```cpp
1  #include <bits/stdc++.h>
2  using namespace std;
3
4  bool available(int process, vector<int>& v){
5          for(auto &ele : v){
6                  if(ele == process) return true;
7          }
8          return false;
9  }
10
11 int main() {
12     int frame_cnt;
13     cout << "Enter Number of Available Frames: ";
14     cin >> frame_cnt;
15     vector<int> v(frame_cnt, -1);
16     cin.ignore();
17
18     string reference_str;
19     cout << "Enter the Reference String ";
20     getline(cin, reference_str);
21
22     stringstream ss(reference_str);
23     string temp;
24
25     int last_used_idx = 0;
26     int page_fault = 0;
27     int page_hit = 0;
28     cout<<endl;
29     cout<<"Reference    ";
30     for(int i = 0; i<frame_cnt; i++) cout<<"Frame"<<i+1<<"   " ;
31     cout<<"       Status"<<endl;
32     cout<<endl;
```

```cpp
33      while (ss >> temp) {
34          int process = stoi(temp);
35          cout<<process<<"                    ";
36          string status;
37          if(available(process, v) == false){
38                  page_fault++;
39                  v[last_used_idx] = process;
40                  last_used_idx = (last_used_idx + 1) % frame_cnt;
41                  status = "Page Fault";
42          }
43          else{
44                  status = "Page Hit";
45                  page_hit++;
46
47          }
48          for(int i = 0; i<frame_cnt; i++){
49                      if(v[i] == -1) cout<<" ";
50                      else cout<<v[i];
51                      cout<<"             ";
52              }
53              cout<<status<<endl;
54
55      }
56      cout<<endl;
57      cout<<"Page Fault : "<<page_fault<<endl;
58
59      cout<<"Fault Rate : "<<(double)page_fault/(page_fault + page_hit);
60      cout<<endl;
61      return 0;
62 }
```

```
Enter Number of Available Frames: 3
Enter the Reference String 7 0 1 2 0 3 0 4 2 3 0 3 2

Reference    Frame1   Frame2   Frame3      Status

7              7                           Page Fault
0              7        0                  Page Fault
1              7        0        1         Page Fault
2              2        0        1         Page Fault
0              2        0        1         Page Hit
3              2        3        1         Page Fault
0              2        3        0         Page Fault
4              4        3        0         Page Fault
2              4        2        0         Page Fault
3              4        2        3         Page Fault
0              0        2        3         Page Fault
3              0        2        3         Page Hit
2              0        2        3         Page Hit

Page Fault : 10
Fault Rate : 0.769231
```