

SET-1

- a) Write a program to simulate the page replacement algorithm First in First Out (FIFO)

```
#include<stdio.h>
int main()
{
    int i, j, k, f, pf=0, count=0, rs[25], m[10], n;
    printf("\n Enter the length of reference string : ");
    scanf("%d",&n);
    printf("\n Enter the reference string : ");
    for(i=0;i<n;i++)
        scanf("%d",&rs[i]);
    printf("\n Enter no. of frames : ");
    scanf("%d",&f);
    for(i=0;i<f;i++)
        m[i]=-1;
    printf("\n The Page Replacement Process is : \n");
    for(i=0;i<n;i++)
    {
        for(k=0;k<f;k++)
        {
            if(m[k]==rs[i])
                break;
        }
        if(k==f)
        {
            m[count++]=rs[i];
            pf++;
        }
        for(j=0;j<f;j++)
            printf("\t%d",m[j]);
        if(k==f)
            printf("\tPF No. --> %d",pf);
        printf("\n");
        if(count==f)
            count=0;
    }
    printf("\n The number of Page Faults using FIFO are %d",pf);
}
```

OUTPUT

```
Enter the length of reference string : 12
Enter the reference string : 4 7 6 1 7 6 1 2 7 2 7 1
Enter no. of frames : 3

The Page Replacement Process is :
    4      -1      -1      PF No. --> 1
    4      7      -1      PF No. --> 2
    4      7      6      PF No. --> 3
    1      7      6      PF No. --> 4
    1      7      6
    1      7      6
    1      7      6
    1      2      6      PF No. --> 5
    1      2      7      PF No. --> 6
    1      2      7
    1      2      7
    1      2      7

The number of Page Faults using FIFO are 6
-----
Process exited after 19.12 seconds with return value 0
Press any key to continue . . .
```

b) Write an assembly language program (ALP) to print numbers from 0 to9.

DATA SEGMENT

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE, DS:DATA

BEGIN: MOV AX,DATA

MOV DS,AX

MOV CX,10

MOV DL,48

L1:MOV AH,2

INT 21H

INC DL

LOOP L1

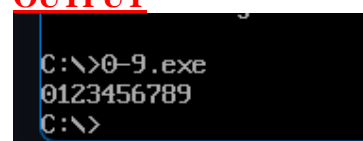
MOV AH,4CH

INT 21H

CODE ENDS

END BEGIN

OUTPUT



```
C:\>0-9.exe
0123456789
C:\>
```

SET-2

a) Write a program to simulate the Optimal page replacement algorithm.

```
#include<stdio.h>
#include<conio.h>
int fr[3], n, m;
void display();
int main()
{
    int i,j,page[20],fs[10];
    int max,found=0,lg[3],index,k,l,flag1=0,flag2=0,pf=0;
    float pr;
    printf("\nEnter length of the reference string : ");
    scanf("%d",&n);
    printf("\nEnter the reference string : ");
    for(i=0;i<n;i++)
        scanf("%d",&page[i]);
    printf("\nEnter no of frames : ");
    scanf("%d",&m);
    for(i=0;i<m;i++)
        fr[i]=-1; pf=m;
    for(j=0;j<n;j++)
    {
        flag1=0; flag2=0;
        for(i=0;i<m;i++)
        {
            if(fr[i]==page[j])
            {
                flag1=1; flag2=1;
                break;
            }
        }
    }

    if(flag1==0)
    {
        for(i=0;i<m;i++)
        {
            if(fr[i]==-1)
            {
                fr[i]=page[j]; flag2=1;
                break;
            }
        }
    }

    if(flag2==0)
    {

```

```

for(i=0;i<m;i++)
lg[i]=0;
for(i=0;i<m;i++)
{
    for(k=j+1;k<=n;k++)
    {
        if(fr[i]==page[k])
        {
            lg[i]=k-j;
            break;
        }
    }
}
found=0;
for(i=0;i<m;i++)
{
    if(lg[i]==0)
    {
        index=i;
        found = 1;
        break;
    }
}
if(found==0)
{
    max=lg[0]; index=0;
    for(i=0;i<m;i++)
    {
        if(max<lg[i])
        {
            max=lg[i];
            index=i;
        }
    }
}
fr[index]=page[j];
pf++;
}
display();
}

printf("\nNumber of page faults : %d\n", pf);
pr=(float)pf/n*100;
printf("Page fault rate = %f \n", pr);
}

void display()

```

```

{
    int i; for(i=0;i<m;i++)
        printf("%d\t",fr[i]);
    printf("\n");
}

```

OUTPUT

```

Enter the reference string : 1 2 3 4 2 1 5 6 2 1 2 3 7 6 3
Enter no of frames : 3
1      -1      -1
1      2      -1
1      2      3
1      2      4
1      2      4
1      2      4
1      2      5
1      2      6
1      2      6
1      2      6
1      2      6
3      2      6
3      7      6
3      7      6
3      7      6
3      2      6
3      2      1
3      2      1
3      2      1
6      2      1

Number of page faults : 11
Page fault rate = 55.000000

-----
Process exited after 23.46 seconds with return value 0
Press any key to continue . . .

```

b) Write an Assembly Language Program (ALP) to check whether a given number is even or odd.

```

ASSUME CS:CODE,DS:DATA
DATA SEGMENT
    NL1 DB 10,'ENTER NUMBER:$'
    NL2 DB 10,'ODD$'
    NL3 DB 10,'EVEN$'
    SMLST DB ?
DATA ENDS

```

```

CODE SEGMENT
START:
    MOV AX,DATA
    MOV DS,AX

```

```
LEA DX,NL1
MOV AH,09H
INT 21H
MOV AH,01H
INT 21H
SUB AL,30H

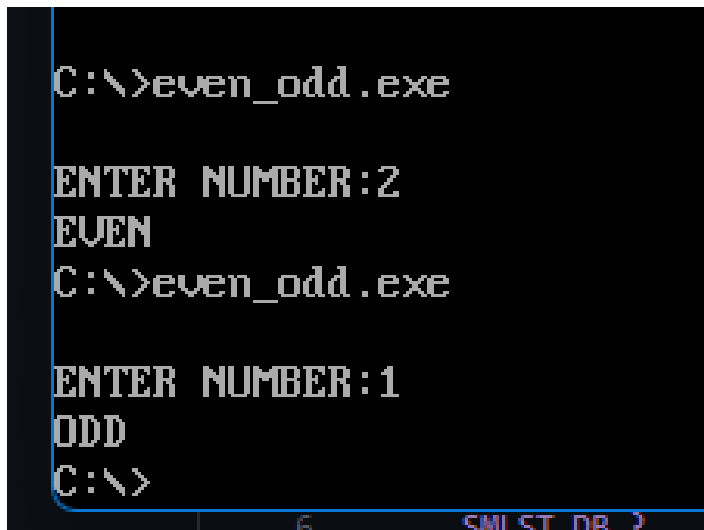
TEST AX,01H
JE SKIP1
LEA DX,NL2

MOV AH,09H
INT 21H
JMP SKIP2
SKIP1:
    LEA DX,NL3
    MOV AH,09H
    INT 21H

SKIP2:
    MOV AH,4CH
    INT 21H

CODE ENDS
END START
```

OUTPUT



```
C:\>even_odd.exe

ENTER NUMBER:2
EVEN
C:\>even_odd.exe

ENTER NUMBER:1
ODD
C:\>
```

The screenshot shows a Windows command prompt window with a black background and white text. The prompt 'C:\>' is followed by the command 'even_odd.exe'. The program then displays 'ENTER NUMBER:' and the user enters '2'. The program outputs 'EVEN'. The prompt is repeated, and the user enters '1'. The program outputs 'ODD'. The prompt is repeated again, and the user enters '>'. At the bottom of the window, there is a status bar with the text '6 SMLST DB ?'.

SET-3

a) Write a program to simulate the page replacement algorithm Least Recently Used (LRU)

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int i, j , k, min, rs[25], m[10], count[10], flag[25], n, f, pf=0, next=1;
    printf("\nEnter the length of reference string : ");
    scanf("%d",&n);
    printf("\nEnter the reference string : ");
    for(i=0;i<n;i++)
    {
        scanf("%d",&rs[i]);
        flag[i]=0;
    }
    printf("\nEnter the number of frames : ");
    scanf("%d",&f);
    for(i=0;i<f;i++)
    {
        count[i]=0;
        m[i]=-1;
    }
    printf("\nThe Page Replacement process is \n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<f;j++)
        {
            if(m[j]==rs[i])
            {
                flag[i]=1;
                count[j]=next;
                next++;
            }
        }
        if(flag[i]==0)
        {
            if(i<f)
            {
                m[i]=rs[i];
                count[i]=next;
                next++;
            }
            else
            {

```

```

        min=0;
        for(j=1;j<f;j++)
            if(count[min] > count[j]) min=j;
            m[min]=rs[i];
            count[min]=next;
            next++;
        }
        pf++;
    }
    for(j=0;j<f;j++) printf("%d\t", m[j]);
    if(flag[i]==0)
        printf("PF No. --> %d" , pf);
    printf("\n");
}
printf("\nThe number of page faults using LRU are %d",pf);
}

```

OUTPUT

```

Enter the length of reference string : 12
Enter the reference string : 4 7 6 1 7 6 1 2 7 2 7 1
Enter the number of frames : 3

The Page Replacement process is
4      -1      -1      PF No. --> 1
4       7      -1      PF No. --> 2
4       7       6      PF No. --> 3
1       7       6      PF No. --> 4
1       7       6
1       7       6
1       7       6
1       2       6      PF No. --> 5
1       2       7      PF No. --> 6
1       2       7
1       2       7
1       2       7

The number of page faults using LRU are 6
-----
Process exited after 25.8 seconds with return value 0
Press any key to continue . . .

```

b) Write an Assembly Language Program (ALP) to find Factorial of a number.

```

ASSUME CS:CODE
CODE SEGMENT
START:
MOV CX,05H

```



```

MOV AX,01H
NEXT:
MUL CX
DEC CX
CMP CX,01H
JNZ NEXT

```

```

MOV AH,4CH
MOV BL,AL
MOV AL,0H
INT 03H

```

```

CODE ENDS
END START

```

OUTPUT

```

C:\>debug fact.exe
-g
AX=4C00 BX=007B CX=0001 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0014 NU UP EI PL ZR NA PE NC
076A:0014 CC INT 3
-q
C:\>_

```

SET-4

- Write a program to simulate the File Organization Technique Single level directory.

```

#include<stdio.h>
#include<string.h>
int main()
{
int nf=0,i=0,j=0,ch;
char mdname[10],fname[10][10],name[10];
printf("Enter the directory name:");
scanf("%s",mdname);
printf("\nEnter the number of files:");
scanf("%d",&nf);
do
{
printf("Enter file name to be created:");
scanf("%s",name);
for(i=0;i<nf;i++)
{
if(!strcmp(name,fname[i]))

```

```

break;
}
if(i==nf)
{
strcpy(fname[j++],name);
nf++;
}
else
printf("\nThere is already %s\n",name);
printf("\nDo you want to enter another file(yes - 1 or no - 0):");
scanf("%d",&ch);
}
while(ch==1);
printf("\nDirectory name is:%s\n",mdname);
printf("\nFiles names are:");
for(i=0;i<j;i++)
printf("\n%s",fname[i]);
}

```

OUTPUT

```

Enter the directory name:GCET
Enter the number of files:3
Enter file name to be created:B.TECH
Do you want to enter another file(yes - 1 or no - 0):1
Enter file name to be created:M.TECH
Do you want to enter another file(yes - 1 or no - 0):1
Enter file name to be created:MBA
Do you want to enter another file(yes - 1 or no - 0):0
Directory name is:GCET
Files names are:
B.TECH
M.TECH
MBA
-----
Process exited after 36.21 seconds with return value 0
Press any key to continue . . .

```

b) Write an Assembly Language Program (ALP) to print Fibonacci series up to 5 numbers.

```

ASSUME CS:CODE,DS:DATA
DATA SEGMENT
NL1 DB 10,'ENTER NUMBER'
NL2 DB','$'
TEMP DB ?

```

DATA ENDS

CODE SEGMENT

START:

```
MOV AX,DATA
MOV DS,AX
LEA DX,NL1
MOV AH,09H
INT 21H
```

```
MOV AH,01H
INT 21H
SUB AL,30H
MOV CL,AL
MOV AL,0
MOV BL,1
```

LBL1:

```
MOV TEMP,AL
LEA DX,NL2
MOV AH,09H
INT 21H
```

```
ADD AX,3030H
MOV DX,AX
MOV AH,02H
INT 21H
```

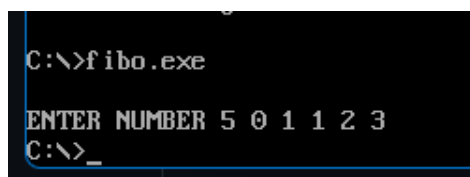
```
MOV AL,TEMP
ADD AL,BL
MOV BL,TEMP
```

```
LOOP LBL1
MOV AH,4CH
INT 21H
```

CODE ENDS

END START

OUTPUT



```
C:\>fibo.exe
ENTER NUMBER 5 0 1 1 2 3
C:\>_
```

SET-5

a) Write a program to simulate the File Organization Technique Two level directory.

```
#include<stdio.h>
#include<conio.h>
struct st
{
    char dname[10];
    char sdname[10][10];
    char fname[10][10][10];
    int ds,sds[10];
}dir[10];

int main()
{
    int i,j,k,n;
    printf("\nEnter number of directories:");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        printf("\nEnter directory %d names:",i+1);
        scanf("%s",&dir[i].dname);
        printf("enter size of directories:");
        scanf("%d",&dir[i].ds);

        for(j=0;j<dir[i].ds;j++)
        {
            printf("\nEnter subdirectory name and size:");
            scanf("%s",&dir[i].sdname[j]);
            scanf("%d",&dir[i].sds[j]);

            for(k=0;k<dir[i].sds[j];k++)
            {
                printf("\nEnter file name:");
                scanf("%s",&dir[i].fname[j][k]);
            }
        }
    }

    printf("\ndirname\t\tsize\tsubdirname\tsize\tfiles");
    printf("\n*****\n");
    for(i=0;i<n;i++)
    {
        printf("%s\t\t%d",dir[i].dname,dir[i].ds);
        for(j=0;j<dir[i].ds;j++)
```

```

    {
        printf("\t%s\t\t\t\t\t",dir[i].sdname[j],dir[i].sds[j]);
        for(k=0;k<dir[i].sds[j];k++)
            printf("%s\t",dir[i].fname[j][k]);
        printf("\n\t\t");
    }
    printf("\n");
}
}

```

OUTPUT

```

Enter number of directories:1
Enter directory 1 names:GCET
enter size of directories:2

Enter subdirectory name and size:B.TECH 2
Enter file name:CSE
Enter file name:EA
Enter subdirectory name and size:M.TECH 2
Enter file name:MBA
Enter file name:MCA

dirname      size  subdirname    size  files
*****
GCET         2      B.TECH        2      CSE   EA
              M.TECH        2      MBA   MCA

-----
Process exited after 32.89 seconds with return value 0
Press any key to continue . . .

```

b) Write an Assembly Language Program (ALP) to take n values from user and calculate their sum for 8086.

```

ASSUME CS:CODE, DS:DATA
DATA SEGMENT
    VAL1 DB ?
    NL1 DB 0AH,0DH,'ENTER HOW MANY NO U WANT:', '$'
    NL2 DB 0AH,0DH,'ENTER NO:', '$'
DATA ENDS
CODE SEGMENT
MAIN PROC
    MOV AX,DATA
    MOV DS,AX

    LEA DX,NL1
    MOV AH,09H

```

```

INT 21H

MOV AH,01H
INT 21H
SUB AL,30H

MOV CL,AL
MOV BL,AL
MOV AL,00
MOV VAL1,AL

LBL1:
    LEA DX,NL2
    MOV AH,09H
    INT 21H

    MOV AH,01H
    INT 21H
    SUB AL,30H

    ADD AL,VAL1
    MOV VAL1,AL
    LOOP LBL1

    MOV AX,00
    MOV BL,VAL1
    MOV AH,4CH
    INT 03H

MAIN ENDP
CODE ENDS
END MAIN

```

OUTPUT

```

C:\>debug autosum.exe
-g
ENTER HOW MANY NO U WANT:4
ENTER NO:2
ENTER NO:3
ENTER NO:4
ENTER NO:5
AX=4C00 BX=000E CX=0000 DX=001D SP=0000 BP=0000 SI=0000 DI=0000
DS=076A ES=075A SS=0769 CS=076D IP=003C  NU UP EI PL NZ NA PO NC
076D:003C CC          INT     3
-q
C:\>

```

SET-6

- a) Write a program to simulate the File Organization Technique Hierarchical directory.

```
#include<stdio.h>
struct st
{
    char dname[10];
    char sdname[10][10];
    char fname[10][10][10];
    int ds,sds;
}
dir[3];
main()
{ int i,j,k,n;
printf("enter number of directories : ");
scanf("%d",&n);
for(i=0;i<n;i++)
{
printf("enter directory %d name : ",i);
scanf("%s",&dir[i].dname);
printf("enter size of directory : ");
scanf("%d",&dir[i].ds);
for(j=0;j<dir[i].ds;j++)
{
printf("enter subdirectory name : ");
scanf("%s",dir[i].sdname[j]);
printf("enter subdirectory size : ");
scanf("%d",&dir[i].sds);
for(k=0;k<dir[i].sds;k++)
{
printf("enter filename : ");
scanf("%s",&dir[i].fname[j][k]);
} } }
printf("\n DIRNAME\t SIZE\t SUBDIRNAME \t SIZE\t FILES\n");
for(i=0;i<n;i++)
{
printf("%s\t\t%d",dir[i].dname,dir[i].ds);
for(j=0;j<dir[i].ds;j++)
{
printf("\t%s\t\t%d",dir[i].sdname[j],dir[i].sds);
for(k=0;k<dir[i].sds;k++)
printf("%s",dir[i].fname[j][k]);
printf("\n\t");
}
printf("\n");
}
```

```
}  
}
```

OUTPUT

```
enter number of directories : 1  
enter directory 0 name : AIML  
enter size of directory : 1  
enter subdirectory name : EA  
enter subdirectory size : 1  
enter filename : ABC...  
  
DIRNAME      SIZE  SUBDIRNAME  SIZE  FILES  
AIML         1    EA         1    ABC...  
  
-----  
Process exited after 11.5 seconds with return value 0  
Press any key to continue . . .
```

b) Write an Assembly Language Program(ALP) to take n values from user and calculate maximum and minimum values.

```
ASSUME DS:DATA, CS:CODE
```

```
DATA SEGMENT
```

```
ARR DB 5,3,7,1,9,2,6,8,4
```

```
LEN DW $-ARR
```

```
MIN DB ?
```

```
MAX DB ?
```

```
DATA ENDS
```

```
CODE SEGMENT
```

```
START:
```

```
MOV AX,DATA
```

```
MOV DS,AX
```

```
LEA SI,ARR
```

```
MOV AL,ARR[SI]
```

```
MOV MIN,AL
```

```
MOV MAX,AL
```

```
MOV CX,LEN
```

```
REPEAT:
```

```
MOV AL,ARR[SI]
```

```
CMP MIN,AL
```

```
JL CHECKMAX
```

```
MOV MIN,AL
```

```
CHECKMAX:
```



```

        CMP MAX,AL
        JG DONE
        MOV MAX,AL

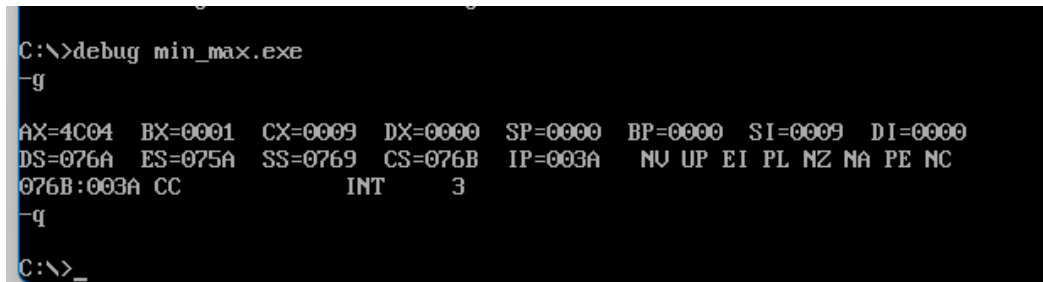
DONE:
        INC SI
        LOOP REPEAT

        MOV BL,MIN
        MOV CL,MAX
        MOV AH,4CH
        INT 03H

CODE ENDS
END START

```

OUTPUT



```

C:\>debug min_max.exe
-g
AX=4C04 BX=0001 CX=0009 DX=0000 SP=0000 BP=0000 SI=0009 DI=0000
DS=076A ES=075A SS=0769 CS=076B IP=003A NU UP EI PL NZ NA PE NC
076B:003A CC          INT     3
-q
C:\>_

```

SET-7

a) Write a program to simulate the Sequential File allocation strategy.

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int f[50], i, st, len, j, c, k, count = 0;
    for(i=0;i<50;i++)
        f[i]=0;

    x: count=0;
    printf("\nEnter starting block and length of files: ");
    scanf("%d%d", &st,&len);
    for(k=st;k<(st+len);k++)
        if(f[k]==0)
            count++;
    if(len==count)
    {

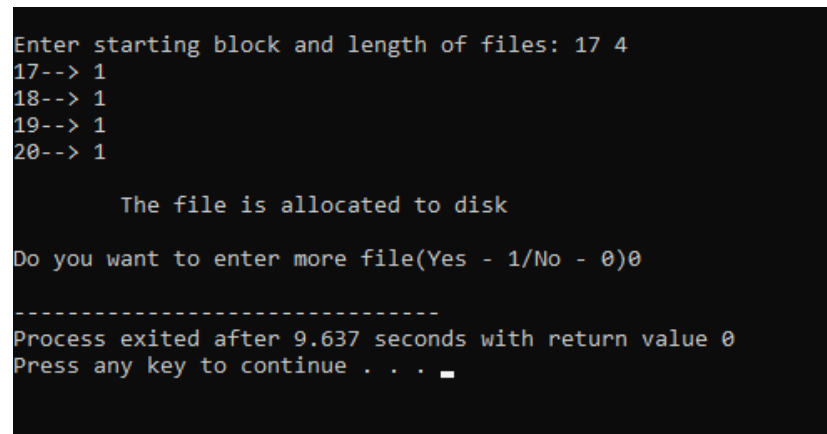
```

```

for(j=st;j<(st+len);j++)
if(f[j]==0)
{
f[j]=1;
printf("%d--> %d\n",j,f[j]);
}
if(j!=(st+len-1))
printf("\n\tThe file is allocated to disk\n");
}
else
printf("\n\tThe file is not allocated \n");
printf("\nDo you want to enter more file(Yes - 1/No - 0)");
scanf("%d", &c);
if(c==1)
goto x;
getch();
}

```

OUTPUT



```

Enter starting block and length of files: 17 4
17--> 1
18--> 1
19--> 1
20--> 1

        The file is allocated to disk

Do you want to enter more file(Yes - 1/No - 0)0
-----
Process exited after 9.637 seconds with return value 0
Press any key to continue . . . _

```

b) Write an assembly language program to reverse the given string for 8086.

```

DATA SEGMENT
    OSTR DB 'COMPUTER','$'
    SLEN DW $-OSTR
    RSTR DB 20 DUP('COMPUTER')
DATA ENDS

```

```

CODE SEGMENT
ASSUME CS:CODE,DS:DATA
BEGIN:
    MOV AX,DATA
    MOV DS,AX
    MOV ES,AX

```

```

MOV CX,SLEN
ADD CX,-2

LEA SI,OSTR
LEA DI,RSTR
ADD SI,SLEN
ADD SI,-2

L1:
    MOV AL,[SI]
    MOV [DI],AL
    DEC SI
    INC DI
    LOOP L1

    MOV AL,[SI]
    MOV [DI],AL
    INC DI

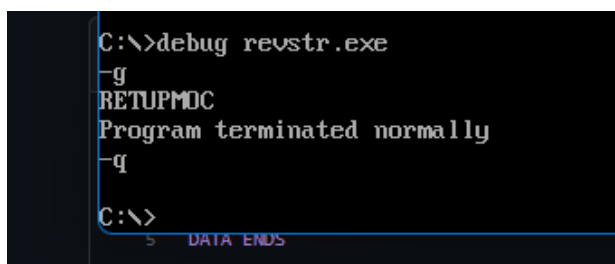
    MOV DL','$'
    MOV [DI],DL

PRINT:
    MOV AH,09H
    LEA DX,RSTR
    INT 21H

EXIT:
    MOV AX,4C00H
    INT 21H
CODE ENDS
END BEGIN

```

OUTPUT



```

C:\>debug revstr.exe
-g
RETUPMOC
Program terminated normally
-q
C:\>
5 DATA ENDS

```

SET-8

a) Write a program to simulate the indexed File allocation strategy.

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
int main()
{
    int f[50], index[50], i, n, st, len, j, c, k, ind, count=0;
    for(i=0; i<50; i++)
        f[i]=0;
    x: printf("\nEnter the index block: ");
    scanf("%d", &ind);
    if(f[ind]!=1)
    {
        printf("\nEnter no of blocks needed and no of files for the index %d on the disk : \n",
            ind);
        scanf("%d", &n);
    }
    else
    {
        printf("\t%d index is already allocated \n", ind);
        goto x;
    }
    y: count=0;
    for(i=0; i<n; i++)
    {
        scanf("%d", &index[i]);
        if(f[index[i]]==0)
            count++;
    }
    if(count==n)
    {
        for(j=0; j<n; j++)
            f[index[j]]=1;
        printf("\tAllocated\n");
        printf("File Indexed\n");
        for(k=0; k<n; k++)
            printf("%d ----->%d : %d\n", ind, index[k], f[index[k]]);
    }
    else
    {
        printf("\tFile in the index is already allocated \n");
        printf("\nEnter another file indexed : ");
        goto y;
    }
    printf("\nDo you want to enter more file(Yes - 1/No - 0)");
```

```

scanf("%d", &c);
if(c==1)
goto x;
else
exit(0);
getch();
}

```

OUTPUT

```

Enter the index block: 1

Enter no of blocks needed and no of files for the index 1 on the disk :
5 0 3 4 5 6
      Allocated
File Indexed
1 ----->0 : 1
1 ----->3 : 1
1 ----->4 : 1
1 ----->5 : 1
1 ----->6 : 1

Do you want to enter more file(Yes - 1/No - 0)0
-----
Process exited after 19.77 seconds with return value 0
Press any key to continue . . .

```

b) Write 8086 assembly language program to transfer a block of data from one location to another.

```

ORG 100H
ASSUME CS:CODE
CODE SEGMENT
START:
    MOV CX,08H
    MOV BX,10H
    MOV DX,21H

    MOV SI,BX
    MOV DI,DX
    MOV AL,CL

STORE:
    MOV BYTE PTR[SI],AL
    DEC AL
    CMP AL,0H
    JNE STORE

AGAIN:
    MOV AL,BYTE PTR[SI]
    MOV BYTE PTR[DI],AL

```

```
LOOP AGAIN
MOV AH,4CH
INT 21H
```

```
CODE ENDS
END START
```

OUTPUT

```
C:\>debug transfer.exe
-t
AX=FFFF BX=0000 CX=0008 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0003  NU UP EI PL NZ NA PO NC
076A:0003 BB1000      MOV     BX,0010
-t
AX=FFFF BX=0010 CX=0008 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0006  NU UP EI PL NZ NA PO NC
076A:0006 BA2100      MOV     DX,0021
-t
AX=FFFF BX=0010 CX=0008 DX=0021 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0009  NU UP EI PL NZ NA PO NC
076A:0009 8BF3        MOV     SI,BX
-t
AX=FFFF BX=0010 CX=0008 DX=0021 SP=0000 BP=0000 SI=0010 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=000B  NU UP EI PL NZ NA PO NC
076A:000B 8BFA        MOV     DI,DX
```

SET-9

a) Write a program to simulate the Linked List File allocation strategy.

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
int main()
{
    int f[50], p,i, st, len, j, c, k, a;
    for(i=0;i<50;i++)
        f[i]=0;
    printf("\nEnter how many blocks already allocated: ");
    scanf("%d",&p);
    printf("\nEnter blocks already allocated: ");
    for(i=0;i<p;i++)
    {
        scanf("%d",&a);
        f[a]=1;
    }
    x: printf("\nEnter index starting block and length: ");
```

```

scanf("%d%d", &st,&len);
k=len;
if(f[st]==0)
{
for(j=st;j<(st+k);j++)
{
if(f[j]==0)
{
f[j]=1;
printf("\t%d ----->%d\n",j,f[j]);
}
else
{
printf("\t%d Block is already allocated \n",j);
k++;
}
}
}
else
printf("\n%d starting block is already allocated \n",st);
printf("\nDo you want to enter more file(Yes - 1/No - 0)");
scanf("%d", &c);
if(c==1)
goto x;
else
exit(0);
getch();
}

```

OUTPUT

```

Enter how many blocks already allocated: 3
Enter blocks already allocated: 1 3 4
Enter index starting block and length: 2 5
    2 ----->1
    3 Block is already allocated
    4 Block is already allocated
    5 ----->1
    6 ----->1
    7 ----->1
    8 ----->1

Do you want to enter more file(Yes - 1/No - 0)0
-----
Process exited after 16.87 seconds with return value 0
Press any key to continue . . .

```

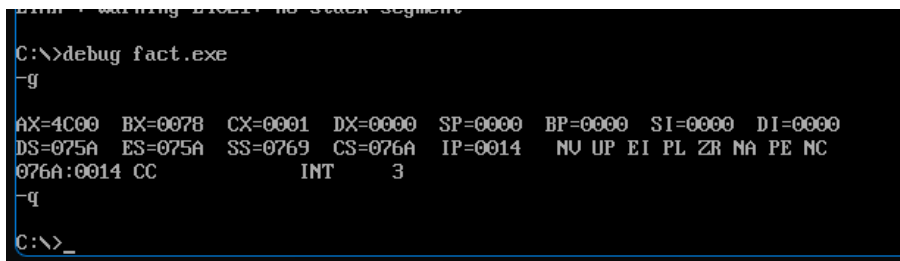
b) Write an Assembly Language Program (ALP) to find Factorial of a number.

```
ASSUME CS:CODE
CODE SEGMENT
START:
MOV CX,05H
MOV AX,01H
NEXT:
MUL CX
DEC CX
CMP CX,01H
JNZ NEXT

MOV AH,4CH
MOV BL,AL
MOV AL,0H
INT 03H

CODE ENDS
END START
```

OUTPUT



```
C:\>debug fact.exe
-g
AX=4C00 BX=007B CX=0001 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0014  NU UP EI PL ZR NA PE NC
076A:0014 CC          INT     3
-q
C:\>_
```