

Program: LRU Page replacement

Code:

```
#include<stdio.h>

void main()
{
    int i,j,k,min,ref_string[25],frame[10],count[10],flag[25],n,f,pf=0,next=0;
    printf("Niyati Savant -- LRU \n");
    printf("Enter the length of the reference string: ");
    scanf("%d",&n);
    printf("Enter the reference string: ");
    //n=12,f=3
    for(i=0;i<n;i++)
    {
        scanf("%d",&ref_string[i]);
        flag[i]=0;
    }
    printf("Enter the number of frames: ");
    scanf("%d",&f);

    for(i=0;i<f;i++)
    {
        count[i]=0;
        frame[i]=-1;
    }
    printf("\nThe Page Replacement process is \n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<f;j++)
        {
            if(frame[j]==ref_string[i])
            {
```

```

        flag[i]=1;
        count[j]=next;
        next++;
    }
}

if(flag[i]==0)
{
    if(i<f)
    {
        frame[i]=ref_string[i];
        count[i]=next;
        next++;
    }
    else
    {
        min=0;
        for(j=0;j<f;j++)
            if(count[min] > count[j])
                min=j;
        frame[min]=ref_string[i];
        count[min]=next;
        next++;
    }
    pf++;
}

for(j=0;j<f;j++)
    printf("%d\t",frame[j]);
if(flag[i]==0)
    printf("Page Fault");
else

```

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        printf("Page Hit");
    printf("\n");
}
printf("\nThe number of page faults are %d",pf);
printf("\nThe number of page Hits are %d",n-pf);
printf("\nThe Hit ratio is %d / %d",n-pf,n);
}

```

Output:

Niyati Savant -- LRU

Enter the length of the reference string: 12

Enter the reference string: 2 3 2 1 5 2 4 5 3 2 5 2

Enter the number of frames: 3

The Page Replacement process is

2	-1	-1	Page Fault
2	3	-1	Page Fault
2	3	-1	Page Hit
2	3	1	Page Fault
2	5	1	Page Fault
2	5	1	Page Hit
2	5	4	Page Fault
2	5	4	Page Hit
3	5	4	Page Fault
3	5	2	Page Fault
3	5	2	Page Hit
3	5	2	Page Hit

The number of page faults are 7

The number of page Hits are 5

The Hit ratio is 5 / 12