

بسمه تعالی



گزارش کار آزمایش ۲ ریزپردازنده و اسمبلی
بخش A

غزاله طالبیان، ۹۸۲۴۳۰۳۶
محسن کربلائی امینی، ۹۸۲۴۲۱۲۸
۲۷ اسفند ۱۴۰۱

بخش ۱۴:

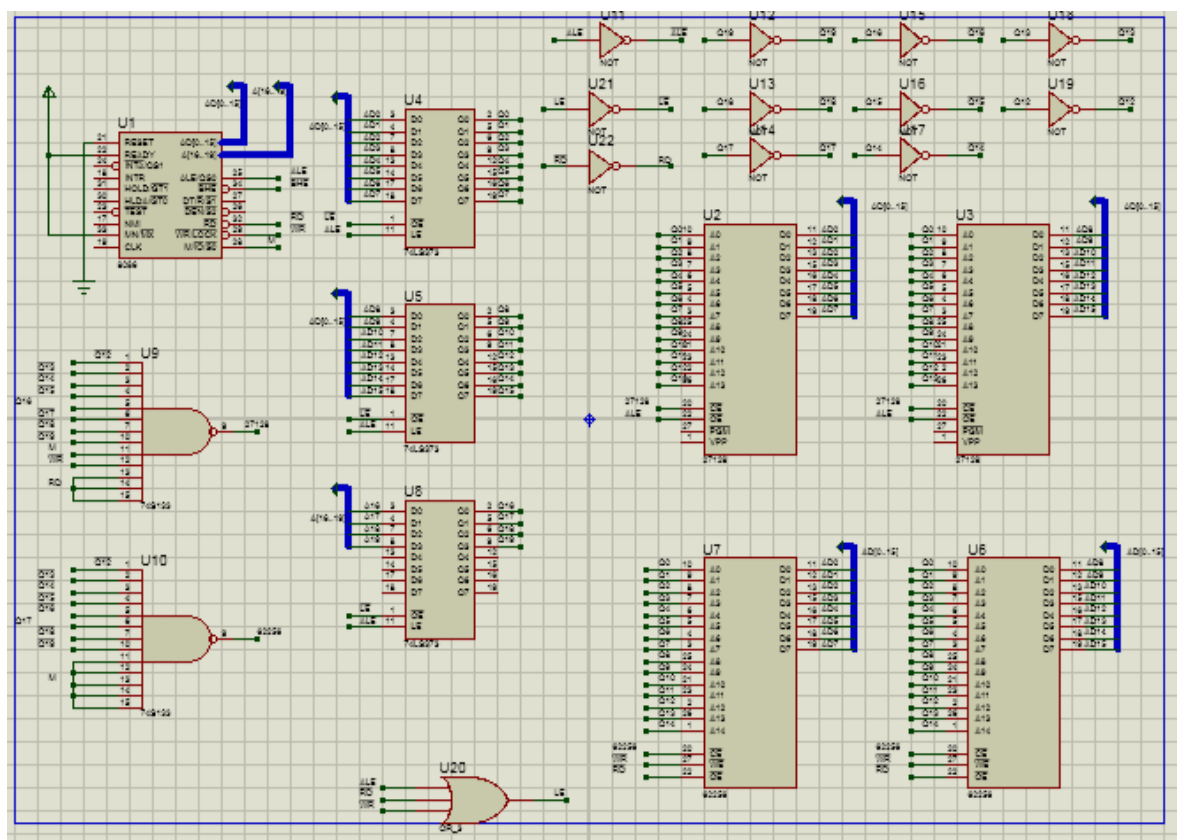
شماتیک:

در بخش اول حافظه ها به صورت $۱۶ \times ۴k$ پیاده سازی شده اند و به همین دلیل تنها به صورت word addressable قابل فراخوانی می باشند. همچنین تغییری نسبت به صورت سوال ایجاد شده که به جای استفاده از تراشه دیکودر، از گیت های AND ۱۳ ورودی و در نگهداری از مقادیر آدرس نیز از تراشه های latch استفاده شده است.

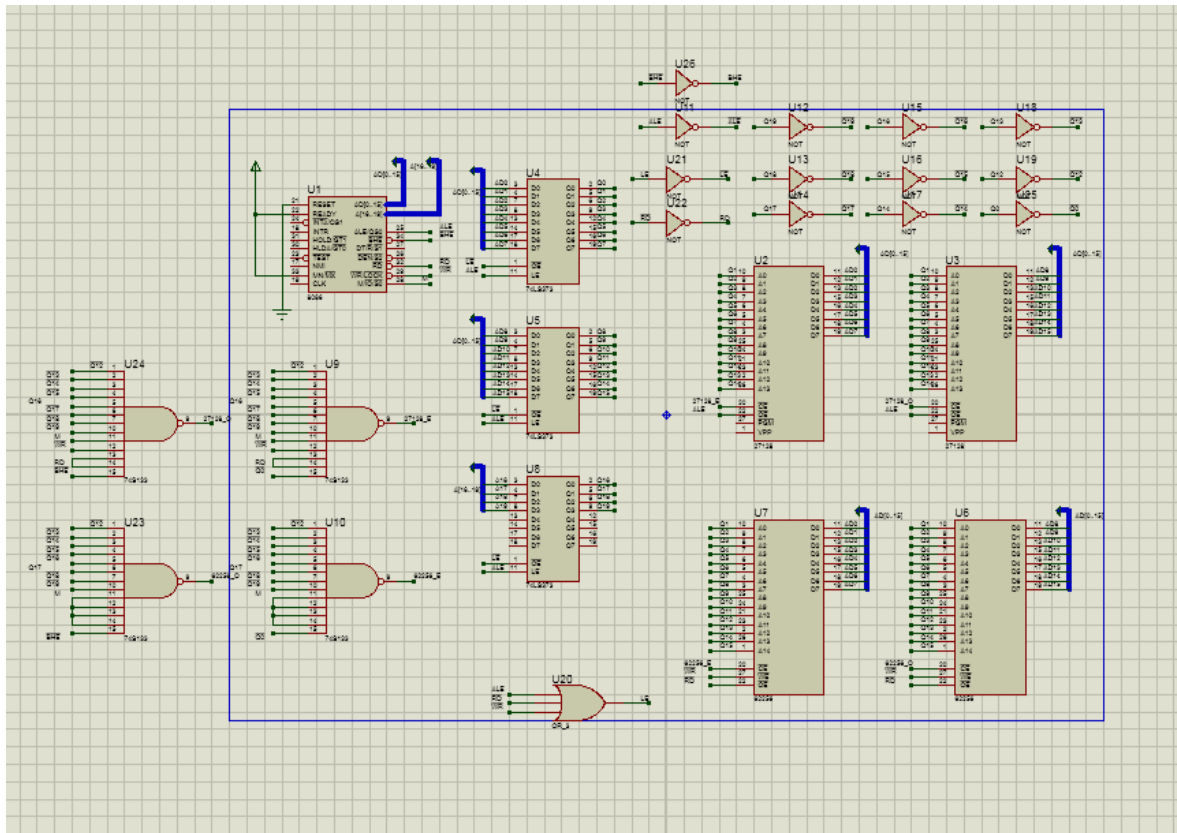
وضعیت دیکودینگ آدرس ها به شرح زیر می باشد:

EPROM: from $۱۰۰۰۰H$ to $۱۰FFFH$

RAM: from $۲۰۰۰۰H$ to $۲۰FFFH$



در شماتیک مربوط به قسمت ۴، جهت پیاده‌سازی فراخوانی byte addressable در قالب بانک‌های زوج و فرد از سیگنال‌های Q_0 و BHE استفاده شده و گیت‌های AND جدید برای جداسازی CS هر تراشه اضافه شده‌اند.



کد و نتیجه شبیه سازی:

```
.model small
.stack 64
; EPROM address decoding: from 10000H to 10FFFFH
; RAM address decoding: from 20000H to 20FFFFH
; each will return 16 bit data since the memory is asked to be 4k*16
.data
N dw 20
.code
main proc far
mov ax,@data
mov ds,ax

MOV SI,0
MOV AX, N
CALL CPY

MOV SI,0
MOV AX, N
MOV DI, N
CALL INVCY
JMP ENDALL
CPY PROC NEAR
    CMP SI,AX
    JGE ENDLOOP1
    MOV CX,1000H
    MOV ES,CX
    MOV BX,ES:[SI]

    MOV CX,2000H
    MOV ES,CX
    MOV ES:[SI],BX
    INC SI
    INC SI
    CALL CPY
ENDLOOP1:
    RET
CPY ENDP

INVCY PROC NEAR
    CMP SI,AX
    JGE ENDLOOP2
    MOV CX,1000H
    MOV ES,CX
    MOV BX,ES:[SI]

    MOV CX,2000H
    MOV ES,CX
    MOV ES:[DI],BX
    INC SI
    DEC DI
    INC SI
    DEC DI
    CALL INVCY
ENDLOOP2:
    RET
INVCY ENDP

ENDALL:
int 21h
main endp
end main
```

ضمناً در این آزمایشگاه

نتیجه ۱) CPY:

به دلیل word addressable بودن قسمت یک، آدرس های حافظه فقط در هنگام فراخوانی اعداد زوج منتقل شده اند (یکی در میان). در تصویر زیر U۲ به U۷ و U۳ به U۶ مپ می شوند.

Memory Contents - U7	Memory Contents - U2
<pre> 0000 00 00 A4 00 00 00 C0 00 84 00 01 00 00 00 89 00 E8 00 25 00%. 0014 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0028 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 003C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0050 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0064 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0078 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 008C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00A0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00B4 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00C8 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00DC 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00F0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0104 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0118 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 012C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 </pre>	<pre> 0000 E8 D8 A4 02 00 85 C0 0F 84 43 01 00 00 4C 89 F7 E8 5B 25 FFC...L...[% 0014 FF 4C 89 EE 48 8D 3D 45 FB 04 00 48 C7 44 24 10 00 00 00 00L..H.=E...H.DS... 0028 E8 63 F8 FF FF 48 89 C7 49 89 C5 E8 78 25 FF FF 48 8B 00 E1C..H..I...X%.H... 003C 31 04 00 44 89 E7 4C 89 EE 89 C2 66 48 0F 6E C1 E8 FF 55 FFL.D...F..H..U... 0050 FF 4C 89 EF 85 C0 78 58 E8 13 25 FF FF 48 89 EE 44 89 E7 E8L...X%.H..D... 0064 68 FD FF FF 83 F8 07 75 18 48 8B 7C 24 10 80 3F 32 74 59 E8U..H..\$.72EY... 0078 F4 24 FF FF E8 08 00 00 00 0F 1F 80 00 00 00 48 8B 54 24\$......H..TS... 008C 18 64 48 2B 14 25 28 00 00 00 0F 85 B8 00 00 00 48 83 C4 28dH%.....H..C... 00A0 5D 41 5C 41 5D 41 5E C3 0F 1F 84 00 00 00 00 00 E8 BB 24 FFJAJAA.....\$. 00B4 FF B8 2C 00 00 00 E8 CC 0F 1F 40 00 4C 89 F7 E8 A8 24 FF FFL...\$. 00C8 B8 09 00 00 00 E8 89 90 89 44 24 0C E8 97 24 FF FF 8B 44 24DS...\$.DS... 00DC 0C EB A9 90 4C 89 F7 89 44 24 0C E8 84 24 FF FF 8B 44 24 0CDS...\$.DS... 00F0 EB 96 66 0F 1F 44 00 00 BE 0A 00 00 00 4C 01 F6 31 FF 0F BEf..D.....L... 0104 06 8D 48 00 89 C2 83 F9 09 76 21 90 80 FA 20 75 AB 4C 89 EAH.....V...U...L... 0118 48 83 C6 01 E8 1F 72 02 00 49 89 C5 E9 E4 FE FF 0F 1F 80H.....F..I...H... 012C 00 00 00 00 8D 14 BF 48 83 C6 01 8D 7C 50 D0 0F BE 06 8D 48H.....P.....H... </pre>
Memory Contents - U6	Memory Contents - U3
<pre> 0000 00 00 08 00 FF 00 78 00 00 00 4C 00 F1 00 C0 00 8B 00 24 00X...L...\$. 0014 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 0028 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 003C 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 0050 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 0064 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 0078 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 008C 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 00A0 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 00B4 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 00C8 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 00DC 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 00F0 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 0104 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 0118 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 012C 00 00 08 00 FF 00 78 00 00 00 00 00 00 00 00 00 00 00 </pre>	<pre> 0000 83 EC 08 41 FF B6 78 02 00 00 4C 89 F1 31 C0 4C 8B 64 24 10A..X...L..L.dS... 0014 41 89 A9 27 00 00 48 89 DA BE 01 00 00 4C 8D 05 BF DE 01A.....L..... 0028 00 4C 89 E7 E8 5F 50 00 00 41 58 41 FF B6 A8 02 00 00 31 C0L...P...AXA...L... 003C 4C 89 E7 41 89 A8 27 00 00 4C 89 F1 48 89 DA 4C 8D 05 B2 DEL..A...L..H..... 0050 01 00 BE 01 00 00 00 E8 34 50 00 00 41 59 41 FF B6 80 02 00L...P...AXA...L... 0064 00 31 C0 4C 89 E7 41 89 B2 27 00 00 4C 89 F1 48 89 DA 4C 8DL..A...L..H..... 0078 05 F3 ED 01 00 BE 01 00 00 E8 09 50 00 00 41 5A 41 FF B6L.....P...AZA... 008C B8 02 00 00 31 C0 4C 89 E7 41 89 47 28 00 00 4C 89 F1 48 89L..L..A.G...L..H... 00A0 DA 4C 8D 05 E8 ED 01 00 BE 01 00 00 E8 DE 4F 00 00 41 80L...A.....G...A... 00B4 BE AA 04 00 00 00 41 58 41 5C 0F 84 21 E3 FF FF 51 31 F6 41A[A]...j..H..\$.L... 00C8 B9 0C 01 00 00 4C 8D 05 48 DE 01 00 6A 01 48 8B 7C 24 10 4CL...K...j..H..\$.L... 00DC 89 F1 48 89 DA 31 C0 E8 A8 4F 00 00 5E 5F E9 F6 E4 FF FF 48H.....L...O.....H... 00F0 8B 3C 24 89 68 00 00 00 48 89 DE 4C 8D 05 FE 81 02 00 48 8D<S.K...H.....L...H... 0104 15 EF DB 01 00 E8 C2 4C 00 00 E9 E7 E0 FF FF 48 83 EC 08 4CL.....L...H.....L... 0118 B9 F1 31 F6 41 89 B8 01 00 00 50 48 8B 7C 24 10 4C 8D 05 B4L..A...PH..\$.L... 012C DB 01 00 48 89 DA 31 C0 E8 57 4F 00 00 59 5E E9 AD E0 FF FFH.....L...WO...YA... </pre>

نتیجه ۱) INCPY:

Memory Contents - U7	Memory Contents - U2
<pre> 0000 00 00 25 00 E8 00 89 00 00 00 01 00 84 00 C0 00 00 00 A4 00%. 0014 E8 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 0028 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 003C 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 0050 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 0064 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 0078 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 008C 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 00A0 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 00B4 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 00C8 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 00DC 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 00F0 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 0104 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 0118 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 012C 00 00 25 00 E8 00 89 00 00 00 00 00 00 00 00 00 00 00 </pre>	<pre> 0000 E8 D8 A4 02 00 85 C0 0F 84 43 01 00 00 4C 89 F7 E8 5B 25 FFC...L...[% 0014 FF 4C 89 EE 48 8D 3D 45 FB 04 00 48 C7 44 24 10 00 00 00 00L..H.=E...H.DS... 0028 E8 63 F8 FF FF 48 89 C7 49 89 C5 E8 78 25 FF FF 48 8B 00 E1C..H..I...X%.H... 003C 31 04 00 44 89 E7 4C 89 EE 89 C2 66 48 0F 6E C1 E8 FF 55 FFL.D...F..H..U... 0050 FF 4C 89 EF 85 C0 78 58 E8 13 25 FF FF 48 89 EE 44 89 E7 E8L...X%.H..D... 0064 68 FD FF FF 83 F8 07 75 18 48 8B 7C 24 10 80 3F 32 74 59 E8U..H..\$.72EY... 0078 F4 24 FF FF E8 08 00 00 00 0F 1F 80 00 00 00 48 8B 54 24\$......H..TS... 008C 18 64 48 2B 14 25 28 00 00 00 0F 85 B8 00 00 00 48 83 C4 28dH%.....H..C... 00A0 5D 41 5C 41 5D 41 5E C3 0F 1F 84 00 00 00 00 00 E8 BB 24 FFJAJAA.....\$. 00B4 FF B8 2C 00 00 00 E8 CC 0F 1F 40 00 4C 89 F7 E8 A8 24 FF FFL...\$. 00C8 B8 09 00 00 00 E8 89 90 89 44 24 0C E8 97 24 FF FF 8B 44 24DS...\$.DS... 00DC 0C EB A9 90 4C 89 F7 89 44 24 0C E8 84 24 FF FF 8B 44 24 0CDS...\$.DS... 00F0 EB 96 66 0F 1F 44 00 00 BE 0A 00 00 00 4C 01 F6 31 FF 0F BEf..D.....L... 0104 06 8D 48 00 89 C2 83 F9 09 76 21 90 80 FA 20 75 AB 4C 89 EAH.....V...U...L... 0118 48 83 C6 01 E8 1F 72 02 00 49 89 C5 E9 E4 FE FF 0F 1F 80H.....F..I...H... 012C 00 00 00 00 8D 14 BF 48 83 C6 01 8D 7C 50 D0 0F BE 06 8D 48H.....P.....H... </pre>
Memory Contents - U6	Memory Contents - U3
<pre> 0000 00 00 24 00 8B 00 C0 00 F1 00 4C 00 00 00 78 00 FF 00 08 00\$. 0014 83 EC 08 41 FF B6 78 02 00 00 4C 89 F1 31 C0 4C 8B 64 24 10A..X...L..L.dS... 0028 00 4C 89 E7 E8 5F 50 00 00 41 58 41 FF B6 A8 02 00 00 31 C0L...P...AXA...L... 003C 4C 89 E7 41 89 A8 27 00 00 4C 89 F1 48 89 DA 4C 8D 05 B2 DEL..A...L..H..... 0050 01 00 BE 01 00 00 00 E8 34 50 00 00 41 59 41 FF B6 80 02 00L...P...AXA...L... 0064 00 31 C0 4C 89 E7 41 89 B2 27 00 00 4C 89 F1 48 89 DA 4C 8DL..A...L..H..... 0078 05 F3 ED 01 00 BE 01 00 00 E8 09 50 00 00 41 5A 41 FF B6L.....P...AZA... 008C B8 02 00 00 31 C0 4C 89 E7 41 89 47 28 00 00 4C 89 F1 48 89L..L..A.G...L..H... 00A0 DA 4C 8D 05 E8 ED 01 00 BE 01 00 00 E8 DE 4F 00 00 41 80L...A.....G...A... 00B4 BE AA 04 00 00 00 41 58 41 5C 0F 84 21 E3 FF FF 51 31 F6 41A[A]...j..H..\$.L... 00C8 B9 0C 01 00 00 4C 8D 05 48 DE 01 00 6A 01 48 8B 7C 24 10 4CL...K...j..H..\$.L... 00DC 89 F1 48 89 DA 31 C0 E8 A8 4F 00 00 5E 5F E9 F6 E4 FF FF 48H.....L...O.....H... 00F0 8B 3C 24 89 68 00 00 00 48 89 DE 4C 8D 05 FE 81 02 00 48 8D<S.K...H.....L...H... 0104 15 EF DB 01 00 E8 C2 4C 00 00 E9 E7 E0 FF FF 48 83 EC 08 4CL.....L...H.....L... 0118 B9 F1 31 F6 41 89 B8 01 00 00 50 48 8B 7C 24 10 4C 8D 05 B4L..A...PH..\$.L... 012C DB 01 00 48 89 DA 31 C0 E8 57 4F 00 00 59 5E E9 AD E0 FF FFH.....L...WO...YA... </pre>	<pre> 0000 83 EC 08 41 FF B6 78 02 00 00 4C 89 F1 31 C0 4C 8B 64 24 10A..X...L..L.dS... 0014 41 89 A9 27 00 00 48 89 DA BE 01 00 00 4C 8D 05 BF DE 01A.....L..... 0028 00 4C 89 E7 E8 5F 50 00 00 41 58 41 FF B6 A8 02 00 00 31 C0L...P...AXA...L... 003C 4C 89 E7 41 89 A8 27 00 00 4C 89 F1 48 89 DA 4C 8D 05 B2 DEL..A...L..H..... 0050 01 00 BE 01 00 00 00 E8 34 50 00 00 41 59 41 FF B6 80 02 00L...P...AXA...L... 0064 00 31 C0 4C 89 E7 41 89 B2 27 00 00 4C 89 F1 48 89 DA 4C 8DL..A...L..H..... 0078 05 F3 ED 01 00 BE 01 00 00 E8 09 50 00 00 41 5A 41 FF B6L.....P...AZA... 008C B8 02 00 00 31 C0 4C 89 E7 41 89 47 28 00 00 4C 89 F1 48 89L..L..A.G...L..H... 00A0 DA 4C 8D 05 E8 ED 01 00 BE 01 00 00 E8 DE 4F 00 00 41 80L...A.....G...A... 00B4 BE AA 04 00 00 00 41 58 41 5C 0F 84 21 E3 FF FF 51 31 F6 41A[A]...j..H..\$.L... 00C8 B9 0C 01 00 00 4C 8D 05 48 DE 01 00 6A 01 48 8B 7C 24 10 4CL...K...j..H..\$.L... 00DC 89 F1 48 89 DA 31 C0 E8 A8 4F 00 00 5E 5F E9 F6 E4 FF FF 48H.....L...O.....H... 00F0 8B 3C 24 89 68 00 00 00 48 89 DE 4C 8D 05 FE 81 02 00 48 8D<S.K...H.....L...H... 0104 15 EF DB 01 00 E8 C2 4C 00 00 E9 E7 E0 FF FF 48 83 EC 08 4CL.....L...H.....L... 0118 B9 F1 31 F6 41 89 B8 01 00 00 50 48 8B 7C 24 10 4C 8D 05 B4L..A...PH..\$.L... 012C DB 01 00 48 89 DA 31 C0 E8 57 4F 00 00 59 5E E9 AD E0 FF FFH.....L...WO...YA... </pre>

کد مربوط به بخش ۴:

```
.model small
.stack 64
; EPROM address decoding: from 10000H to 10FFFFH
; RAM address decoding: from 20000H to 20FFFFH
; each will return 16 bit data since the memory is asked to be 4k*16
.data
    * started
    A1.asm.png
N dw 20
.code
main proc far
mov ax,@data
mov ds,ax
MOV SI,0
MOV AX, N
CALL CPY

MOV SI,0
MOV AX, N
MOV DI, N
CALL INVCY
JMP ENDALL
CPY PROC NEAR
    CMP SI,AX
    JGE ENDLOOP1
    MOV CX,1000H
    MOV ES,CX
    MOV BX,ES:[SI]
    MOV CX,2000H
    MOV ES,CX
    MOV ES:[SI],BX
    INC SI
    ;INC SI
    CALL CPY
ENDLOOP1:
    RET
CPY ENDP
INVCY PROC NEAR
    CMP SI,AX
    JGE ENDLOOP2
    MOV CX,1000H
    MOV ES,CX
    MOV BX,ES:[SI]

    MOV CX,2000H
    MOV ES,CX
    MOV ES:[DI],BX
    INC SI
    DEC DI
    INC SI
    DEC DI
    CALL INVCY
ENDLOOP2:
    RET
INVCY ENDP
ENDALL:
int 21h
main endp
end main
~
~
~
```

ضمناً در این آزمایشگاه

نتیجه شبیه‌سازی قسمت ۴:

در این قسمت با توجه به جداسازی بانک‌های زوج و فرد قابلیت فراخوانی byte addressable حافظه‌ها تامین شده و جابه‌جایی‌ها به صورت پشت هم انجام شده‌اند.

INCPY۴

Memory Contents - U2									
0000	E8	DB	A4	02	00	85	C0	0F	84 43 01 00
000C	00	4C	89	F7	E8	5B	25	FF	FF 4C 89 EE
0018	48	8D	3D	45	FB	04	00	48	C7 44 24 10
0024	00	00	00	00	E8	63	FB	FF	FF 48 89 C7
0030	49	89	C5	E8	78	25	FF	FF	48 8B 0D E1
003C	31	04	00	44	89	E7	4C	89	EE 89 C2 66
0048	48	0F	6E	C1	E8	FF	55	FF	FF 4C 89 EF
0054	85	C0	78	58	E8	13	25	FF	FF 48 89 EE

Memory Contents - U7									
0000	00	43	84	0F	00	85	C0	0F	A4 DB E8 00
000C	00	00	00	00	00	00	00	00	00 00 00 00
0018	00	00	00	00	00	00	00	00	00 00 00 00
0024	00	00	00	00	00	00	00	00	00 00 00 00
0030	00	00	00	00	00	00	00	00	00 00 00 00
003C	00	00	00	00	00	00	00	00	00 00 00 00
0048	00	00	00	00	00	00	00	00	00 00 00 00
0054	00	00	00	00	00	00	00	00	00 00 00 00

Memory Contents - U6									
0000	83	00	00	02	78	B6	FF	41	08 EC 83 00
000C	00	00	00	00	00	00	00	00	00 00 00 00
0018	00	00	00	00	00	00	00	00	00 00 00 00
0024	00	00	00	00	00	00	00	00	00 00 00 00
0030	00	00	00	00	00	00	00	00	00 00 00 00
003C	00	00	00	00	00	00	00	00	00 00 00 00
0048	00	00	00	00	00	00	00	00	00 00 00 00
0054	00	00	00	00	00	00	00	00	00 00 00 00

Memory Contents - U3									
0000	83	EC	08	41	FF	B6	78	02	00 00 4C 89
000C	F1	31	C0	4C	8B	64	24	10	41 B9 A9 27
0018	00	00	48	89	DA	BE	01	00	00 00 4C 8D
0024	05	BF	DE	01	00	4C	89	E7	E8 5F 50 00
0030	00	41	58	41	FF	B6	A8	02	00 00 31 C0
003C	4C	89	E7	41	B9	A8	27	00	00 4C 89 F1
0048	48	89	DA	4C	8D	05	B2	DE	01 00 BE 01
0054	00	00	00	E8	34	50	00	00	41 59 41 FF

CPY۴

Memory Contents - U2									
0000	E8	DB	A4	02	00	85	C0	0F	84 43 01 00
000C	00	4C	89	F7	E8	5B	25	FF	FF 4C 89 EE
0018	48	8D	3D	45	FB	04	00	48	C7 44 24 10
0024	00	00	00	00	E8	63	FB	FF	FF 48 89 C7
0030	49	89	C5	E8	78	25	FF	FF	48 8B 0D E1
003C	31	04	00	44	89	E7	4C	89	EE 89 C2 66
0048	48	0F	6E	C1	E8	FF	55	FF	FF 4C 89 EF
0054	85	C0	78	58	E8	13	25	FF	FF 48 89 EE

Memory Contents - U7									
0000	00	DB	A4	02	00	85	C0	0F	84 43 01 00
000C	00	00	00	00	00	00	00	00	00 00 00 00
0018	00	00	00	00	00	00	00	00	00 00 00 00
0024	00	00	00	00	00	00	00	00	00 00 00 00
0030	00	00	00	00	00	00	00	00	00 00 00 00
003C	00	00	00	00	00	00	00	00	00 00 00 00
0048	00	00	00	00	00	00	00	00	00 00 00 00
0054	00	00	00	00	00	00	00	00	00 00 00 00

Memory Contents - U6									
0000	83	EC	08	41	FF	B6	78	02	00 00 00 00
000C	00	00	00	00	00	00	00	00	00 00 00 00
0018	00	00	00	00	00	00	00	00	00 00 00 00
0024	00	00	00	00	00	00	00	00	00 00 00 00
0030	00	00	00	00	00	00	00	00	00 00 00 00
003C	00	00	00	00	00	00	00	00	00 00 00 00
0048	00	00	00	00	00	00	00	00	00 00 00 00
0054	00	00	00	00	00	00	00	00	00 00 00 00

Memory Contents - U3									
0000	83	EC	08	41	FF	B6	78	02	00 00 4C 89
000C	F1	31	C0	4C	8B	64	24	10	41 B9 A9 27
0018	00	00	48	89	DA	BE	01	00	00 00 4C 8D
0024	05	BF	DE	01	00	4C	89	E7	E8 5F 50 00
0030	00	41	58	41	FF	B6	A8	02	00 00 31 C0
003C	4C	89	E7	41	B9	A8	27	00	00 4C 89 F1
0048	48	89	DA	4C	8D	05	B2	DE	01 00 BE 01
0054	00	00	00	E8	34	50	00	00	41 59 41 FF