



14.2 KB



main.c



Share



Run

Output

Clear

```
4 {
5     FILE *fptr1, *fptr2;
6     char filename[100], c;
7     printf("Enter the filename to open for reading \n");
8     scanf("%s", filename);
9     fptr1 = fopen(filename, "r");
10    if (fptr1 == NULL)
11    {
12        printf("cannot open file %s \n", filename);
13        exit(0);
14    }
15    printf("Enter the filename to open for writing \n");
16    scanf("%s", filename);
17    fptr2 = fopen(filename, "w");
18    if (fptr2 == NULL)
19    {
20        printf("cannot open file %s \n", filename);
21        exit(0);
22    }
```

```
*Enter the filename to open reading:input.txt.
*Enter the filename to open writing:output.txt.
Contents copied to output.txt
```

```
--- Code execution successful ---
```

```

Project Classes Debug | p.192472187.17.cpp |
--- main() : int
1  #include <stdio.h>
2  #include <stdbool.h>
3  #define P 5 // Number of processes
4  #define R 3 // Number of resources
5  int main() {
6      int i, j, k;
7      int alloc[P][R] = { {0, 1, 0},
8                          {2, 0, 0},
9                          {3, 0, 2},
10                         {2, 1, 1},
11                         {0, 0, 2} };
12      int max[P][R] = { {7, 5, 3},
13                       {3, 2, 2},
14                       {9, 0, 2},
15                       {2, 2, 2},
16                       {4, 3, 3} };
17      int avail[R] = {3, 3, 2};
18      int need[P][R];
19      for (i = 0; i < P; i++) {
20          for (j = 0; j < R; j++) {
21              need[i][j] = max[i][j] - alloc[i][j];
22          }
23      }
24      bool finish[P] = {0};
25      int safeSeq[P]; // To store the safe sequence
26      int count = 0;
27      while (count < P) {
28          bool found = false;
29          for (i = 0; i < P; i++) {
30              if (!finish[i]) {
31                  // Check if needs can be met
32                  for (j = 0; j < R; j++)

```

```

C:\Users\Veera Vaishnavi\Down x + - □ ×
System is in a safe state.
Safe sequence is: P1 P3 P4 P0 P2

-----
Process exited after 5.489 seconds with return val
ue 0
Press any key to continue . . .

```

Compiler Resources Compile Log Debug Find Results Close

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Veera Vaishnavi\Downloads\p.192472187.17.exe
- Output Size: 129.7724609375 KiB
- Compilation Time: 0.30s

Line: 26 Col: 19 Sel: 0 Lines: 60 Length: 1713 Insert Done parsing in 0.016 seconds



Project Classes Debug p.192472187.18.cpp

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <pthread.h>
4  #include <semaphore.h>
5  #include <unistd.h>
6
7  #define SIZE 5
8
9  int buffer[SIZE];
10 int in = 0, out = 0;
11
12 sem_t empty, full;
13 pthread_mutex_t mutex;
14
15 void* producer(void* arg) {
16     int item;
17     for (int i = 0; i < 10; i++) {
18         item = rand() % 100;
19
20         sem_wait(&empty);
21         pthread_mutex_lock(&mutex);
22
23         buffer[in] = item;
24         printf("Produced: %d\n", item);
25         in = (in + 1) % SIZE;
26
27         pthread_mutex_unlock(&mutex);
28         sem_post(&full);
29
30         sleep(1);
31     }
32     return NULL;
```

```
Produced: 0
Consumed: 34
Produced: 69
Produced: 24
Consumed: 0
Produced: 78
Produced: 58
Consumed: 69
Produced: 62
Produced: 64
Consumed: 24
Consumed: 78
Consumed: 58
Consumed: 62
Consumed: 64

-----
Process exited after 44.38 seconds with return value 0
Press any key to continue . . .
```

Compiler Resources Compile Log Debug Find Results Close

Abort Compilation

Compilation results...

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Veera Vaishnavi\Downloads\p.192472187.18.exe
- Output Size: 188.392578125 KiB
- Compilation Time: 0.38s
```

Line: 72 Col: 1 Sel: 0 Lines: 72 Length: 1399 Insert Done parsing in 0.172 seconds



Project Classes Debug p.192472187.18.cpp p.192472187.19.cpp

```
1 #include <stdio.h>
2 #include <pthread.h>
3
4 int counter = 0;
5 pthread_mutex_t lock;
6
7 void* increment(void* arg) {
8     for (int i = 0; i < 1000000; i++) {
9         pthread_mutex_lock(&lock);
10        counter++;
11        pthread_mutex_unlock(&lock);
12    }
13    return NULL;
14 }
15
16 int main() {
17     pthread_t t1, t2;
18
19     pthread_mutex_init(&lock, NULL);
20
21     pthread_create(&t1, NULL, increment, NULL);
22     pthread_create(&t2, NULL, increment, NULL);
23
24     pthread_join(t1, NULL);
25     pthread_join(t2, NULL);
26
27     pthread_mutex_destroy(&lock);
28
29     printf("Final counter value: %d\n", counter);
30     return 0;
31 }
32
```

C:\Users\Veera Vaishnavi\Downloads\p.192472187.19.exe

Final counter value: 2000000

```
-----
Process exited after 12.34 seconds with return
value 0
Press any key to continue . . .
```

Compiler Resources Compile Log Debug Find Results Close

Abort Compilation

Compilation results...

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Veera Vaishnavi\Downloads\p.192472187.19.exe
- Output Size: 183.3515625 KiB
- Compilation Time: 0.33s
```

Line: 32 Col: 1 Sel: 0 Lines: 32 Length: 629 Insert Done parsing in 0.015 seconds

Project Classes Debug | reader writer OS.cpp |

```

1  #include <stdio.h>
2  #include <pthread.h>
3  #include <semaphore.h>
4  #include <unistd.h>
5
6  // Shared data
7  int data = 0;
8  int readerCount = 0;
9
10 // Semaphores
11 sem_t mutex; // For protecting readerCount
12 sem_t writeBlock; // For writers
13
14 // Reader function
15 void* reader(void* arg) {
16     int id = *((int*)arg);
17
18     sem_wait(&mutex);
19     readerCount++;
20     if (readerCount == 1) {
21         sem_wait(&writeBlock); // First reader locks the writer
22     }
23     sem_post(&mutex);
24
25     // Reading section
26     printf("Reader %d: read data = %d\n", id, data);
27     sleep(1); // Simulate read time
28
29     sem_wait(&mutex);
30     readerCount--;
31     if (readerCount == 0) {
32         sem_post(&writeBlock); // Last reader releases the writer

```

```

C:\Users\Veera Vaishnavi\Down x + v
Reader 1: read data = 0
Reader 2: read data = 0
Reader 3: read data = 0
Reader 5: read data = 0
Reader 4: read data = 0
Writer 1: wrote data = 10
Writer 2: wrote data = 20

-----
Process exited after 3.113 seconds with return value 0
Press any key to continue . . .

```

Compiler Resources Compile Log Debug Find Results Close

Compilation results...

```

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Veera Vaishnavi\Downloads\reader writer OS.exe
- Output Size: 188.2275390625 KiB
- Compilation Time: 0.91s

```