```c
#include <stdio.h>
#include <stdlib.h>
int mutex = 1;
int full = 0;
int empty = 10;
int x = 0;
void producer() {
    --mutex;
    ++full;
    --empty;
    x++;
    printf("\nProducer produces item %d\n", x);
    ++mutex;
}
void consumer() {
    --mutex;
    --full;
    ++empty;
    printf("\nConsumer consumes item %d\n", x);
    x--;
    ++mutex;
}
int main() {
    int n;
    printf("1. Press 1 for Producer\n2. Press 2 for Consumer\n3. Press 3 for Exit\n");
    while (1) {
        printf("\nEnter your choice: ");
        scanf("%d", &n);
```

```c
29            switch (n) {
30                case 1:
31                    if ((mutex == 1) && (empty != 0)) {
32                        producer();
33                    } else {
34                        printf("Buffer is full!\n");
35                    }
36                    break;
37                case 2:
38                    if ((mutex == 1) && (full != 0)) {
39                        consumer();
40                    } else {
41                        printf("Buffer is empty!\n");
42                    }
43                    break;
44                case 3:
45                    exit(0);
46                default:
47                    printf("Invalid choice, try again.\n");
48            }
49        }
50    return 0;
51 }
```

```
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: 3

_____
Process exited after 35.52 seconds with return value 0
Press any key to continue . . .
```