



School of Electronics Engineering

Class Id: VL2021220502581

Faculty : **Prof. Manish Kumar**

Slot : L23+L24

Deadline : 04-Mar-2022

Marks : 10

Instruction for each Lab Record:

1. Write Aim and Algorithm
2. Execute the program in Keil simulator- provide text code
3. Save the results as screen shots.
4. Make a .pdf file of the screen shots of the Keil simulator while executing the program and displaying the results.
5. Show authenticity of your work by creating a folder with your registration no. while creating the project file in Keil simulator (as we do in lab class- First Lab Program demonstration).
6. Write each step screen shot for each program.
7. Write Result and Conclusion

Lab Task 3

Sub Task 1: Timer (Realize the event through simulation, consider different test cases)

- a) Write a Program to toggles the ports of the 8051. Use the LEDs to watch the bits of the ports toggle on and off. Make sure that the time delay in between the "on" and "off" states is long enough that you can observe each state clearly.
- b) Test the 8051's ports for input operation as follows. Connect each bit of P1 (P1.0 - P1.7) of the 8051 to DIP switches. Any change of status of the switches connected to P1 will be instantly reflected on LEDs connected to P2.
- c) Write a program using timer 0 to generate a 500 Hz square wave frequency on one of the pins of P1. Then examine the frequency using the KEIL IDE inbuilt Logic Analyzer.

Sub Task 2: perform counter operations

Question 1:

Write an 8051 assembly program to use Counter 1 in mode 2 and after 10 number of counts on TL1, generate a SQUARE waveform of 1 KHz on P1.2 by using Timer 1 in mode 1, show the counts in TL1 on port 2.

Question 2:

Assuming that clock pulses are fed into pin T1, write a program for counter 1 in mode 2 to count the pulses and display the state of the TL1 count on P2, which connects to 8 LEDs.