

File Edit Selection View Go Run Terminal Help

Q: Lab6

EXPLORER

LAB6

- q1_recv
- q1_recv.c
- q1_send
- q1_send.c

q1_send.c q1_recv.c

```
1  /* Q1: Receiver - Check if received number is Palindrome */
2  #include <stdio.h>
3  #include <sys/ipc.h>
4  #include <sys/msg.h>
5
6  struct msg_buffer {
7      long msg_type;
8      int num;
9  } message;
10
11 int main() {
12     key_t key = ftok("progfile", 65);
13     int msgid = msgget(key, 0666 | IPC_CREAT);
14
15     msgrcv(msgid, &message, sizeof(message), 1, 0);
16
17     int n = message.num, rev = 0, rem, temp = n;
18     while (temp != 0) {
19         rem = temp % 10;
20         rev = rev * 10 + rem;
21         temp /= 10;
22     }
23
24     if (n == rev) printf("Number %d is a Palindrome.\n", n);
25     else printf("Number %d is NOT a Palindrome.\n", n);
26
27     msgctl(msgid, IPC_RMID, NULL);
28     return 0;
29 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Enter a message to send to child: Hello World!

Child received message: Hello World!

[1] + Done "/usr/bin/gdb" --interpreter=mi --tty=\${DbgTerm} 0<"/tmp/Microsoft-MIEngine-In-blumagjh.kc4" 1>"/tmp/Microsoft-MIEngine-Out-xukg3x2p.nly"

4ITA2@debian:~/krtin_240911550/Lab6\$

File Edit View Search Terminal Help

4ITA2@debian:~/krtin_240911550/Lab6\$ gcc q1_send.c -o q1_send
4ITA2@debian:~/krtin_240911550/Lab6\$ gcc q1_recv.c -o q1_recv
4ITA2@debian:~/krtin_240911550/Lab6\$./q1_send
Enter a number to send: 5
Number 5 sent.

4ITA2@debian:~/krtin_240911550/Lab6\$

File Edit View Search Terminal Help

4ITA2@debian:~/krtin_240911550/Lab6\$./recv
bash: ./recv: No such file or directory
4ITA2@debian:~/krtin_240911550/Lab6\$./q1_recv
Number 5 is a Palindrome.

4ITA2@debian:~/krtin_240911550/Lab6\$ date
Thursday 19 February 2026 03:34:21 PM IST
4ITA2@debian:~/krtin_240911550/Lab6\$

C/C++... ✓

cppdbg: q1

SUGGESTED ACTIONS

Build Workspace Show Config

q1_recv.c +

Describe what to build next:

Agent Auto

Ln 29, Col 2 Spaces: 4 UTF-8 LF { } C Linux

P EN 2 15:34

A screenshot of a Linux desktop environment, likely a Kali Linux distribution, showing a terminal window, a code editor, and a system tray.

Terminal Window:

```
4ITA2@debian:~/krtin_240911550/Lab6$ ./prod
Enter 4 integers: 10 20 30 40
4ITA2@debian:~/krtin_240911550/Lab6$
```

Code Editor (VS Code):

The code editor shows two files: `q2_producer.c` and `q2_consumer.c`. The `q2_producer.c` file contains the following C code:

```
/* Q2: Producer - Write 4 integers to FIFO */
#include <stdio.h>
#include <fcntl.h>
#include <sys/stat.h>
#include <unistd.h>

int main() {
    int fd, arr[4];
    mkfifo("myfifo", 0666);

    printf("Enter 4 integers: ");
    for(int i=0; i<4; i++) scanf("%d", &arr[i]);

    fd = open("myfifo", O_WRONLY);
    write(fd, arr, sizeof(int) * 4);
    close(fd);

    return 0;
}
```

The `q2_consumer.c` file is currently selected in the tabs.

Terminal Output:

```
4ITA2@debian:~/krtin_240911550/Lab6$ mkfifo myfifo
4ITA2@debian:~/krtin_240911550/Lab6$ ./cons
Consumer received: 10 20 30 40
4ITA2@debian:~/krtin_240911550/Lab6$ date
Thursday 19 February 2026 03:46:18 PM IST
4ITA2@debian:~/krtin_240911550/Lab6$
```

Bottom Panel:

- PROBLEMS**: Shows no errors.
- OUTPUT**: Shows the output of the producer and consumer programs.
- DEBUG CONSOLE**: Shows the GDB session for the producer.
- TERMINAL**: Shows the current terminal session.
- PORTS**: Shows network port information.

Suggested Actions:

- C/C++: ...
- cppdbg: q1

Status Bar:

Ln 21, Col 1 Spaces: 4 UTF-8 LF { } C Linux 15:46

File Edit Selection View Go Run Terminal Help Q Lab6

EXPLORER ... C q4_writer.c X C q4_reader.c CHAT + - x

LAB6 .vscode cons myfifo prod q1_recv C q1_recv.c q1_send C q1_send.c q2_consumer C q2_consumer.c q2_producer C q2_producer.c q3 C q3.c C q4_reader.c C q4_writer.c reader shmfile writer

q4_writer.c > main()

```
1  /* Q4: Writer - Write words into Shared Memory */
2  #include <stdio.h>
3  #include <sys/shm.h>
4
5  int main() {
6      key_t key = ftok("shmfile", 65);
7      int shmid = shmget(key, 1024, 0666 | IPC_CREAT);
8      char *str = (char*) shmat(shmid, (void*)0, 0);
9
10     printf("Enter words: ");
11     fgets(str, 100, stdin);
12
13     printf("Data written: %s", str);
14     shmdt(str);
15     return 0;
16 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Parent: Enter an alphabet: Child read:
A
Parent: Child replied with: A
[1] + Done "/usr/bin/gdb" --interpreter=mi --tty=\${DbgTerm} 0<"/tmp/Microsoft-MIEngine-In-ifddlrwd.rxz" 1>"/tmp/Microsoft-MIEngine-Out-tae3pagy.nqq"
● 4ITA2@debian:~/krtin_240911550/Lab6\$ date
Thu Feb 19 15:47:47 IST 2026
○ 4ITA2@debian:~/krtin_240911550/Lab6\$

4ITA2@debian:~/krtin_240911550/Lab6 File Edit View Search Terminal Help
4ITA2@debian:~/krtin_240911550/Lab6\$ gcc q4_writer.c -o writer
4ITA2@debian:~/krtin_240911550/Lab6\$ gcc q4_reader.c -o reader
4ITA2@debian:~/krtin_240911550/Lab6\$ touch shmfile
4ITA2@debian:~/krtin_240911550/Lab6\$./writer
Enter words: hello world!
Data written: hello world!
4ITA2@debian:~/krtin_240911550/Lab6\$

4ITA2@debian:~/krtin_240911550/Lab6 File Edit View Search Terminal Help
4ITA2@debian:~/krtin_240911550/Lab6\$./reader
Consumer read: hello world!
Shared memory deleted.
4ITA2@debian:~/krtin_240911550/Lab6\$ ^C
4ITA2@debian:~/krtin_240911550/Lab6\$ date
Thursday 19 February 2026 03:51:05 PM IST
4ITA2@debian:~/krtin_240911550/Lab6\$

with Agent
es may be inaccurate.
it Instructions to onboard
o your codebase.

cppdbg: q3 Build Workspace Show Config
q4_writer.c + Describe what to build next
Agent Auto 15:51

Ln 16, Col 2 Spaces: 4 UTF-8 LF { } C Linux