VANIER COLLEGE – Computer Engineering Technology – Autumn 2017

Introduction to Microprocessors (247-302)

Project

PIC16F Embedded System

Objectives and basic requirements

In this project, you are required to build an embedded prototype system based on PIC16F887A. The basic requirements of the project would be :

1. Using PIC16F887A as the MAIN controller unit
2. Utilize at least 1 interrupt source in the microcontroller
3. Unit has at least one user input module and one output module connected to it

This project can be either an individual project or a team (up to 2) project. Team project is expected to have higher complexity.

Schedule of assignments:

1. Submission of proposal : 7th Nov (Tuesday) before 4pm (*via Lea*)
2. Assignment period : 9th Nov ~ 5th Dec 2017 (officially 3 lab sessions : 9th, 16th, 23th Nov)
3. Project showcase and presentation : 5th Dec 2017 (Tuesday)
4. Report submission : 10th Dec 2017 (*via Lea*)

Assessment criteria:

1. Prototype system functionality and quality (35% + **10%(bonus for project with technical excellence)**) - team
2. Knowledge assessment and participation (15%) - individual
3. Project report and User's guide (30%) – team
    a) Project report should at least contain the following information :
        i. Technical details ;
            - Technical features and design specifications
            - Detail schematic and high level flow chart
            - Technical details of firmware implementation
            - Any necessary pictures, waveforms to illustrate the functionality of the system
        ii. Discussion and Analysis
            - Problem encountered
            - Technical knowledge learned/enhanced
            - Potential enhancement of the project
    b) User's guide should at least contain the following information :
        i. Features and functionality
        ii. Operating procedures
        iii. Basic troubleshooting
4. Project presentation (max 10 mins) and showcase (15%) - team
5. Weekly progress and action item reports (5%) - team