

FCFS

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

```
int main() {
```

```
    int pages[30], frame[10], n, f, i, j, k = 0, flag, fault = 0;
```

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

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

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

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

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

```
    printf("Enter number of frames (min 3): ");
```

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

```
    for(i = 0; i < f; i++)
```

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

```
    printf("\nPage\tFrames\t\tPage Fault\n");
```

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

```
        flag = 0;
```

```
        for(j = 0; j < f; j++) {
```

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

```
                flag = 1;
```

```
                break;
```

```
            }
```

```
        }
```

```
        if(flag == 0) {
```

```
            frame[k] = pages[i];
```

```
            k = (k + 1) % f;
```

```

        fault++;
    }

    printf("%d\t", pages[i]);
    for(j = 0; j < f; j++) {
        if(frame[j] != -1)
            printf("%d ", frame[j]);
        else
            printf("- ");
    }
    if(flag == 0)
        printf("\tPage Fault %d", fault);
    printf("\n");
}

printf("\nTotal Page Faults: %d\n", fault);
return 0;
}

```

Enter number of pages: 10

Enter the page reference string:

7 0 1 2 0 3 0 4 2 3

Enter number of frames: 3

Page	Frames	Page Fault
7	7 - -	Page Fault 1
0	7 0 -	Page Fault 2
1	7 0 1	Page Fault 3
2	2 0 1	Page Fault 4
0	2 0 1	

3	2 3 1	Page Fault 5
0	2 3 0	Page Fault 6
4	4 3 0	Page Fault 7
2	4 2 0	Page Fault 8
3	4 2 3	Page Fault 9

Total Page Faults: 9

1 FCFS (First Come First Serve)

Logic:

- Pages are replaced **in the order they entered** the frames (like a queue).
- The **oldest page** gets replaced first.

Step-by-Step Table:

Page Frames (from oldest → newest) Page Fault? Explanation

7	7 - -	✓	7 inserted (empty frame)
0	7 0 -	✓	0 inserted
1	7 0 1	✓	1 inserted
2	2 0 1	✓	7 (oldest) replaced
0	2 0 1	✗	0 already present
3	2 3 1	✓	0 next oldest replaced
0	2 3 0	✓	1 replaced
4	4 3 0	✓	2 replaced
2	4 2 0	✓	3 replaced
3	4 2 3	✓	0 replaced