Ex. No.: 11b)
Date: 09-04-2025

LRU Aim:

To write a c program to implement LRU page replacement algorithm. **Algorithm:**

1: Start the process
2: Declare the size
3: Get the number of pages to be inserted
4: Get the value
5: Declare counter and stack
6: Select the least recently used page by counter value 7:
Stack them according the selection.
8: Display the values
9: Stop the process

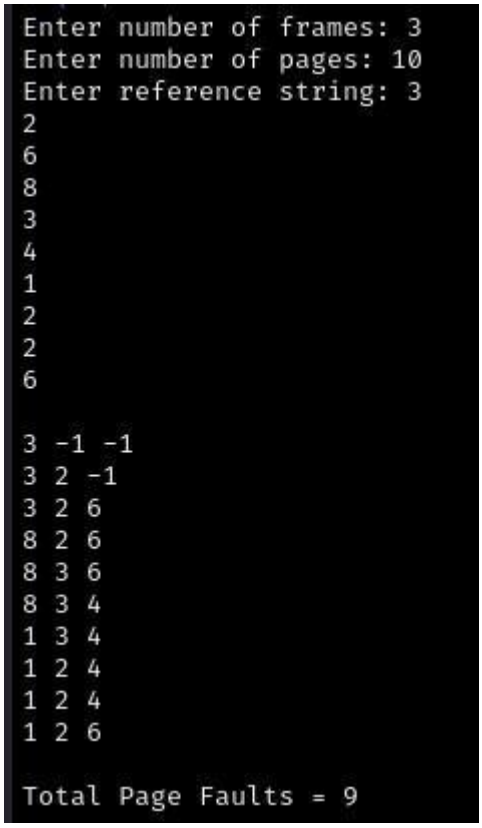
Program Code:

```
#include
<stdio.h> int findLRU(int time[], int
n) {    int i, min = time[0],
pos = 0;          for (i = 1; i < n; ++i)
{        if (time[i] < min) {
min = time[i];          pos = i;
        }
        }
        return pos;
} int main() {  int frames[10], pages[30],
counter[10];  int i, j, k, pos, max, faults = 0, time
= 0;    int n, f;          printf("Enter number of
frames: ");      scanf("%d", &f);
 printf("Enter number of pages: ");
scanf("%d", &n);
        printf("Enter reference string: ");
for (i = 0; i < n; ++i)
 scanf("%d", &pages[i]);       for (i = 0; i
< f; ++i) {
```

```
            frames[i] = -1;
 counter[i] = 0;
            }
            printf("\n");   for (i = 0; i < n; ++i) {              int
flag1 = 0, flag2 = 0;               for (j = 0; j < f; ++j) {
if (frames[j] == pages[i]) {              time++;
counter[j] = time; // Update recent use time              flag1
= flag2 = 1;              break;
          }
           }          if (flag1
== 0) {
          for (j = 0; j < f; ++j) {
 if (frames[j] == -1) {
time++;                    faults++;
frames[j] = pages[i];
counter[j] = time;                  flag2
= 1;                          break;
                      }
          }
            }
            if (flag2 == 0) {           pos
= findLRU(counter, f);
time++;           faults++;
frames[pos] = pages[i];
 counter[pos] = time;
            }
            // Display current frame
state       for (k = 0; k < f; ++k) {
if (frames[k] != -1)
printf("%d ", frames[k]);           else
printf("-1 ");
```

```
        }
        printf("\n");
        }
  printf("\nTotal Page Faults = %d\n", faults);    return 0;
}
```

OUTPUT:



RESULT:

Hence, page faults that occur using LRU page replacement technique has been found.