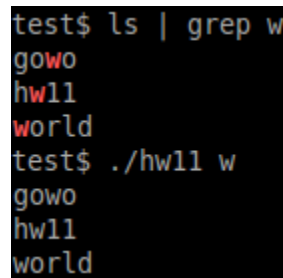# Forks and Pipes

   This homework will require you to write an application in C that performs the same behavior as `ls | grep some_pattern` (it searches the current working directory for some file name). You cannot use directory I/O and you cannot use the `system` method. You must implement this functionality using `fork` and `exec`.

Figure 1: Example output for the program. Your output should match the command output.

1. Your program **shall** meet the basic requirements listed below:

   (a) Your program **shall** print reasonable error information.

   (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 Lubuntu VM.

      ii. The built program **shall** be able to run in a 32 bit x86 Lubuntu VM.

2. Your program **shall not** use `system` or the shell to perform any of its requirements.

3. Your program **shall not** use directory I/O to perform any of its requirements. You must rely on programs already implemented on your system.

4. Your program **shall** spawn a child process.

   (a) Your child process **shall** filter standard in by a pattern. The behavior should match the `grep` command.

   (b) Your child process **shall** receive it's input through a pipe.

   (c) Your child process **shall** write it's output to the screen.

5. Your parent process[1] **shall** list each file in the current working directory.

6. Your parent process[1] **shall** write it's output to a pipe.

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[1]Or another child process.