#include <stdio.h>

#include <conio.h>

# define infinite 1000

int search(int a[],int n, int pageno)

{

int i;

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

if(a[i]==pageno)

return(1);

return(0);

}

int findmax(int a[],int n)

{

int i,j;

j=0;

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

if(a[i] > a[j])

j=i;

return(j);

}

int findempty(int a[],int n)

{

int i;

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

if(a[i]==-1)

return(i);

return(-1);

}

void main()

{

int lruf[10],trace[30],ntrace,nframes;

int i,j,loc,lrud[10];

float lruh=0.00;

printf("\n Enter no. of frames : ");

scanf("%d",&nframes);

printf("\n enter no of entries in the page trace : ");

scanf("%d",&ntrace);

printf("\nEnter page trace : ");

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

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

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

{

lruf[i]=-1;

lrud[i]=0;

}

printf("\nPage no. LRU Allocation");

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

{

if(!search(lruf,nframes,trace[i]))

{

loc=findempty(lruf,nframes);

if(loc!=-1) //Empty frame

{

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

lrud[j]++;

lruf[loc]=trace[i];

lrud[loc]=0;

}

else

{

loc=findmax(lrud,nframes);

lruf[loc]=trace[i];

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

lrud[j]++;

lrud[loc]=0;

}

}

else

{

lruh=lruh+1;

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

{

if(lruf[j]!=trace[i])

lrud[j]++;

else

lrud[j]=0;

}

}

printf("\n %d ",trace[i]);

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

printf("%3d ",lruf[j],lrud[j]);

}

printf("\nPAGE FAULT: %d",ntrace-lruh);

getch();

}