Week 1: File Redirection and gcc compiler options

2021

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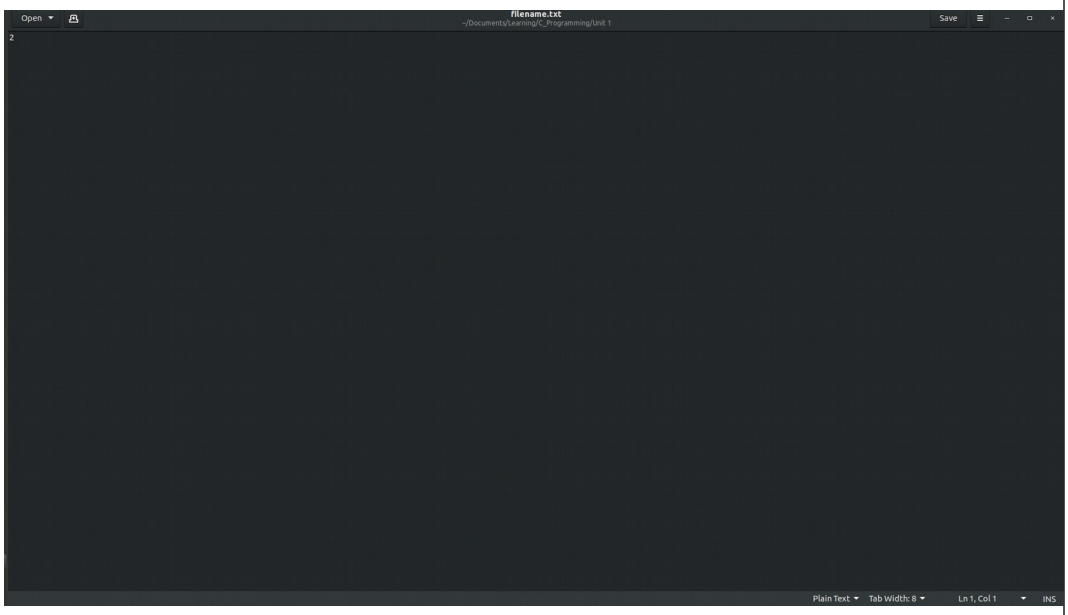
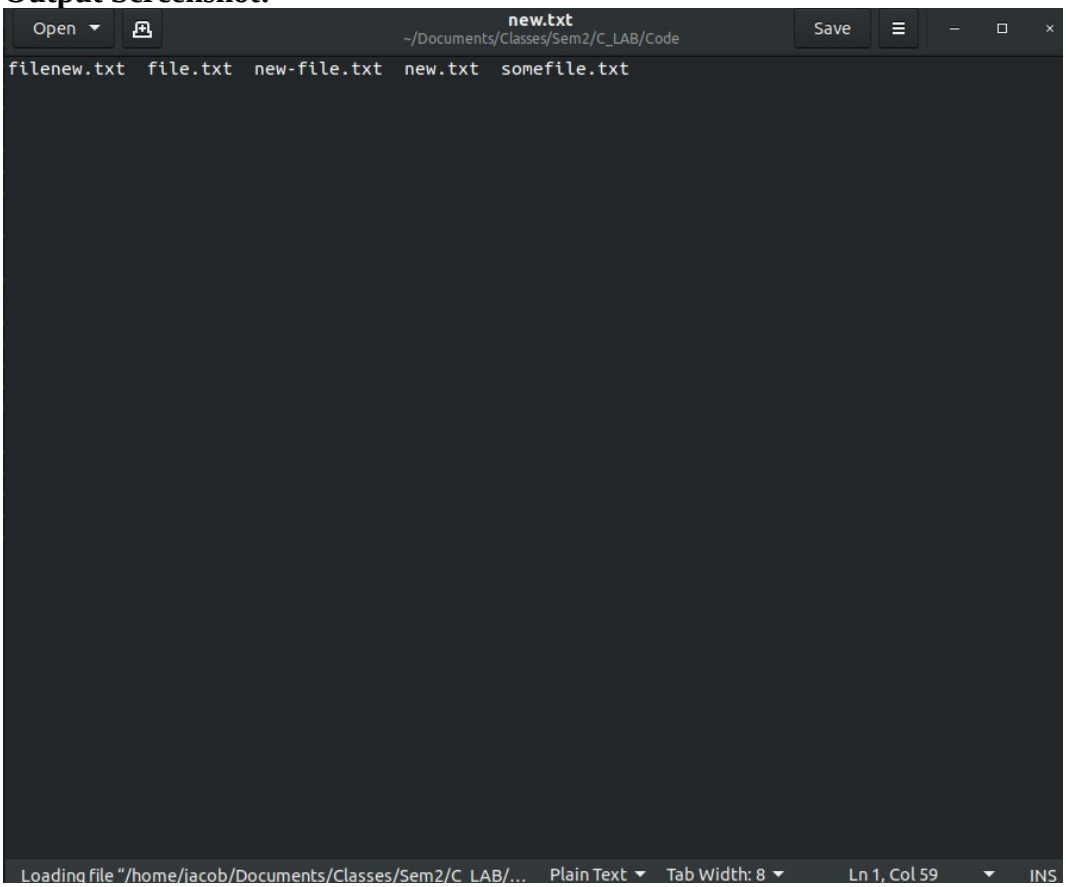
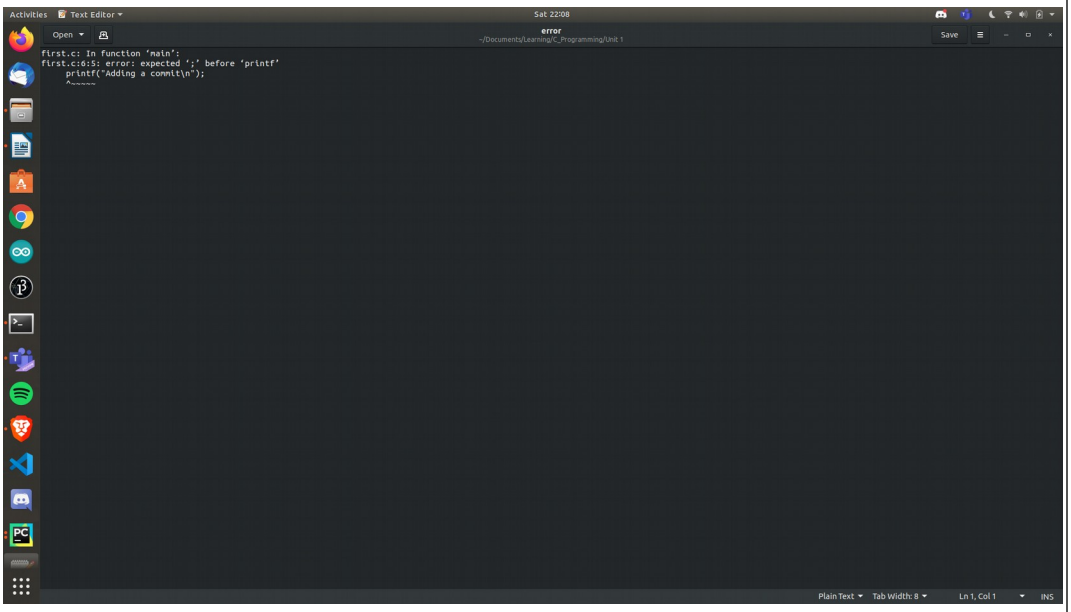
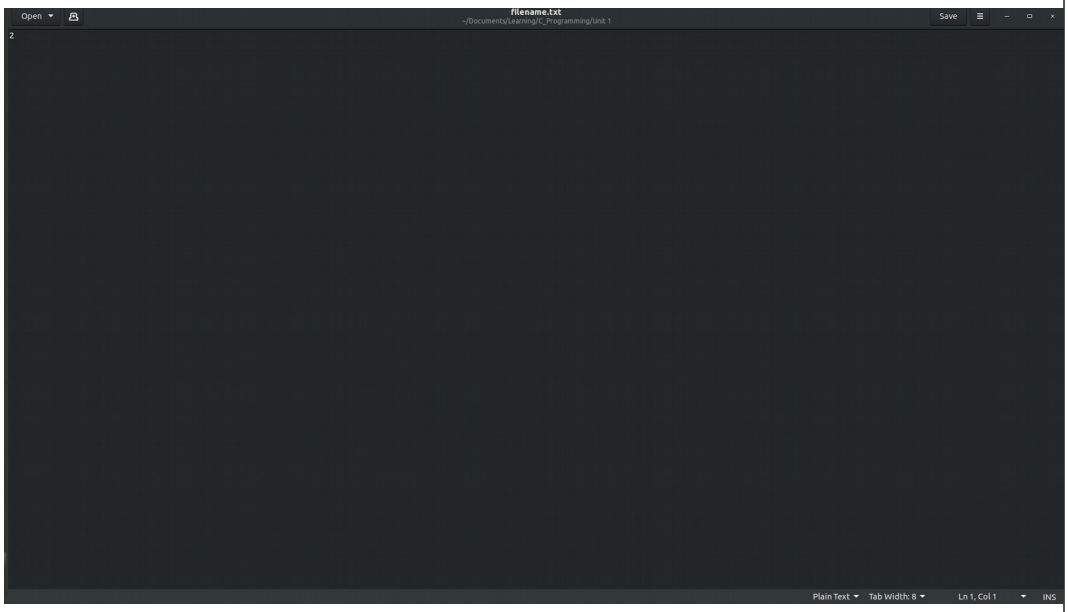
Task 1	**Redirect Standard Output :Write to New File**
	Description: It redirects all the standard output from the command into the given file.
	Commands: `jacob@jacob-Vostro-3501:~/Documents/Learning/C_Programming/Unit 1$ ./Test > filename.txt`
	Output Screenshot: 
Task 2	**Redirect Standard Output: Writes to the Same File**
	Description: Here we redirect the standard output to the same file that we had created or had previously.

	Commands: `jacob@jacob-Vostro-3501:~/Documents/Classes/Sem2/C_LAB/Code$ dir >> new.txt`
	Output Screenshot: 
Task 3	**Redirect Standard Error To a File**
	Description: Here we redirect the standard error, if any, to a file.
	Commands: `jacob@jacob-Vostro-3501:~/Documents/Learning/C_Programming/Unit 1$ gcc first.c > out 2>error`

	Output Screenshot: 
Task 4	**Redirect All Output: Writes to Same File**
	Description: We redirect all the output of the given command to a new file.
	Commands: `jacob@jacob-Vostro-3501:~/Documents/Classes/Sem2/C_LAB/Code$ dir >> new.txt`
	Output Screenshot:



Task 5	**Input Redirection-Taking input from file**
	Description: **Here we take input from a file for a command.**
	Commands: `jacob@jacob-Vostro-3501:~/Documents/Learning/C_Programming/Unit 1$ sort < fruit.txt`
	Output Screenshot: Apples Grapes Kiwi Mangoes Watermelon
Task 6:	**Options in gcc compiler**
	`Description:` When you invoke GCC, it normally does preprocessing, compilation, assembly and linking. The "overall options" allow you to stop

	this process at an intermediate stage. For example, the -c option says not to run the linker. Then the output consists of object files output by the assembler. Other options are passed on to one or more stages of processing. Some options control the preprocessor and others the compiler itself. Yet other options control the assembler and linker; most of these are not documented here, since you rarely need to use any of them.
	Commands: `jacob@jacob-Vostro-3501:~/Documents/Learning/C_Programming/Unit 1$ gcc --help`
	Output Screenshot:

```
Usage: gcc [options] file...
Options:
  -pass-exit-codes         Exit with highest error code from a phase.
  --help                   Display this information.
  --target-help            Display target specific command line options.
  --help={common|optimizers|params|target|warnings|[^]{joined|separate|undocumented}}[,...].
                           Display specific types of command line options.
  (Use '-v --help' to display command line options of sub-processes).
  --version                Display compiler version information.
  -dumpspecs               Display all of the built in spec strings.
  -dumpversion             Display the version of the compiler.
  -dumpmachine             Display the compiler's target processor.
  -print-search-dirs       Display the directories in the compiler's search path.
  -print-libgcc-file-name  Display the name of the compiler's companion library.
  -print-file-name=<lib>   Display the full path to library <lib>.
  -print-prog-name=<prog>  Display the full path to compiler component <prog>.
  -print-multiarch         Display the target's normalized GNU triplet, used as
                           a component in the library path.
  -print-multi-directory   Display the root directory for versions of libgcc.
  -print-multi-lib         Display the mapping between command line options and
                           multiple library search directories.
  -print-multi-os-directory Display the relative path to OS libraries.
  -print-sysroot           Display the target libraries directory.
  -print-sysroot-headers-suffix Display the sysroot suffix used to find headers.
  -Wa,<options>            Pass comma-separated <options> on to the assembler.
  -Wp,<options>            Pass comma-separated <options> on to the preprocessor.
  -Wl,<options>            Pass comma-separated <options> on to the linker.
  -Xassembler <arg>        Pass <arg> on to the assembler.
  -Xpreprocessor <arg>     Pass <arg> on to the preprocessor.
  -Xlinker <arg>           Pass <arg> on to the linker.
  -save-temps              Do not delete intermediate files.
  -save-temps=<arg>        Do not delete intermediate files.
  -no-canonical-prefixes   Do not canonicalize paths when building relative
                           prefixes to other gcc components.
  -pipe                    Use pipes rather than intermediate files.
  -time                    Time the execution of each subprocess.
  -specs=<file>            Override built-in specs with the contents of <file>.
  -std=<standard>          Assume that the input sources are for <standard>.
  --sysroot=<directory>    Use <directory> as the root directory for headers
                           and libraries.
  -B <directory>           Add <directory> to the compiler's search paths.
  -v                       Display the programs invoked by the compiler.
  -###                     Like -v but options quoted and commands not executed.
  -E                       Preprocess only; do not compile, assemble or link.
  -S                       Compile only; do not assemble or link.
  -c                       Compile and assemble, but do not link.
  -o <file>                Place the output into <file>.
  -pie                     Create a position independent executable.
  -shared                  Create a shared library.
  -x <language>            Specify the language of the following input files.
```