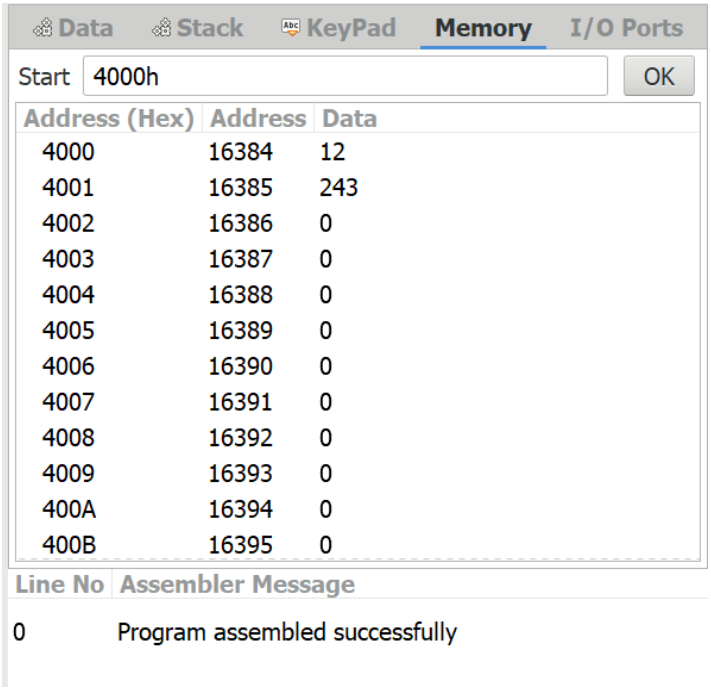
MIT ASSIGNMENT – 2

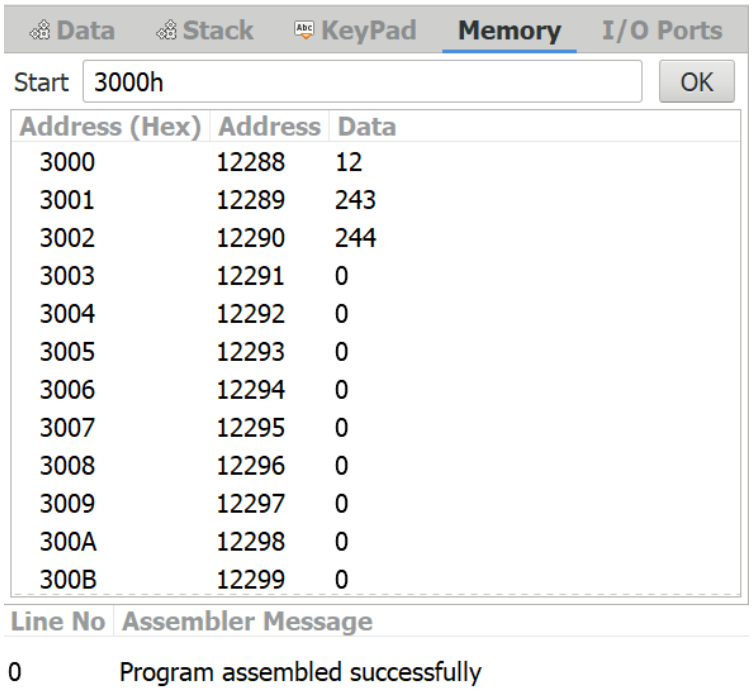
1. **Write a program for one's complement of 8-bit number.**

```
;Program1
;Data present at 4000h – 12 (in decimal)
lda 4000h
cma
sta 4001h
hlt
```



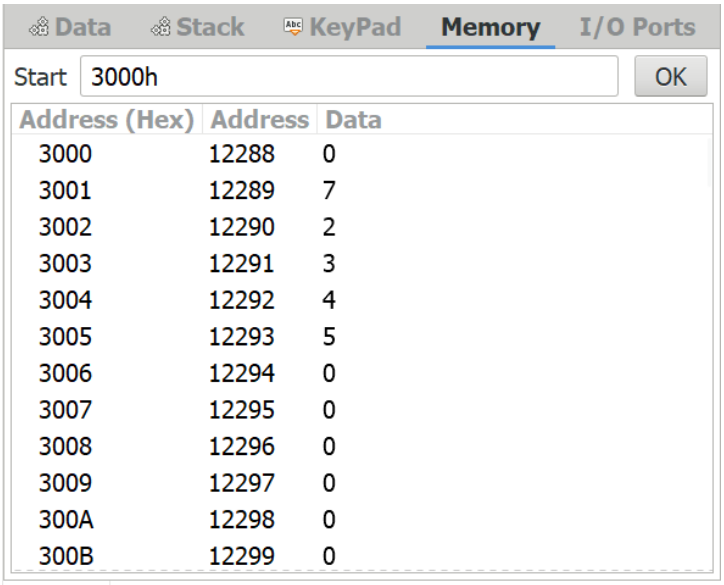
2. **Write a program for two's complement of 8-bit number.**

```
;Program2
;Data present at 3000h – 12 (in decimal)
lda 3000h
cma
sta 3001h
adi 01
sta 3002H
hlt
```



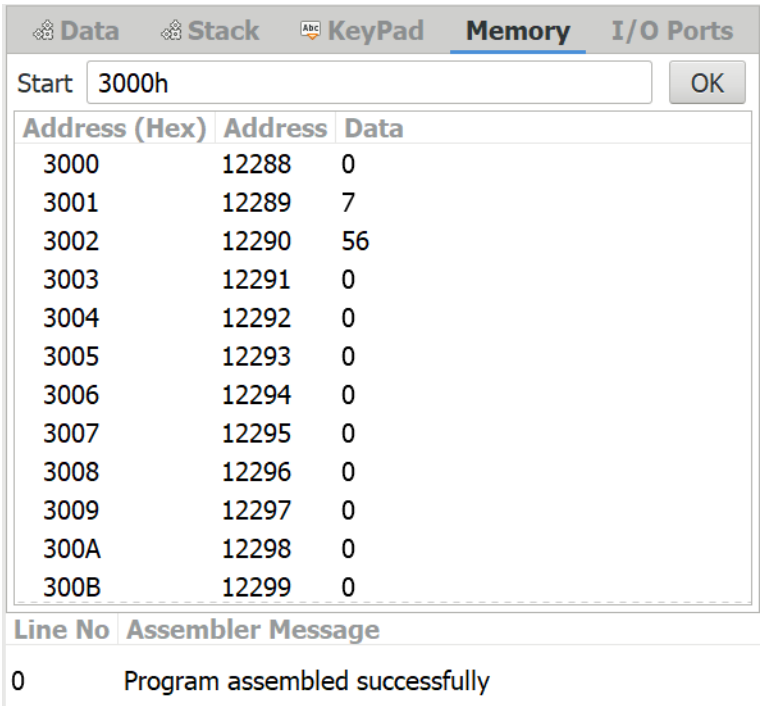
3. **Write an assembly language program that AND, OR and XOR together the contents of register B, C and E and place the result into memory location 3000H, 3001H and 3002H.**

```
;Program3
;Data present at 3003h,3004h,3005h – 3,4,5 (all in decimal) respectively
lda 3003h
mov b,a
lda 3004h
mov c,a
lda 3005h
mov e,a
; AND Operation
ana c
ana b
sta 3000h
; OR Operation
mov a,e
ora c
ora b
sta 3001h
; XOR Operation
mov a,e
xra c
xra b
sta 3002h
hlt
```



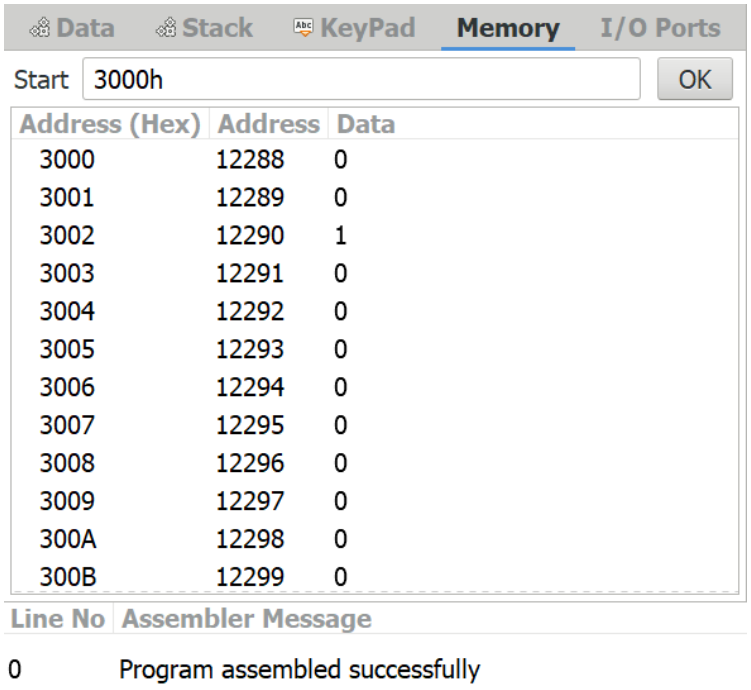
4. **Write a program to shift 8-bit no by three bits left. Assume data is in register C.**

```
;Program4
mvi c,07h
;------------
mov a,c
rlc
rlc
rlc
sta 3002h
hlt
```



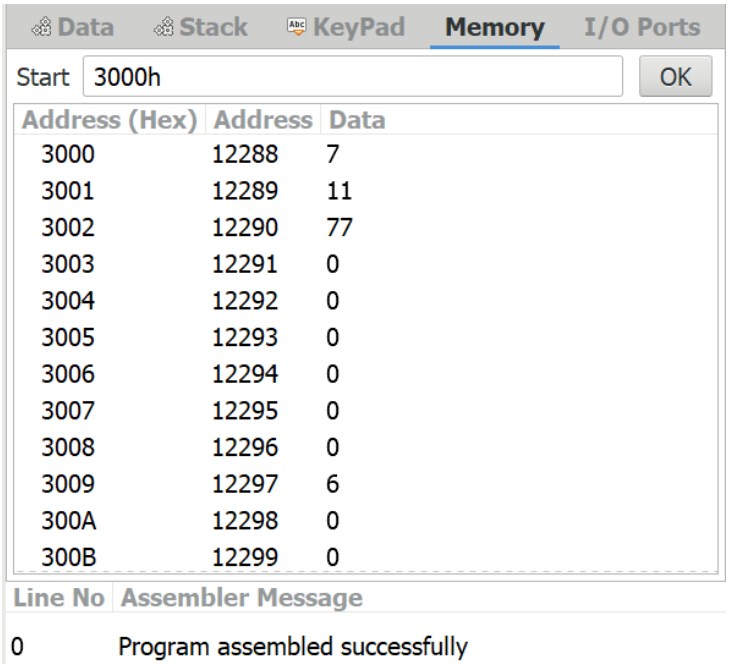
5. **Write a program to shift 8-bit data four bits right. Assume data is in register C.**

```
;Program5
mvi c,10h
;------------
mov a,c
rrc
rrc
rrc
rrc
sta 3002h
hlt
```



6. **Write a Program to Multiply Two 8-bit Numbers.**

```
;Program6
;Data present at 3000h and 3001h – 7 and 11 (in decimal) respectively
lda 3000h
mov e,a
mvi d,00h
lda 3001h
mov c,a
lxi h,0000h
loop: dad d
dcr c
jnz loop
shld 3002h
hlt
```



7. **Write a Program to find Largest of two 8-bit numbers.**

```
;Program7
;Larger value is stored in 2000h
mvi b,02h
mvi c,05h
mov a,b
cmp c
jnc noCarry
mov a,c
noCarry: sta 2000h
hlt
```