

# COP 290: Assignment 2 Report

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## Directory structure

### BEFORE MAKE:

submit

```
|—— 2018CS10416_sh.c
|—— makefile
|—— run_shell.c
```

### AFTER MAKE:

submit

```
|—— 2018CS10416_sh.c
|—— makefile
|—— run_shell
|—— run_shell.c
|—— shell
```

## Execute instructions

**make** - builds all dependencies and runs the *run\_shell* wrapper code which runs *shell*.

**make clean** - removes the non-source files, namely *run\_shell* and *shell*.

**./run\_shell** - runs the shell wrapper as desired by the assignment specification.

**./shell** - independently runs the shell itself.

Note: the last two commands require the compilation step to be completed beforehand.

## Description

The shell conforms to all the specifications and has been rigorously tested to ensure that desired behaviour is produced.

A few salient features of the shell are:

- Presence or absence of spaces, tabs, etc. around `|`, `<`, `>` are supported.
- Any number of pipes are supported.
- Any combination of piping and redirection is supported.
- Piped parts are executed concurrently as in bash.
- Proper release of resources has been ensured.
- Highly descriptive error messages are used in case of error.
- Errors are handled gracefully without crashing.
- Memory leaks have been avoided.

Moreover, the code is well-commented and highly readable. Safe design and coding practices of C programming have been used throughout the code.