**Practical : 12**

**Aim: Implementation Of FIFO (First In First Out) Page Replacement Algorithm.**

**Program:**

**#include<stdio.h>**

**#include<conio.h>**

**#include<stdlib.h>**

**int main()**

**{**

**int rs[30],i,f,n,s,pages,p,frame\_size,l=0,flag=0;**

**int page\_faults = 0;**

**float fault\_ratio;**

**char x[20];**

**int frame[30],pri[20][30];**

**printf("\nEnter number of pages:");**

**scanf("%d", &pages);**

**l=pages;**

**printf("\nEnter the number of pages:\n");**

**for(i = 0; i < pages; i++)**

**{**

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

**}**

**printf("\nEnter number of frames:");**

**{**

**scanf("%d", &frame\_size);**

**}**

**p=frame\_size;**

**frame[p];**

**for(i=0; i< pages; i++)**

**{**

**x[i]='X';**

**}**

**for(i = 0; i < frame\_size; i++)**

**{**

**frame[i] = -1;**

**}**

**for(i = 0; i < pages; i++)**

**{**

**s = 0;**

**for(n = 0; n < frame\_size; n++)**

**{**

**if(rs[i] == frame[n])**

**{**

**s++;**

**page\_faults--;**

**x[i]='\*';**

**}**

**}**

**page\_faults++;**

**if((page\_faults <= frame\_size) && (s == 0))**

**{**

**frame[flag++] = rs[i];**

**}**

**else if(s == 0)**

**{**

**frame[(page\_faults - 1) % frame\_size] = rs[i];**

**}**

**for(f=0;f<frame\_size;f++)**

**{**

**pri[f][i]=frame[f];**

**}**

**}**

**printf("\n");**

**for(i = 0 ; i < pages\*5+10; i ++)**

**{**

**printf("-");**

**}**

**printf("\n|Frames |");**

**for(i=0; i<= 2\*pages ; i++)**

**{**

**printf(" ");**

**}**

**printf("Pages");**

**for(i=0; i<= 2\*pages ; i++)**

**{**

**printf(" ");**

**}**

**printf("|\n\t");**

**for(i = 0 ; i < pages\*5+2\*frame\_size - 5; i ++)**

**{**

**printf("-");**

**}**

**printf("\n|\t|");**

**for(i=0 ; i < pages ; i++)**

**{**

**printf(" %2d |",rs[i]);**

**}**

**printf("\n|\t");**

**for(i = 0 ; i < pages\*5+2\*frame\_size - 5; i ++)**

**{**

**printf("-");**

**}**

**printf("\n");**

**for(i=0;i<frame\_size;i++)**

**{**

**printf("| %2d",i);**

**printf("\t|");**

**for(f = 0; f < pages; f++)**

**{**

**if(pri[i][f]== -1)**

**{**

**printf(" - |");**

**}**

**else**

**printf(" %2d |",pri[i][f]);**

**}**

**printf("\n");**

**}**

**for(i = 0 ; i < pages\*5+2\*frame\_size+3; i ++)**

**{**

**printf("-");**

**}**

**printf("\n\t|");**

**for(i = 0; i< pages; i++)**

**{**

**if(x[i]=='X')**

**{**

**//printf("\033[0;31m");**

**printf(" %2c |",x[i]);**

**}**

**else**

**{**

**//printf("\033[0;32m");**

**printf(" %2c |",x[i]);**

**}**

**}**

**printf("\n");**

**for(i = 0 ; i < pages\*5+2\*frame\_size+3; i ++)**

**{**

**printf("-");**

**}**

**printf("\n\nPage Faults, given by: No of pages - Pages hits\nSo here it is %d - %d =\t%d\n\n", pages,(pages-page\_faults),page\_faults);**

**printf("\nPage Hits , given by: No of pages - Pages Miss\nSo here it is %d - %d =\t%d\n\n", pages,page\_faults,(pages-page\_faults));**

**fault\_ratio=((float)page\_faults/pages);**

**printf("\nPage Fault ratio, given by: Page faults/Total pages \nSo here it is %d / %d =\t%5.2f\n\n",page\_faults,pages,fault\_ratio);**

**printf("\nPage Hit ratio, given by: Page hits/Total pages \nSo here it is %d / %d =\t%5.2f\n\n",(pages-page\_faults),pages,((float)pages-page\_faults)/pages);**

**return 0;**

**}**

**Output:**

