Page replacement Policy

M Naveenkumar
1905097

A system uses 3 page frames for storing process pages in main memory. It uses the Least Recently Used (LRU) page replacement policy. Assume that all the page frames are initially empty. Write a Program to simulate the LRU Page replacement policy and perform the following operations,

1. Calculate the total number of page faults occurring while processing the page reference string given below.
2. Display the page replacement chart.

Input Page reference: 4, 7, 6, 1, 7, 6, 1, 2, 7, 2

Code:

```
#include "stdio.h"



void displayFrame(int arr[],int n){
    for (int i=0;i<n;i++){
        if (arr[i]==0){
            printf("Empty\t");
            continue;
        }
        printf("%d\t",arr[i]);
    }
    printf("\n");
}
int findLRU(int time[],int n){
    int min=999;
    for(int i=0;i<n;i++){
        if (time[i]<min)
            min=i;
```

```
    }
    return min;
}

int main(){
    //LRU
    int no_of_frames=3,no_of_pages=6;
    printf("Enter the no of frames:",&no_of_frames);
    scanf("%d",&no_of_frames);
    printf("Enter the no of pages:",&no_of_pages);
    scanf("%d",&no_of_pages);
    int
workingarray[no_of_frames],arr[no_of_pages],queue[no_of_p
ages],incoming_time[no_of_frames];
    printf("Enter the pages:\n");
    for (int i=0;i<no_of_pages;i++){
        scanf("%d",&arr[i]);
    }
    int frames[no_of_frames];
    for (int i=0;i<no_of_frames;i++){
        frames[i]=0;
    }
    int miss_count=0;

    //loop
    int index=0,sizeofqueue=0;
    for(int i=0;i<no_of_pages;i++){
        queue[sizeofqueue++]=arr[i];
        int found=0;
        for (int j=0;j<no_of_frames;j++){
            if(arr[i]==frames[j]){
                printf("%d Hit....\n",arr[i]);
```

```
                found=1;
                break;
            }
        }
        if(found==0){

            printf("%d miss\n",arr[i]);
            if(index<no_of_frames){
                frames[index]=arr[i];
                incoming_time[index]=i;
                index++;
                displayFrame(frames,no_of_frames);
            }
            else{
                miss_count++;

index=findLRU(incoming_time,no_of_frames);
                frames[index]=arr[i];
                incoming_time[index]=i;
                displayFrame(frames,no_of_frames);
            }
        }
    }
    printf("Miss count=%d",miss_count);
    return 0;
}
```

Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Enter the no of frames:3
Enter the no of pages:10
Enter the pages:
4
7
6
1
7
6
1
2
7
2
4 miss
4       Empty   Empty
7 miss
4       7       Empty
6 miss
4       7       6
1 miss
1       7       6
7 Hit....
6 Hit....
1 Hit....
2 miss
2       7       6
7 Hit....
2 Hit....
Miss count=1
PS E:\5th sem\os\exp 9>
```