//optimal replcement

#include<stdio.h>

int main()

{

int num,n,frames[10],pages[30],temp[10],flag1,flag2,flag3,i,j,k,pos,max,faults = 0;

printf("Enter number of frames: ");

scanf("%d", &num);

printf("Enter number of pages: ");

scanf("%d", &n);

printf("Enter page reference string: ");

for(i=0;i<n;i++)

{

scanf("%d",&pages[i]);

}

for(i=0;i<num;i++)

{

frames[i]=-1;

}

for(i=0;i<n;i++)

{

flag1=flag2=0;

for(j=0;j<n;j++)

{

if(frames[j]==pages[i])

{

flag1=flag2=1;

break;

}

}

if(flag1==0)

{

for(j=0;j<num;j++)

{

if(frames[j]==-1){

faults++;

frames[j]=pages[i];

flag2=1;

break;

}

}

}

if(flag2==0)

{

flag3=0;

for(j=0;j<num;j++)

{

temp[j]=-1;

for(k=i+1;k<n;k++)

{

if(frames[j] == pages[k])

{

temp[j] = k;

break;

}

}

}

for(j=0;j<num;j++)

{

if(temp[j] == -1)

{

pos = j;

flag3 = 1;

break;

}

}

if(flag3 ==0)

{

max = temp[0];

pos = 0;

for(j=1;j<num;j++)

{

if(temp[j] > max)

{

max = temp[j];

pos = j;

}

}

}

frames[pos] = pages[i];

faults++;

}

printf("\n");

for(j=0;j<num;j++)

{

printf("%d\t", frames[j]);

}

}

printf("\n\nTotal Page Faults = %d", faults);

return 0;

}

Output:  
