LAB 11

Questions:

1. Create a procedure named Scan_String to find the index of the first occurrence of the character

'#' in the given string.

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

2. Modify the above procedure to take offset of string1 and the character to be searched

as argument.

3. Create IsCompare procedure to compare two strings.

4. Create a Str_Reverse procedure to reverse strings.

5. Create a procedure that Loads an array of integer by multiplying it with

Load(offset array, byte no)

Q1

```
INCLUDE Irvine32.inc

.data
Str1 BYTE "127&j~3#^&*#*#45^",0
str2 BYTE "Character found" , 0
str3 BYTE "Character not found" , 0

.code
main PROC

mov ebx , 0

Scan_String PROC
mov edi , offset Str1
mov al , '#'
mov ecx , LENGTHOF Str1
cld ; forward direction
inc ebx
repne SCASB ; repeat while not equal
jnz quit

found:
mov edx , offset str2
call Writestring
call crlf
mov eax , LENGTHOF Str1
sub eax , ecx
dec eax
call Writeint
exit
```
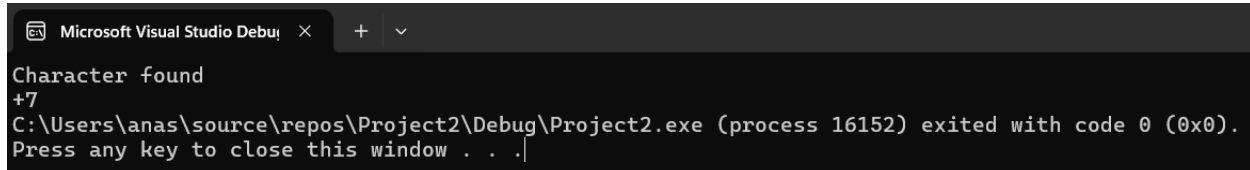
```
quit:
mov edx , offset str3
call Writestring
ret
Scan_String ENDP

exit
main ENDP
END main
```

```
Microsoft Visual Studio Debug   ×   +   ∨

Character found
+7
C:\Users\anas\source\repos\Project2\Debug\Project2.exe (process 16152) exited with code 0 (0x0).
Press any key to close this window . . .
```

Q2

```
INCLUDE Irvine32.inc

.data
Str1 BYTE "127&j~3#^&*#*#45^",0
str2 BYTE "Character found" , 0
str3 BYTE "Character not found" , 0

.code
main PROC

Scan_String PROTO, str4:PTR BYTE , charac:BYTE , len:DWORD
INVOKE Scan_String , ADDR Str1 , '#' , LENGTHOF Str1

exit
main ENDP


Scan_String PROC , string1: PTR BYTE , character:BYTE , Leng:DWORD
mov edi , string1
mov al , character
mov ecx , Leng
cld ; forward direction
repne SCASB ; repeat while not equal
jnz quit

found:
mov edx , offset str2
call Writestring
call crlf
mov eax , LENGTHOF Str1
sub eax , ecx
dec eax
call Writeint
exit
```
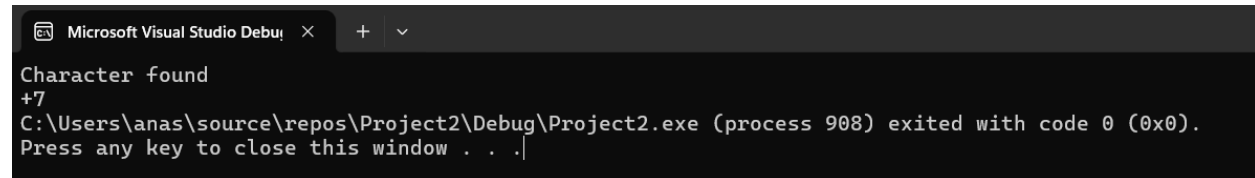
```
quit:
mov edx , offset str3
call Writestring
ret
Scan_String ENDP


END main
```

Q3

```
INCLUDE Irvine32.inc

.data
str1 BYTE "abc",0
str2 BYTE "ab" , 0

greater BYTE "source > target",0
lessOrEqual BYTE "source < target",0

.code
main PROC

call IsCompare

exit
main ENDP

IsCompare PROC
mov esi , offset str1
mov edi , offset str2

CMPSB
ja L1
mov edx , offset lessOrequal
call Writestring
jmp quit

L1:
mov edx , offset greater
call Writestring

quit:
ret
IsCompare ENDP

END main
```

Q4

```
INCLUDE Irvine32.inc

.data
str1 BYTE "Hello",0

.code
main PROC

call Str_reverse


exit
main ENDP

Str_reverse PROC
mov esi , offset str1
mov edi , offset str1

add edi , LENGTHOF str1-2 ; mov edi to the end(-2 because of null terminator)

mov ecx , LENGTHOF str1/2 ; only need to process half of the string

L1:
mov al , [esi]
mov bl , [edi]
mov [esi] , bl
mov [edi] , al
inc esi
dec edi
loop L1

mov edx , offset str1
call Writestring

ret
Str_reverse ENDP

END main
```

Q5

```
INCLUDE Irvine32.inc

.data
array DWORD 1,2,3,4,5,6,7,8,9,10

.code
main PROC

call arrMul

;print array
mov ecx , LENGTHOF array
mov esi , 0

L1:
mov eax , array[esi *TYPE array]
call Writeint
call crlf
inc esi
loop L1


exit
main ENDP

arrMul PROC
mov esi , offset array
mov edi , esi
mov ecx , LENGTHOF array
mov ebx , (SIZEOF array)/10

L1:
lodsd ; [esi] stored in eax
mul ebx
stosd ; eax stored back into array pointed by edi this time
loop L1

ret
arrMul ENDP

END main
```

```
Microsoft Visual Studio Debug    ×    +    ∨

+4
+8
+12
+16
+20
+24
+28
+32
+36
+40

C:\Users\anas\source\repos\Project2\Debug\Project2.exe (process 9136) exited with code 0 (0x0).
Press any key to close this window . . .
```