

Başkent Üniversitesi
Elektrik - Elektronik Mühendisliği Bölümü

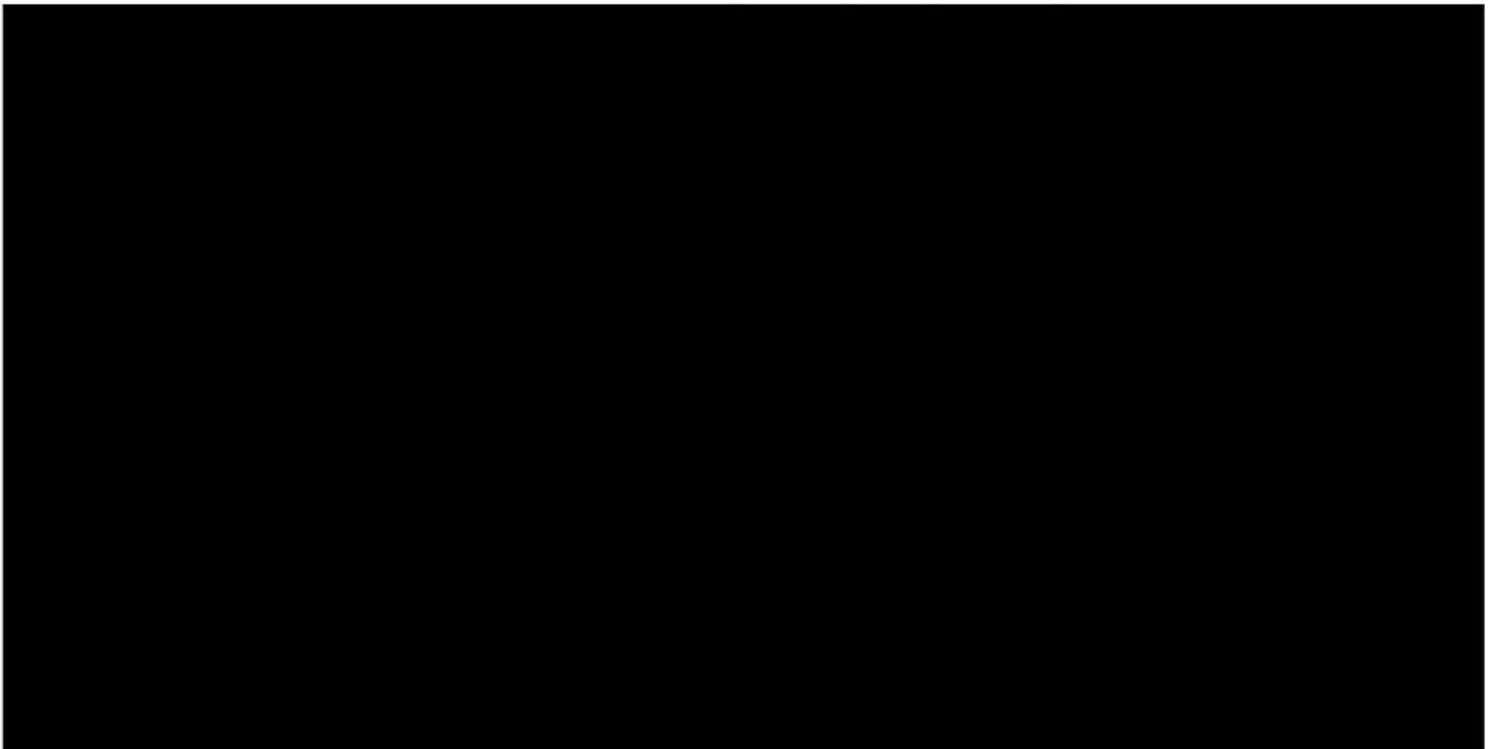
EEM 332 – Mikroişlemciler Laboratuvarı

RAPOR

Deney No: #6

Deney Adı: Assembly Programlama/ Döngüler

Deney Tarihi: 21/04/2006



Deneysel çalışma :

1)

C. Mov [DI],AL

Register indirect addressing

$10000+0100=10100$

D.MOV AL,[BP+DI]

Based indexed addressing mode

$10000+1000+0100= 11100$

E. MOV CX,[DI]

Indexed addressing mode

10100

F. MOV DX,[BP]

Based addressing mode

11000

G. MOV [100],DL

Direct addressing mode

10100

H. MOV [SI+100],AX

Indexed addressing mode

$20000+0200+100= 20300$

İ. MOV DL,[BX+100]

Based addressing mode

$10000+0300+100= 10400$

J. MOV [SI],DX

Register indirect addressing

$10000+0200= 10200$

K. MOV CL,[BX]

Based addressing addressing

10300

L. MOV CH,[BX+SI]

Based indexed addressing mode

$10000+0300+0200= 10500$

M. MOV AX,[BP+200]

Based addressing mode

$10000+1000+200= 11200$

N.MOV AL,[BP+SI-200]

Based indexed addressing mode
 $10000+1000+0200-200= 11000$

O. MOV AL,[SI-0100]
Indexed indirect mode
 $10000+0200-0100= 10100$

2)

Programın komutları :(Assembly)

(Hafıza adresleri) Program komutları:

13A5:0100	mov ax,1234
13A5:0103	mov bx,ax
13A5:0105	mov cl,bl
13A5:0107	DS: mov [0200],ax
13A5:010B	mov ch,[0201]
13A5:010F	ES: mov [0220],ax
13A5:0113	mov SI,0220
13A5:0116	mov ah,[SI]
13A5:0118	mov bp,0220
13A5:011B	DS: mov ax,5678
13A5:011F	mov bx,0200
13A5:0122	DS: mov [bx+2],ax
13A5:0126	mov ax,90AB
13A5:0129	mov DI,0220
13A5:012C	mov [DI]-1c,ax
13A5:012F	mov bx,100
13A5:0132	mov SI,104
13A5:0135	mov cl,[bx][SI]
13A5:0137	mov SI,0100
13A5:013A	mov ch,[bx][SI]+5

Komut satırları taker taker trace yapılırsa çıkan sonuçlar şu şekildedir.

-t

AX=1234 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0103 NV UP EI PL NZ NA PO NC
13A5:0103 89C3 MOV BX,AX

-t

AX=1234 BX=1234 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0105 NV UP EI PL NZ NA PO NC
13A5:0105 88D9 MOV CL,BL

-t

AX=1234 BX=1234 CX=0034 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0107 NV UP EI PL NZ NA PO NC
13A5:0107 3E DS:
13A5:0108 A30002 MOV [0200],AX DS:0200=0000

-t

AX=1234 BX=1234 CX=0034 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=010B NV UP EI PL NZ NA PO NC
13A5:010B 8A2E0102 MOV CH,[0201] DS:0201=12

-

-t

AX=1234 BX=1234 CX=1234 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=010F NV UP EI PL NZ NA PO NC
13A5:010F 26 ES:
13A5:0110 A32002 MOV [0220],AX ES:0220=0000

-t

AX=1234 BX=1234 CX=1234 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0113 NV UP EI PL NZ NA PO NC
13A5:0113 BE2002 MOV SI,0220

-t

AX=1234 BX=1234 CX=1234 DX=0000 SP=FFEE BP=0000 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0116 NV UP EI PL NZ NA PO NC
13A5:0116 8A24 MOV AH,[SI] DS:0220=34

-t

AX=3434 BX=1234 CX=1234 DX=0000 SP=FFEE BP=0000 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0118 NV UP EI PL NZ NA PO NC
13A5:0118 BD2002 MOV BP,0220

-

-t

AX=3434 BX=1234 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=011B NV UP EI PL NZ NA PO NC
13A5:011B 3E DS:
13A5:011C B87856 MOV AX,5678

-t

AX=5678 BX=1234 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=011F NV UP EI PL NZ NA PO NC
13A5:011F BB0002 MOV BX,0200

-t

AX=5678 BX=0200 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0122 NV UP EI PL NZ NA PO NC
13A5:0122 3E DS:
13A5:0123 894702 MOV [BX+02],AX DS:0202=0000

-t

AX=5678 BX=0200 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0126 NV UP EI PL NZ NA PO NC
13A5:0126 B8AB90 MOV AX,90AB

=

-t

AX=90AB BX=0200 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0000
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0129 NV UP EI PL NZ NA PO NC
13A5:0129 BF2002 MOV DI,0220

-t

AX=90AB BX=0200 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=012C NV UP EI PL NZ NA PO NC
13A5:012C 8945E4 MOV [DI-1C],AX DS:0204=0000

-t

AX=90AB BX=0200 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=012F NV UP EI PL NZ NA PO NC
13A5:012F BB0001 MOV BX,0100

-t

AX=90AB BX=0100 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0220 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0132 NV UP EI PL NZ NA PO NC
13A5:0132 BE0401 MOV SI,0104

=

-t

AX=90AB BX=0100 CX=1234 DX=0000 SP=FFEE BP=0220 SI=0104 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0135 NV UP EI PL NZ NA PO NC
13A5:0135 8A08 MOV CL,[BX+SI] DS:0204=AB

-t

AX=90AB BX=0100 CX=12AB DX=0000 SP=FFEE BP=0220 SI=0104 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=0137 NV UP EI PL NZ NA PO NC
13A5:0137 BE0001 MOV SI,0100

-t

AX=90AB BX=0100 CX=12AB DX=0000 SP=FFEE BP=0220 SI=0100 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=013A NV UP EI PL NZ NA PO NC
13A5:013A 8A6805 MOV CH,[BX+SI+05] DS:0205=90

-t

AX=90AB BX=0100 CX=90AB DX=0000 SP=FFEE BP=0220 SI=0100 DI=0220
DS=13A5 ES=13A5 SS=13A5 CS=13A5 IP=013D NV UP EI PL NZ NA PO NC
13A5:013D 0000 ADD [BX+SI],AL DS:0200=34

D komutunu kullanarak girilen değerlerin hafızadaki yerleşim hallerini görebiliriz.

-d

13A5:0100 B8 34 12 89 C3 88 D9 3E-A3 00 02 8A 2E 01 02 26 .4.....>.....&
13A5:0110 A3 20 02 BE 20 02 8A 24-BD 20 02 3E B8 78 56 BB\$. .>.xV.
13A5:0120 00 02 3E 89 47 02 B8 AB-90 BF 20 02 89 45 E4 BB ..>.G.....E..
13A5:0130 00 01 BE 04 01 8A 08 BE-00 01 8A 68 05 00 00 00 h....
13A5:0140 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00
13A5:0150 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00
13A5:0160 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00
13A5:0170 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00
-

U komutunu kullanarak fiziksel adres ve atama değerleri bulunabilir ve incelenebilir.

-u 100

13A5:0100 B83412	MOV	AX,1234
13A5:0103 89C3	MOV	BX,AX
13A5:0105 88D9	MOV	CL,BL
13A5:0107 3E	DS:	
13A5:0108 A30002	MOV	[0200],AX
13A5:010B 8A2E0102	MOV	CH,[0201]
13A5:010F 26	ES:	
13A5:0110 A32002	MOV	[0220],AX
13A5:0113 BE2002	MOV	SI,0220
13A5:0116 8A24	MOV	AH,[SI]
13A5:0118 BD2002	MOV	BP,0220
13A5:011B 3E	DS:	
13A5:011C B87856	MOV	AX,5678
13A5:011F BB0002	MOV	BX,0200
13A5:0122 3E	DS:	
13A5:0123 894702	MOV	[BX+02],AX
13A5:0126 B8AB90	MOV	AX,90AB
13A5:0129 BF2002	MOV	DI,0220
13A5:012C 8945E4	MOV	[DI-1C],AX
13A5:012F BB0001	MOV	BX,0100
13A5:0132 BE0401	MOV	SI,0104
13A5:0135 8A08	MOV	CL,[BX+SI]
13A5:0137 BE0001	MOV	SI,0100
13A5:013A 8A6805	MOV	CH,[BX+SI+05]
13A5:013D 0000	ADD	[BX+SI],AL

-