

SAAD UR REHMAN

19k-0218

SEC: C

LAB TASK 11

Q1:

```
task.asm X
.data ;SAAD UR REHMAN (19k-0218)
str1 BYTE "Enter three numbers",0
.code
main PROC
mov edx,offset str1
call writestring
call crlf
mov ecx,3
l1 :
call readdec
push eax
loop l1

call ThreeProd
call crlf
call writedec
exit
main ENDP

ThreeProd PROC
push ebp
mov ebp,esp
mov eax,[ebp+8]
mov ebx,[ebp+12]

mul ebx

mov ebx,[ebp+16]
mul ebx
pop ebp
ret
ThreeProd ENDP
END main
```

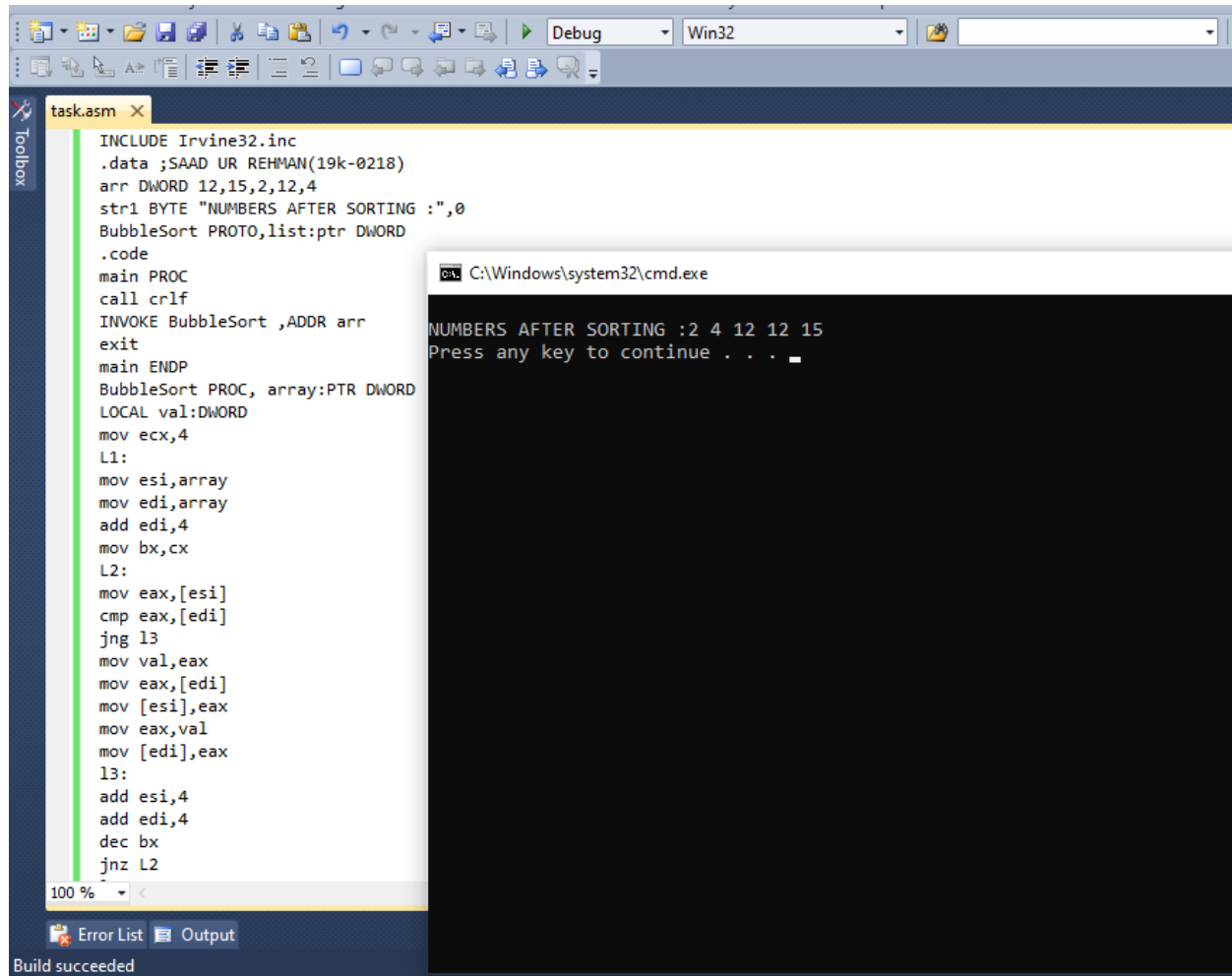
```
C:\Windows\system32\cmd.exe
Enter three numbers
2
4
5
40Press any key to continue . . .
```

Q2:

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The screenshot shows a Windows IDE with a toolbar at the top. The main window displays an assembly file named `task.asm`. The code includes `Irvine32.inc`, defines a data section with an array `arr` of `DWORD` values `12, 15, 2, 12, 4`, and a string `str1` "NUMBERS AFTER SORTING :". It defines a `BubbleSort` procedure and a `main` procedure that calls `cr1f`, `BubbleSort`, and `exit`. The `BubbleSort` procedure is implemented with assembly instructions for sorting the array. The status bar at the bottom indicates "Build succeeded".

```
task.asm
INCLUDE Irvine32.inc
.data ;SAAD UR REHMAN(19k-0218)
arr DWORD 12,15,2,12,4
str1 BYTE "NUMBERS AFTER SORTING :",0
BubbleSort PROTO,list:ptr DWORD
.code
main PROC
call cr1f
INVOKE BubbleSort ,ADDR arr
exit
main ENDP
BubbleSort PROC, array:PTR DWORD
LOCAL val:DWORD
mov ecx,4
L1:
mov esi,array
mov edi,array
add edi,4
mov bx,cx
L2:
mov eax,[esi]
cmp eax,[edi]
jng l3
mov val,eax
mov eax,[edi]
mov [esi],eax
mov eax,val
mov [edi],eax
l3:
add esi,4
add edi,4
dec bx
jnz L2
```

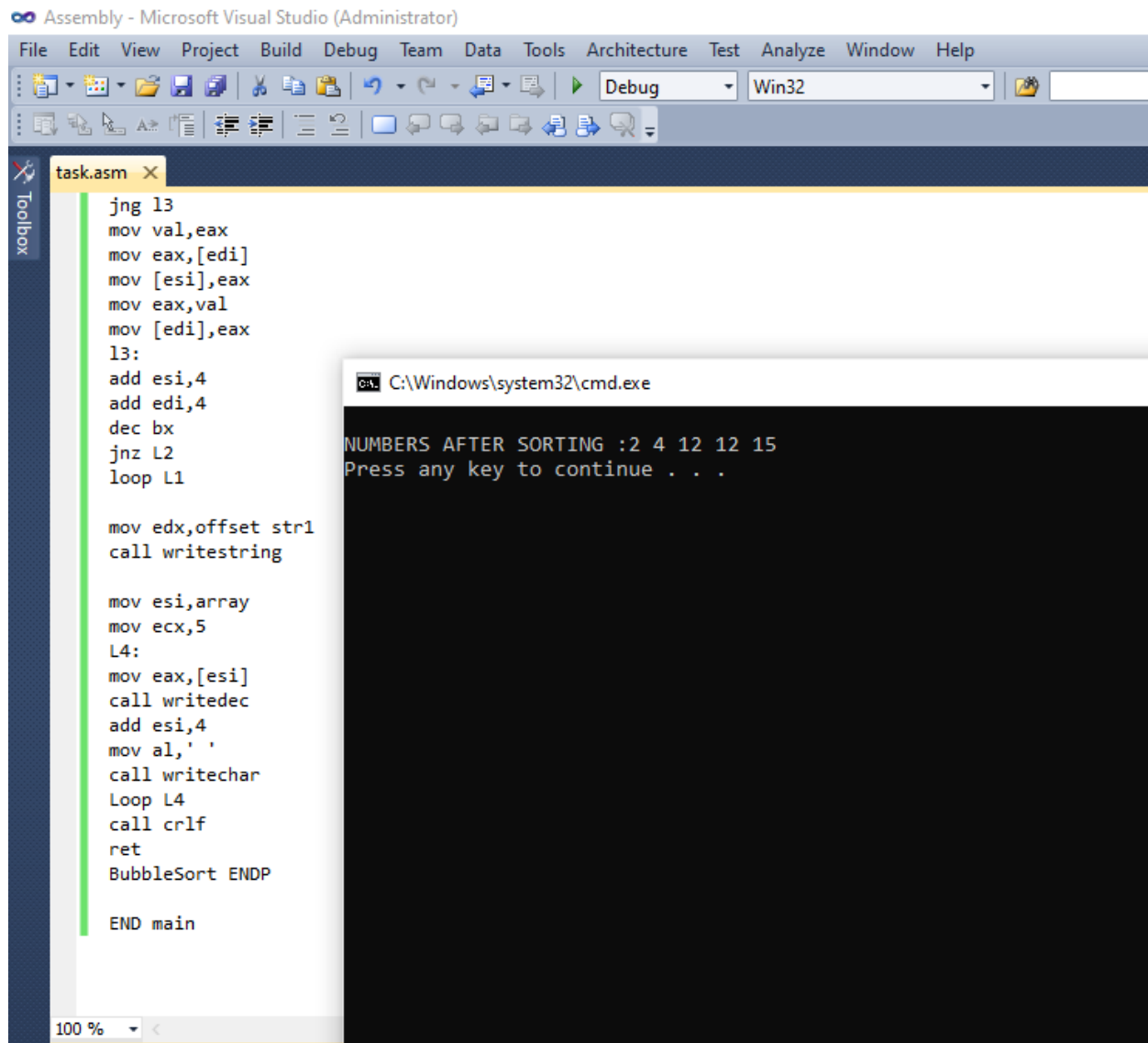
Output window (C:\Windows\system32\cmd.exe):

```
NUMBERS AFTER SORTING :2 4 12 12 15
Press any key to continue . . .
```

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The image shows a screenshot of the Microsoft Visual Studio (Administrator) interface. The main window displays the assembly file `task.asm`. The code is as follows:

```
jng l3
mov val,eax
mov eax,[edi]
mov [esi],eax
mov eax,val
mov [edi],eax
l3:
add esi,4
add edi,4
dec bx
jnz L2
loop L1

mov edx,offset str1
call writestring

mov esi,array
mov ecx,5
L4:
mov eax,[esi]
call writedec
add esi,4
mov al,' '
call writechar
loop L4
call crlf
ret
BubbleSort ENDP

END main
```

Overlaid on the bottom right is a command prompt window titled `C:\Windows\system32\cmd.exe`. It displays the output of the program:

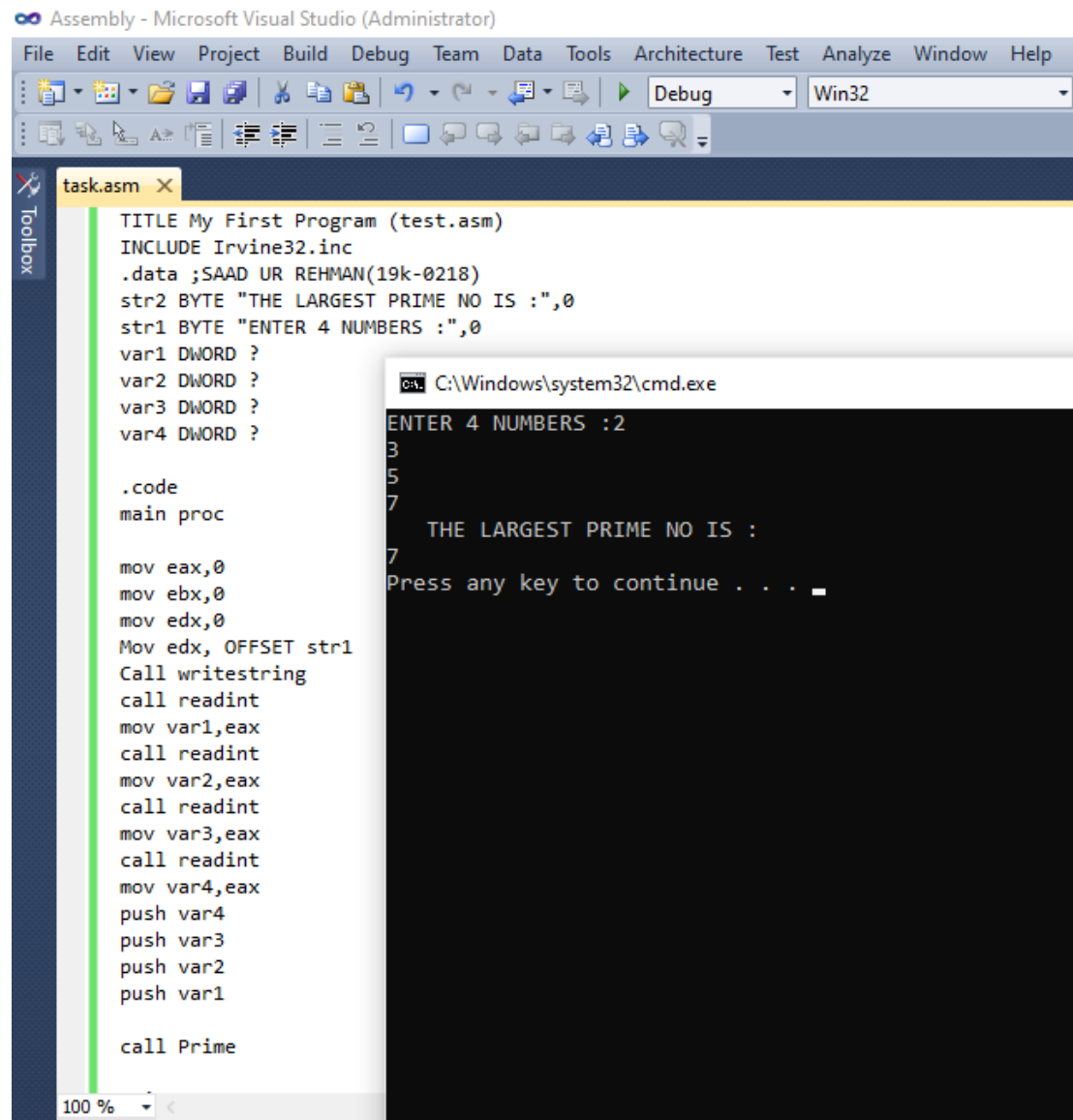
```
NUMBERS AFTER SORTING :2 4 12 12 15
Press any key to continue . . .
```

Q3:

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

```
TITLE My First Program (test.asm)
INCLUDE Irvine32.inc
.data ;SAAD UR REHMAN(19k-0218)
str2 BYTE "THE LARGEST PRIME NO IS :",0
str1 BYTE "ENTER 4 NUMBERS :",0
var1 DWORD ?
var2 DWORD ?
var3 DWORD ?
var4 DWORD ?

.code
main proc

mov eax,0
mov ebx,0
mov edx,0
Mov edx, OFFSET str1
Call writestring
call readint
mov var1,eax
call readint
mov var2,eax
call readint
mov var3,eax
call readint
mov var4,eax
push var4
push var3
push var2
push var1

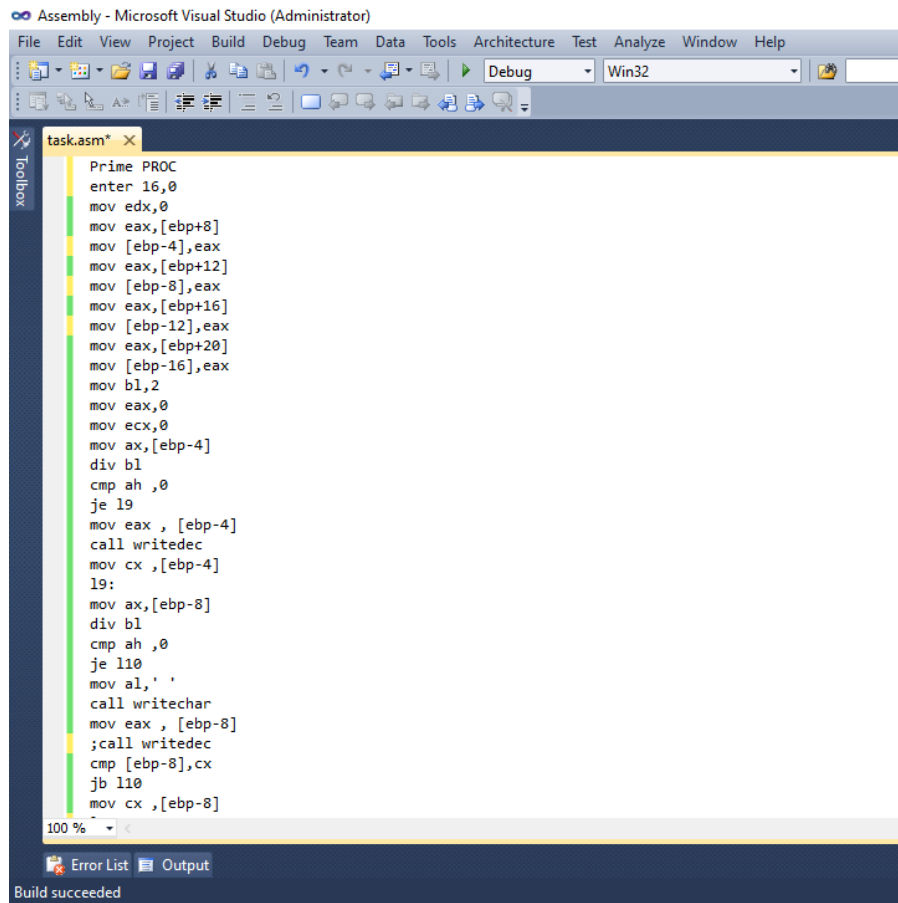
call Prime
```

On the right, a command prompt window titled `C:\Windows\system32\cmd.exe` shows the program's execution. It displays the prompt `ENTER 4 NUMBERS :2`, followed by the output `THE LARGEST PRIME NO IS :` and the instruction `Press any key to continue . . .`.

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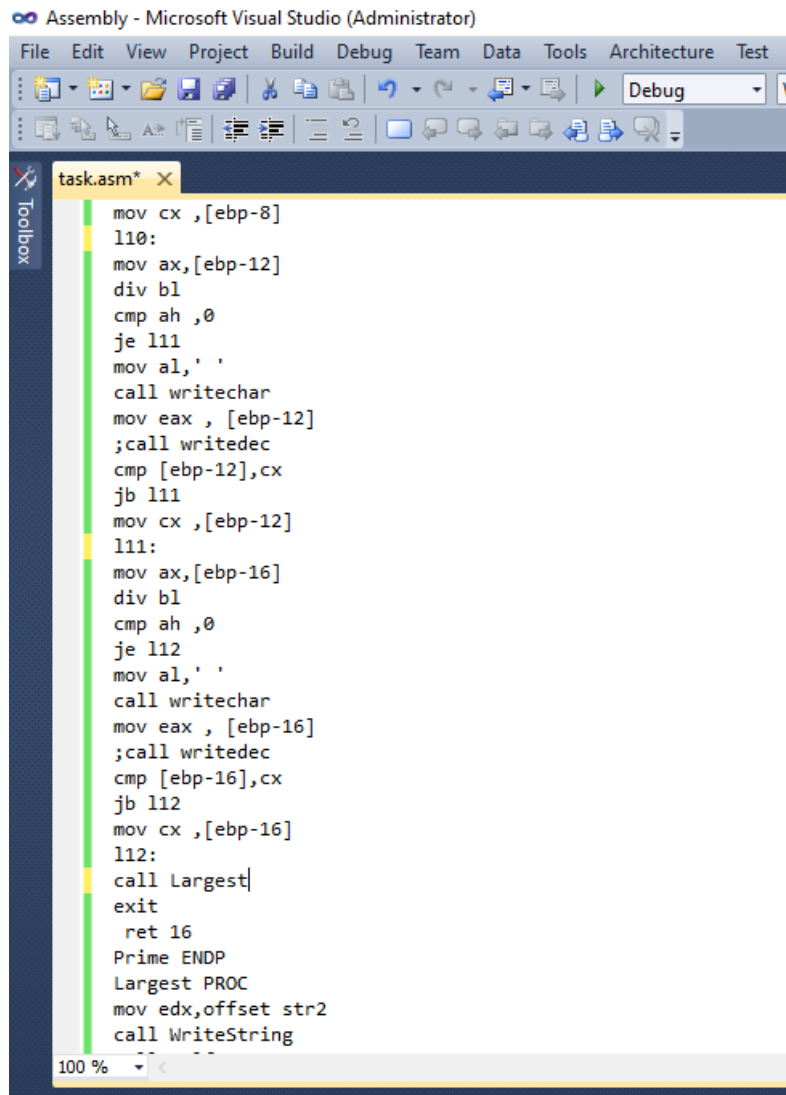


```
Assembly - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Team Data Tools Architecture Test Analyze Window Help
task.asm
Prime PROC
enter 16,0
mov edx,0
mov eax,[ebp+8]
mov [ebp-4],eax
mov eax,[ebp+12]
mov [ebp-8],eax
mov eax,[ebp+16]
mov [ebp-12],eax
mov eax,[ebp+20]
mov [ebp-16],eax
mov bl,2
mov eax,0
mov ecx,0
mov ax,[ebp-4]
div bl
cmp ah,0
je l9
mov eax,[ebp-4]
call writedec
mov cx,[ebp-4]
l9:
mov ax,[ebp-8]
div bl
cmp ah,0
je l10
mov al,' '
call writechar
mov eax,[ebp-8]
;call writedec
cmp [ebp-8],cx
jb l10
mov cx,[ebp-8]
100 %
Error List Output
Build succeeded
```

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```
Assembly - Microsoft Visual Studio (Administrator)
File Edit View Project Build Debug Team Data Tools Architecture Test
task.asm*
mov cx,[ebp-8]
l10:
mov ax,[ebp-12]
div bl
cmp ah,0
je l11
mov al,' '
call writechar
mov eax,[ebp-12]
;call writedec
cmp [ebp-12],cx
jbe l11
mov cx,[ebp-12]
l11:
mov ax,[ebp-16]
div bl
cmp ah,0
je l12
mov al,' '
call writechar
mov eax,[ebp-16]
;call writedec
cmp [ebp-16],cx
jbe l12
mov cx,[ebp-16]
l12:
call Largest
exit
ret 16
Prime ENDP
Largest PROC
mov edx,offset str2
call WriteString
100 %
```

-----END-----