DSH

Description
    This is a process idetification program and simple shell. This program will introduce unix environment, system calls, signals, the proc filesystem and the fork / exec system calls. It will be a command line program with executable name: dsh. It should present a prompt with a prompt string: dsh> and accept commands to be executed at the prompt.

- THIS WILL ONLY RUN ON LINUX -
- SIGNAL WILL ONLY WORK IF YOU HAVE PERMISION TO USE KILL -

Algorithms and libraries used:
    As for Algorithms, nothing significant was used.
List of Libraries:
    //input
        <iostream>
    //string functions
        <string>, <string.h>

    //for system function commands
        <stdio.h>, <stdlib.h>, <sys/types.h>, <unistd.h>

    //to open files
        <fstream>

    //for kill command
        <signal.h>

Functions and Program structure
Structure: the main program uses something very close to a switch statement.
However this is done as if elses for the use of strings. The Program is sequencial. To add to modularity, and make main easier to read, many chunks
of code were pulled out into smaller functions. All of which can be found below main.

List of functions:
    //function taken from sample code
    spawn - creates a fork and executs on it

    // primary functions for loop
    cmdnm - displays the command line call for a process id
    help - displace information for custom commands (command is helpThis)
    cwd - displays current working directory
    signal - sends a signal to a process

    systat - displays system statics
    //systat helper functions
    displayProcFile - displays the first line of a file
    displayProcFileMeminfo - displays 2 lines of meminfo file
    displayProcFileCPUInfo - displays lines 2 - 9 of cpuinfo file

- Note Many of these are not direct commands in the program
- Note spawn was taken from under the Gnu Public License. Thus this code is now as well. You can find out more information about Gnu codes and the GPL at   http://www.gnu.org/ .

Compiling the program:
    There is a make file provide. Using the make command will compile the program. Also the command: "g++ -o dsh dsh.cpp -Wall -g -std=c++11" will as well

Submitted Files:
    prog1.pdf, dsh.cpp, Makefile

prog1.pdf = This descriptive document of this project
dsh.cpp = The code for this project
Makefile = compiling tool for code