Mawlana Bhashani Science and Technology University
Lab-Report

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i) What is FIFO page replacement Algorithm?

FIFO page replacement Algorithm:

Consider the following reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2.
Assume demand paging with three frames.

Using FIFO page replacement algorithm –

7	0	1	2	0	3	0	4	2	3	0	3	2
7	7	7	2	2	2	2	4	4	4	0	0	0
	0	0	0	0	3	3	3	2	2	2	2	2
		1	1	1	0	0	0	3	3	3	3	3

ii) Implementation of FIFO page replacement algorithm in C?

The implementation of FIFO page replacement algorithm in C is given below:

Code:

```
//implementation of FIFO page replacement in c++

#include<bits/stdc++.h>

using namespace std;

int pageFaults(int pages[], int n, int capacity)

{

    unordered_set<int> s;

    queue<int> indexes;

    int page_faults = 0;

    for (int i=0; i<n; i++)
```

```
{
    if (s.size() < capacity)
    {
        if (s.find(pages[i])==s.end())
        {
            s.insert(pages[i]);
            page_faults++;
            indexes.push(pages[i]);
        }
    }
    else
    {

        if (s.find(pages[i]) == s.end())
        {
            int val = indexes.front();
            indexes.pop();
            s.erase(val);
            s.insert(pages[i]);
            indexes.push(pages[i]);
            page_faults++;
        }
    }
```

```
    }

    return page_faults;

}

int main()

{

    int pages[] = {7, 0, 1, 2, 0, 3, 0, 4,

                   2, 3, 0, 3, 2};

    int n = sizeof(pages)/sizeof(pages[0]);

    int capacity = 3;

    cout <<"The total no. of page faults: "<< pageFaults(pages, n,
capacity)<<endl;

    return 0;

}
```

Output: