

### **Experiment-31:Construct a C program to simulate the First in First Out paging technique of memory management.**

Aim:

To simulate the First In First Out (FIFO) paging technique of memory management in C.

Procedure:

1. Take the number of pages and the number of frames as input.
2. Simulate the FIFO algorithm by storing pages in frames.
3. If a page needs to be loaded and all frames are occupied, replace the page that has been in memory the longest.
4. Keep track of page faults and display the results.

C Program:

```
#include <stdio.h>
```

```
int main() {
```

```
    int frames, pages, page_faults = 0, pointer = 0;
```

```
    printf("Enter the number of frames: ");
```

```
    scanf("%d", &frames);
```

```
    printf("Enter the number of pages: ");
```

```
    scanf("%d", &pages);
```

```
    int page_sequence[pages], frame[frames];
```

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

```
        frame[i] = -1;
```

```
    }
```

```
    printf("Enter the page reference string: ");
```

```
    for (int i = 0; i < pages; i++) {
```

```
        scanf("%d", &page_sequence[i]);
```

```
}
```

```
for (int i = 0; i < pages; i++) {
```

```
    int page_found = 0;
```

```
    for (int j = 0; j < frames; j++) {
```

```
        if (frame[j] == page_sequence[i]) {
```

```
            page_found = 1;
```

```
            break;
```

```
        }
```

```
    }
```

```
    if (!page_found) {
```

```
        frame[pointer] = page_sequence[i];
```

```
        pointer = (pointer + 1) % frames;
```

```
        page_faults++;
```

```
    }
```

```
    printf("Frame state after page %d: ", page_sequence[i]);
```

```
    for (int j = 0; j < frames; j++) {
```

```
        if (frame[j] != -1) {
```

```
            printf("%d ", frame[j]);
```

```
        } else {
```

```
            printf(" - ");
```

```
        }
```

```
    }
```

```
    printf("\n");
```

```
}
```

```
    printf("Total page faults: %d\n", page_faults);  
  
    return 0;  
}
```

Output:

### Output

```
Enter the number of frames: 2  
Enter the number of pages: 2  
Enter the page reference string: 1  
2  
Frame state after page 1: 1 -  
Frame state after page 2: 1 2  
Total page faults: 2  
  
192372048|  
=== Code Execution Successful ===
```