DEPARTMENT OF
SCHOOL OF COMPUTING
College of Engineering and Technology
SRM Institute of Science and Technology

MINI PROJECT REPORT

ODD Semester, 2023-2024

Lab code & Sub Name : 21CSS201T & Computer Organization and Architecture

Year & Semester : II & III

Project Title : MICRO-PROCESSOR BASED DOOR OPENER

Lab Supervisor **:** **Dr.Abijah Roseline S**

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Particulars	**Max. Marks**	**Marks Obtained**
		Name:
		Register No :
Program and Execution	20	
Demo verification &viva	15	
Project Report	05	
Total	**40**	

Date :

Staff Name :

Signature :

MICRO-PROCESSOR BASED DOOR OPENER

OBJECTIVE:

The objective of the project titled "Microprocessor-Based Door Opener using 8051 Microprocessor" is to design and implement a secure and efficient system for remotely controlling the opening and closing of a door. This system leverages the 8051 microcontroller to provide convenient and reliable access control, enhancing security and accessibility in various applications, such as homes, offices, and industrial settings

ABSTRACT:

The "Microprocessor-Based Door Opener using 8051 Microprocessor" project is designed to address the need for an intelligent, secure, and user-friendly door control system. The project aims to utilize the capabilities of the 8051 microprocessor to create a robust and versatile solution for door access control

INTRODUCTION:

- In recent times, the demand for automatic door openers has seen significant growth. This project presents an innovative solution for automated access using a microprocessor-based control system.
- The primary objective of this project is to provide a convenient and efficient method for opening and closing doors without the need for manual intervention.
- Our system eliminates the need for human gate monitoring and manual operation. It uses remote control technology for effortless access.
- Unlike traditional gates, our automatic gate system offers intelligent features such as obstacle detection and dynamic control.

HARDWARE/SOFTWARE REQUIREMENTS:

8051 MICROPROCESSOR BASED KEIL COMPILER

CONCEPTS/WORKING PRINCIPLE

A microprocessor-based door opener using the 8051 microcontroller is a common embedded systems project. This system can be used to control and automate the opening and closing of doors using software. Here's an overview of the concepts and working principles involved:

Software Components:

- Microcontroller Programming: The 8051 microcontroller is programmed using a high-level language such as C or assembly. The software handles input from sensors, processes commands from the user interface, and controls the motor/actuator.

- Control Logic: The control logic is the software algorithm that decides when to open or close the door. This logic could be based on user input (e.g., entering a PIN or presenting an RFID card), sensor input (e.g., detecting an obstruction in the door's path), or a predetermined schedule

APPROACH/METHODOLOGY/PROGRAMS:

```
#include <reg51.h>

sbit p10 = P1 ^ 0;
sbit p11 = P1 ^ 1;
sbit p12 = P1 ^ 2;
sbit p13 = P1 ^ 3;
int gateStatus = 0;
void delay1();
void delay2();
void main(void) {
  while (1) {
    delay1();
    if (p10 == 1 && gateStatus == 0) {
      p11 = 1;
      p12 = 0;
      p13 = 1;
      delay2();
      gateStatus = 1;
    } else if (p10 == 0 && gateStatus == 1) {
      p11 = 1;
      p12 = 1;
      p13 = 0;
      delay2();
      gateStatus = 0;
      p11 = 0;
    } else if (p10 == 1 && gateStatus == 1) {
      p11 = 0;
      p12 = 0;
      p13 = 0;
    }

  }
}

void delay1() {
  int i, j;
  for (i = 0; i < 10; i++) {
    for (j = 0; j < 10000; j++) {}
  }
}
void delay2() {
  int i, j, f = 0;
```

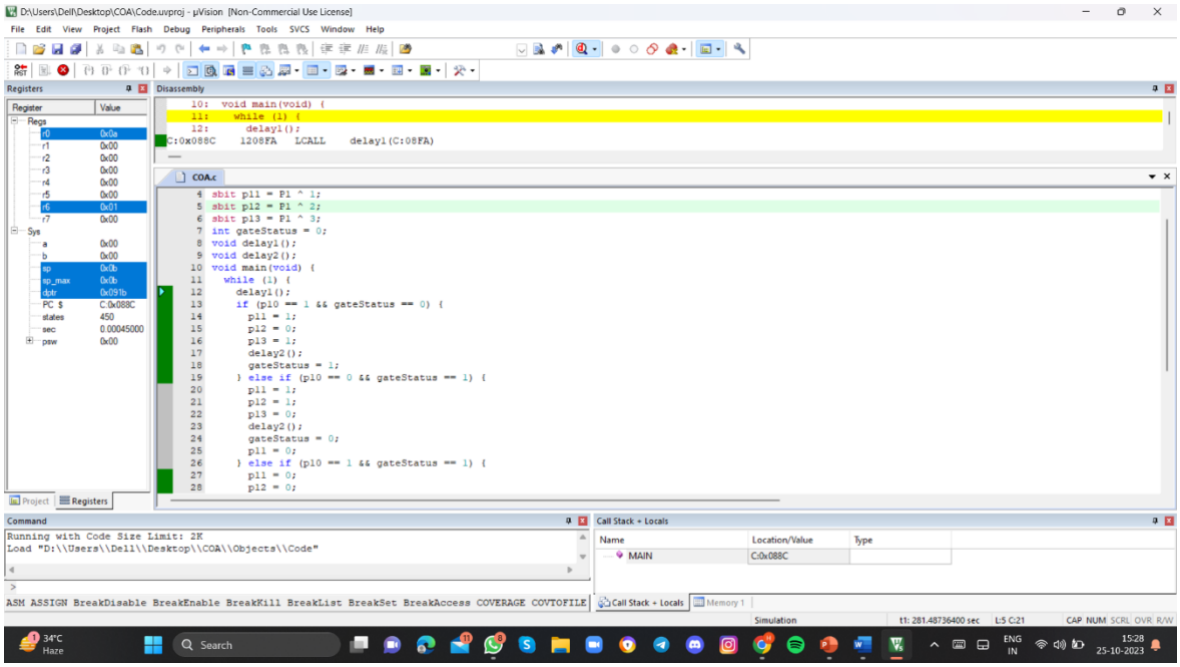
```
  for (i = 0; i < 10; i++) {
    for (j = 0; j < 30000; j++) {}
  }
 }
```

FLOWCHART:

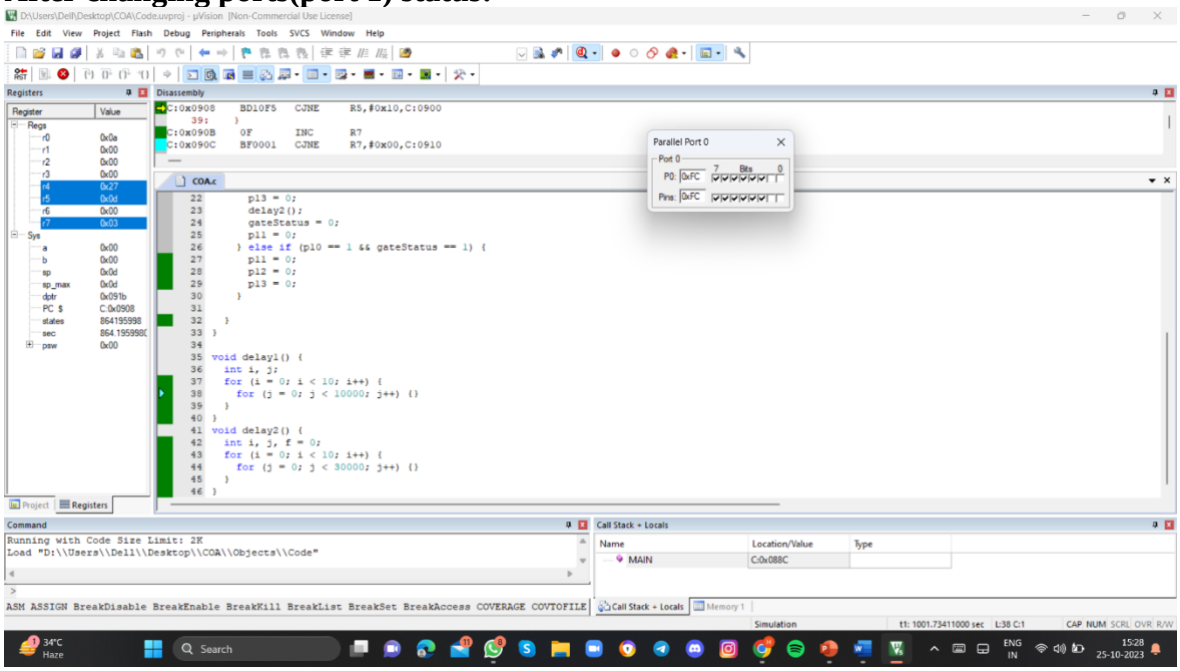
Draw it in MS-word itself. Don't paste it from your note

OUTPUT:

Before changing ports status:



After changing ports(port 1) status:



CONCLUSIONS:

The provided code is written in C for an 8051 microcontroller. It controls a gate mechanism based on the state of input p10 and maintains a gate status variable to track whether the gate is open or closed. The code employs simple delay functions to control the timing of operations.

REFERENCES:

https://www.researchgate.net/publication/228631957_Design_of_a_Microprocessor_Based_Automatic_Gate