

Dubai International Academic City

CS/ECE/INSTR/EEE F241
MICROPROCESSORS AND INTERFACING
LABORATORY MANUAL
II Semester 2021-22

EXPERIMENT-6
WORKING WITH FILES AND SYSTEM DATE AND TIME

P1. Write a program to create a file and write text data into it using DOS interrupts.

Handwritten codes:

K.YASHWANTH
2021A7PS0136U - Lab 6 - P1

```

.CODE
.model small
.stack 20
Print Macro Msg
MOV AH, 09H
LEA DX, MSG
INT 21H
END M
READ MACRO STR
LEA DX, STR
MOV AH, 0AH
INT 21H
EndM
.DATA
MSG1 DB 0DH, 0AH, 'Enter filename:$'
MSG2 DB 0DH, 0AH, 'File created$'
MSG3 DB 0DH, 0AH, 'Error file creation$'
MSG4 DB 0DH, 0AH, 'Enter text:$'
MSG5 DB 0DH, 0AH, 'Error file opening$'
MSG6 DB 0DH, 0AH, 'Error in writing$'
MSG7 DB 0DH, 0AH, 'Creating & writing successful'
Fname DB 80
DB ?
DB 80 DUP(0)
Text DB 80
DB ?
DB 80 DUP(0)
.CODE
START:
MOV AX, @DATA
MOV DS, AX
MOV ES, AX
PRINT MSG1
READ FNAME
LEA SI, FNAME+2

```

```

MOV CL, FNAME +
MOV CH, 00
ADD SI, CX
MOV BYTE PTR[SI], 00
LEA DX, FNAME + 2
MOV AH, 3CH
MOV CX, 0000H
INT 21H
JNC SUCCE
PRINT MSG3
JMP EXIT
SUCCE:
PRINT MSG2
PRINT MSG4
READ TEXT
MOV AH, 3DH
MOV AL, 02H
LEA DX, FNAME + 2
INT 21H
JNC SUCC2
PRINT MSG5
JMP EXIT
SUCC2:
MOV BX, AX
MOV AH, 40H
MOV CH, 00H
MOV CL, TEXT + 1
LEA DX, TEXT + 2
INT 21H
JNC SUCC3
PRINT MSG6
MOV AH, 3EH
INT 21H
JMP EXIT
SUCC3:
PRINT MSG7
EXIT:
MOV AH, 4CH
INT 21H
END START

```

Solution Screenshot:

C:\NTASM>136E6P1

Enter a filename:file.txt

File is created

Enter a text:hello world!

Creating and writing successful

File name entered

Confirmation msg

Text in file entered

Confirmation msg

P2. Write a program to read system time and display at the center of the screen

Handwritten codes:

```

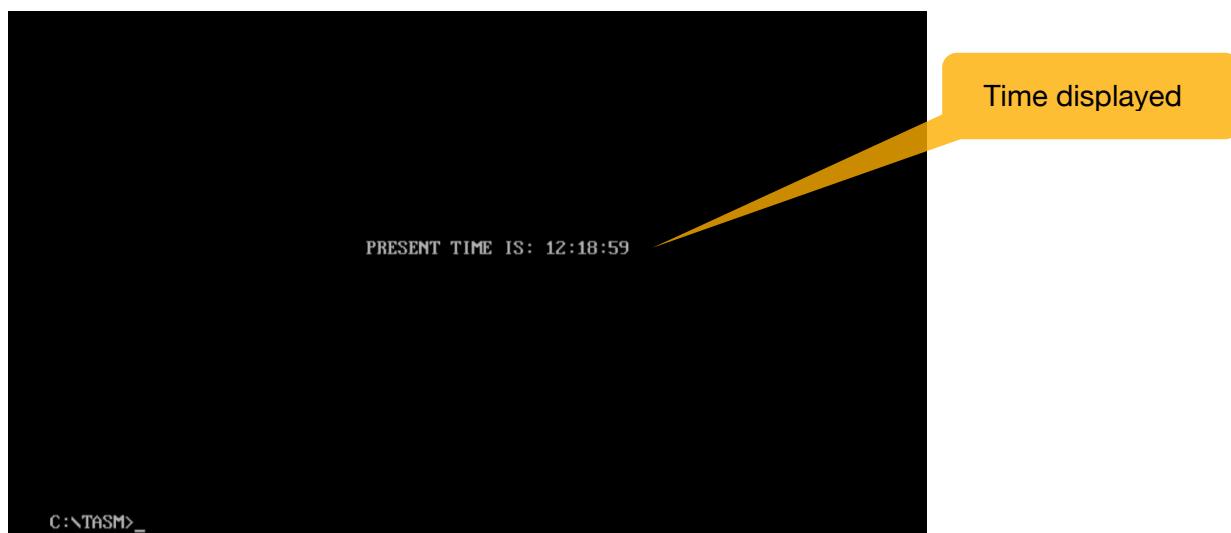
2021A7PS0136U - K.Yashwanth - 16 - P2
.MODEB Small
.Stack 20
.DATA
    MS DB "Present time is: %"
    .code
    .start:
        MOV AX, @DATA
        MOV DS, AX
        MOV AH, 00
        MOV AL, 03H
        INT 10H
        MOV AH, 02
        MOV BH, 0
        MOV DH, 12
        MOV DL, 30
        INT 10H
        LEA DX, MS
        MOV AH, 09
        INT 21H
        MOV AH, 2CH
        INT 21H
        MOV AL, CH
        CALL DISP
        MOV DL, ':'
        MOV AH, 02
        INT 21H

        MOV AL, CL
        CALL DISP
        MOV DL, ':'
        MOV AH, 02
        INT 21H

        MOV AL, DH
        CALL DISP
        MOV AH, 02
        MOV BH, 0
        MOV DH, 24

```

```
MOV DL, 00H  
INT 10H  
  
MOV AH, 0CH  
INT 21H  
DISP PROC NEAR  
AAM  
  
ADD AX, 3030H  
MOV BX, AX  
MOV DL, BH  
MOV AH, 02  
INT 21H  
MOV DL, BL  
MOV AH, 02  
INT 21H  
  
RET  
ENDP  
  
END START
```

Solution Screenshot:

P3. Write a program to read system date and display in this format DD-MM-YEAR.

Handwritten codes:

```

2021A7PS0136U-K.Yashwanth - L6 - P3

.MODEL SMALL
.STACK 20
PRINT MACRO MSG
MOV AH, 09H
MOV DX, OFFSET MSG
INT 21H
ENDM
.DATA
DAY DB ?, ?, '_'
MONTH DB ?, ?, '_'
YEAR DB ?, ?, ?, ?, '$'
.CODE
START:
MOV AX, @DATA
MOV DS, AX
MOV ES, AX
MOV AH, 2AH
INT 21H
PUSH CX
PUSH DX
MOV AL, DL
LEA SI, DAY
MOV AH, 0DH
CALL CONV
POP DX
MOV AL, DH
LEA SI, MONTH
MOV AH, 00H
CALL CONV
POP AX
LEA SI, YEAR
CALL CONV
PRINT DAY
MOV AH, 4CH
INT 21H
CONV PROC NEAR

```

```
MOV CX, 0000H  
MOV BX, 000AH  
  
NEXT:  
MOV DX, 0000  
DIV BX  
ADD DL, 30H  
PUSH DX  
INC CX  
CMP AX, 000AH  
JAE NEXT  
ADD AL, 30H  
MOV [SI], AL  
  
UP:  
POP AX  
INC SI  
MOV [SI], AL  
LOOP UP  
RET  
CONV ENDP  
END START
```

Solution Screenshot:

C:\TASM>136E6P3
25-03-2023

Time displayed

Exercise Problems

1. Write a program to read and display the content of existing file (DOS Function 3FH).

Handwritten codes:

```

2021A7PS0136U - K.Yashwanth - L6 - Q1 - Exercise Problem

.model small
.stack 20
.data
file-n DB 'file.txt', 0
handle DW ?
buff DB 4096 DUP(0)
Bytes-Read DW ?
.code
main proc
MOV AX, @data ; these 2 lines not required if .startp is used
MOV DS, AX
MOV AH, 3DH
MOV AL, 0
LEA DX, file-n
INT 21H
JC ERROR
MOV handle, AX
MOV AX, 3FH
MOV BX, handle
LEA DX, buff
MOV CX, 4096
INT 21H
JC error
MOV Bytes-Read, AX
MOV AH, 0AH
MOV BX, 1
LEA DX, buff
MOV CX, Bytes-Read
INT 21H
MOV AH, 3EH
MOV BX, handle
INT 21H
MOV AH, 4CH
XOR AL, AL
INT 21H
Error:
MOV AH, 09H
LEA DX, error-msg
INT 21H
JMP MAIN
error-msg DB 'Error: unable to read file', 13, 10, '$'
main endp
end main

```

Solution Screenshot:

```
C:\TASM>136E6A1  
hello world!
```

Displayed content of existing file