

Removing Comments from a Source File

Even though comments are essential for human readers, the compiler simply ignores them. If you are writing a compiler, you therefore need to be able to recognize and eliminate comments that occur in a source file.

Write a C++ program that copies characters from the input stream `is` to the output stream `os`, except the characters that appear inside C++ comments. Your implementation should recognize both comment conventions.

- Any text beginning with `/*` and ending with `*/`, possibly many lines later.
- Any text beginning with `//` and ending through the end of the line.

The `main()` routine in your program simply calls the following routines for each subtask:

- **`void open_files (ifstream& is, ofstream& os)`:** It opens the source file: `prog4-in.cc` for the input stream `is` and the source file: `prog4-out.cc` for the output stream `os`. If either file cannot be opened, it prints an error message on `stderr` and exits the program with the exit value `EXIT_FAILURE`.
- **`void process_data (ifstream& is, ofstream& os)`:** It gets the data from the input stream `is`, character by character, and it inserts an individual character in the output stream `os` if the character is not part of a C++ comment.
- **`void close_files (ifstream& is, ofstream& os)`:** It closes both the input and output source files associated with the streams `is` and `os` at the end of the program.