//Paging Simulation Using FIFO

import java.util.\*;

public class Fifo {

public static void main(String[] args) {

Scanner sn=new Scanner(System.***in***);

System.***out***.println("Enter Frame size ");

int fr=sn.nextInt();

int frame[]=new int[fr];

System.***out***.println("Enter how many pages you want to enter");

int pg=sn.nextInt();

int pages[]=new int[pg];

System.***out***.println("Enter pages you want:");

for(int i=0;i<pg;i++)

{

pages[i]=sn.nextInt();

}

int hits=0;

int faults=0;

int j=0;

boolean check;

for(int i=0;i<pg;i++)

{

check =false;

for(int k=0;k<fr;k++)

if (frame[k]==pages[i]){

check=true;

hits=hits+1;

}

if(check ==false)

{

frame[j]=pages[i];

j++;

if(j>=fr)

j=0;

faults=faults+1;

}

}

System.***out***.println("Hits="+ hits+"Hitsra=”+hitsra+”\nFaults="+faults+ "Faultsra=");

}

}

LRU

import java.util.ArrayList;

import java.util.Scanner;

public class Lru

{

public static void main(String agrs[])

{

Scanner sn=new Scanner(System.***in***);

System.***out***.print("\nEnter How Many Frames You Want :");

int frame=sn.nextInt();

System.***out***.print("How Many Pages You Want :");

int pg=sn.nextInt();

System.***out***.print("\nEnter Pages");

int pages[]=new int[pg];

for(int i=0;i<pg;i++)

{

pages[i]=sn.nextInt();

}

ArrayList<Integer> s=new ArrayList<>(frame);

int count=0,pagefault=0;

for(int i:pages)

{

if(!s.contains(i))

{

if(s.size()==frame)

{

s.remove(0);

s.add(frame-1,i);

}

else

{

s.add(count,i);

count++;

}

pagefault++;

}else

{

s.remove((Object)i);

s.add(s.size(),i);

}

}

System.***out***.print("Page Fault :"+pagefault);

//System.out.println("Page Hits:"+ pagehit);

}

}

Optimal

import java.util.\*;

import java.io.\*;

public class Optimal {

public static void main(String args[]) throws IOException {

Scanner sn=new Scanner(System.***in***);

int numberOfFrames, numberOfPages, flag1, flag2, flag3, i, j, k, pos = 0, max,hit=0;

int faults = 0;

int temp[] = new int[10];

System.***out***.println("Enter number of Frames: ");

numberOfFrames = sn.nextInt();

int frame[] = new int[numberOfFrames];

System.***out***.println("Enter number of Pages: ");

numberOfPages = sn.nextInt();

int pages[] = new int[numberOfPages];

System.***out***.println("Enter the pages: ");

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

pages[i] = sn.nextInt();

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

frame[i] = -1;

for (i = 0; i < numberOfPages; ++i) {

flag1 = flag2 = 0;

for (j = 0; j < numberOfFrames; ++j) {

if (frame[j] == pages[i]) {

flag1 = flag2 = 1;

hit++;

break;

}

}

if (flag1 == 0) {

for (j = 0; j < numberOfFrames; ++j) {

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

faults++;

frame[j] = pages[i];

flag2 = 1;

break;

}

}

}

if (flag2 == 0) {

flag3 = 0;

for (j = 0; j < numberOfFrames; ++j) {

temp[j] = -1;

for (k = i + 1; k < numberOfPages; ++k) {

if (frame[j] == pages[k]) {

temp[j] = k;

break;

}

}

}

for (j = 0; j < numberOfFrames; ++j) {

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

pos = j;

flag3 = 1;

break;

}

}

if (flag3 == 0) {

max = temp[0];

pos = 0;

for (j = 1; j < numberOfFrames; ++j) {

if (temp[j] > max) {

max = temp[j];

pos = j;

}

}

}

frame[pos] = pages[i];

faults++;

}

// System.out.print();

// for (j = 0; j < numberOfFrames; ++j) {

// System.out.print("\t" + frame[j]);

// }

}

System.***out***.println("\n\nTotal Page Faults: " + faults+"Faultsra=+faultsra");

System.***out***.println("\n\nTotal Page hits: " + hit+"Hitsra+hitsra");

}

}