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**CODE:**

```
#include <stdio.h>
#include <stdbool.h>

bool isPresent(int frame[], int n){
    for(int i=0;i<3;i++){
        if(frame[i]==n){
            return true;
        }
    }
    return false;
}

void display(int frame[]){
    for(int i=2;i>=0;i--){
        if(frame[i] == -1){
            printf(" ");
        }else{
            printf("%d ", frame[i]);
        }
    }
}

void main(){
    int sequence[] = {7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 3}; // given reference string
    int frame[4] = {-1,-1,-1,-1}; // frame - to store the reference string in frame
    int count = 0; // to count the page fault
    int least_index = 0; // to store the least used index

    for(int i=0;i<14;i++){
        // checking if i > frame_size i.e. 2(given) for checking frame is full or not
        if(i>2){
            // following checking if the element is ready present in frame or not. If present then don't
            // push anything.
            if(isPresent(frame, sequence[i])){
                printf("%d -> ", sequence[i]);
                display(frame);
                printf(" HIT\n");
            }else{
                // if element is not present the at least_index of frame replace the element
                // logic for Least_used_index
            }
        }else{
            // if frame is not full directly push the reference_string_element to frame(frame)
            frame[i] = sequence[i]; // pushing reference_string_element in frame
            // following code is for printing: reference_string_element -> frame_elements MISS/HIT
        }
    }
}
```

```
        printf("%d -> ", sequence[i]);
        display(frame);
        printf(" MISS\n");
        count++; // increasing the page fault number;
    }
}

printf("\nTotal number of page fault = %d\n", count);
}
```

## OUTPUT:

```
7 ->    7  MISS
0 ->    0 7  MISS
1 ->  1 0 7  MISS
0 ->  1 0 7   HIT
0 ->  1 0 7   HIT
0 ->  1 0 7   HIT

Total number of page fault = 3
```