

SAAD UR REHMAN

19k-0218

SEC: C

LAB 12 STRING TASK

Q1:

```
TITLE MY First Program(final.asm)

INCLUDE Irvine32.inc

.data
str1 BYTE "ENTER A SENTENCE :",0
arr BYTE 20 DUP(?)
temp DWORD ?

fun PROTO,string:ptr BYTE,temp1:DWORD

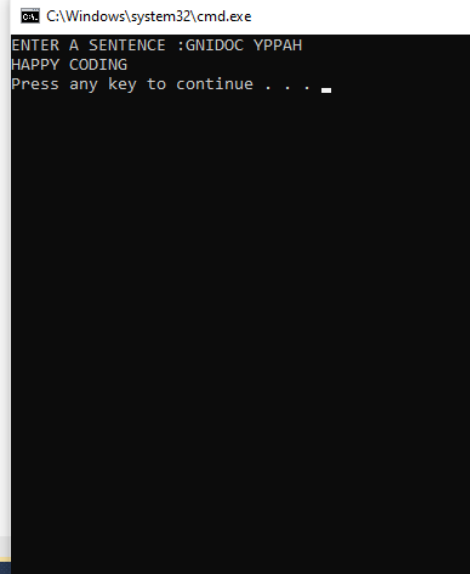
.code
main PROC                ;SAAD UR REHMAN(19k-0218)
mov edx,offset str1
call WriteString

mov edx,offset arr
mov ecx,lengthof arr
call readString
call strlen
mov temp,eax

INVOKE fun,ADDR arr,temp
exit
main ENDP

fun PROC,string:ptr BYTE,temp1:DWORD
mov edi,string
add edi,temp
sub edi,1

mov ecx,temp
l1:
mov al,[edi]
```



```
C:\Windows\system32\cmd.exe
ENTER A SENTENCE :GNIDOC YPPAH
HAPPY CODING
Press any key to continue . . .
```

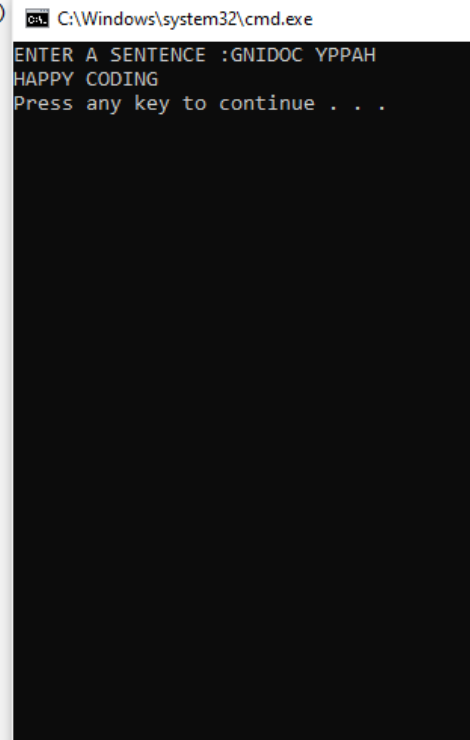
```
.code
main PROC                ;SAAD UR REHMAN(19k-0218)
mov edx,offset str1
call WriteString

mov edx,offset arr
mov ecx,lengthof arr
call readString
call strlen
mov temp,eax

INVOKE fun,ADDR arr,temp
exit
main ENDP

fun PROC,string:ptr BYTE,temp1:DWORD
mov edi,string
add edi,temp
sub edi,1

mov ecx,temp
l1:
mov al,[edi]
call WriteChar
dec edi
loop l1
call crlf
ret
fun ENDP
END main
```



```
C:\Windows\system32\cmd.exe
ENTER A SENTENCE :GNIDOC YPPAH
HAPPY CODING
Press any key to continue . . .
```

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Q2:

```
TITLE MY First Program(final.asm)

INCLUDE Irvine32.inc

.data
str1 BYTE "ENTER A STRING :",0
str2 BYTE "ENTER A CHARACTER TO FIND FREQUENCY :",0
str3 BYTE "FREQUENCY OF ",0
arr BYTE 50 DUP(?)
str_size WORD ?
count WORD ?
fun PROTO,string:ptr BYTE,length1:DWORD,string2:ptr BYTE
.code
main PROC    ;SAAD UR REHMAN(19k-0218)
mov count,0
mov edx,offset str1
call WriteString

mov edx,offset arr
mov ecx,lengthof arr
call ReadString
call strlen
mov str_size,ecx
call crlf

mov edx,offset str2
call WriteString
call ReadChar
call WriteChar

INVOKE fun,addr arr,str_size,addr str3
exit
main ENDP
```

```
C:\Windows\system32\cmd.exe
ENTER A STRING :We are Studying at National Fast University Karachi
ENTER A CHARACTER TO FIND FREQUENCY :a
FREQUENCY OF a:7
Press any key to continue . . .
```

```
19k-0218
Toolbox
INVOKE fun,addr arr,str_size,addr str3
exit
main ENDP

fun PROC,string:ptr BYTE,length1:DWORD,string2:ptr BYTE

mov esi,string
mov ecx,length1
l1:
cmp al,[esi]
jne l2
inc count
l2:
add esi,1
loop l1

call crlf
mov edx,string2
call WriteString
call WriteChar
mov al,':'
call WriteChar

mov ax,count
call WriteDec
call crlf
ret
fun ENDP
END main
```

```
C:\Windows\system32\cmd.exe
ENTER A STRING :We are Studying at National Fast University Karachi
ENTER A CHARACTER TO FIND FREQUENCY :a
FREQUENCY OF a:7
Press any key to continue . . .
```

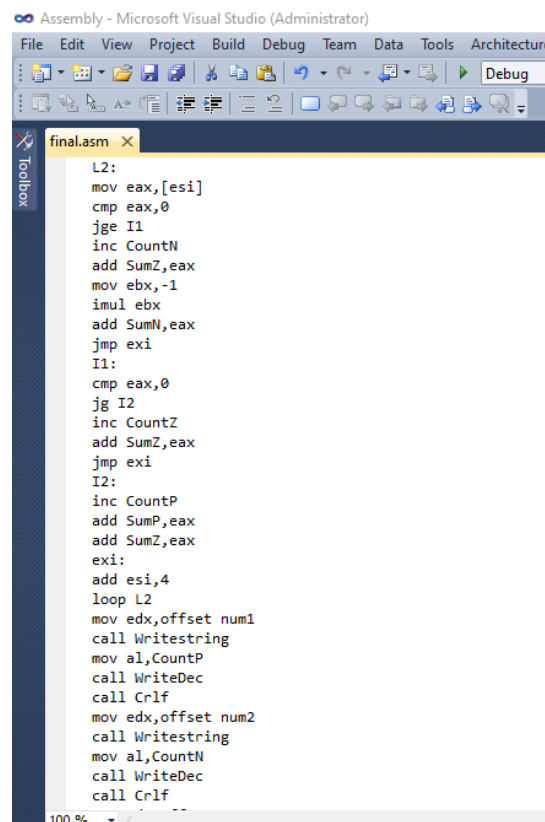
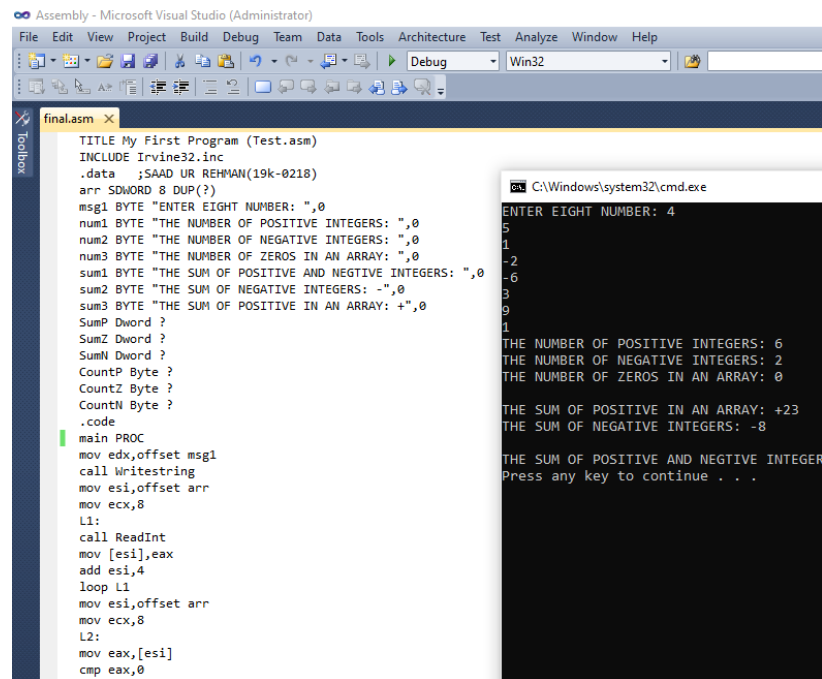
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Q3:

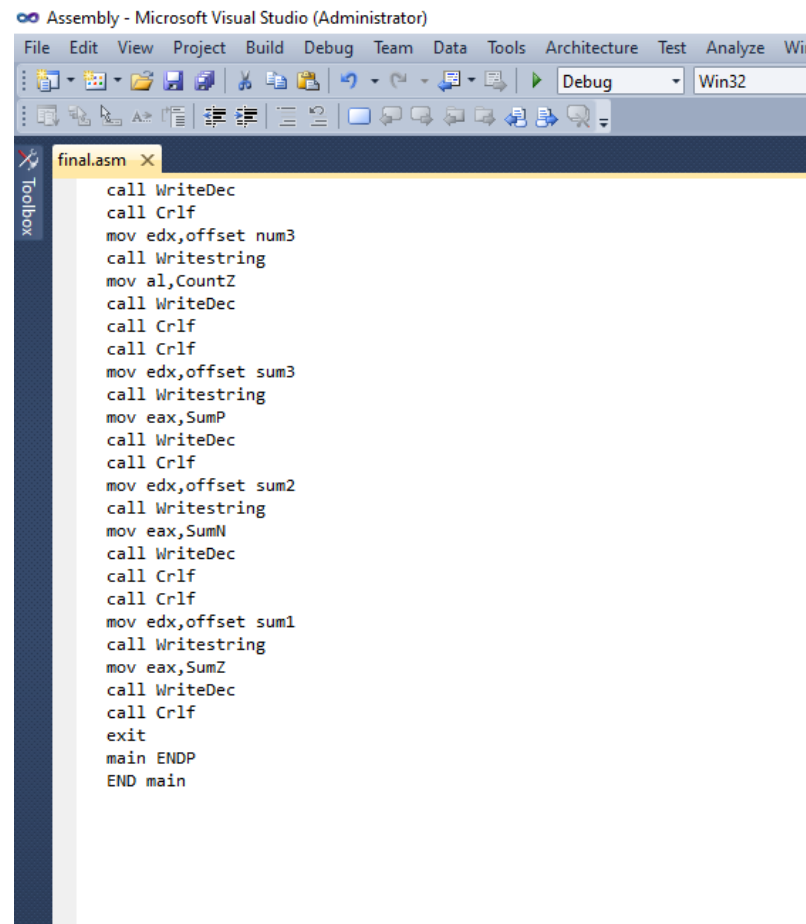
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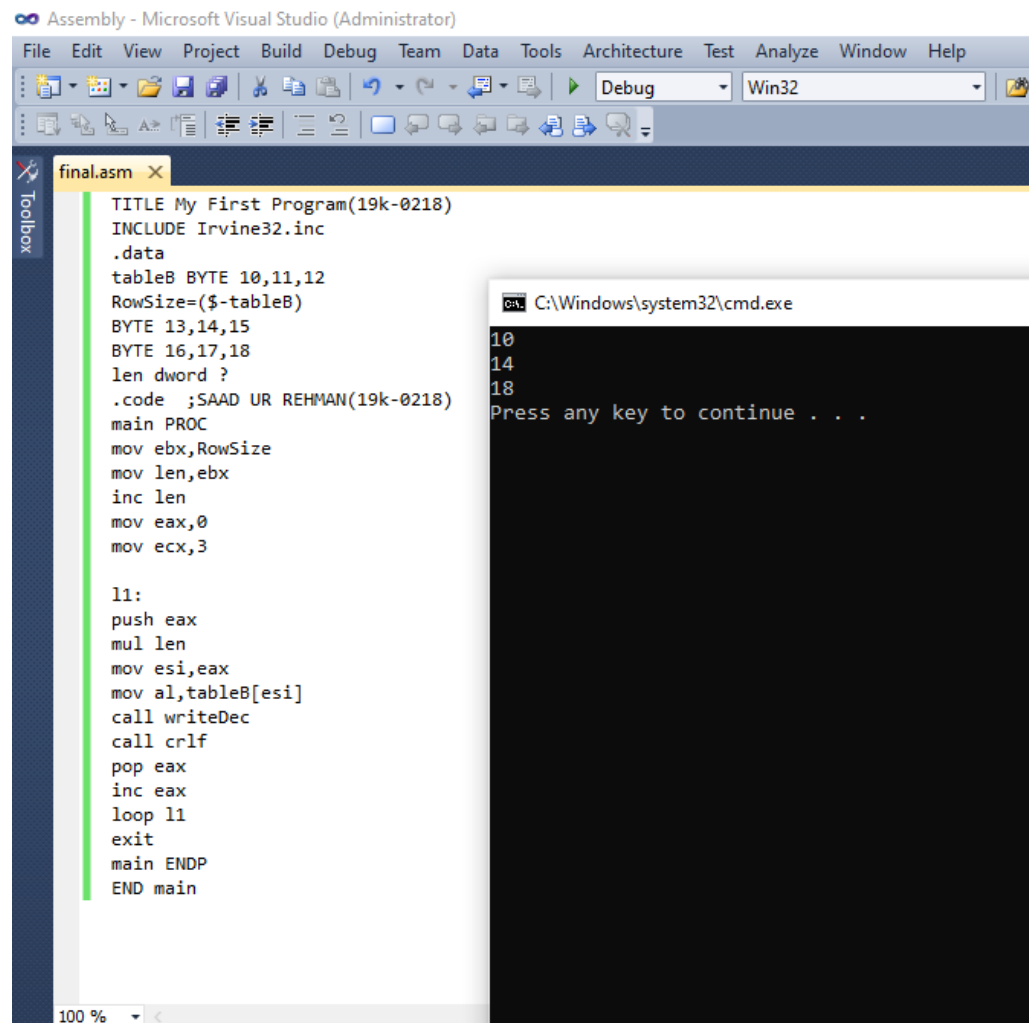
```
Assembly - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Team Data Tools Architecture Test Analyze Wi
call WriteDec
call Crlf
mov edx,offset num3
call WriteString
mov al,CountZ
call WriteDec
call Crlf
call Crlf
mov edx,offset sum3
call WriteString
mov eax,SumP
call WriteDec
call Crlf
mov edx,offset sum2
call WriteString
mov eax,SumN
call WriteDec
call Crlf
call Crlf
mov edx,offset sum1
call WriteString
mov eax,SumZ
call WriteDec
call Crlf
exit
main ENDP
END main
```

Q4:

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The screenshot shows the Microsoft Visual Studio (Administrator) interface. The main window displays the assembly file 'final.asm' with the following code:

```
TITLE My First Program(19k-0218)
INCLUDE Irvine32.inc
.data
tableB BYTE 10,11,12
RowSize=($-tableB)
BYTE 13,14,15
BYTE 16,17,18
len dword ?
.code ;SAAD UR REHMAN(19k-0218)
main PROC
mov ebx,RowSize
mov len,ebx
inc len
mov eax,0
mov ecx,3

l1:
push eax
mul len
mov esi,eax
mov al,tableB[esi]
call writeDec
call crlf
pop eax
inc eax
loop l1
exit
main ENDP
END main
```

The code defines a byte array 'tableB' containing the values 10, 11, 12, 13, 14, 15, 16, 17, 18. It then calculates the 'RowSize' of the array and uses a loop to print each element of the array using the 'writeDec' function. The program is executed in a command prompt window, which shows the output:

```
C:\Windows\system32\cmd.exe
10
14
18
Press any key to continue . . .
```