

Vivekanand Education Society's Institute of Technology
Department of Computer Engineering



Subject: - Microprocessor

Semester:- V

Div:-C

Class:-T.E. (D12)

Roll No: 29	Name: Ajay Singh Khalsa		
Exp. No:12	Title: AIM: Program and interfacing of ADC using 8255 <hr/>		
DOP:	23/11/2020	DOS:	4/12/2020
GRADE:		LAB OUTCOMES : LO1,LO2,LO3	SIGNATURE:

INPUT:

```
DATA SEGMENT
PORTA EQU 00H
PORTC EQU 04H
CNTPRT EQU 06H
MEM DB 20H
DATA ENDS
CODE SEGMENT
ASSUME CS:CODE,DS:DATA
START:      MOV AX,DATA
MOV DS,AX
MOV DX,CNTPRT
MOV AL,98H
OUT DX,AL
MOV AL,01H
OUT DX,AL MOV
AL,00
OUT DX,AL
MOV DX,PORTC
CHK:  IN AL,DX
AND AL,80H
JZ CHK
MOV DX,PORTA
IN AL,DX
MOV MEM,AL
INT 3H
CODE ENDS
END START
```

Output:

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Progra...

File Edit View Run Breakpoints Data Options Window Help **READY**

[CPU 80486] 1=[↑][↓]

cs:0000 B8AD48	mov	ax, 48AD	ax 0000	c=0
cs:0003 8ED8	mov	ds, ax	bx 0000	z=0
cs:0005 BA0600	mov	dx, 0006	cx 0000	s=0
cs:0008 B098	mov	al, 98	dx 0000	o=0
cs:000A EE	out	dx, al	si 0000	p=0
cs:000B B001	mov	al, 01	di 0000	a=0
cs:000D EE	out	dx, al	bp 0000	i=1
cs:000E B000	mov	al, 00	sp 0000	d=0
cs:0010 EE	out	dx, al	ds 489D	
cs:0011 BA0400	mov	dx, 0004	es 489D	
cs:0014 EC	in	al, dx	ss 48AC	
cs:0015 2480	and	al, 80	cs 48AE	
cs:0017 74FB	je	0014	ip 0000	

ds:0000 CD 20 FF 9F 00 EA FF FF = f n
ds:0008 AD DE E0 01 C5 15 AA 01 i |x0|S-0
ds:0010 C5 15 89 02 20 10 92 01 +Se0 >ff0
ds:0018 01 03 01 00 02 FF FF FF 000 0

ss:0002 6474
ss:0000 0000

F1-Help F2-Bkpt F3-Mod F4-Here F5-Zoom F6-Next F7-Trace F8-Step F9-Run F10-Menu

initially

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Progra...

File Edit View Run Breakpoints Data Options Window Help **READY**

[CPU 80486] 1=[↑][↓]

cs:0000 B8AD48	mov	ax, 48AD	ax 4898	c=0
cs:0003 8ED8	mov	ds, ax	bx 0000	z=0
cs:0005 BA0600	mov	dx, 0006	cx 0000	s=0
cs:0008 B098	mov	al, 98	dx 0006	o=0
cs:000A EE	out	dx, al	si 0000	p=0
cs:000B B001	mov	al, 01	di 0000	a=0
cs:000D EE	out	dx, al	bp 0000	i=1
cs:000E B000	mov	al, 00	sp 0000	d=0
cs:0010 EE	out	dx, al	ds 48AD	
cs:0011 BA0400	mov	dx, 0004	es 489D	
cs:0014 EC	in	al, dx	ss 48AC	
cs:0015 2480	and	al, 80	cs 48AE	
cs:0017 74FB	je	0014	ip 000A	

es:0000 CD 20 FF 9F 00 EA FF FF = f n
es:0008 AD DE E0 01 C5 15 AA 01 i |x0|S-0
es:0010 C5 15 89 02 20 10 92 01 +Se0 >ff0
es:0018 01 03 01 00 02 FF FF FF 000 0

ss:0002 6474
ss:0000 0000

F1-Help F2-Bkpt F3-Mod F4-Here F5-Zoom F6-Next F7-Trace F8-Step F9-Run F10-Menu

Out statement executed

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Progra...

File Edit View Run Breakpoints Data Options Window Help

1-CPU 80486 1-[↑][↓]

Address	Instruction	Comment	Register/Value
cs:0017	je 0014	↑	ax 4800 c=0
cs:0019	mov dx,0000		bx 0000 z=1
cs:001C	in al,dx		cx 0000 s=0
cs:001D	mov [0000],al		dx 0004 o=0
cs:0020	int 03		si 0000 p=1
cs:0021	add [bx+si],al		di 0000 a=0
cs:0023	add [bx+si],al		bp 0000 i=1
cs:0025	add [bx+si],al		sp 0000 d=0
cs:0027	add [bx+si],al		ds 48AD
cs:0029	add [bx+si],al		es 489D
cs:002B	add [bx+si],al		ss 48AC
cs:002D	add [bx+si],al		cs 48AE
cs:002F	add [bx+si],al		ip 0017

es:0000 CD 20 FF 9F 00 EA FF FF = f 0
 es:0008 AD DE E0 01 C5 15 AA 01 i 00+5-0
 es:0010 C5 15 89 02 20 10 92 01 +5e0 0A0
 es:0018 01 03 01 00 02 FF FF FF 000 0

ss:0002 6474
 ss:0000 0000

F1-Help F2-Bkpt F3-Mod F4-Here F5-Zoom F6-Next F7-Trace F8-Step F9-Run F10-Menu

Jump back to previous statement as zero flag set to 1

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Progra...

File Edit View Run Breakpoints Data Options Window Help

1-CPU 80486 1-[↑][↓]

Address	Instruction	Comment	Register/Value
cs:0014	in al,dx		ax 4800 c=0
cs:0015	and al,80		bx 0000 z=1
cs:0017	je 0014	↑	cx 0000 s=0
cs:0019	mov dx,0000		dx 0004 o=0
cs:001C	in al,dx		si 0000 p=1
cs:001D	mov [0000],al		di 0000 a=0
cs:0020	int 03		bp 0000 i=1
cs:0021	add [bx+si],al		sp 0000 d=0
cs:0023	add [bx+si],al		ds 48AD
cs:0025	add [bx+si],al		es 489D
cs:0027	add [bx+si],al		ss 48AC
cs:0029	add [bx+si],al		cs 48AE
cs:002B	add [bx+si],al		ip 0017

es:0000 CD 20 FF 9F 00 EA FF FF = f 0
 es:0008 AD DE E0 01 C5 15 AA 01 i 00+5-0
 es:0010 C5 15 89 02 20 10 92 01 +5e0 0A0
 es:0018 01 03 01 00 02 FF FF FF 000 0

ss:0002 6474
 ss:0000 0000

F1-Help F2-Bkpt F3-Mod F4-Here F5-Zoom F6-Next F7-Trace F8-Step F9-Run F10-Menu

As it is stuck in the loop the interfacing with ADC is successfully executed.