**Practical Assignment 10:**

**Write a java program to implement Page Replacement Policies LRU & OPT.**

import java.util.\*;

import java.io.\*;

class Optimal

{

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

{

BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

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

int faults = 0;

int temp[] = new int[10];

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

numberOfFrames = Integer.parseInt(br.readLine());

int frame[] = new int[numberOfFrames];

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

numberOfPages = Integer.parseInt(br.readLine());

int pages[] = new int[numberOfPages];

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

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

pages[i] = Integer.parseInt(br.readLine());

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;

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);

}

}

**OUTPUT:**

7 0 1 2 0 3 0 4 2 3 0 3 2