mkdir() System Call Implementation in Linux Lite

What is mkdir()?

The mkdir() function is a system call used in UNIX-like operating systems to create a new directory. It is defined in the POSIX standard and is available via the following C headers:

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

This function provides low-level access to the filesystem and is typically used in C programs for tasks that require directory creation.

How to Implement mkdir() in linux lite

➤ **Step-by-Step: Implement mkdir() in Linux Lite**

1. Open the Terminal

- Press Ctrl + Alt + T or search for **"Terminal"** in the start menu.

2. Write the C Program

1. Create a new file:

```
nano mkdir_example.c
```

2. Paste the following code:

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

int main() {
   const char *path = "/home/yourusername/testdir";

   // Try to create the directory with owner-only permissions
   if (mkdir(path, 0700) == 0) {
      printf("Directory created successfully.\n");
   } else {
      perror("mkdir failed");
   }

   return 0;
}
```

3. Save and exit:

- Press Ctrl + O ‘n Enter to save
- Press Ctrl + X to exit nano

3. Compile the C Program

- Use gcc (the GNU Compiler) to compile it:

```
gcc mkdir_example.c -o mkdir_example
```

- This creates an executable file named mkdir_example.

4. Run the Program

- Now run it with:

```
./mkdir_example
```

- If the directory is created, it will print:

```
Directory created successfully.
```

- If there's an error (e.g., directory already exists), it will print something like:

```
mkdir failed: File exists
```

5. Check If the Directory Exist

- Check with:

```
ls /home/yourusername/
```

- You should see the new directory listed (e.g., testdir).

➤ **Optional: Use User Input Instead of Hardcoding**

You can modify the program to ask the user for a folder name:

```
#include <stdio.h>
#include <sys/stat.h>
#include <sys/types.h>
int main() {
   char path[100];
   printf("Enter the directory path to create: ");
```

```
    scanf("%s", path);
    if (mkdir(path, 0700) == 0) {
        printf("Directory created successfully.\n");
    } else {
        perror("mkdir failed");
    }
    return 0;
}
```