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

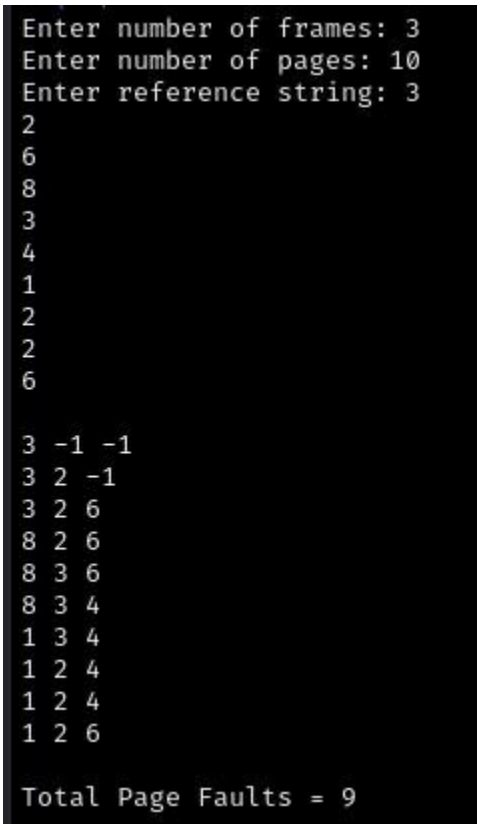
Program Code: #include

```
<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.