Comprehensive Guide to I/O Operations in Linux

[Previous content remains unchanged...]

5. Writing to a File

[Previous content remains unchanged...]

Questions and Answers:

Q1: What is 0666 that is specified in the open() call? What does it mean? A1: 0666 is the file permission mode in octal notation. It means the file will be created with read and write permissions for the owner, group, and others.

Q2: What is O_APPEND doing in the same call? Run the program again and check its output. A2: O_APPEND flag ensures that the data is appended to the end of the file. If you run the program multiple times, you'll see multiple timestamps in the file, one after another.

Q3: Modify the following line in the code and then compile and run the program and check its output. What has happened? From: `size_t length = strlen(timeStamp);` To: `size_t length = strlen(timeStamp)-5;` A3: By reducing the length by 5, you're truncating the last 5 characters of the timestamp. This will likely cut off the year and newline character from the timestamp in the file.

Q4: Modify the following line in the code and then compile and run the program and check its output. What has happened? From: `size_t length = strlen(timeStamp);` To: `size_t length = strlen(timeStamp)-5;` A4: When you modify the length to `strlen(timeStamp)-5`, you're reducing the number of characters written to the file by 5. Here's what happens:

1. The `strlen(timeStamp)` function returns the length of the entire timestamp string.
2. By subtracting 5 from this length, you're instructing the `write()` function to write fewer characters than the full timestamp.
3. As a result, the last 5 characters of the timestamp will not be written to the file.

For example, if the original timestamp was:

```
Wed Oct 11 15:30:45 2024
```

After this modification, the written timestamp might look like:

```
Wed Oct 11 15:30:45 2
```

The last five characters (including the newline character) are cut off. This demonstrates how the `length` parameter in the `write()` function controls exactly how many bytes are written to the file.

[Remaining content stays the same...]