Logo

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**AMITY INSITUTE OF INFORMATION TECHNOLOGY LUCKNOW**

**AMITY UNIVERSITY UTTAR PRADESH**

**LUCKNOW CAMPUS**

**LAB FILE**

**8086 ASSEMBLY PROGRAMMING**

**NAME: ANKUR CHAUDHARY**

**ENROLLMENT NO: A7304920001**

**B.Sc. I.T**

**SUBMITTED TO:** DR. RAJIV PANDEY

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| Sr No. | Program |
| 1 | Write a program to display ouput in LED. |
| 2 | Program to add two number and display output in LED. |
| 3 | Program to find avg of 3 number. |
| 4 | Write a program to swap two number. |
| 5 | Write a program to print factorial of a number. |
| 6 | Write a program to print Fibonacci series. |
| 7 | WRITE A PROGRAM TO CHECK IF A STRING IS PALINDROME OR NOT. |

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**Q.1 Write a program to display ouput in LED.**

**Ans:**

#start=led\_display.exe#

#make\_bin#

name "led"

mov ax,5

out 199,ax

hlt

**Q.2 Program to add two number and display output in LED.**

**Ans:**

#start=led\_display.exe#

#make\_bin#

name "led"

mov AL,10

out 199, ax

mov BL, 20

add AL,BL

out 199,ax

hlt

**Q.3 Program to find avg of 3 number.**

**Ans:**

DATA SEGMENT

NUM1 DB

NUM2 DB 10

NUM3 DB 10

AVG DB ?

ENDS

CODE SEGMENT

ASSUME DS:DATA CS:CODE

START:

MOV AX,DATA

MOV DS,AX

MOV AL,NUM1

ADD AL,NUM2

ADD AL,NUM3

MOV AH,0

MOV DL,3

DIV DL

MOV AVG,AL

#start=led\_display.exe#

out 199,ax

MOV AH,4CH

INT 21H

ENDS

END START

**Q4.Write a program to swap two number.**

Ans:

DATA SEGMENT

NUM1 DB 5

NUM2 DB 10

ENDS

CODE SEGMENT

ASSUME DS:DATA CS:CODE

START:

#start=led\_display.exe#

MOV AX,@DATA

MOV DS,AX

MOV AL,NUM1

MOV BL,NUM2

MOV NUM1,BL

MOV NUM2,AL

MOV AH,4CH

INT 21H

ENDS

END START

**Q4 Write a program to swap two numbers.**

Ans:

DATA SEGMENT

NUM1 DB 5

NUM2 DB 10

ENDS

CODE SEGMENT

ASSUME DS:DATA CS:CODE

START:

#start=led\_display.exe#

MOV AX,@DATA

MOV DS,AX

MOV AL,NUM1

MOV BL,NUM2

MOV NUM1,BL

MOV NUM2,AL

MOV AH,4CH

INT 21H

ENDS

END START

**Q.5 Write a program to print factorial of a number.**

Ans:

#start=led\_display.exe#

name "fact"

.DATA

ANS DB ?

.CODE

MAIN PROC

MOV AX,@DATA

MOV DS,AX

MOV AL,5

MOV CL,4

MOV BL,AL

SUB BL,1

L:

MUL BL

SUB BL,1

LOOP L

OUT 199,AL

MOV ANS,AL

END MAIN

RET

**Q.6 Write a program to print Fibonacci series.**

Ans:

#start=led\_display.exe#

name "fIB"

.DATA

ANS DW ?

.CODE

MAIN PROC

MOV AX,@DATA

MOV DS,AX

MOV BX,0

MOV DX,1

MOV CX,5

L:

ADD BX,DX

MOV AX,BX

MOV BX,DX

MOV DX,AX

OUT 199,AX

LOOP L

SUB DX,1

MOV ANS,DX

END MAIN

RET

**Q 7. WRITE A PROGRAM TO CHECK IF A STRING IS PALINDROME OR NOT.**

ANS:

DATA SEGMENT

STRING DB 'ABBA','$'

STRING1 DB 'STRING IS PALINDROME','$'

STRING2 DB 'STRING IS NOT PALINDROME','$'

ENDS

CODE SEGMENT

START:

MAIN PROC FAR

MOV AX,DATA

MOV DS,AX

CALL PALINDROME

MOV AH,4CH

INT21H

MAIN ENDP

CODE ENDS

END START

PALINDROME PROC

MOV SI,OFFSET STRING

LOOP1:

MOL AL,[SI]

CMP AL,'$'

JE LABEL1

INC SI

JMP LOOP1

LABEL1:

MOV DI,OFFSET STRING

DEC SI

LOOP 2:

CMP SI,DI

JL OUTPUT1

MOV AL,[SI]

MOV BL,[DI]

CMP AL,BL

JNE OUTPUT2

DEC SI

INC DI

JMP LOOP2

OUTPUT1:

LEA DX,STRING1

MOV AH,09H

INT 21H

RET

OUTPUT2:

LEA DX,STRING2

MOV AH,09H

INT21H

RET

PALINDROME ENDP

END MAIN