

Micro-Controller

Experiment No. 1

Name: **Parth Sachin Jadhav**

T.E. E.N.T.C.

Roll No.: **24**

1] Addition of two HEX numbers:

The screenshot displays a microcontroller development software interface. On the left, the 'Registers' window shows a list of registers and their values. On the right, the 'Disassembly' window shows the assembly code for the program.

Registers Window:

Register	Value
Regs	
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x6c
b	0x36
sp	0x07
sp_max	0x07
dptr	0x0000
PC \$	C:0x0007
states	90885442
sec	27.26563533
psw	0x00

Disassembly Window:

```
5:      H1 :SJMP H1
->C:0x0007 80FE  SJMP  H1 (C:0007)
C:0x0009 00     NOP
C:0x000A 00     NOP

add.s
1  ORG 0000H
2      MOV A, #36H
3      MOV B, #36H
4      ADD A,B
5      H1 :SJMP H1
6  END
7
```

2] Accumulation and Summation:

The screenshot displays a microcontroller development IDE with two main windows: **Registers** and **Disassembly**.

Registers Window:

Register	Value
Regs	
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x00
b	0x00
sp	0x07
sp_max	0x07
dptr	0x0000
PC \$	C:0x0000
states	0
sec	0.00000000
psw	0x00

Disassembly Window:

The disassembly window shows the following code:

```
2: MOV R0, #50H
C:0x0000 7850 MOV R0,#0x50
3: MOV R3, #04H
C:0x0002 7B04 MOV R3,#0x04
```

Below the disassembly window, a file named **addc.s** is open, showing the following assembly code:

```
1 ORG 0000H
2 MOV R0, #50H
3 MOV R3, #04H
4 MOV A, @R0
5 UP: INC R0
6 ADDC A, @R0
7 DJNZ R3, UP
8 MOV 60H, A
9 H1: SJMP H1
10 END
```

Memory Window:

The screenshot displays the **Memory Window** with the title **Memory 1**. The **Address:** field is set to **i:50H**.

The memory contents are displayed in two rows:

```
I:0x50: 01 02 03 04 05 00 00 00 00 00 00 00 00 00 00 0F 00 00 00
I:0x73: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

3] Memory Block Copier using Assembly (Int_RAM):

The screenshot displays the Keil uVision IDE interface. On the left, the 'Registers' window is open, showing a list of registers and their current values. The registers are organized into two sections: 'Regs' (r0-r7) and 'Sys' (a, b, sp, sp_max, dptr, PC, states, sec, psw). The 'Disassembly' window on the right shows the assembly code for the file 'int_ram.s'. The code includes instructions such as 'ORG 0000H', 'MOV R0, #50H', 'MOV R1, #60H', 'MOV R2, #05H', 'UP: MOV A, @R0', 'MOV @R1, A', 'INC R0', 'INC R1', 'DJNZ R2, UP', 'H1: SJMP H1', and 'END'. The assembly code is color-coded, with labels in green, instructions in blue, and constants in red.

Register	Value
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x00
b	0x00
sp	0x07
sp_max	0x07
dptr	0x0000
PC	0x0000
states	0
sec	0.00000000
psw	0x00

```

1 ORG 0000H
2 MOV R0, #50H
3 MOV R1, #60H
4 MOV R2, #05H
5 UP: MOV A, @R0
6 MOV @R1, A
7 INC R0
8 INC R1
9 DJNZ R2, UP
10 H1: SJMP H1
11 END
12

```

Memory Window:

Memory 1																													
Address:		0:50H																											
I:0x50:		01	02	03	04	05	00	00	00	00	00	00	00	00	00	00	01	02	03	04	05	00							
I:0x73:		00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00						
I:0x96:		00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00						