

**Lab 05**  
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**Codes**

## Q1 Code

```
1 Include Irvine32.inc
2 .data
3     array DWORD 10 DUP(?)
4 .code
5 main PROC
6     mov eax, 1
7     mov ebx, 0
8     mov esi, 0
9     mov edi, 0
10    mov edx, 4
11    mov [array], ebx
12    add esi, 4
13    mov ecx, 20
14    L1:
15        add eax, [array+edi]
16        call WriteInt
17        mov [array+esi], eax
18        mov eax, [var+edi]
19        add esi, 4
20        add edi, 4
21        dec ecx
22        loop L1
23 call Crlf
24 exit
25 main ENDP
26 END main
```

Q1 Code

```

1 Include Irvine32.inc
2 .data
3     array DWORD 8, 5, 1, 2, 6
4 .code
5 main PROC
6
7     mov esi, 0
8     mov edi, 8
9     mov ebx, [array+esi]
10    xchg ebx, [array+edi]
11    mov [array+esi], ebx    ;1, 5, 8, 2, 6
12    add esi, 4
13    add edi, 4
14    mov ebx, [array+esi]
15    xchg ebx, [array+edi]
16    mov [array+esi], ebx    ;1, 2, 8, 5, 6
17    add esi, 4
18    add edi, 4
19    mov ebx, [array+esi]
20    xchg ebx, [array+edi]
21    mov [array+esi], ebx    ;1, 2, 6, 5, 8
22    sub edi, 4
23    mov ebx, [array+esi]
24    xchg ebx, [array+edi]
25    mov [array+esi], ebx    ;i, 2, 5, 6, 8
26
27 call Crlf
28 exit
29 main ENDP
30 END main

```

Q2 Code

Q2 Code

```

1 INCLUDE Irvine32.inc
2 .data
3     array1 DWORD 1, 1111, 4321, 1234
4     array2 DWORD 11, 111, 432, 123
5     array3 Dword 111, 11, 43, 12
6     array4 Dword 1111, 1, 4, 1
7     array5 BYTE " ", 0
8 .code
9 main PROC
10     mov esi, 0
11     mov ecx, 8
12     l1:
13         mov eax, [array1+esi]
14         call WriteDec
15         mov ebx, ecx
16         mov ecx, SIZEOF array5
17         l2:
18             mov al, [array5+esi]
19             call WriteChar
20             loop l2
21             mov ecx, ebx
22             dec ecx
23             add esi, 4
24     loop l1
25     call Crlf
26     mov esi, 0
27     mov ecx, 8
28     R1:
29         mov eax, [array2+esi]
30         call WriteDec
31         mov ebx, ecx
32         mov ecx, SIZEOF array5
33     R2:
34         mov al, [array5+esi]
35         call WriteChar
36     loop R2
37     mov ecx, ebx
38     dec ecx
39     add esi, 4
40     loop R1
41     call Crlf
42     mov esi, 0
43     mov ecx, 8
44     T1:
45         mov eax, [array3+esi]
46         call WriteDec
47         mov ebx, ecx
48         mov ecx, SIZEOF array5
49     T2:
50         mov al, [array5+esi]
51         call WriteChar
52         loop T2
53         mov ecx, ebx
54         dec ecx

```

Q3 Code part 1

## Q3 Code Part 1

```
53     mov ecx, ebx
54     dec ecx
55     add esi, 4
56     loop T1
57     call Crlf
58     mov esi, 0
59     mov ecx, 8
60     S1:
61     mov eax, [array4+esi]
62     call WriteDec
63     mov ebx, ecx
64     mov ecx, SIZEOF array5
65     S2:
66     mov al, [array5+esi]
67     call WriteChar
68     loop S2
69     mov ecx, ebx
70     dec ecx
71     add esi, 4
72 loop S1
73 call Crlf
74 exit
75 main ENDP
76 END main
```

Q3 code part 2

Q3 Code part 2

```

1 INCLUDE Irvine32.inc
2 .data
3     EMP_ID DWORD 4 DUP(0)
4     EMP_Name DWORD 4 DUP(0)
5     EMP_YearofBirth DWORD 4 DUP(0)
6     EMP_Salary DWORD 4 DUP(0)
7 .code
8 main PROC
9     mov ecx, 3
10    mov edx, OFFSET EMP_ID
11    call ReadString
12    add edx, 4
13    call ReadString
14    add edx, 4
15    call ReadString
16    add edx, 4
17    call ReadString
18    mov ecx, 6
19    mov edx, OFFSET EMP_Name
20    call ReadString
21    add edx, 4
22    call ReadString
23    add edx, 4
24    call ReadString
25    add edx, 4
26    call ReadString
27    mov esi, 0
28    mov eax, 0
29    call ReadDec
30    mov [EMP_YearofBirth+esi], eax
31    add esi, 4
32    mov eax, 0
33    call ReadDec
34    mov [EMP_YearofBirth+esi], eax
35    add esi, 4
36    mov eax, 0
37    call ReadDec
38    mov [EMP_YearofBirth+esi], eax
39    add esi, 4
40    mov eax, 0
41    call ReadDec
42    mov [EMP_YearofBirth+esi], eax
43    mov esi, 0
44    mov eax, 0
45    call ReadDec
46    mov [EMP_Salary+esi], eax
47    add esi, 4
48    mov eax, 0
49    call ReadDec
50    mov [EMP_Salary+esi], eax
51    add esi, 4
52    mov eax, 0
53    call ReadDec
54    mov [EMP_Salary+esi], eax

```

Q4 CODE PART 1

Q4 Code Part 1

```
53      call ReadDec
54      mov [EMP_Salary+esi], eax
55      add esi, 4
56      mov eax, 0
57      call ReadDec
58      mov [EMP_Salary+esi], eax
59      mov esi, 0
60      mov eax, [EMP_Salary+esi]
61      mov edi, 4
62      mov ecx, 4
63 L1:
64      add eax, [EMP_Salary+edi]
65      add esi, 4
66      add edi, 4
67      dec ecx
68      loop L1
69      call DumpRegs
70 exit
71 main ENDP
72 END main
```

Q4 CODE PART 2

Q4 Code Part-2

```
1 Include Irvine32.inc
2 .data
3     target BYTE "hello world!", 0
4     source BYTE LENGTHOF target-1 DUP(?)
5 .code
6 main PROC
7     mov esi, 0
8     mov ecx, SIZEOF target
9     L1:
10         mov al, [target+esi]
11         mov [source+esi], al
12         call WriteChar
13         inc esi
14     loop L1
15 call Crlf
16 exit
17 main ENDP
```

Q5 CODE

Q5 Code



```
1 Include Irvine32.inc
2 .data
3     array DWORD 23, 45, 16, 55, 11, 34, 87, 77
4 .code
5 main PROC
6     mov esi, 0
7     mov edi, 28
8     mov ecx, 14
9     L1:
10        mov ebx, [array+esi]
11        mov eax, [array+edi]
12        mov [array+esi], eax
13        mov [array+edi], ebx
14        add esi, 4
15        sub edi, 4
16        dec ecx
17    loop L1
18 call DumpRegs
19 exit
20 main ENDP
21 END main
```

Q6 CODE

Q6 Code

**The End**  
**Thank You**

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