

```
1  #include <pthread.h>
2  #include <stdio.h>
3  #include <stdlib.h>
4  #include <unistd.h>
5  #include <errno.h>
6
7  // condition variables - User-made Barrier example
8
9  pthread_mutex_t mutex;
10 pthread_cond_t cond;
11 int nThread = 5;
12 int nJoined=0;
13
14
15 void initBarrier(){
16     pthread_mutex_init(&mutex, NULL);
17     pthread_cond_init(&cond, NULL);
18 }
19
20 void barrier(){
21     pthread_mutex_lock(&mutex);
22     nJoined++;
23     while(nJoined<nThread){
24         pthread_cond_wait(&cond, &mutex);
25     }
26     pthread_mutex_unlock(&mutex);
27     pthread_cond_broadcast(&cond);
28 }
29
30 void destroyBarrier(){
31     pthread_mutex_destroy(&mutex);
32     pthread_cond_destroy(&cond);
33 }
34
35 void* start(void* arg) {
36     printf("inizio\n");
37     barrier();
38     printf("fine\n");
39     return NULL;
40 }
41
42 int main(int argc, char* argv[]) {
43     pthread_t th[nThread];
44     initBarrier();
45     for (int i = 0; i < nThread; i++) {
46         pthread_create(&th[i], NULL, &start, NULL);
47     }
48
49     for (int i = 0; i < nThread; i++) {
50         pthread_join(th[i], NULL);
51     }
52     destroyBarrier();
53     return 0;
54 }
55 }
```