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**K17-3922**

**Section: E**

**Coal Lab 10**

**Task 1**

.data

mystr byte "Madam",0

.code

main PROC

push dword ptr lengthof mystr

push offset mystr

call strReverse

exit

main ENDP

strReverse proc

push ebp

mov ebp,esp

mov ebx,[ebp+8]

mov edi,[ebp+12]

sub edi,2

add edi,ebx

mov ecx,[ebp+12]

sub ecx,1

shr ecx,1

l1:

mov al,[ebx]

mov ah,[edi]

xchg al,ah

mov [ebx],al

mov [edi],ah

inc ebx

dec edi

loop l1

mov edx,offset mystr

call writestring

pop ebp

ret 8

strReverse endp

END main

[10:13 PM, 11/27/2018] AbdullAh: INCLUDE Irvine32.inc

.data

Str1 BYTE "127&j~3#^&##45^",0

.code

main PROC

mov eax,0

push lengthof str1

push offset Str1

call Scan\_String

exit

main endp

Scan\_String proc

push ebp

mov ebp,esp

mov al,'#'

cld

mov edi,[ebp+8]

movzx ecx,byte ptr[ebp+12]

repnz scasb

jnz quit

dec edi

mov eax,[ebp+8]

xchg eax,edi

sub eax,edi

call dumpregs

quit:nop

pop ebp

ret 8

Scan\_String endp

END main

**Task 2**

include irvine32.inc

.data

str1 BYTE "127&j~3#^&\*#\*#45^",0

count dword 17

index dword 0

str2 byte "character is on index : ",0

.code

main proc

mov esi,offset Str1

mov al,'#'

push esi

push eax

call check\_string

add esp,8

exit

main endp

check\_string proc

enter 0,0

mov edi,[ebp+12]

mov al,byte ptr [ebp+8]

mov ecx,count

l1:

scasb

je l3

inc index

loop l1

l3:

mov edx, offset str2

call writestring

mov eax,index

call writedec

call crlf

mov esp,ebp

pop ebp

ret

check\_string endp

end main

**Task 3**

include irvine32.inc

.data

str1 BYTE "my name is Fahad",0

str2 byte "my name is Abdullah Qadri",0

count dword 30

str3 byte "both strings are same ",0

str4 byte "both strings are different",0

.code

main proc

mov edi,offset str1

mov esi,offset str2

call IsCompare

exit

main endp

IsCompare proc

mov ecx,count

l1:

cmpsb

jne l3

loop l1

mov edx, offset str3

call writestring

ret

l3:

mov edx, offset str4

call writestring

ret

IsCompare endp

end main

**Task 7**

INCLUDE Irvine32.inc

.data

arr byte 1,2,3,4,5,6,7,8,9,10,11

key byte 4

.code

main PROC

mov edi,offset arr

;eax=mid,ebx=lowerBound,edx=upperBound,cl=2

mov esi,0

mov cl,2

mov ebx,0

mov edx,lengthof arr -1

l1:

cmp ebx,edx

jnbe outer

mov ah,arr[esi]

cmp ah,key

jz outer

mov ah,arr[esi]

cmp ah,key

jna setLowerBound

ja setUpperBound

back:nop

mov eax,ebx

add eax,edx

div cl

movzx eax,al

movzx si,al

jmp l1

setLowerBound:

movzx ebx,si

add ebx,1

jmp back

setUpperBound:

movzx edx,si

sub edx,1

jmp back

outer:nop

mov eax,esi

call dumpregs

exit

main ENDP

END main

**Task 5**

INCLUDE Irvine32.inc

.data

mystr byte "Madam",0

.code

main PROC

push dword ptr lengthof mystr

push offset mystr

call strReverse

exit

main ENDP

strReverse proc

push ebp

mov ebp,esp

mov ebx,[ebp+8]

mov edi,[ebp+12]

sub edi,2

add edi,ebx

mov ecx,[ebp+12]

sub ecx,1

shr ecx,1

l1:

mov al,[ebx]

mov ah,[edi]

xchg al,ah

mov [ebx],al

mov [edi],ah

inc ebx

dec edi

loop l1

mov edx,offset mystr

call writestring

pop ebp

ret 8

strReverse endp

END main