

# File Status Program

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This homework will require you to write an application in C that displays file information. The file will be given as a command line argument and options will be provided to display type and owner. By default, your application will print the size of the file in bytes. Your application must complete all of the shalls listed below. Your submission must include a makefile and all the needed source to build your application.

1. Your program **shall** meet the basic requirements listed below:
  - (a) Your program **shall** print error information for each error in so much as your program was directly responsible for the method call that produced the error.
  - (b) Your program **shall** terminate after encountering an unrecoverable error (after printing error information).
  - (c) You **shall** submit all source code and a makefile in a tar file.
    - i. The makefile **shall** be able to build your source in a 32 bit Ubuntu VM.
    - ii. The built program **shall** be able to run in a 32 bit x86 Ubuntu VM.
2. The program **shall** accept a file path via the command line.
  - (a) The file **shall** be entered as an argument to the program<sup>1</sup>.
  - (b) If no file is given, the program **shall** print helpful information.
  - (c) If the argument given is not a valid file, the program **shall** print an error and exit.
  - (d) If the argument given is a valid file, the program **shall** print the total size of the file in bytes.
3. The program **shall** accept 3 command options:
  - (a) When given the *t* command option, the program **shall** print the file type, in addition to the size. This is assuming the argument was a valid file and you have permission.
  - (b) When given the *o* command option, the program **shall** print the file owner, in addition to the size. This is assuming the argument was a valid file and you have permission.
    - i. The file owner **shall** be displayed as a user name rather than a user ID, if possible. If the user name does not exist, print the user ID instead. Do not terminate as an error.
  - (c) When given the *e* command option, the program **shall** write the entire environment to the file. Do not overwrite the data already in the file.

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<sup>1</sup>As opposed to a command option or command switch.