

Thread Message Project Test Cases

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Thank you for the extension, Gusty. We really appreciate it!

Instruction File Test Cases:

1. Show that send_msg blocks when the message queue contains num_msgs.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 3
test fill and empty msgq
Send? y
sending: msg1
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: msg2
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: hellomsg
Do you want to add another element. If so type the name otherwise type 'n' arsalan_message
Array is full
Blocked
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$
```

2. Show that `recv_msg` blocks when the message queue is empty.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 2
test fill msgs and pass it on
Send? y
sending: msg1
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: msg2
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: hellormsg
Do you want to add another element. If so type the name otherwise type 'n' n
Send? n
msgq_show() after filling for test 2:
I am going to display all the messages
0 msg1
1 msg2
2 hellormsg
3 (null)
This is me: 1
This is me: 2
passiton1 initial msgq_len: 4
passiton1: 0x7f5235fcfee0 0x7f5236c01998 msg1
passiton1 after recv msgq_len: 3
passiton1 after send msgq_len: 3
passiton2 initial msgq_len: 3
passiton2: 0x7f52357bfee0 0x7f5236c0199d msg2
passiton2 after recv msgq_len: 2
passiton2 after send msgq_len: 2
passiton1 initial msgq_len: 2
passiton1: 0x7f5235fcfee0 0x7f5236c019a2 hellormsg
passiton1 after recv msgq_len: 1
passiton1 after send msgq_len: 1
passiton2 initial msgq_len: 1
Blocked
```

3. Solve a producer consumer problem with your message queue and five threads.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room
test fill and empty msgq

Time to create messages
Producer 1: Insert msg2 at 0
Producer 1: Insert gustymsg at 1
Producer 1: Insert msg2 at 2
Producer 1: Insert gustymsg at 3
Consumer 3: consumes msg2 at 1
Consumer 4: consumes msg2 at 1
Consumer 5: consumes msg2 at 1
Producer 1: Insert gustymsg at 4
Producer 1: Insert gustymsg at 5
Producer 1: Insert msg2 at 6
Producer 1: Insert hellomsg at 7
Producer 1: Insert gustymsg at 8
Producer 1: Insert hellomsg at 9
Producer 1: Insert msg1 at 10
Producer 1: Insert gustymsg at 11
Producer 1: Insert msg1 at 12
Producer 1: Insert gustymsg at 13
Producer 1: Insert msg1 at 14
Producer 1: Insert msg1 at 15
Producer 1: Insert gustymsg at 16
Producer 1: Insert msg2 at 17
Producer 1: Insert hellomsg at 18
Producer 1: Insert msg2 at 19
Producer 1: Insert hellomsg at 20
Producer 1: Insert hellomsg at 21
Producer 1: Insert hellomsg at 22
Producer 1: Insert msg2 at 23
Producer 1: Insert msg2 at 24
Producer 1: Insert msg2 at 25
Producer 1: Insert msg1 at 26
Producer 1: Insert gustymsg at 27
Producer 1: Insert msg2 at 28
Producer 1: Insert hellomsg at 29
Producer 1: Insert msg2 at 30
Producer 1: Insert hellomsg at 31
Producer 1: Insert hellomsg at 32
Producer 1: Insert hellomsg at 33
Producer 1: Insert msg2 at 34
Producer 1: Insert msg2 at 35
Producer 1: Insert msg2 at 36
Producer 1: Insert hellomsg at 37
Producer 1: Insert gustymsg at 38
Producer 1: Insert msg1 at 39
Producer 1: Insert msg2 at 40
```

```
Producer 1: Insert msg2 at 34
Producer 1: Insert msg2 at 35
Producer 1: Insert msg2 at 36
Producer 1: Insert hellomsg at 37
Producer 1: Insert gustymsg at 38
Producer 1: Insert msg1 at 39
Producer 1: Insert msg2 at 40
Producer 1: Insert gustymsg at 41
Producer 1: Insert gustymsg at 42
Producer 1: Insert msg2 at 43
Producer 1: Insert hellomsg at 44
Producer 1: Insert msg1 at 45
Producer 1: Insert msg2 at 46
Producer 1: Insert hellomsg at 47
Consumer 5: consumes msg2 at 1
Producer 2: Insert msg2 at 48
Producer 2: Insert gustymsg at 49
Producer 2: Insert gustymsg at 50
Producer 2: Insert gustymsg at 51
Producer 2: Insert msg2 at 52
Producer 2: Insert msg2 at 53
Producer 2: Insert msg1 at 54
Producer 2: Insert gustymsg at 55
Producer 2: Insert hellomsg at 56
Producer 2: Insert msg1 at 57
Producer 2: Insert hellomsg at 58
Producer 2: Insert gustymsg at 59
Producer 2: Insert gustymsg at 60
Producer 2: Insert gustymsg at 61
Producer 2: Insert msg2 at 62
Producer 2: Insert msg2 at 63
Producer 2: Insert hellomsg at 64
Producer 2: Insert gustymsg at 65
Producer 2: Insert hellomsg at 66
Producer 2: Insert gustymsg at 67
Producer 2: Insert msg2 at 68
Producer 2: Insert msg2 at 69
Producer 2: Insert msg1 at 70
Producer 2: Insert hellomsg at 71
Producer 2: Insert msg1 at 72
Producer 2: Insert gustymsg at 73
Producer 2: Insert gustymsg at 74
Producer 2: Insert gustymsg at 75
Producer 2: Insert gustymsg at 76
Producer 2: Insert msg1 at 77
Producer 2: Insert msg2 at 78
Producer 2: Insert msg2 at 79
Producer 2: Insert gustymsg at 80
Producer 2: Insert msg1 at 81
```

```
Consumer 5: consumes msg2 at 37
Consumer 4: consumes gustymsg at 6
Consumer 4: consumes gustymsg at 39
Consumer 4: consumes msg1 at 40
Consumer 4: consumes msg2 at 41
Consumer 4: consumes gustymsg at 42
Consumer 4: consumes gustymsg at 43
Consumer 4: consumes msg2 at 44
Consumer 4: consumes hellormsg at 45
Consumer 4: consumes msg1 at 46
Consumer 4: consumes msg2 at 47
Consumer 4: consumes hellormsg at 48
Consumer 4: consumes msg2 at 49
Consumer 4: consumes gustymsg at 50
Consumer 4: consumes gustymsg at 51
Consumer 4: consumes gustymsg at 52
Consumer 4: consumes msg2 at 53
Consumer 4: consumes msg2 at 54
Consumer 4: consumes msg1 at 55
Consumer 4: consumes gustymsg at 56
Consumer 4: consumes hellormsg at 57
Consumer 4: consumes msg1 at 58
Consumer 4: consumes hellormsg at 59
Consumer 4: consumes gustymsg at 60
Consumer 4: consumes gustymsg at 61
Consumer 4: consumes gustymsg at 62
Consumer 4: consumes msg2 at 63
Consumer 4: consumes msg2 at 64
Consumer 4: consumes hellormsg at 65
Consumer 4: consumes gustymsg at 66
Consumer 4: consumes hellormsg at 67
Consumer 4: consumes gustymsg at 68
Consumer 4: consumes msg2 at 69
Consumer 3: consumes gustymsg at 5
Consumer 3: consumes msg1 at 71
Consumer 3: consumes hellormsg at 72
Consumer 3: consumes msg1 at 73
Consumer 3: consumes gustymsg at 74
Consumer 3: consumes gustymsg at 75
Consumer 3: consumes gustymsg at 76
Consumer 3: consumes gustymsg at 77
Consumer 3: consumes msg1 at 78
Consumer 3: consumes msg2 at 79
Consumer 3: consumes msg2 at 80
Consumer 3: consumes gustymsg at 81
Consumer 3: consumes msg1 at 82
Consumer 3: consumes msg1 at 83
Consumer 3: consumes msg2 at 84
Consumer 3: consumes hellormsg at 85
```

```
Consumer 3: consumes gustymsg at 75
Consumer 3: consumes gustymsg at 76
Consumer 3: consumes gustymsg at 77
Consumer 3: consumes msg1 at 78
Consumer 3: consumes msg2 at 79
Consumer 3: consumes msg2 at 80
Consumer 3: consumes gustymsg at 81
Consumer 3: consumes msg1 at 82
Consumer 3: consumes msg1 at 83
Consumer 3: consumes msg2 at 84
Consumer 3: consumes hellomsg at 85
Consumer 3: consumes msg2 at 86
Consumer 3: consumes msg1 at 87
Consumer 3: consumes msg1 at 88
Consumer 3: consumes msg2 at 89
Consumer 3: consumes hellomsg at 90
Consumer 3: consumes msg1 at 91
Consumer 3: consumes msg1 at 92
Consumer 3: consumes hellomsg at 93
Consumer 3: consumes msg2 at 94
Consumer 3: consumes msg2 at 95
Consumer 3: consumes msg1 at 96
Consumer 3: consumes msg1 at 97
Consumer 3: consumes gustymsg at 98
Consumer 3: consumes gustymsg at 99
Consumer 3: consumes msg2 at 100
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$
```

Average Test Cases:

1. Running the program with “./chat_room 3” command.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 3
test fill and empty msgq
Send?
```

2. Entering in ‘y’ with the ./chat_room 3” command.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 3
test fill and empty msgq
Send? y
sending: msg1
Do you want to add another element. If so type the name otherwise type 'n'
```

3. Entering in ‘Y’ with the ./chat_room 3” command.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 3
test fill and empty msgq
Send? Y
sending: msg1
Do you want to add another element. If so type the name otherwise type 'n'
```

4. Entering in ‘n’.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 3
test fill and empty msgq
Send? Y
sending: msg1
Do you want to add another element. If so type the name otherwise type 'n' n
Send?
```

5. Entering in 'y' 4 times with “./chat_room 2” command.

```
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$ ./chat_room 2
test fill msgs and pass it on
Send? y
sending: msg1
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: msg2
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: hellormsg
Do you want to add another element. If so type the name otherwise type 'n' n
Send? y
sending: gustymsg
Do you want to add another element. If so type the name otherwise type 'n' n
msgq_show() after filling for test 2:
I am going to display all the messages
0 msg1
1 msg2
2 hellormsg
3 gustymsg
This is me: 1
This is me: 2
passiton1 initial msgq_len: 4
passiton1: 0x7f92c7fcfee0 0x7f92c88e4008 msg1
passiton1 after recv msgq_len: 3
passiton1 after send msgq_len: 3
passiton2 initial msgq_len: 4
passiton2: 0x7f92c77bfee0 0x7f92c88e400d msg2
passiton2 after recv msgq_len: 2
passiton2 after send msgq_len: 2
passiton1 initial msgq_len: 2
passiton1: 0x7f92c7fcfee0 0x7f92c88e4012 hellormsg
passiton1 after recv msgq_len: 1
passiton1 after send msgq_len: 1
passiton2 initial msgq_len: 1
passiton2: 0x7f92c77bfee0 0x7f92c88e401b gustymsg
passiton2 after recv msgq_len: 0
passiton2 after send msgq_len: 0
lpittman@DESKTOP-S59F40M:~/CPSC-405/CPSC-405/Thread_Project$
```