```c
/*-------------EXPERIMENT-7------------------*/
/*
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ROLL NO. : 40

TOPIC : DISK SCHEDULING ALGORITHM
*/

/*------------HEADER FILES----------------*/

#include <stdio.h>
#include <stdlib.h>
#include<stdbool.h>

/*---------------CODE------------------*/

bool find_Update(int x,int arr[],bool ref_bit[],int frames)
{
    for (int i = 0; i < frames; i++)
    {
        if (arr[i] == x)
        {
            ref_bit[i] = true;
            return true;
        }
    }
    return false;
}
int update(int x,int arr[],bool ref_bit[],int frames,int pt)
{
    while(true)
    {
        if(!ref_bit[pt])
        {
            arr[pt] = x;
            return ((pt+1)%frames);
        }
        ref_bit[pt] = false;
        pt = (pt+1)%frames;
    }
}
int hit_Falut(int refString[], int frames,int len)
{
    int pt,i,x,pf;
    pt=0;
    pf=0; //page faults
    int arr[frames];
    for(int j=0;j<frames;j++) //intially page array all element = -1
    {
        arr[j]=-1;
    }
    bool ref_bit[frames];// for reference bit : true =1 and false=0
    for (i = 0; i <18; i++)
    {
        x = refString[i];
        if(!find_Update(x,arr,ref_bit,frames))
        {
            pt = update(x,arr,ref_bit,frames,pt);
            pf++;
        }
    }
    return pf;
}
int main()
{
```

```c
    int refString[] = {0,4,1,4,2,4,3,4,2,4,0,4,1,4,2,4,3,4};
    int frames =0,pf=0;
    printf("\n:::::::::::::::::::::::::::::::::::::::::::::::::::::::\n");
    printf("Enter number of frames: \n");
    scanf("%d",&frames);
    printf("\n......................................\n");
    int len = (sizeof(refString)/sizeof(refString[0]));
    printf("\n......................................\n");
    printf("sizeof(refString) = %d , length = %d\n",sizeof(refString),len);
    printf("\n:::::::::::::::::::::::::::::::::::::::::::::::::::::::\n");
    for(int j=0;j<(sizeof(refString)/sizeof(refString[0]));j++)
    {
        printf("%d ",refString[j]);
    }
    printf("\n");
    pf = hit_Falut(refString,frames,len);
    printf("\n==================================\n");
    printf("The Number of Page faults are : %d\n",pf);
    printf("\n......................................\n");
    printf("The Page fault probability is : %f\n",(float) pf/18);
    printf("\n......................................\n");
    printf("The Page fault percentage is : %f\n",(float) (pf*100)/18 );
    printf("\n......................................\n");
    printf("EXITING....\n");
    printf("\n==================================\n");
    return 0;
}

/*----------------OUTPUT-------------------*/

:::::::::::::::::::::::::::::::::::::::
Enter number of frames:
5

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sizeof(refString) = 72 , length = 18

:::::::::::::::::::::::::::::::::::::::
0 4 1 4 2 4 3 4 2 4 0 4 1 4 2 4 3 4

==================================
The Number of Page faults are : 5

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The Page fault probability is : 0.277778

......................................
The Page fault percentage is : 27.777779

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EXITING....

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```