

## PROGRAM – 14

```
#include<stdio.h>
struct page
{
    int value;
    int used;
    int r;
};

void r(struct page *arr,int a)
{
    int i;
    for(i=0;i<a;i++)
    {
        arr[i].r=0;
    }
}

int main()
{
    int a,b,c,i,j,count=0,elem=0,d,temp,e=0;
    printf(">Enter number of Frames present\n");
    scanf("%d",&a);
    struct page arr[a];
    printf(">Enter the total number of pages present AND assign
their values \n");
    scanf("%d",&b);
    int val[b];
    printf(">Page Values\n");
    for(i=0;i<b;i++)
    {
        scanf("%d",&val[i]);
    }
    printf("\n\n");
    for(i=0;i<a;i++)
    {
        arr[i].used=0;
        arr[i].value=0;
    }
    for(i=0;i<b;i++)
    {
        r(arr,a);
        d=0;
        for(j=0;j<elem;j++)
        {
            if(arr[j].value==val[i])
            {
                d=1;
                arr[j].used=0;
            }
        }
        if(d==0)
        {
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        if(elem<a)
        {
            arr[elem].value=val[i];
            elem++;
        }
        else
        {
            int max,k=0;
            max=arr[k].used;
            for(j=1;j<elem;j++)
            {
                if(max<arr[j].used)
                {
                    max=arr[j].used;
                    k=j;
                }
            }
            temp=arr[k].value;
            arr[k].value=val[i];
            arr[k].used=0;
            e++;
        }
        count++;
    }
    printf("After Replacement : ");
    for(j=0;j<elem;j++)
    {
        printf("%d | ",arr[j].value);
    }
    printf("\n");
    if(d==1)
    {
        printf("-->Page Hit\n\n\n");
    }
    else if(d==0)
    {
        if(elem==a)
        {
            if(e>0)
            {
                printf("%d is replaced by %d\n",temp,val[i]);
                printf("-->Page Fault\n\n\n");
            }
            else
            {
                printf("-->Page Fault\n\n\n");
            }
        }
        else
        {
            printf("-->Page Fault\n\n\n");
        }
    }
}
for(j=0;j<elem;j++)

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        {
            arr[j].used=arr[j].used+1;
        }
    }
    printf("Total Page Faults = %d\n",count);
    float percent;
    percent=(float)count*100/b;
    printf("Average Page Fault percent = %.2f",percent);
    return 0;
}
```