1. **Washing Machine Controller Using Arduino Microcontroller**
2. **Block Diagram**

Buzzer

Drain

Atmega328 IC

Microcontroller

20\*4 LCD

Tank

Motor

Valve

1. **Table**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **s.no.** | **Discription** | **Name** | **Type** | **Data Direction** | **Specification** | **Remarks** |
| **1.** | **Draining** | Drain | input | DI | 5VDC |  |
| **2.** | **Water-Tank** | Tank | input | DI | 5VDC |  |
| **3.** | **Drainvalve** | valve | Output | DO | 5VDC |  |
| **4.** | **Buzzer** | buzzer | Output | DO | 5VDC |  |
| **5.** | **LCD** | 20\*4 LCD | Output | DO | 5VDC |  |
| **6.** | **Motor** | Motor | Output | DO | NA |  |

1. **Flow Chart**

START

Initialize the Drain Switch,tank,motor,valve And LCD In Arduino

DrainSwitch==1

YES

Water Tank==1

NO

Volve-Off

motor-off

Volve-LOW

LCD-Set Washing timer

LCD-Washing

Motor On

Delay(Timer)

Motor Off

Volve High

LCD-Drain Valve opened

Until Drain Closed Motor on

Volve Closed

Lcd-Washing completed

1. **Code**

#include <LiquidCrystal.h>

const int drainSwitch = 8;

const int waterTank = 9;

const int drainValve = 10;

const int washingMotor = 11;

const int buzzer = 12;

const int timerSetting = A0;

LiquidCrystal lcd(7, 6, 5, 4, 3, 2);

int timerValue;

void setup() {

pinMode(drainSwitch, INPUT);

pinMode(waterTank, INPUT);

pinMode(drainValve, OUTPUT);

pinMode(washingMotor, OUTPUT);

pinMode(buzzer, OUTPUT);

lcd.begin(20, 4);

}

void loop() {

// Check for drain switch

if (digitalRead(drainSwitch) == HIGH) {

// Wait for water to drain out

delay(3000);

// Check for empty water tank

if (digitalRead(waterTank) == HIGH) {

// Close drain valve

digitalWrite(drainValve, LOW);

lcd.clear();

lcd.print("Drain valve closed");

delay(1000);

// Ask for timer setting

lcd.clear();

lcd.print("Set washing timer:");

timerValue = analogRead(timerSetting);

// Convert timer value to minutes

timerValue = map(timerValue, 0, 1023, 0, 60);

lcd.setCursor(0, 1);

lcd.print(timerValue);

lcd.print(" mins");

delay(1000);

// Start washing

lcd.clear();

lcd.print("Washing...");

digitalWrite(washingMotor, HIGH);

delay(timerValue \* 60000);

digitalWrite(washingMotor, LOW);

// Open drain valve

digitalWrite(drainValve, HIGH);

lcd.clear();

lcd.print("Drain valve opened");

delay(3000);

// Buzzer beeps until drain valve closed

while (digitalRead(drainSwitch) == HIGH) {

digitalWrite(buzzer, HIGH);

delay(500);

digitalWrite(buzzer, LOW);

delay(500);

}

// Close drain valve and indicate washing completed

digitalWrite(drainValve, LOW);

lcd.clear();

lcd.print("Washing completed!");

digitalWrite(buzzer, HIGH);

delay(1000);

digitalWrite(buzzer, LOW);

}

}

}

1. **Circuit&Simulation**