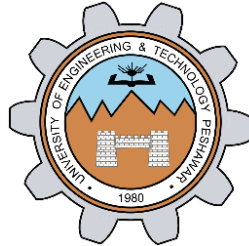


MICROPROCESSOR BASED SYSTEM DESIGN LAB

LAB 13



Spring 2021

CSE307L MBSD Lab

Submitted by: **Shah Raza**

Registration No. : **18PWCSE1658**

Class Section: **B**

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: _____

Submitted to:

Engr. Amaad Khalil

Tuesday, August 10, 2021

Department of Computer Systems Engineering
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Task 1:

Use external ADC to read data from sensors. Transfer data to 8051 board. The microcontroller will analyze the data and after processing send it out to external DAC. The output of DAC and input of ADC is compared on oscilloscope for all the parameters.

Code:

```
#include <reg51.h>
#include <stdio.h>

sbit RD_n = P3^0; //P3.0 is connected to the RD pin of ADC
sbit WR_n = P3^1; //P3.1 is connected to the WR pin of ADC
sbit INTR = P3^2; //P3.2 is connected to the INTR pin of ADC

void Ext0(void); //Function that is called after the ADC is done with conversion

void main(void)
{
    P2 = 0xFF; //Set P2 as an input Port
    P1 = 0x00; //Set P1 as an output Port
    INTR = 1; //Set P3.2 as an input pin
    while (1)
    {
        RD_n = 1; //Set the RD pin to High
        WR_n = 0; //WR = Low
        WR_n = 1; //Low-->High
        while(INTR==1); //Wait for the ADC to Convert the given voltage
        Ext0(); //Call the Ext0 function
    }
}

void Ext0()
{
    RD_n = 0; //Set the RD pin of ADC from HIGH to LOW
    //The ADC sends the converted value to P2
    P1 = P2; //Send the value at P2 to P1
}
```

Output / Graphs / Plots / Results:
Schematic:

