

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 int mutex = 1;
4 int full = 0;
5 int empty = 10, x = 0;
6 void producer()
7 {
8     --mutex;
9     ++full;
10    --empty;
11    x++;
12    printf("\nProducer produces "
13           "item %d",
14           x);
15    ++mutex;
16 }
17 void consumer()
18 {
19     --mutex;
20     --full;
21     ++empty;
22    printf("\nConsumer consumes "
23           "item %d",
24           x);
25    x--;
```

```
1. Press 1 for Producer
2. Press 2 for Consumer
3. Press 3 for Exit
Enter your choice:1

Producer produces item 1
Enter your choice:1

Producer produces item 2
Enter your choice:2

Consumer consumes item 2
Enter your choice:1

Producer produces item 2
Enter your choice:3

-----
Process exited after 27.35 seconds with return value 0
Press any key to continue . . .
```

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\pushpaja\OneDrive\Documents\producer-consumer.exe
- Output Size: 126.24609375 KiB
- Compilation Time: 0.63s
```

```
1 #include <stdio.h>
2 #include <stdio.h>
3 int main()
4 {
5     int referenceString[10], pageFaults = 0, m, n, s, pages, frames;
6     printf("\nEnter the number of Pages:\t");
7     scanf("%d", &pages);
8     printf("\nEnter reference string values:\n");
9     for( m = 0; m < pages; m++)
10     {
11         printf("Value No. [%d]:\t", m + 1);
12         scanf("%d", &referenceString[m]);
13     }
14     printf("\nWhat are the total number of frames:\t");
15     {
16         scanf("%d", &frames);
17     }
18     int temp[frames];
19     for(m = 0; m < frames; m++)
20     {
21         temp[m] = -1;
22     }
23     for(m = 0; m < pages; m++)
24     {
25         s = 0;
```

```
Enter the number of Pages: 4

Enter reference string values:
Value No. [1]: 12
Value No. [2]: 15
Value No. [3]: 35
Value No. [4]: 29

What are the total number of frames: 3

12    -1    -1
12    15    -1
12    15    35
29    15    35
Total Page Faults: 4

-----
Process exited after 55 seconds with return value 0
```

Abort Compilation

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\pushpaja\OneDrive\Documents\FIFO paging.exe
- Output Size: 126.4345703125 KiB
- Compilation Time: 1.81s
```

☐ Shorten compiler paths

```
1 #include<stdio.h>
2 int findLRU(int time[], int n){
3     int i, minimum = time[0], pos = 0;
4     for(i = 1; i < n; ++i){
5         if(time[i] < minimum){
6             minimum = time[i];
7             pos = i;
8         }
9     }
10    return pos;
11 }
12 int main()
13 {
14     int no_of_frames, no_of_pages, frames[10], pages[10];
15     printf("Enter number of frames: ");
16     scanf("%d", &no_of_frames);
17     printf("Enter number of pages: ");
18     scanf("%d", &no_of_pages);
19     printf("Enter reference string: ");
20     for(i = 0; i < no_of_pages; ++i){
21         scanf("%d", &pages[i]);
22     }
23     for(i = 0; i < no_of_frames; ++i){
24         frames[i] = -1;
25     }
```

Abort Compilation

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\pushpaja\OneDrive\Documents\LRU paging.exe
- Output Size: 126.296875 KiB
- Compilation Time: 0.22s
```

☐ Shorten compiler paths

```
Enter number of frames: 4
Enter number of pages: 3
Enter reference string: 5
```

```
1
2
5    -1    -1    -1
5     1    -1    -1
5     1     2    -1
```

Total Page Faults = 3

```
-----
Process exited after 9.69 seconds with return value 0
Press any key to continue . . .
```

```
1 #include<stdio.h>
2 int main()
3 {
4     int no_of_frames, no_of_pages, frames[10], pages[30], temp[10], flag1, flag2, flag3, i, j, k, pos, max, faults = 0;
5     printf("Enter number of frames: ");
6     scanf("%d", &no_of_frames);
7     printf("Enter number of pages: ");
8     scanf("%d", &no_of_pages);
9     printf("Enter page reference string: ");
10    for(i = 0; i < no_of_pages; ++i){
11        scanf("%d", &pages[i]);
12    }
13    for(i = 0; i < no_of_frames; ++i){
14        frames[i] = -1;
15    }
16    for(i = 0; i < no_of_pages; ++i){
17        flag1 = flag2 = 0;
18        for(j = 0; j < no_of_frames; ++j){
19            if(frames[j] == pages[i]){
20                flag1 = flag2 = 1;
21                break;
22            }
23        }
24        if(flag1 == 0){
25            for(j = 0; j < no_of_frames; ++j){
```

```
C:\Users\pushpaja\OneDrive\Documents\optimal paging.exe
Enter number of frames: 3
Enter number of pages: 4
Enter page reference string: 2
5
8
4
2      -1      -1
2      5      -1
2      5      8
4      5      8

Total Page Faults = 4
-----
Process exited after 11.41 seconds with return value 0
Press any key to continue . . .
```

Abort Compilation

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\pushpaja\OneDrive\Documents\optimal paging.exe
- Output Size: 126.7646484375 KiB
- Compilation Time: 0.19s
```

☐ Shorten compiler paths


```
1 #include <stdio.h>
2 int current[5][5], maximum_claim[5][5], available[5];
3 int allocation[5] = {0, 0, 0, 0, 0};
4 int maxres[5], running[5], safe = 0;
5 int counter = 0, i, j, exec, resources, processes, k = 1;
6
7 int main()
8 {
9     printf("\nEnter number of processes: ");
10     scanf("%d", &processes);
11
12     for (i = 0; i < processes; i++)
13     {
14         running[i] = 1;
15         counter++;
16     }
17     printf("\nEnter number of resources: ");
18     scanf("%d", &resources);
19
20     printf("\nEnter Claim Vector:");
21     for (i = 0; i < resources; i++)
22     {
23         scanf("%d", &maxres[i]);
24     }
25 }
```

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\pushpaja\OneDrive\Documents\bankers algorithm.
- Output Size: 128.26171875 KiB
- Compilation Time: 0.31s
```

```
C:\Users\pushpaja\OneDrive\Documents\bankers algorithm.exe

Enter number of processes: 2

Enter number of resources: 2

Enter Claim Vector:1 2

Enter Allocated Resource Table:
1 2 3 4 5 6

Enter Maximum Claim Table:
2 3 4 5 6 7

The Claim Vector is:      1      2
The Allocated Resource Table:
      1      2
      3      4

The Maximum Claim Table:
      5      6
      2      3

Allocated resources:      4      6
Available resources:      -3     -4

The processes are in unsafe state.

-----
Process exited after 39.03 seconds with return value 0
Press any key to continue . . .
```