

```
1 #include <stdio.h>
2 #include <unistd.h>
3 #include <stdlib.h>
4 #include <string.h>
5 #include <pthread.h>
6 #include <semaphore.h>
7
8 void *func(void *arg);
9 sem_t sem;
10
11 #define BUFSIZE 1024
12 char buf[BUFSIZE];
13
14 int main() {
15     pthread_t t;
16
17     if( sem_init(&sem, 0, 0) != 0 ) {
18         perror("Semaphore initialization failed");
19         exit(EXIT_FAILURE);
20     }
21
22     if( pthread_create(&t, NULL, func, NULL) != 0 ) {
23         perror("Thread creation failed");
24         exit(EXIT_FAILURE);
25     }
26
27     puts("Please input some text. Ctrl-d to quit.");
28
29     while( fgets(buf, BUFSIZE, stdin) != NULL ){
30         puts("got you."); sem_post(&sem);
31     }
32
33     puts("main: pressed Ctrl-d");
34     buf[0]='e';
35     sem_post(&sem);
36
37     puts("\nWaiting for thread to finish...");
38     if( pthread_join(t, NULL) != 0 ) {
39         perror("Thread join failed");
40         exit(EXIT_FAILURE);
41     }
42
43     sem_destroy(&sem); puts("Thread joined.");
44 }
```

```
45     exit(EXIT_SUCCESS);
46 }
47
48 void *func(void *arg) {
49     sem_wait(&sem);
50     while( buf[0] != 'e' ) {
51         printf("You input %ld characters\n", strlen(buf)-1 );
52         sem_wait(&sem);
53     }
54     puts("thread: exiting...");
55     pthread_exit(NULL);
56 }
```