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BATCH: K1

EXPERIMENT-7

In [1]:

```
# FIFO REPLACEMENT
capacity = int(input("Enter the number of frames: "))
current_col, fault_count, hit_count, front, page_fault = [], 0, 0, 0,'M'
print("Enter the reference string: ",end="") # WITH SPACES
s = list(map(int,input().strip().split())) # REMOVE SPACES
print("\nString|Frame →\t",end='')
for i in range(capacity):
    print(i,end=' ')
print("Fault\n    ↓\n")
for i in s:
    if i not in current_col:
        if len(current_col)<capacity: # ALL FRAMES NOT FILLED
            current_col.append(i)
        # ALL FRAMES FILLED
        else:
            current_col[front] = i # FIFO TECHNIQUE
            front = (front+1)%capacity # IF FRONT BECOMES GREATER THAN 3 THEN MAKE FRONT
= 0
        fault_count += 1
        page_fault = 'M'
    else:
        # CURRENT PAGE MATCHES WITH FRAME PAGES THEN HIT
        hit_count += 1
        page_fault = 'H'
    print(f"   {i}\t\t",end='')
    for x in current_col:
        print(x,end=' ')
    for x in range(capacity-len(current_col)):
        print(' ',end=' ')
    print(f" {page_fault}")
print(f"\nTotal requests: {len(s)}\nTotal Page Hits: {hit_count}\nHit Rate: {100 - round
((fault_count/len(s)*100) ,2)}%")
```

```
Enter the reference string:
String|Frame → 0 1 2 Fault
    ↓

   1  1       M
   3  1 3     M
   0  1 3 0   M
   3  1 3 0   H
   5  5 3 0   M
   6  5 6 0   M

Total requests: 6
Total Page Hits: 1
Hit Rate: 16.67
```

In [51]:

```
# LEAST RECENTLY USED REPLACEMENT
print("Enter the number of frames: ",end="")
capacity = int(input())
```

```
current_col,st,fault_count,page_fault = [],[],0,'M'
print("Enter the reference string: ",end="")
s = list(map(int,input().strip().split()))
print("\nString|Frame →\t",end='')
for i in range(capacity):
    print(i,end=' ')
print("Fault\n    ↓\n")
for i in s:
    if i not in current_col:
        if len(current_col)<capacity:
            current_col.append(i)
            st.append(len(current_col)-1)
        else:
            ind = st.pop(0)
            current_col[ind] = i
            st.append(ind)
        page_fault = 'M'
        fault_count += 1
    else:
        st.append(st.pop(st.index(current_col.index(i))))
        page_fault = 'H'
    print("   %d\t\t"%i,end='')
    for x in current_col:
        print(x,end=' ')
    for x in range(capacity-len(current_col)):
        print(' ',end=' ')
    print(" %s"%page_fault)
print("\nTotal Requests: %d\nTotal Page Faults: %d\nFault Rate: %0.2f%%"%(len(s),fault_c
ount,(fault_count/len(s))*100))
```

```
Enter the number of frames: Enter the reference string:
String|Frame → 0 1 2 3 Fault
    ↓

    7   7         M
    0   7 0       M
    1   7 0 1     M
    2   7 0 1 2   M
    0   7 0 1 2   H
    3   3 0 1 2   M
    0   3 0 1 2   H
    4   3 0 4 2   M
    2   3 0 4 2   H
    3   3 0 4 2   H
    0   3 0 4 2   H
    3   3 0 4 2   H
    2   3 0 4 2   H

Total Requests: 13
Total Page Faults: 6
Fault Rate: 46.15%
```