

C Programming Language Refresher Module for Operating Systems

August 20, 2020

Assignment 0.1 (Total points:)

Due date: Aug 31, 2020. Time: 23:59 Hrs. (Hard Deadline)

1 Understanding Program Compilation Process

This first exercise is aimed to take you through the compilation process. You task would be write out a simple C program – `hello.c`, that would have two local variables initialised to some values. Thereafter, you print them out via `printf()` function and exit the program. Your task is to use `gcc` compiler to walk through all the steps of compilation. The first step would be to pause at the pre-processing step. You need to explain the output of the pre-processing, based on the output file (derived by pausing the compilation at the preprocessing step). Thereafter, you need go via all the compilation steps and pause at each step, save the output file and explain the contents in each of these output files. You would require to refer to the `manpages` for `gcc` for the same.

What To Submit

- Program source code with Makefile to compile and pause the compilation at each phase.
- Write-up describing the following:
 - Gcc command-line options that pauses the compilation of the program at each step, along with their descriptions.
 - Description the outcomes of each step involving the description of the output file.

Grading Rubric

- Successful control of each compilation step via the Makefile – 10 points.
- Correct description of command-line options of GCC that controls each step of compilation – 20 points.

- Correct description of the output files obtained from each step of the compilation process – 20 points.