

EXPERIMENT N0-9

Write a program to implement page replacement policies: LRU

CODE:

```
#include<stdio.h>

int x,x1;

int in[100],p[50],hit=0,i,j,k,pgfaultcnt=0;

void initialize()
{
    pgfaultcnt=0;
    for(i=0; i<x1; i++)
        p[i]=9999;
}

int isHit(int data)
{
    hit=0;
    for(j=0; j<x1; j++)
    {
        if(p[j]==data)
        {
            hit=1;
            break;
        }
    }

    return hit;
```

```
}
```

```
int getHitIndex(int data)
```

```
{
```

```
    int hitind;
```

```
    for(k=0; k<x1; k++)
```

```
    {
```

```
        if(p[k]==data)
```

```
        {
```

```
            hitind=k;
```

```
            break;
```

```
        }
```

```
    }
```

```
    return hitind;
```

```
}
```

```
void dispPages()
```

```
{
```

```
    for (k=0; k<x1; k++)
```

```
    {
```

```
        if(p[k]!=9999)
```

```
            printf(" %d",p[k]);
```

```
    }
```

```
}
```

```
void dispPgFaultCnt()
```

```

{
    printf("\nTotal no of page faults:%d",pgfaultcnt);
}

void LRU()
{
    initialize();

    int least[50];
    for(i=0; i<x; i++)
    {

        printf("\nFor %d :",in[i]);

        if(isHit(in[i])==0)
        {

            for(j=0; j<x1; j++)
            {
                int pg=p[j];
                int found=0;
                for(k=i-1; k>=0; k--)
                {
                    if(pg==in[k])
                    {
                        least[j]=k;
                        found=1;
                        break;

```

```

        }
        else
            found=0;
    }
    if(!found)
        least[j]=-9999;
}
int min=9999;
int repindex;
for(j=0; j<x1; j++)
{
    if(least[j]<min)
    {
        min=least[j];
        repindex=j;
    }
}
p[repindex]=in[i];
pgfaultcnt++;

dispPages();
}
else
    printf("No page fault!");
}
dispPgFaultCnt();
}

```

```
int main()
{

    printf("\nEnter no of pages:");
    scanf("%d",&x);
    printf("\nEnter refernce string:");
    for(i=0; i<x; i++)
    {
        scanf("%d",&in[i]);
    }

    printf("\nEnter no of frames:");
    scanf("%d",&x1);
    LRU();

}
```

OUTPUT:

```
PS C:\gym> cd "c:\gym\" ; if ($?) { gcc LRC.c -o LRC } ; if ($?) { .\LRC }

Enter no of pages:15

Enter reference string:3
8
2
3
9
1
6
3
8
9
3
6
2
1
3

Enter no of frames:5
```

```
2
1
3

Enter no of frames:5

For 3 : 3
For 8 : 3 8
For 2 : 3 8 2
For 3 :No page fault!
For 9 : 3 8 2 9
For 1 : 3 8 2 9 1
For 6 : 3 6 2 9 1
For 3 :No page fault!
For 8 : 3 6 8 9 1
For 9 :No page fault!
For 3 :No page fault!
For 6 :No page fault!
For 2 : 3 6 8 9 2
For 1 : 3 6 1 9 2
For 3 :No page fault!
Total no of page faults:9
PS C:\gym>
```