Lab 6

Instructions: Implement custom string functions.

Objectives:

- Continued practice with functions/function calls.
- Continued practice with strings.
- Continued practice with input/output.

Task: Implement the following functions in a C program called `Lab6.c`.

- **`void`** `reverse(`**`char`** `*str)`: Given some string `str`, prints the string in reverse. Example:
  - `reverse("test")` → Prints "`tset`".

- **`int`** `hasChar(`**`char`** `*str,` **`char`** `c)`: Returns 1 if `c` is contained in `str`, or 0 if not. Examples:
  - `hasChar("test", 't')` → 1
  - `hasChar("test", 'k')` → 0

- **`void`** `replaceChar(`**`char`** `*str,` **`char`** `old,` **`char`** `new)`: Replaces `old` with `new` in `str`.
  - `replaceChar("test", 't', 'k')` → "`kesk`"

In the `main` function, use `fgets` and `getchar` to prompt the user for different inputs, then print the results of the three functions as shown in Figure 1.

```
/home/user/CIS190/Lab6/$ ./Lab6.out
Enter a string: test
tset

Enter a string: test
Enter a char: t
hasChar = 1

Enter a string: test
Char to replace: t
Replace with: k
kesk
```

```
/home/user/CIS190/Lab6/$ ./Lab6.out
Enter a string: other test
tset rehto

Enter a string: test
Enter a char: k
hasChar = 0

Enter a string: other test
Char to replace: t
Replace with: X
oXher XesX
```

Figure 1. Example outputs for `Lab6.c`.

Submission details:

- Upload a compressed archive (e.g., .zip) containing `Lab6.c`.
- The archive should be named `Lab6_LastName`, where `LastName` is your last name.
- If you're on Linux, you can use the following command to create a .tar.gz archive from the terminal:

  ```
  $ tar -czvf Lab6_LastName.tar.gz Lab6.c
  ```

  where `LastName` is your last name.