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#include <iostream>

using namespace std;

int main() {

    int n, frames, pageFaults = 0;

    int page[100], memory[100], front = 0;

    cout << "Enter number of pages: ";

    cin >> n;

    cout << "Enter the page reference string:\n";

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

        cin >> page[i];

    }

    cout << "Enter number of frames: ";

    cin >> frames;

    // Initialize memory frames to -1 (empty)

    for (int i = 0; i < frames; i++) {

        memory[i] = -1;

    }

    cout << "\nPage\tFrames\t\tPage Fault\n";

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

        bool found = false;
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// Check if page is already in memory
for (int j = 0; j < frames; j++) {
    if (memory[j] == page[i]) {
        found = true;
        break;
    }
}

// If not found, it's a page fault
if (!found) {
    memory[front] = page[i];
    front = (front + 1) % frames; // Circular replacement
    pageFaults++;
}

// Print current memory state
cout << page[i] << "\t";
for (int j = 0; j < frames; j++) {
    if (memory[j] != -1)
        cout << memory[j] << " ";
    else
        cout << "- ";
}
cout << "\t\t" << (found ? "No" : "Yes") << "\n";
}

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    cout << "\nTotal Page Faults: " << pageFaults << endl;

    return 0;
}

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FIFO

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#include<iostream>

using namespace std;

int main()
{
    int i,j,n,page[100],frame[10],fsize,k,avail,count=0;

    cout<<"Enter the total number of pages"<<endl;

    cin>>n;

    cout<<"\nEnter the page numbers : "<<endl;

    for(i=1;i<=n;i++)

        cin>>page[i];

    cout<<"\nEnter the frame size"<<endl;

    cin>>fsize;

    for(i=0;i<fsize;i++)

        frame[i]= -1;

    j=0;

    cout<<"\nPage No.\t Page frames\n";

    for(i=1;i<=n;i++)

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{
    cout<<page[i]<<"\t\t";
    avail=0;
    for(k=0;k<fsize;k++)
        if(frame[k]==page[i])
            avail=1;
    if (avail==0)
    {
        frame[j]=page[i];
        j=(j+1)%fsize;
        count++;
        for(k=0;k<fsize;k++)
    }
    cout<<endl;
    cout<<frame[k]<<"\t";
}
cout<<"Page Fault Is "<<count<<endl;
return 0;
}

```

