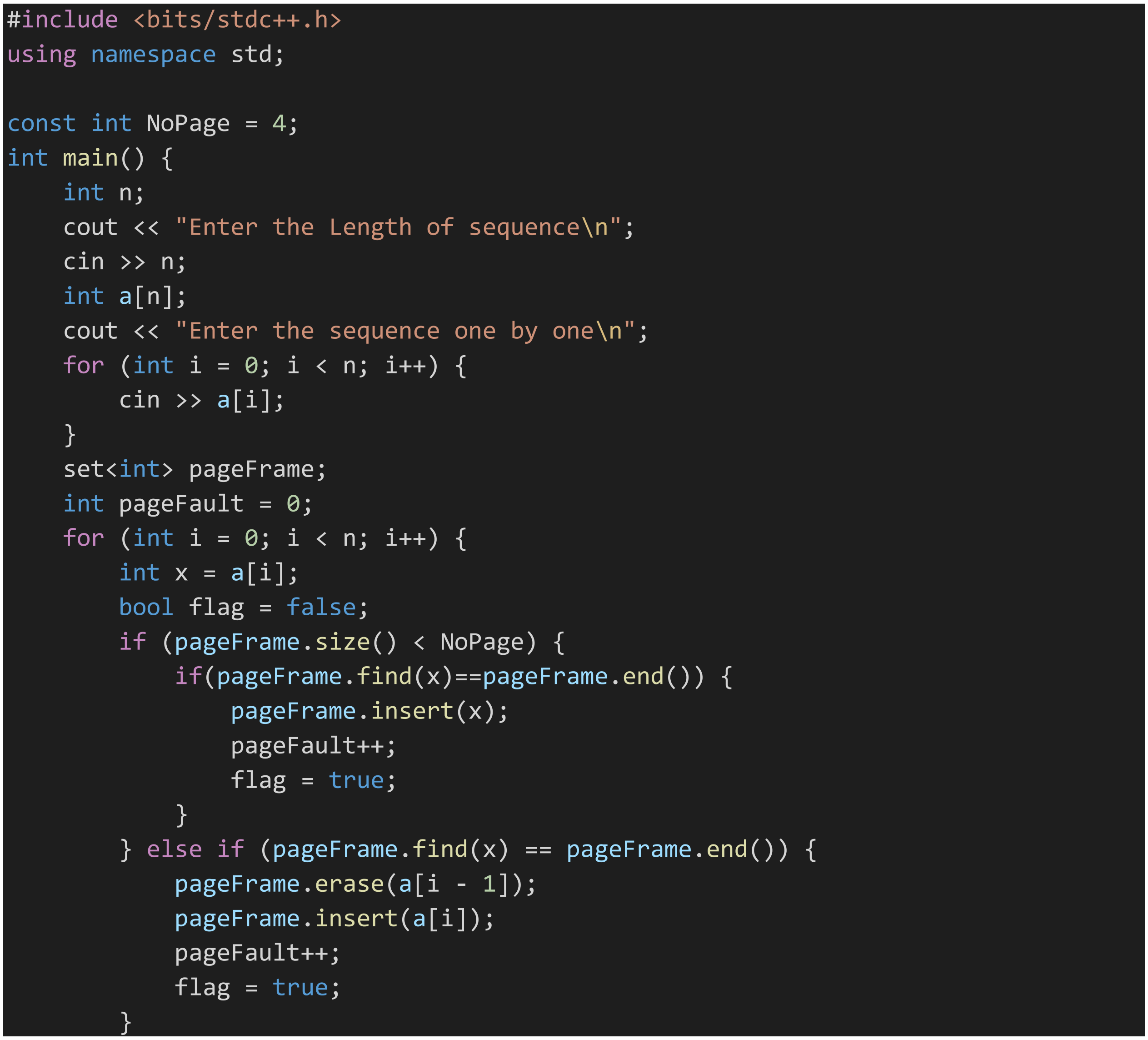
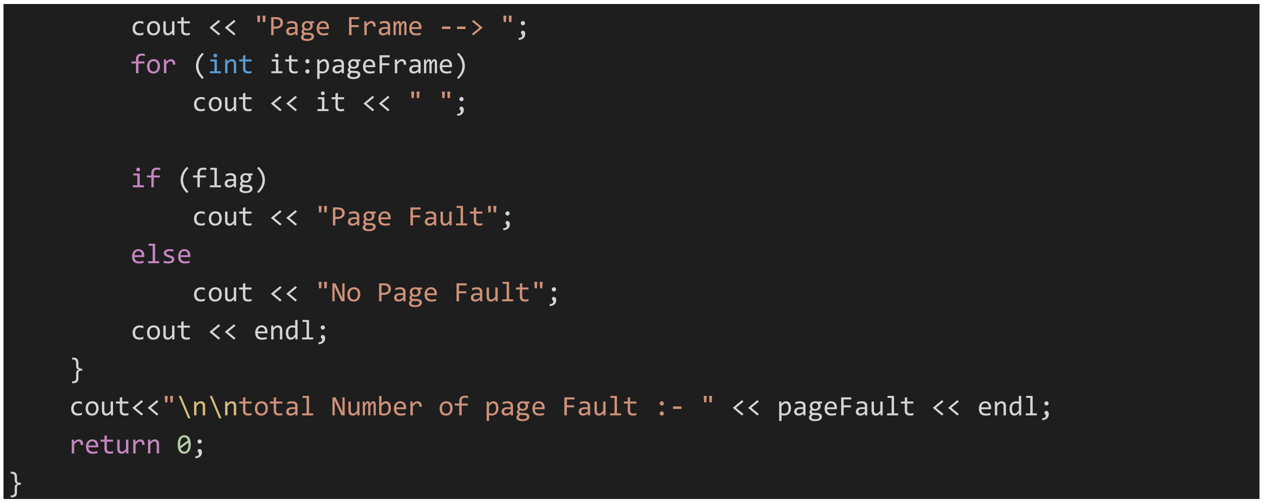
U18CO018
Shubham Shekhaliya
OS Practical Exam

Write a program to implement the most recently used page replacement Algorithm. Process has been allocated 4-page frames. Assume that none of the pages of the process are available in the memory initially.
The process makes the following sequence of page references (Reference's string) 1, 2, 1, 3, 7, 4, 5, 6, 3, 1
How Many Page faults occur for the above reference String?

Code: -

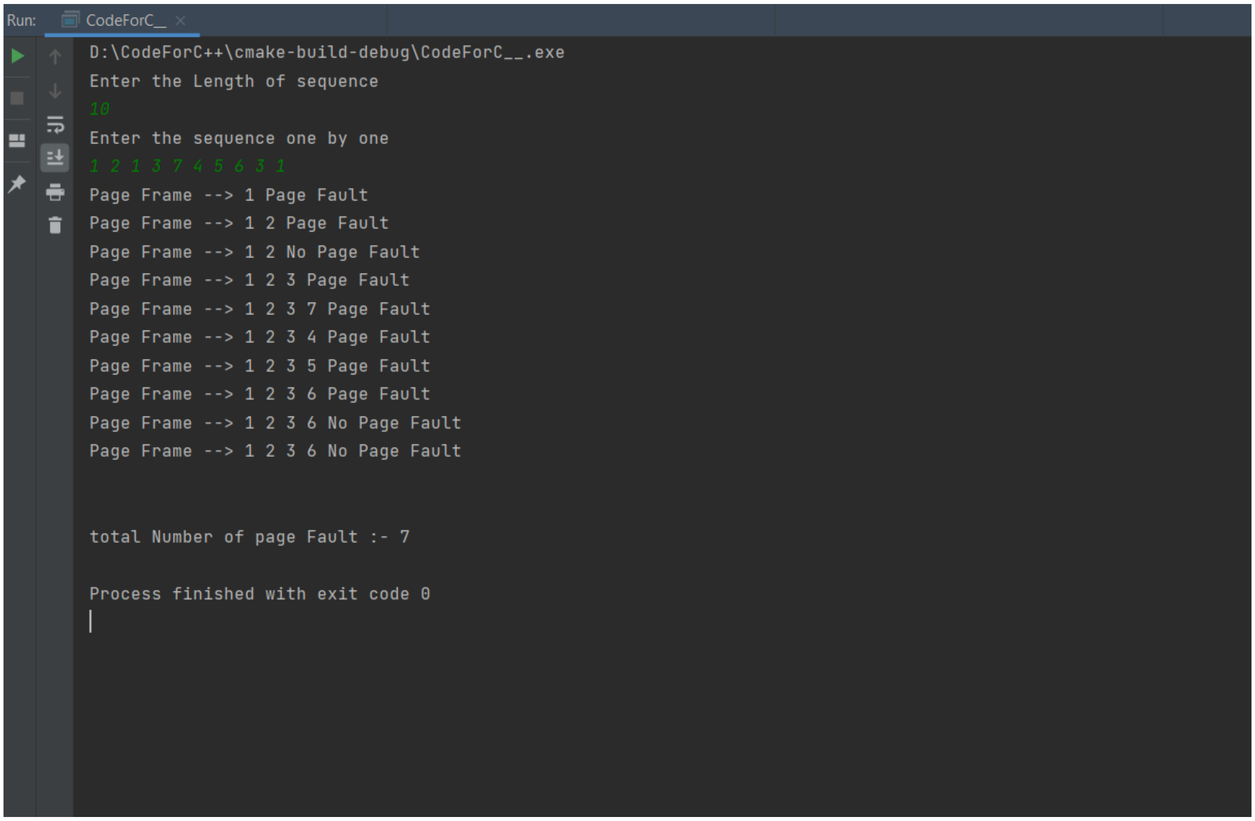


```cpp
#include <bits/stdc++.h>
using namespace std;

const int NoPage = 4;
int main() {
    int n;
    cout << "Enter the Length of sequence\n";
    cin >> n;
    int a[n];
    cout << "Enter the sequence one by one\n";
    for (int i = 0; i < n; i++) {
        cin >> a[i];
    }
    set<int> pageFrame;
    int pageFault = 0;
    for (int i = 0; i < n; i++) {
        int x = a[i];
        bool flag = false;
        if (pageFrame.size() < NoPage) {
            if(pageFrame.find(x)==pageFrame.end()) {
                pageFrame.insert(x);
                pageFault++;
                flag = true;
            }
        } else if (pageFrame.find(x) == pageFrame.end()) {
            pageFrame.erase(a[i - 1]);
            pageFrame.insert(a[i]);
            pageFault++;
            flag = true;
        }
```



```
        cout << "Page Frame --> ";
        for (int it:pageFrame)
            cout << it << " ";

        if (flag)
            cout << "Page Fault";
        else
            cout << "No Page Fault";
        cout << endl;
    }
    cout<<"\n\ntotal Number of page Fault :- " << pageFault << endl;
    return 0;
}
```

Output: -



```
D:\CodeForC++\cmake-build-debug\CodeForC__.exe
Enter the Length of sequence
10
Enter the sequence one by one
1 2 1 3 7 4 5 6 3 1
Page Frame --> 1 Page Fault
Page Frame --> 1 2 Page Fault
Page Frame --> 1 2 No Page Fault
Page Frame --> 1 2 3 Page Fault
Page Frame --> 1 2 3 7 Page Fault
Page Frame --> 1 2 3 4 Page Fault
Page Frame --> 1 2 3 5 Page Fault
Page Frame --> 1 2 3 6 Page Fault
Page Frame --> 1 2 3 6 No Page Fault
Page Frame --> 1 2 3 6 No Page Fault


total Number of page Fault :- 7

Process finished with exit code 0
```