Lab: 6

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COAL

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Campus

Task1:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096

.data
var1 Byte 022h
var2 Word 02233h
var3 Dword 022334455h
str1 Byte 'Size : '
var4 Dword ?

.code
main PROC
mov eax, sizeof var1
mov var4, eax
mov edx, offset str1
call writestring
mov edx, offset var4
call writedec
call crlf

mov eax, sizeof var2
mov var4, eax
mov edx, offset str1
call writestring
mov edx, offset var4
call writedec
call crlf

mov eax, sizeof var3
mov var4, eax
mov edx, offset str1
call writestring
mov edx, offset var4
call writedec
call crlf
```

```
main endp
end main
```

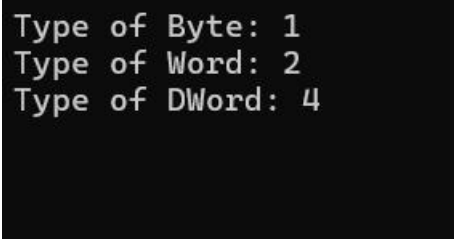## Output:

Task2:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096

.data
var1 Byte 022h
var2 Word 02233h
var3 Dword 022334455h
str1 Byte 'Type of Byte: ', 0
str2 Byte 'Type of Word: ', 0
str3 Byte 'Type of DWord: ', 0
var4 Dword ?

.code
main PROC
mov eax, type var1
mov var4, eax
mov edx, offset str1
call writestring
mov edx, offset var4
call writedec
call crlf
```

```
        mov eax, type var2
        mov var4, eax
        mov edx, offset str2
        call writestring
        mov edx, offset var4
        call writedec
        call crlf

        mov eax, type var3
        mov var4, eax
        mov edx, offset str3
        call writestring
        mov edx, offset var4
        call writedec
        call crlf


        main endp
        end main
```

Output:

Type of Byte: 1
Type of Word: 2
Type of DWord: 4

Task3:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096

.data
```

```
var1 Byte 022h
var2 Word 02233h
var3 Dword 022334455h
str1 Byte 'Length of Byte: ', 0
str2 Byte 'Length of Word: ', 0
str3 Byte 'Length of DWord: ', 0
var4 Dword ?

.code
main PROC
mov eax, lengthof var1
mov var4, eax
mov edx, offset str1
call writestring
mov edx, offset var4
call writedec
call crlf

mov eax, lengthof var2
mov var4, eax
mov edx, offset str2
call writestring
mov edx, offset var4
call writedec
call crlf

mov eax, lengthof var3
mov var4, eax
mov edx, offset str3
call writestring
mov edx, offset var4
call writedec
call crlf


main endp
end main
```

Output:

```
Length of Byte: 1
Length of Word: 1
Length of DWord: 1
```

Task4:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096

.data

str1 Byte 'My name is Fahid Imran: '
str2 Byte 'Length of String: ', 0
var4 Dword ?

.code
main PROC
mov eax, sizeof str1
mov var4, eax
mov edx, offset str2
call writestring
mov edx, offset var4
call writedec
call crlf


main endp
end main
```
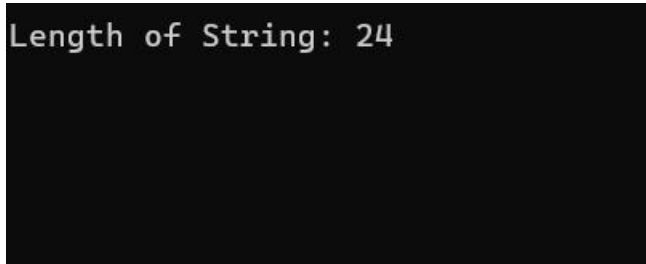
Output:

```
Length of String: 24
```

Task5:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096

.data

arr1 Dword 0,1,2,3,4,5,6,7,8,9


.code
main PROC
mov esi, offset arr1
mov ecx, lengthof arr1

L1:
mov eax, [esi]
add esi, 4
call writedec
call crlf
loop L1

main endp
end main
```
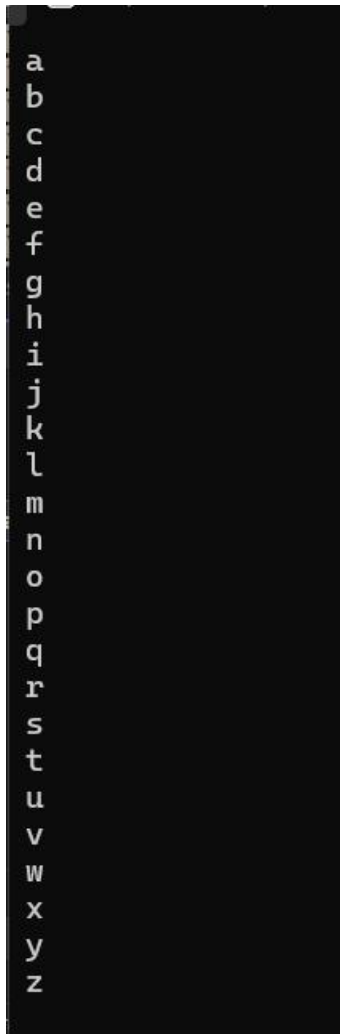
Task6:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096

.data

arr1 Byte 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K', 'L',
'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z'


.code
main PROC
mov esi, offset arr1
mov ecx, lengthof arr1

L1:
mov eax, [esi]
add esi, 1
call writechar
call crlf
```

```
        loop L1

        main endp
        end main
```

Output:

Task7:

Code:

```
Include irvine32.inc
.386
.model flat, stdcall
.stack 4096
```

```
.data

arr1 Byte 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K', 'L',
'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z'


.code
main PROC
mov esi, offset arr1
mov ecx, lengthof arr1

L1:
mov eax, [esi]
add esi, 1
call writechar
call crlf
loop L1

main endp
end main
```

Output:

```
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z
|
```

Task8:

Code:

```
.386
.model flat, stdcall
.stack 4096

.data

arr1 dword 0,1,2,3,4
sum dword 0

.code
main PROC
```
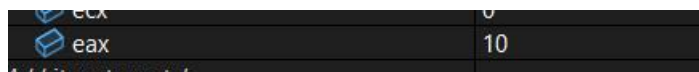
```
mov esi, offset arr1
mov ecx, lengthof arr1

L1:
mov eax, [esi]
add sum, eax
add esi, 4
loop L1

mov eax, sum

main endp
end main
```

Output:

Task9:

Code:

```
.386
.model flat, stdcall
.stack 4096

.data
var1 Byte 'Fahid is my name'
var2 Word 0abcdh, 04142h, 0a321h
var3 Dword 'ABCD', 'FAHI', 'DIMR', 'AN', 0ab123456h

.code
main PROC

mov al , byte PTR var1
mov bx , word PTR var1
mov ecx, dword PTR var1
```

```
        mov al , byte PTR var1+2
        mov bx , word PTR var1+4
        mov ecx, dword PTR var1+10

        mov al , byte PTR var2
        mov bx , word PTR var2
        mov ecx, dword PTR var2

        mov al , byte PTR var2+2
        mov bx , word PTR var2+4
        mov ecx, dword PTR var2+10

        mov al , byte PTR var3
        mov bx , word PTR var3
        mov ecx, dword PTR var3

        mov al , byte PTR var3+2
        mov bx , word PTR var3+4
        mov ecx, dword PTR var3+10

        main endp
        end main
```

Output:

Memory:

Name	Value
al	70 'F'
bx	24902
ecx	1768448326

Name	Value
al	104 'h'
bx	8292
ecx	1634607225

Name	Value
al	205 'Í'
bx	43981
ecx	1094888397

Name	Value
al	66 'B'
bx	41761
ecx	1178683465
Add item to watch	

Name	Value
al	68 'D'
bx	17220
ecx	1094861636
Add item to watch	

Name	Value
al	66 'B'
bx	18505
ecx	1095648329
Add item to watch	