Name: **Bishal Saha** Lab Assignment Number: **6,6A**
Course: **EEE4001:Microprocessors and Microcontroller Lab** Date: 8-04-2022
Registration Number: **20BEE0298**

1 Aim

Upon reset,
To clear P1.0 when INTO(bar) is true,generate 50Hz,SQ wave on P1.0,XTAL=11.0592Hz.

2 Algorithm

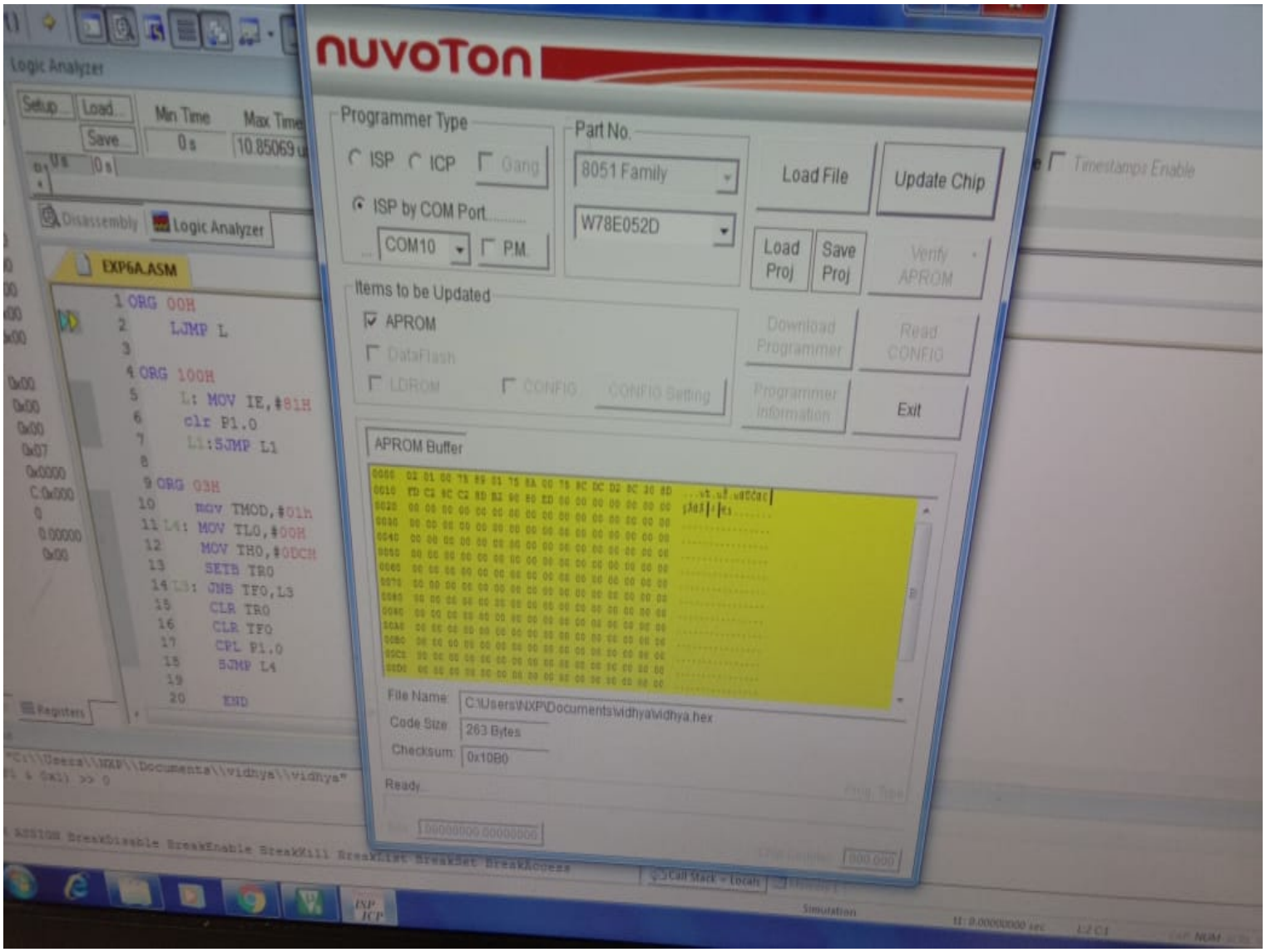
```
1  start reset(by accessing calling Org 0)
2  Jump to any random memory location(say 100h) where IE is defined
3  start Org 100h(any memory lcation)
4  Decalre Intreupt using IE register
5  clear P1.0
6  stay here untill any intrrupt happens
7  On any External intrupt jump to Org 3h(memory location for INTO(bar)
8  Declare TMOD
9  Initialize the initial values
10 start timer wait for overflow
11 clear timer
12 clear overflow
13 access P1.0
14 jump to Intial value line using sjmp so to do the process
       continously
```

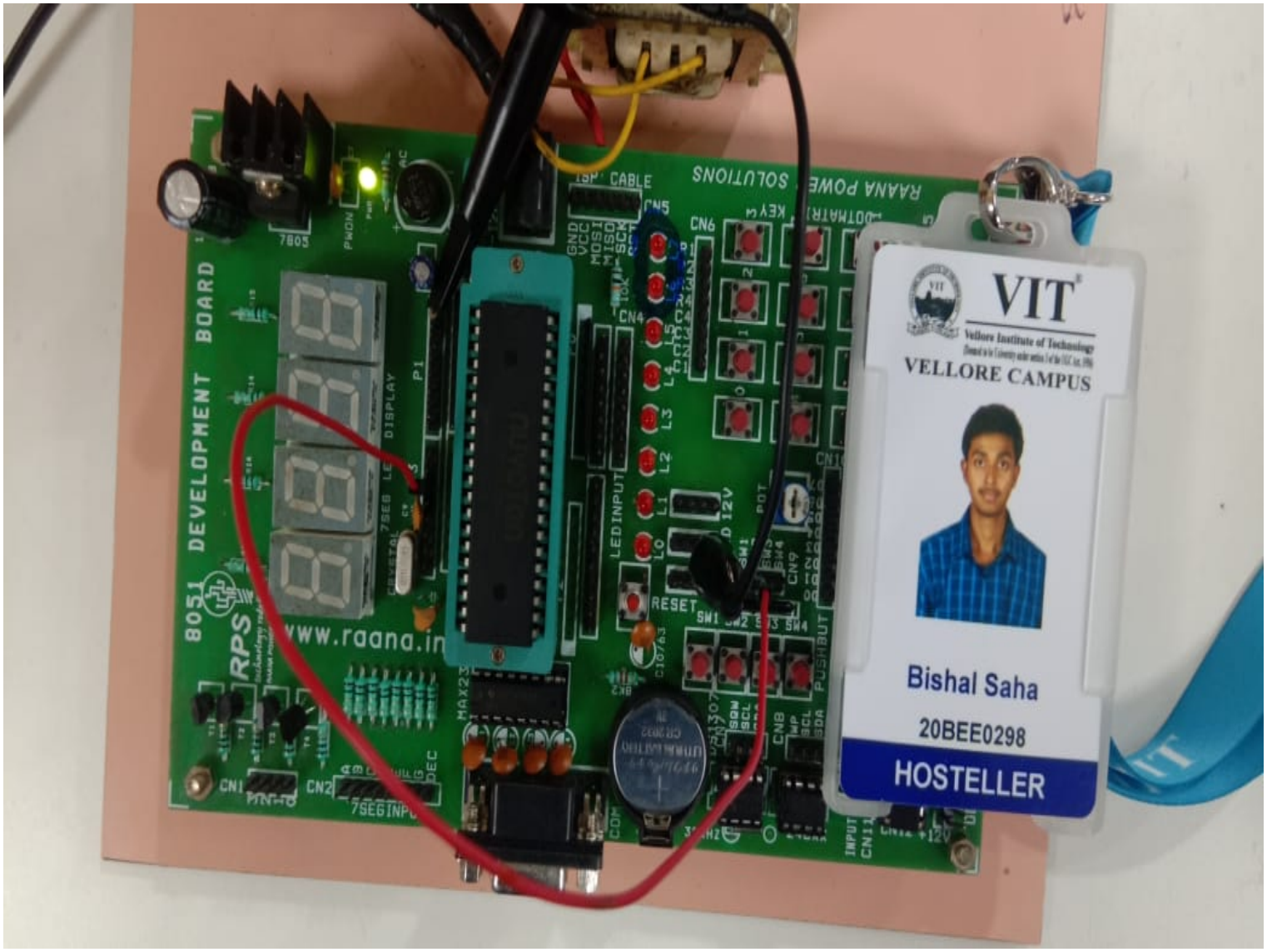
3 Assembly Language Programming and Results:

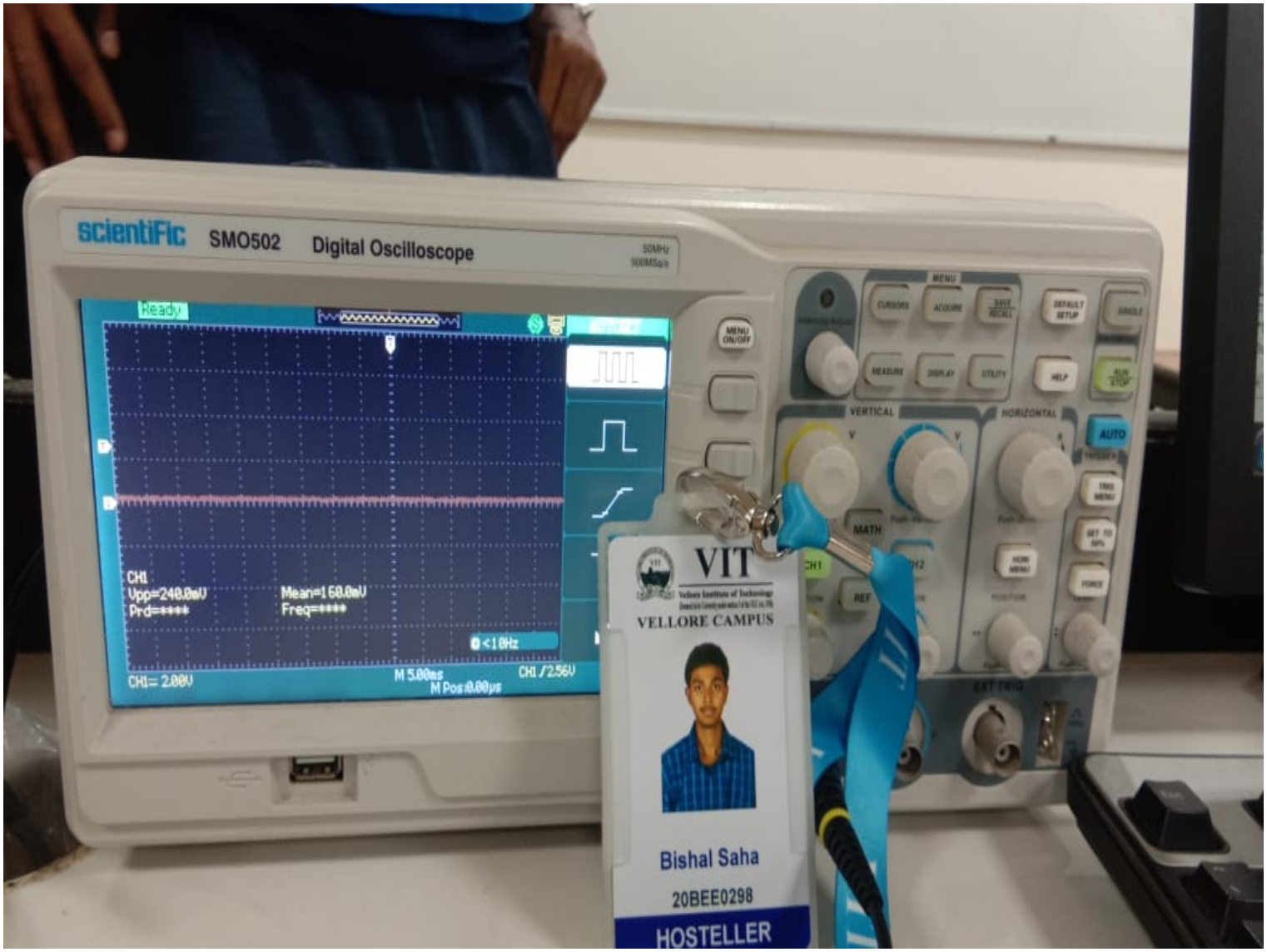
```
Org 0
Ljmp L
Org 100h
L:mov IE,81h
clr P1.0
L1:Sjmp L1
Org 3h
mov TMOD,1h
L4:mov TL0,00h
mov TH0,DCh
Setb TR0
```

L3:Jnb TF0,L3
clr TR0
clr TF0
cpl P1.0
Sjmp L4

3.0.1 OUTPUT




8051 DEVELOPMENT BOARD
www.raana.in
RESET
VIT
Vellore Institute of Technology
VELLORE CAMPUS
Bishal Saha
20BEE0298
HOSTELLER


scientiFic
SMO502
Digital Oscilloscope
Ready
CH1
Vpp=240.0mV
Prd=****
Mean=160.0mV
Freq=****
<10Hz
CH1= 2.00V
M 5.00ns
M Pos:0.00μs
CH1 /2.56V
VIT
VELLORE CAMPUS
Bishal Saha
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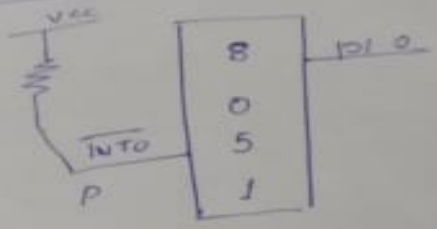
HOSTELLER


scientific SMO502 Digital Oscilloscope
CH1
Vpp=5.84V
Prd=20.02ms
Mean=2.56V
Freq=49.94Hz
VERTICAL
HORIZONTAL
MATH
EXT TRIG
AUTO
VIT
VELLORE CAMPUS
Bishal Saha
20BEE0298
HOSTELLER

6A

Ext Interrupt



upon reset,
clear P1.0 when $\overline{INT0}$ is true, generate 50Hz. SQ wave on P1.0

XTAL = 11.0592MHz

T0 - M1

0 0 0 0 0 1

org 0
Ljmp L

org 100h
L: mov I6, #1000 0001
8 1
Clr P1.0
L1: Sjmp L1

org 3h
mov TMOD, 1h
L1: mov TL0, 00h
mov TH0, ~~24h~~ DCh
Setb TR0
L: Jnb TF0, L
Clr TR0
~~Clr TF0~~
~~Cpl~~ P1.0
Sjmp L1

0.01
1 0850
=10850.6944
=
9210

SC320
2AC2

4 Result

Hence with proper coding in keil compiler in Assembly language we successfully clear P1.0 when INT0(bar) is true,generate 50Hz SQ wave on P1.0(during intreupt)

Name: **Bishal Saha** Lab Assignment Number: **6,6B**
Course: **EEE4001:Microprocessors and Microcontroller Lab** Date: 10-04-2022
Registration Number: **20BEE0298**

1 Aim

To Display Registration Number on 7 Segment in 8051 MicroController.

2 Algorithm

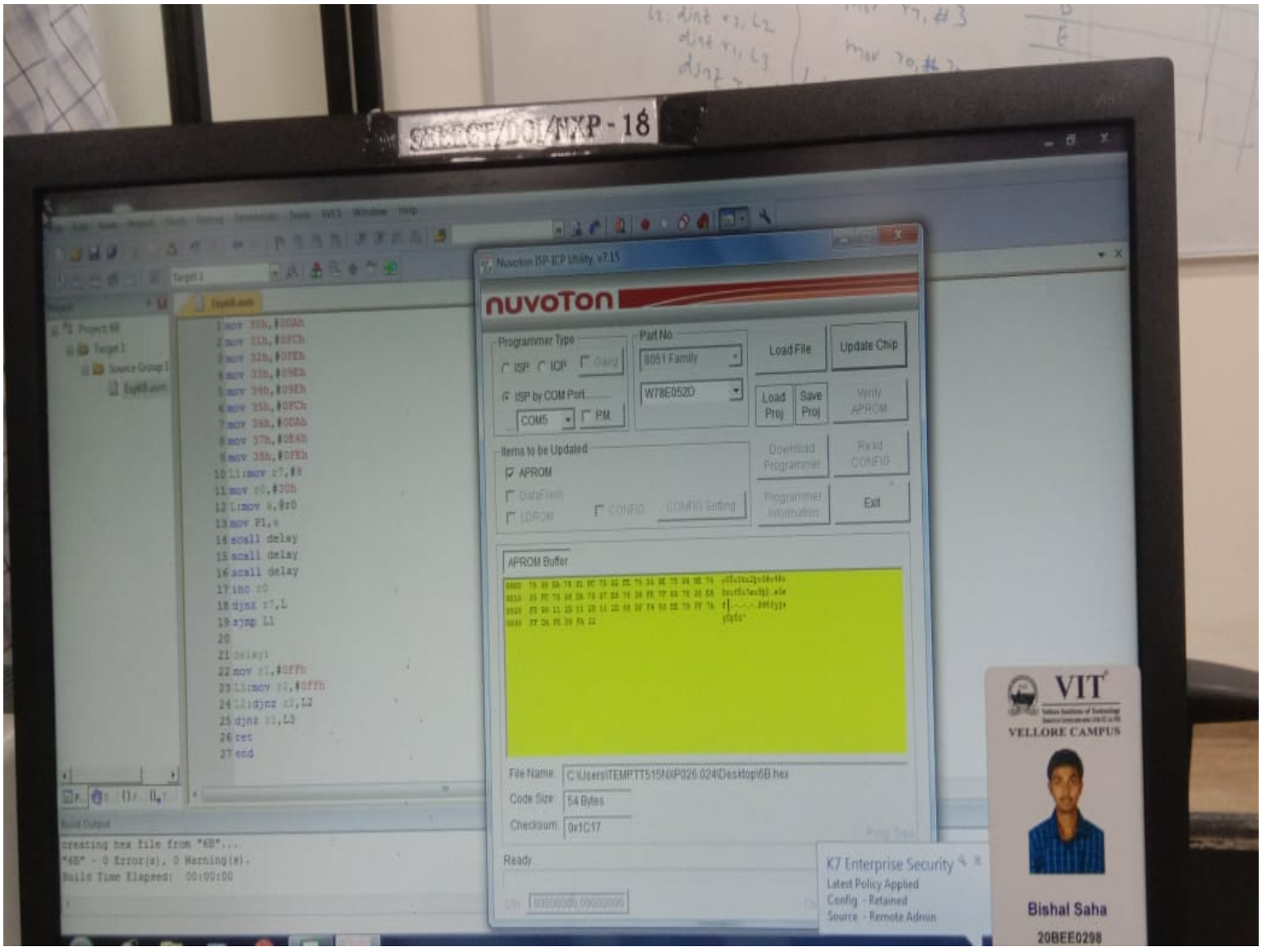
1. Load the respective hexadecimal 9 digit registration Number(according to the rule of 7 segment) from memory location 30h to 38h
2. Load register R7 with value as 9(as we want to repeat the process **for** 9 times as registration number contains 9 letters)
3. Load register R0 with first memory location(as data)
4. Load register A with data at R0 register(using @)
5. Load Port 1 (P1) with A
6. call delay
7. increment register R0
8. Do this process **for** 9 times (using djnz command)
9. jump to **line** no 2 so that this task repeats continously
10. declare delay

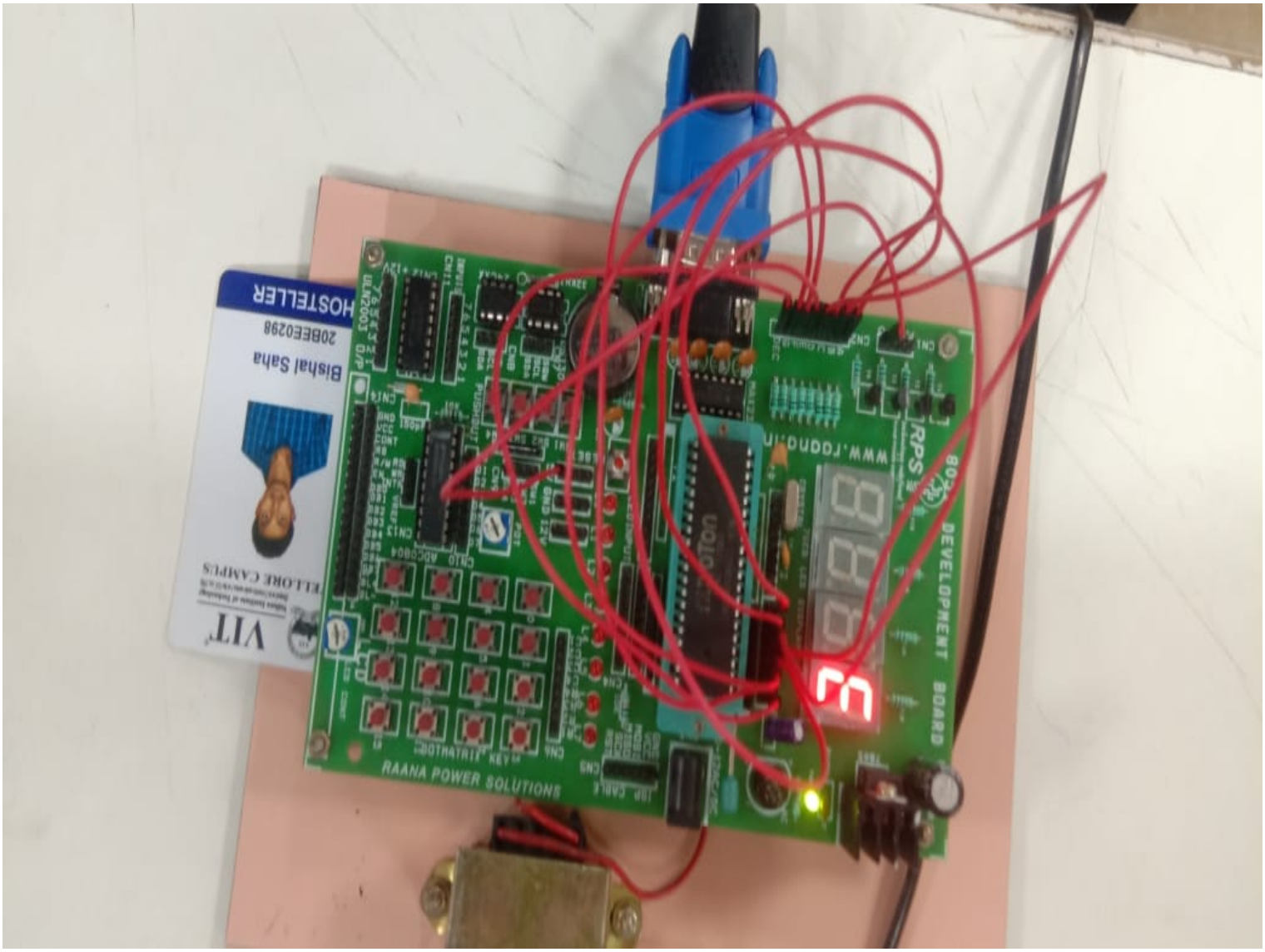
3 Assembly Language Programming and Results:

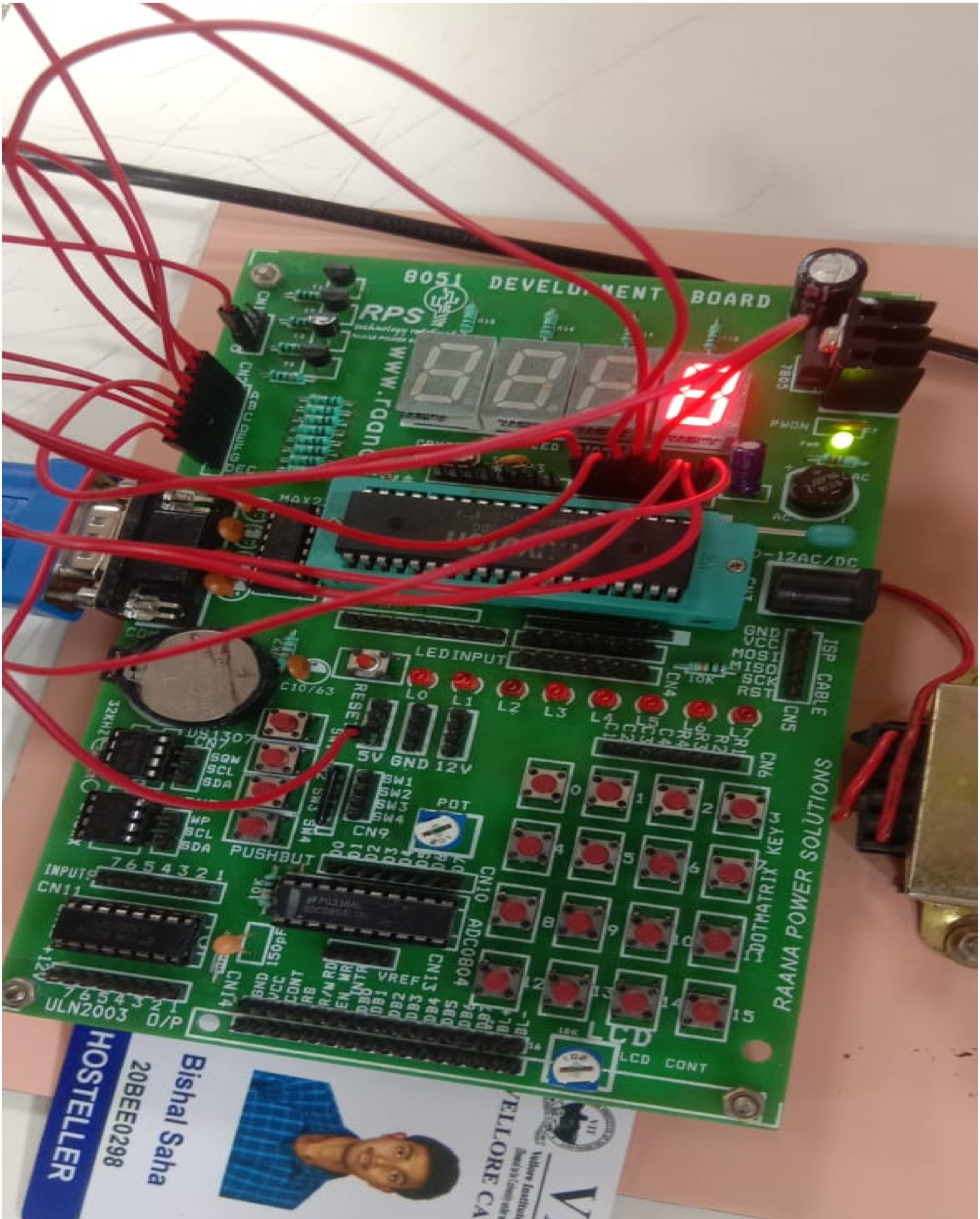
```
mov 30h,0DAh
mov 31h,0FCh
mov 32h,0FEh
mov 33h,09Eh
mov 34h,09Eh
mov 35h,0FCh
mov 36h,0DAh
mov 37h,0ECh
mov 38h,0FEh
L1:mov r7,9
mov r0,30h
L:mov a,@r0
mov P1,a
acall delay
```

```
acall delay
acall delay
inc r0
djnz r7,L
sjmp L1
delay:
mov r1,0FFh
L3:mov r2,0FFh
L2:djnz r2,L2
djnz r1,L3
ret
end
```

3.0.1 OUTPUT




HOSTELLER
20BEE0298
Bishal Saha
VIT
RAANA POWER SOLUTIONS
DEVELOPMENT BOARD


RPS
BOARD
LEDINPUT
L0
L1
L2
L3
L4
L5
L6
L7
5V
GND
12V
POT
PUSHBUT
SW1
SW2
SW3
SW4
CN9
CN10
ADC0804
VREF
GND
VCC
MOSI
MISO
SCK
RST
ISP CABLE
CN5
CN6
CN4
PWON
ULN2003
O/P
LCD CONT
RAANA POWER SOLUTIONS
DOTMATRIX KEY
SQW
SCL
SDA
WP
C10/63
Bishal Saha
20BEE0298
HOSTELLER

20BEE0298

Numb	a	b	c	d	e	f	g	dp	Hex
2	1	1	0	1	1	0	1	0	DA
0	1	1	1	1	1	1	0	0	FC
B	1	1	1	1	1	1	1	0	FE
E	1	0	0	1	1	1	1	0	~~BE~~ 9E 9E
E	1	0	0	1	1	1	1	0	9E
0	1	1	1	1	1	1	0	0	FC
2	1	1	0	1	1	0	1	0	DA
9	1	1	1	0	0	1	1	0	EC
8	1	1	1	1	1	1	1	0	FE

Program

```
mov  30h, #0FCh
mov  31h, # 60h
mov  32h, # 00h
mov  r7, # 3
mov  r0 ,# 30h
L: mov  0, @ r0
   mov  p1 , a
   lcall  delay
   inc r0
   djnz r7 , L
L1  sjmp  L1

delay
   mov r3 #0ffh
L4  mov r1, #ffh
L3    mov r2 , #0ffh
L2  djnz r2, L2
    djnz r1 , L3
    djnz r3 , L4
    end
```

4 Result

Hence with proper coding in keil compiler in Assembly language we successfully Displayed our Resgistration Number on the 7 segment of 8051 MicroController(in channel 1).