Project Definition

Temperature Controlled DC Motor

Embedded Systems Development

(Hardware / Software Interfacing)

By

Kunalsinh Gohil (7943202)

&

Deep Patel (8306151)

CONESTOGA

Connect Life and Learning

Cambridge Campus, 850 Fountain Street South, Cambridge, Ontario N3H 0A8.

INDEX

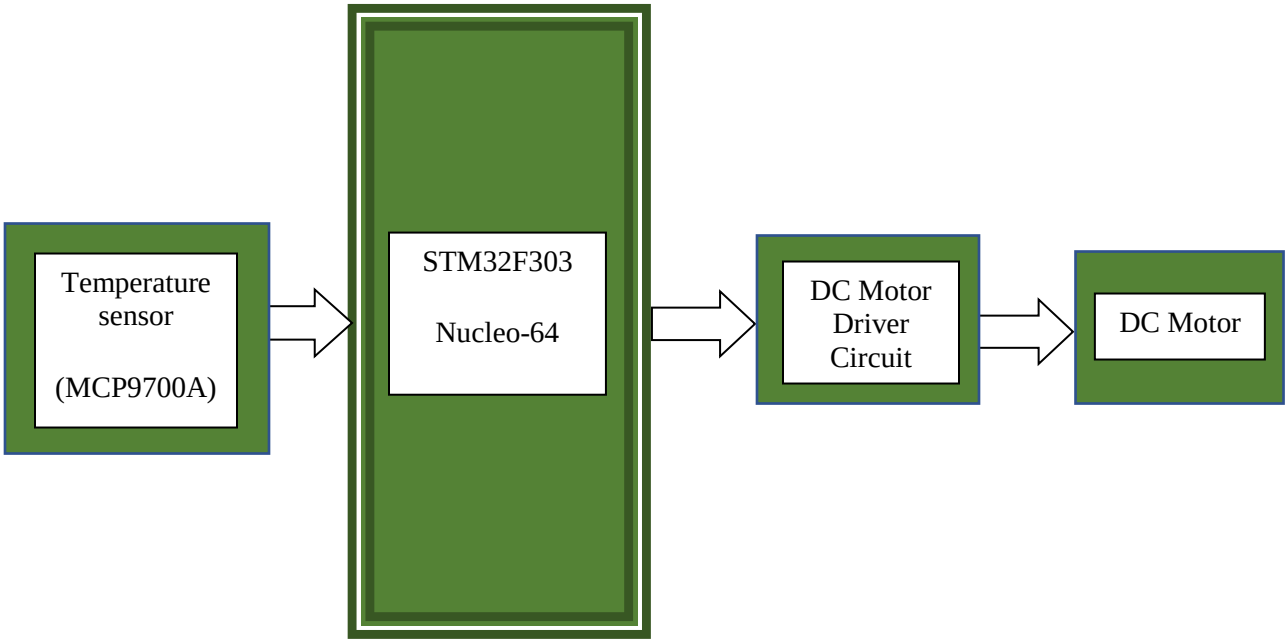
1. Introduction

In the Hardware/Software Interfacing Lab, we have decided to make our final project as on "*Temperature Controlled DC Motor*".

2. Tools Required

1. Nucleo-64 Board
2. Jumper wires
3. Bread board
4. Multimeter
5. Power supply
6. DC Motor
7. Temperature sensor (MCP9700A)
8. DC Motor Driver(L293DNE)

3. Block Diagram



4. Description of the Project

In the project, we will use temperature sensor which will be connected to one the ADC Channel input and it will detect the temperature and with the help of those temperature data we will control the speed of the DC Motor. So, at the room temperature the motor will in the OFF state. If the temperature rises above the room temperature, the DC Motor starts to rotate and as the temperature increases the speed of the DC Motor increases and if the temperature decreases from certain level, the speed of the DC Motor will be decreasing according to it.

5. Overview of software module

In this section, we are going to discuss about basic overview of our implementation of our project. First we will initialize the required GPIO pins then we will initialize ADC, PWM and DC Motor then in ADC, we will print the temperature value on the screen and with the help of those temperature data, we will control the DC Motor.