

AMRUTA PATIL

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Career Objective:

To use my experience in C language and strong analytical skills and innovative mindset to drive Organizational growth.

Academic Profile:

- B.E Electronic and Telecommunication Engineering passed out in 2019
- Diploma in Electronic and Telecommunication Engineering passed out in 2015

Professional Summary:

- Proficient in C
- Proficient and Skilled on micro-controller **ARM Cortex M0 (LPC11C24)**
- knowledge of Serial Protocols like **I2C, SPI and UART**
- knowledge of embedded peripherals: **GPIO, ADC and DAC**
- Knowledge of reading schematics and data sheets of components.
- Self-driven individual with ability to learn, lead and work in diverse teams.
- Working knowledge on **IoT** sensors, IoT devices.
- Knowledge on **image processing**.

Technical Skills:

- **Programming Languages :**
 - Procedural programming : C programming
 - Object Oriented Programming : C++ programming
 - Virtual Oriented programming : Java
- **OS Platforms :** Windows
- **Micro Controllers :** LPC11C24 (ARM Cortex M0)
- **Dev Tools :** KEIL MicroVision IDE , FlashMagic, Serial Terminal(mttty)
- **IDE's :** Arduino, IAR(ARM,8051)Proteus, MATLAB
- **Developed and Tested MCU On-Chip Peripheral modules:** IOCON, SYSCON, GPIO, I2C, SPI, UART, ADC
- **Developed and Tested On-Board Peripheral modules:** Discrete IO, EEPROM, DAC, Voltage Sensor

(0to3.3V POT) and Temperature sensor (LM 35)

Testing techniques

: Manual Testing, Automation Testing

Project #1: Battery State and Temperature Indication:

The objective of this project is to detect and indicate the temperature and state of a battery.

To indicate the state of the battery and temperature, an RGB Led, Buzzer, LM35 temperature sensor and an on-chip 10-bit Successive Approximation type-ADC is used. To identify the battery percentage, the voltage is converted into digital count using ADC and it is converted into percentage. Depending on the current state of the battery percentage, the RGB colour is determined:

Above 70% Green

51% to 70% Yellow

20% to 50% Red

Below 20% Flashing Red and Buzzer beeps at every 1 second.

To find out temperature of a battery LM35 sensor is used. When the temperature goes above 35°C ,

Buzzer beeps and RGB Red led Flashing at every 100ms.

Project #5: Voltage generation with SPI DAC

MCP4911 is an integrated DAC Chip with 10-bit resolution and Vref of 3.3v. This IC is interfaced to MCU through SPI bus (3-wire synchronous full duplex serial IO bus). DAC takes n bit count and generates voltage based on n and Vref. MCP4911 is a 10-bit DAC with: Input Range : 0 to 1023 Output Range : 0 to 3.3v Using the SPI driver, we update the MCP4911 internal register with a 10-bit count to generate the related voltage at the DAC output pin. The output voltage is displayed on the display device (LCD) and is also tested using a multimeter.

Project #3: RTC Parameter Setup with User Keys and display current time:

Our device does not have battery backup. Hence, current time needs to be set every time it is turned ON(in every power cycle/ Reset). In this project we set the real time clock using Left and Right User Keys. Left Key is used to get the current hour and Right Key is used to set the current minute. When Left Key is on Press and hold, it ticks the hour counter (0 to 23 band). On release, hour is set. When Right Key is on press and hold, it ticks the minute counter (0to59 band). On release, a minute is set. Program senses the User Key(s) condition at every 20ms. Hour and minute counter ticks at 500 ms during press and hold. Display Module (LCD) shows all the setup activity (Time)

Work History :

1. Experience: July 2023 to July2024
Company Name : VECTOR INDIA Pvt. Ltd
Domain Knowledge : C programming
Responsibilities : As a Sr.Lab Coordinator solve doubts from C language,check papers,Teach topics
2. Experience: September 2022 to May 2023
Internship : TeamBits Embedded Systems & Solutions (Hyderabad)
Domain Knowledge : C programming,UART,SPI,I2C
Responsibilities : write c programm for specific peripheral

Personal Details:

Gender : Female
Languages : English, Hindi, Marathi
Marital status : Single

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