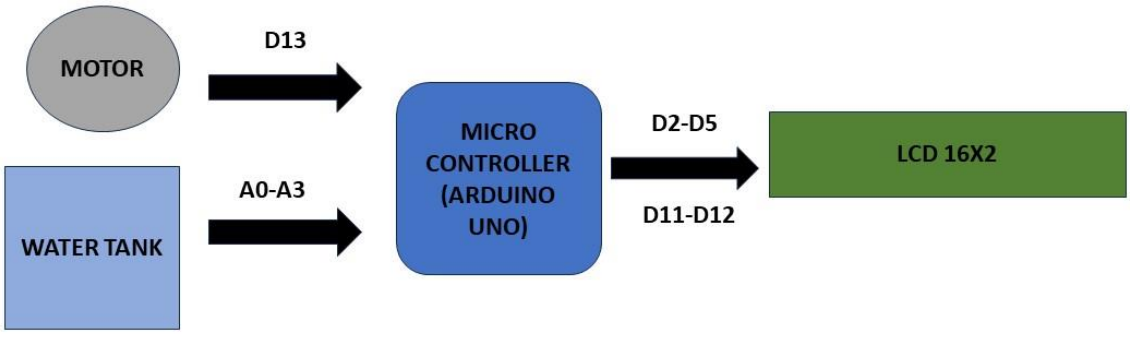
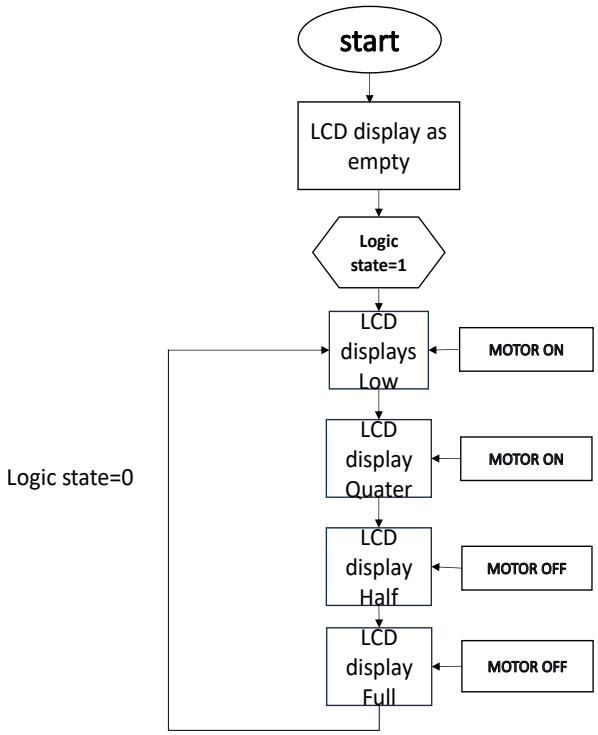
AUTOMATIC WATER LEVEL MONITOR USING ARDUINO

- **DESCRIPTION:** In this project we will monitor the water level in the tank and turn on or off the motor according to the water level in the tank. We have interfaced the Arduino with motor and water tank ,were the water level is the tank is managed by logic states. The level the water tank is displayed in LCD 16X2 as an output.
- **BLOCK DIAGRAM:**



• FLOW CHART:



• INPUTS AND OUTPUTS:

S.No	Description	Name	Type	Data Direction	Specification	Remarks
1	Full tank	F2	INP	DI	Digital	Active High
2	Half tank	H2	INP	DI	Digital	Active High
3	Quater tank	Q2	INP	DI	Digital	Active High
4	Low tank	L2	INP	DI	Digital	Active High
5	Motor pin	D13	INP	DI	Digital	Active High
6	LCD RST	RS	OUT	DO	Digital	Active High
7	LCD EN	EN	OUT	DO	Digital	Active High
8	LCD Data pin	D4	OUT	DO	Digital	Active High
9	LCD Data pin	D5	OUT	DO	Digital	Active High
10	LCD Data pin	D6	OUT	DO	Digital	Active High
11	LCD Data pin	D7	OUT	DO	Digital	Active High

• SOURCE CODE:

```
#include <LiquidCrystal.h>

const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

int lowTank = A3, quTank = A2, halfTank = A1, fullTank = A0;
int motor = 13;
int i, j, k, l;

void setup() {
  lcd.begin(16, 2);
  lcd.print("Tank Status.........");

  pinMode(fullTank, INPUT);
  pinMode(halfTank, INPUT);
  pinMode(quTank, INPUT);
  pinMode(lowTank, INPUT);
  pinMode(motor, OUTPUT);
}

void loop() {
  i = digitalRead(fullTank);
  j = digitalRead(halfTank);
  k = digitalRead(quTank);
  l = digitalRead(lowTank);

  if (i == 1 && j == 1 && k == 1 && l == 1) {
    lcd.setCursor(0, 0);
    lcd.print(char(219));
    lcd.print(char(219));
    lcd.print(char(219));
    lcd.print(char(219));
    lcd.print(' ');
    lcd.setCursor(5, 0);
    lcd.print("FULL.............");
    lcd.setCursor(0, 1);
    lcd.print("MOTOR is OFF                ");
    digitalWrite(motor, LOW);
  } else if (i == 0 && j == 1 && k == 1 && l == 1) {
    lcd.setCursor(0, 0);
    lcd.print(char(219));
    lcd.print(char(219));
    lcd.print(char(219));
    lcd.print(char('_'));
    lcd.print(' ');
    lcd.setCursor(5, 0);
    lcd.print("HALF...........");
    lcd.setCursor(0, 1);
    lcd.print("MOTOR is OFF                ");
```

```
      digitalWrite(motor, LOW);
    } else if (i == 0 && j == 0 && k == 1 && l == 1) {
      lcd.setCursor(0, 0);
      lcd.print(char(219));
      lcd.print(char(219));
      lcd.print("_");
      lcd.print("_");
      lcd.print(' ');
      lcd.setCursor(5, 0);
      lcd.print("QUARTER.............");
      lcd.setCursor(0, 1);
      lcd.print("MOTOR is ON                ");
      digitalWrite(motor, HIGH);
    } else if (i == 0 && j == 0 && k == 0 && l == 1) {
      lcd.setCursor(0, 0);
      lcd.print(char(219));
      lcd.print("_");
      lcd.print("_");
      lcd.print("_");
      lcd.print(' ');
      lcd.setCursor(5, 0);
      lcd.print("LOW.............");
      lcd.setCursor(0, 1);
      lcd.print("MOTOR is ON                ");
      digitalWrite(motor, HIGH);
    } else if (i == 0 && j == 0 && k == 0 && l == 0) {
      lcd.setCursor(0, 0);
      lcd.print("_");
      lcd.print("_");
      lcd.print("_");
      lcd.print("_");
      lcd.print(' ');
      lcd.setCursor(5, 0);
      lcd.print("EMPTY.............");
      lcd.setCursor(0, 1);
      lcd.print("MOTOR is ON                ");
      digitalWrite(motor, HIGH);
    } else {
      digitalWrite(motor, LOW);
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Sensor Fail!");
      lcd.setCursor(0, 1);
      lcd.print("NEED CHECK-UP.........");
    }
  }
```

- **SCHEMATIC:**