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COURSE CODE: BSCS
403

SECTION: A
(MORNING)

LAB TASK # 6

Using STACK:

1. Program to Swap TWO NUMBERS.

Code:

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT

File Edit Search View Options Help C:\NSTACK1.ASM

```
:PROGRAM TO SWAP NUMBERS
dosseg
.model small
.stack 100h
.data
v1 dw ?
.code
main proc
mov ax,'1'
push ax
mov bx,'2'
push bx
mov cx,'a'
mov v1,cx
push v1
pop ax
pop bx
pop v1
mov dx,ax
mov ah,2
int 21h

mov dx,bx
mov ah,2
int 21h
mov dx,v1
mov ah,2
int 21h
mov ah,4ch
int 21h
main endp
end main
```

F1=Help | Line:32 Col:1

Output:

```
C:\>stack1.exe
a21
C:\>
```

2. Program to REVERSE a String.

Code:

The screenshot shows the DOSBox 0.74 interface with the title bar "DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT". The menu bar includes File, Edit, Search, View, Options, Help, and the file name "C:\ND1.ASM". The main window displays the assembly code for a program to reverse a string. The code uses the DOS INT 21h interrupt to output the reversed string. The assembly instructions include mov, push, inc, loop, and int 21h. The data section contains a string "RIMSHA". The code ends with a main procedure and an end directive.

```
:PROGRAM TO REVERSE A STRING
dosseg
.model small
.stack 100h
.data
s1 db 'RIMSHA'
.code
main proc
mov ax,@data
mov ds,ax
mov si,offset s1
mov cx,6
l1:
mov ax,[si]
push ax
inc si
loop l1
mov cx,6
l2:
pop dx
mov ah,2
int 21h
loop l2
mov ah,4ch
int 21h
main endp
end main
```

Output:

```
C:\>EDIT d1.asm
C:\>masm d1.asm;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

51642 + 464902 Bytes symbol space free

0 Warning Errors
0 Severe Errors

C:\>link d1.obj;

Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.

C:\>d1.exe
AHSMIR
C:\>_
```

3. Input a string and reverse it.

Code:

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT

File Edit Search View Options Help C:\D2.ASM

```
;program to take input a string and print it
dosseg
.model small
.stack 100h
.data
a1 db 30 dup('$')
.code
main proc
mov ax,@data
mov ds,ax
mov si,offset a1
l1:
mov ah,1
int 21h
cmp al,13
je programend
mov [si],al
inc si
jmp l1
programend:
mov dx,offset a1
mov si,dx
mov cx,9
p1:
mov bx,[si]
push bx
inc si
loop p1
mov cx,9
p2:
pop dx
mov ah,2
int 21h
loop p2

mov ah,4ch
int 21h
main endp
end main
```

F1=Help | Line:41 Col:1

Output:

```
C:\>d2.exe
rimsha
$$$ahsmir
C:\>
```