

EXPERIMENT 7: FIFO PAGE REPLACEMENT

PROGRAM:

```
#include<stdio.h>

int main()
{
    int i,j,n,a[50],frame[10],no,k,avail,count=0;
    printf("\n ENTER THE NUMBER OF PAGES:\n");
    scanf("%d",&n);
    printf("ENTER THE PAGE NUMBER: \n");
    for(i=1;i<=n;i++)
    scanf("%d",&a[i]);
    printf("\n ENTER THE NUMBER OF FRAMES :");
    scanf("%d",&no);
    for(i=0;i<no;i++)
    frame[i]=-1;
    j=0;
    printf("ref string\t page frames\n ");
    for(i=1;i<=n;i++)
    {
        printf("%d\t\t",a[i]);
        avail=0;
        for(k=0;k<no;k++)
        if(frame[k]==a[i])
        avail=1;
        if(avail==0)
        {
            frame[j]=a[i];
            j=(j+1)%no;
            count++;
            for(k=0;k<no;k++)
            printf("%d\t",frame[k]);
        }
        printf("\n");
    }
}
```

```
printf("NO.OF PAGE FAULTS:%d \n",count);  
return 0;  
}
```

OUTPUT:

```
ENTER THE NUMBER OF PAGES:  
12  
ENTER THE PAGE NUMBER:  
7 0 1 2 0 3 0 4 2 3 0 3  
  
ENTER THE NUMBER OF FRAMES :3  
ref string      page frames  
7              7      -1      -1  
0              7      0      -1  
1              7      0      1  
2              2      0      1  
0  
3              2      3      1  
0              2      3      0  
4              4      3      0  
2              4      2      0  
3              4      2      3  
0              0      2      3  
3  
NO.OF PAGE FAULTS:10
```

EXPERIMENT 8: A) LRU PAGE REPLACEMENT

PROGRAM:

```
#include <stdio.h>
int main()
{
    int i, j, k, f, max, p=10, pf=0, count[10], pageref[25], fp[10], n, flag[10];
    printf("\n Enter the length of page reference string -- ");
    scanf("%d",&n);
    printf("\n Enter the reference string -- ");
    for(i=0;i<n;i++)
        scanf("%d",&pageref[i]);
    printf("\n Enter no. of frames -- ");
    scanf("%d",&f);
    for(i=0;i<f;i++)
    {
        fp[i]=-1;
        count[i]=0;
        flag[i]=0;
    }
    printf("\n The Page Replacement Process is -- \n");
    for(i=0;i<n;i++)
    {
        for(k=0;k<f;k++)
        {
            if(count[k]==0)
            {
                fp[k]=pageref[i];
                pf++;
                count[k]=1;
                p=k;
                flag[k]=1;
                break;
            }
            else if(fp[k]==pageref[i])
            {
                count[k]=1;
                p=k;
                flag[k]=1;
                break;
            }
        }
        if(k==f)
        {
            max=0;
            for(j=0;j<f;j++)
            {
                if( count[j]>max)
```

```

        {
            max=count[j];
            p=j;
        }
    }
    fp[p]=pageref[i];
    count[p]=1;
    flag[p]=1;
    pf++;
}
printf("Page ref is %d",pageref[i]);
for(j=0;j<f;j++)
{
    if(j==p || count[j]==0)
        continue;
    count[j]=count[j]+1;
}
for(j=0;j<f;j++)
{
    printf("\t%d ",fp[j]);

    printf("Fault :%d",pf);
    printf("\n");
}
printf("\n The number of Page Faults using LRU are %d",pf);
return 0;
}

```

OUTPUT:

```

Enter the length of page reference string -- 12
Enter the reference string -- 7 0 1 2 0 3 0 4 2 3 0 3
Enter no. of frames -- 3

The Page Replacement Process is --
Page ref is 7   7   -1   -1 Fault :1
Page ref is 0   7    0   -1 Fault :2
Page ref is 1   7    0    1 Fault :3
Page ref is 2   2    0    1 Fault :4
Page ref is 0   2    0    1 Fault :4
Page ref is 3   2    0    3 Fault :5
Page ref is 0   2    0    3 Fault :5
Page ref is 4   4    0    3 Fault :6
Page ref is 2   4    0    2 Fault :7
Page ref is 3   4    3    2 Fault :8
Page ref is 0   0    3    2 Fault :9
Page ref is 3   0    3    2 Fault :9

The number of Page Faults using LRU are 9

```

EXPERIMENT 8: B) LFU PAGE REPLACEMENT

PROGRAM:

```
#include<stdio.h>
int main()
{
    int i, j, k, f, min, p, pf=0, count[10], pageref[25], fp[10], n;
    printf("\n Enter the length of page reference string -- ");
    scanf("%d",&n);
    printf("\n Enter the reference string -- ");
    for(i=0;i<n;i++)
        scanf("%d",&pageref[i]);
    printf("\n Enter no. of frames -- ");
    scanf("%d",&f);
    for(i=0;i<f;i++)
    {
        fp[i]=-1;
        count[i]=0;
    }
    printf("\n The Page Replacement Process is -- \n");
    for(i=0;i<n;i++)
    {
        for(k=0;k<f;k++)
        {
            if(fp[k]==pageref[i])
            {
                count[k]++;
                break;
            }
        }

        if(k==f)
        {
            min=100;
            for(j=0;j<f;j++)
            {
                if( count[j]<min)
                {
                    min=count[j];
                    p=j;
                }
            }
            fp[p]=pageref[i];
            count[p]=1;
            pf++;
        }
    }
}
```

```

printf("Page Fault %d",pf);
}
for(j=0;j<f;j++)
printf("\t%d",fp[j]);
printf("\n");

}
printf("\n The number of Page Faults using LFu are %d",pf);
}

```

OUTPUT:

```

Enter the length of page reference string -- 12

Enter the reference string -- 7 0 1 2 0 3 0 4 2 3 0 3

Enter no. of frames -- 3

The Page Replacement Process is --
Page Fault 1      7      -1      -1
Page Fault 2      7       0      -1
Page Fault 3      7       0       1
Page Fault 4      2       0       1
           2       0       1
Page Fault 5      3       0       1
           3       0       1
Page Fault 6      4       0       1
Page Fault 7      2       0       1
Page Fault 8      3       0       1
           3       0       1
           3       0       1

The number of Page Faults using LFu are 8

```