Program(fifo)

```
#include<stdio.h>
#include<string.h>
int rfe[100],count=0,f[10];
int available(int n)
{
int i;
for(i=0;i<n;i++)
{
if(rfe[count]==f[i])
return 1;
}
return 0;
}
void fifo(int n,int m)
{
int first=0,i=0,j=0,var=0;
while(count<m)
{
if(count<n)
{
f[count]=rfe[count++];
first++;
var=1;
}
else
{
if(available(n))
{
count++;
var=0;
}
else
{
var=1;
f[j]=rfe[count++];
first++;
j++;
if(j>=n)
j=0;
}
}
if(var==1)
printf("Page Fault   : ");
else
printf("No Page Fault: ");
for(i=0;i<n;i++)
```

```
printf("%d\t",f[i]);
printf("\n");
}
printf("Total Page Fault= %d",first);
}

int main()
{
int fn,rf,i;
printf("\n Enter the number of frames: ");
scanf("%d",&fn);
printf("\n Enter the number of reference elements: ");
scanf("%d",&rf);
printf("\n Enter the reference elements: ");
for(i=0;i<rf;i++)
{
scanf("%d",&rfe[i]);
}
fifo(fn,rf);
return 0;
}
```

```
 Enter the number of frames: 3

 Enter the number of reference elements: 6

 Enter the reference elements: 6
5
4
6
3
2
Page Fault   : 6        0       0
Page Fault   : 6        5       0
Page Fault   : 6        5       4
No Page Fault: 6        5       4
Page Fault   : 3        5       4
Page Fault   : 3        2       4
Total Page Fault= 5
Process returned 0 (0x0)   execution time : 20.682 s
Press any key to continue.
```

```
 Enter the number of frames: 3

 Enter the number of reference elements: 5

 Enter the reference elements: 9
8
7
6
6
Page Fault   : 9        0       0
Page Fault   : 9        8       0
Page Fault   : 9        8       7
Page Fault   : 6        8       7
No Page Fault: 6        8       7
Total Page Fault= 4
Process returned 0 (0x0)   execution time : 18.125 s
Press any key to continue.
```

```
 Enter the number of frames: 3

 Enter the number of reference elements: 6

 Enter the reference elements: 8
2
5
2
2
8
Page Fault   : 8        0       0
Page Fault   : 8        2       0
Page Fault   : 8        2       5
No Page Fault: 8        2       5
No Page Fault: 8        2       5
No Page Fault: 8        2       5
Total Page Fault= 3
Process returned 0 (0x0)   execution time : 25.837 s
Press any key to continue.
```

Program(lru)

```
#include<stdio.h>
int main()
{
int q[20],p[50],c=0,c1,d,f,i,j,k=0,n,r,t,b[20],c2[20];
printf("\nENTER THE NUMBER OF FRAMES : ");
scanf("%d",&f);
printf("ENTER THE NUMBER OF REFERENCE STRING: ");
scanf("%d",&n);
printf("ENTER THE REFERENCING STRING : ");
for(i=0;i<n;i++)
        scanf("%d",&p[i]);
printf("\tFRAME CONTENTS ARE :  \n");
printf("\tF1\tF2\tF3\t");
q[k]=p[k];
printf("\n\t%d\n",q[k]);
c++;
k++;
for(i=1;i<n;i++)
{
    c1=0;
    for(j=0;j<f;j++)
    {
        if(p[i]!=q[j])
           c1++;
    }
    if(c1==f)
    {
        c++;
        if(k<f)
        {
                q[k]=p[i];
                k++;
                for(j=0;j<k;j++)
                  printf("\t%d",q[j]);
                  printf("\n");
        }
        else
        {
                for(r=0;r<f;r++)
                {
                   c2[r]=0;
                   for(j=i-1;j<n;j--)
                   {
                        if(q[r]!=p[j])
                           c2[r]++;
                        else
                           break;
                   }
                }
```

```
                for(r=0;r<f;r++)
                   b[r]=c2[r];
                for(r=0;r<f;r++)
                {
                    for(j=r;j<f;j++)
                    {
                            if(b[r]<b[j])
                            {
                               t=b[r];
                                b[r]=b[j];
                                b[j]=t;
                            }
                    }
                }
                for(r=0;r<f;r++)
                {
                    if(c2[r]==b[0])
                            q[r]=p[i];
                     printf("\t%d",q[r]);
                   }
                printf("\n");
                }
        }
}
printf("\nThe no of page faults is %d",c);

}
```

```
ENTER THE NUMBER OF FRAMES : 3
ENTER THE NUMBER OF REFERENCE STRING: 5
ENTER THE REFERENCING STRING : 4
2
5
6
4
        FRAME CONTENTS ARE :
        F1      F2      F3
        4
        4       2
        4       2       5
        6       2       5
        6       4       5

The no of page faults is 5
Process returned 0 (0x0)   execution time : 15.415 s
Press any key to continue.
```

```
ENTER THE NUMBER OF FRAMES : 3
ENTER THE NUMBER OF REFERENCE STRING: 6
ENTER THE REFERENCING STRING : 8
5
2
6
5
4
        FRAME CONTENTS ARE :
        F1      F2      F3
        8
        8       5
        8       5       2
        6       5       2
        6       5       4

The no of page faults is 5
Process returned 0 (0x0)   execution time : 11.793 s
Press any key to continue.
```

```
ENTER THE NUMBER OF FRAMES : 3
ENTER THE NUMBER OF REFERENCE STRING: 6
ENTER THE REFERENCING STRING : 5
2
3
5
5
2
        FRAME CONTENTS ARE :
        F1      F2      F3
        5
        5       2
        5       2       3

The no of page faults is 3
Process returned 0 (0x0)   execution time : 13.003 s
Press any key to continue.
```

Program(lfu)

```
#include <stdio.h>
struct frame
{
 int content;
 int freq;
 int cnt;
}frames[100];
void main()
{
 int i,j,pg,fr,cnt,pf,min,page[100],id=0;
 printf("\nENTER THE NUMBER OF FRAMES : ");
 scanf("%d",&fr);
 printf("ENTER THE NUMBER OF REFERENCE STRING: ");
 scanf("%d",&pg);
 printf("ENTER THE REFERENCING STRING : ");
 for(i=0;i<pg;i++)
 {
 scanf("%d",&page[i]);
 }

 for(i=0;i<fr;i++)
 {
 frames[i].content = -1;
 frames[i].freq = 0;
 frames[i].cnt = 0;
 }
 printf("\nREFERENCING PAGE\tSTATUS\t\tFRAME CONTENT\n\n");
 for(pf=0,cnt=1,i=0;i<pg;i++)
 {
 printf("\t%d\t\t",page[i]);
 for(j=0;j<fr;j++)
 {
 if(frames[j].content == page[i])
 {
 printf("HIT\t\t");
 frames[j].freq++;
 break;
 }
 }
 if(j == fr)
 {
 printf("MISS\t\t");
 if(id<fr)
 {
 frames[id].content = page[i];
 frames[id].freq++;
```

```
frames[id].cnt = cnt++;
id++;
}
else
{
for(min=0,j=0;j<fr;j++)
{
if(frames[min].freq > frames[j].freq)
{
min = j;
}
else if(frames[min].freq == frames[j].freq && frames[min].cnt > frames[j].cnt)
{
min = j;
}
}
frames[min].content = page[i];
frames[min].freq = 1;
frames[min].cnt = cnt++;
}
pf++;
}
for(j=0;j<fr;j++)
{
if(frames[j].content !=-1)
printf("%d\t",frames[j].content);
}
printf("\n");
}
printf("\nTOTAL PAGE FAULT : %d\n",pf);
}
```

```
ENTER THE NUMBER OF FRAMES : 3
ENTER THE NUMBER OF REFERENCE STRING: 6
ENTER THE REFERENCING STRING : 3
2
1
6
2
1

REFERENCING PAGE        STATUS          FRAME CONTENT

        3               MISS            3
        2               MISS            3       2
        1               MISS            3       2       1
        6               MISS            6       2       1
        2               HIT             6       2       1
        1               HIT             6       2       1

TOTAL PAGE FAULT : 4

Process returned 22 (0x16)   execution time : 20.904 s
Press any key to continue.
```

```
ENTER THE NUMBER OF FRAMES : 3
ENTER THE NUMBER OF REFERENCE STRING: 5
ENTER THE REFERENCING STRING : 4
5
6
1
2

REFERENCING PAGE        STATUS          FRAME CONTENT

        4               MISS            4
        5               MISS            4       5
        6               MISS            4       5       6
        1               MISS            1       5       6
        2               MISS            1       2       6

TOTAL PAGE FAULT : 5

Process returned 22 (0x16)   execution time : 16.724 s
Press any key to continue.
```

```
ENTER THE NUMBER OF FRAMES : 3
ENTER THE NUMBER OF REFERENCE STRING: 6
ENTER THE REFERENCING STRING : 9
5
1
7
5
1

REFERENCING PAGE        STATUS          FRAME CONTENT

        9               MISS            9
        5               MISS            9       5
        1               MISS            9       5       1
        7               MISS            7       5       1
        5               HIT             7       5       1
        1               HIT             7       5       1

TOTAL PAGE FAULT : 4

Process returned 22 (0x16)   execution time : 15.012 s
Press any key to continue.
```