**Simulate page replacement algorithms: b) LRU**

**LRU**

**Algorithm:**

Start.

1. Read the length of the reference string.
2. Read the reference string.
3. Read the number of frames.
4. Assign -1 to all the frames.
5. Take the reference string value and compare it with each frame value if it matches then continue with the next reference string value.

If it does not match,

1. Replace the frame value which is not much recently used with the current reference string value.
2. Increment the page fault count variable.
3. Display the page fault count variable.

Repeat this step until the reference string is over.

1. Display the page fault count variable which indicates the total page fault of the algorithm.

Stop.

**Code:**

#include<stdio.h>

#include<conio.h>

main()

{

int i, j , k, min, rs[25], m[10], count[10], flag[25], n, f, pf=0, next=1;

clrscr();

printf("Enter the length of reference string -- ");

scanf("%d",&n);

printf("Enter the reference string -- ");

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

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

flag[i]=0; }

printf("Enter the number of frames -- ");

scanf("%d",&f);

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

{ count[i]=0; m[i]=-1; }

printf("\nThe Page Replacement process is -- \n");

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

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

{ if(m[j]==rs[i])

{ flag[i]=1;

count[j]=next; next++;

}

}

if(flag[i]==0)

{ if(i<f)

{ m[i]=rs[i]; count[i]=next; next++;

}

else

{ min=0;

for(j=1;j<f;j++)

if(count[min] > count[j])

min=j; m[min]=rs[i]; count[min]=next; next++;

}

pf++; }

for(j=0;j<f;j++)

printf("%d\t", m[j]);

if(flag[i]==0)

printf("PF No. -- %d", pf);

printf("\n");

}

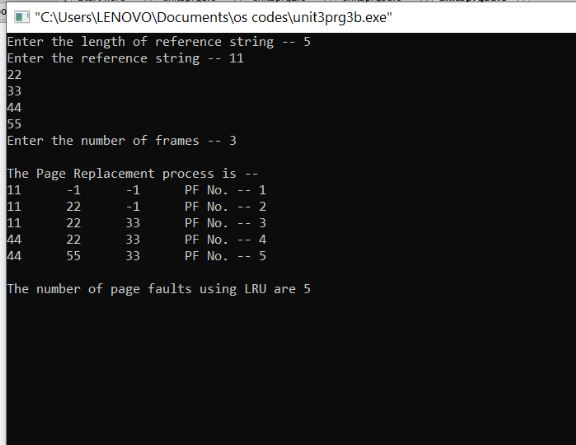
printf("\nThe number of page faults using LRU are %d",pf);

getch();

return;

}

**Input/Output:**

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