

Answer Key: Named Pipes (FIFOs) in Linux

Section A: Fill in the blanks

1. FIFO
2. mkfifo()
3. FIFO special file
4. mkfifo
5. not necessarily

Section B: Multiple Choice Questions

6. c) FIFO
7. d) Both b and c
8. c) open
9. b) Unrelated processes
10. c) <sys/stat.h>

Section C: Short Answer Questions

11. Unnamed pipes are used between related processes, named pipes can be used by unrelated processes via the filesystem.
12. mkfifo myfifo
13. echo "message" > myfifo
14. cat < myfifo
15. Blocking behavior, unidirectional communication, not suitable for complex data structures.

Bonus: Coding Task

Writer Process (writer.c):

```
#include <fcntl.h>
```

```
#include <sys/stat.h>
```

```
#include <unistd.h>
```

```
#include <stdio.h>
```

```
int main() {  
    mkfifo("myfifo", 0666);  
    int fd = open("myfifo", O_WRONLY);  
    write(fd, "Hello from writer!", 19);  
    close(fd);  
    return 0;  
}
```

Reader Process (reader.c):

```
#include <fcntl.h>  
#include <unistd.h>  
#include <stdio.h>
```

```
int main() {  
    char buf[100];  
    int fd = open("myfifo", O_RDONLY);  
    read(fd, buf, sizeof(buf));  
    printf("Received: %s\n", buf);  
    close(fd);  
    return 0;  
}
```