

C Systems Programming

Write the code in C. You *must* use RCS to keep multiple versions of your assignment.

In this assignment, you will create a minimal shell in Unix, called `mysh`. You will start with creating a prompt on the terminal for the user. The user will enter a command to be executed. You will search for the executable corresponding to the command in all the directories specified in the environment variable `MYPATH`. This variable should be set with at least three directories before you start `mysh`. In case the variable is not set, use the variable `PATH` to search for the executable.

You can set the variable `MYPATH` using `:` to separate directories. For example, you can set it as
In `csh/tcsh` `setenv MYPATH /bin:/usr/local/bin:${HOME}/bin:.`

In `ksh/bash` `export MYPATH=/bin:/usr/local/bin:${HOME}/bin:.`

You will search the directories in sequence. As soon as you find a filename corresponding to the command, check to make sure that it is an ordinary file and its execution bit is set for you. If these conditions are met, execute the command by forking and using `exec1`. Otherwise, keep on searching in the directories. If you cannot find the command, issue the message saying `Command not found` preceded by the name of the command.

After executing the command, issue the prompt again. If the command entered is `exit`, terminate your shell.

Take the prompt from environment variable `PS1` if set. Otherwise, use `>>>` as the default prompt. Make sure that you have a `Makefile`, a `README` (in plain text format) file, and use RCS.

Extra Credit: Allow your shell to kill the currently executing command by typing a `CTRL-C`.

When the user hits `CTRL-C`, the command that was executed from within `mysh` is terminated.

The only time you terminate `mysh` is when the user types a `CTRL-D` or `exit` command.

In your report explain your work and provide screenshots of the program when it is run using different examples. The more detailed the explanations, the better. At the end provide some conclusions. The submission of the source files and your report as well has to be done through the blackboard system "mygateway". Your report should be submitted in Word and PDF formats.

The program has to be able to compile and run in Admiral. Follow good programming principles and document your program well.

The regular due date is April 26 (11:59 PM), and the late due date is May 01 (11:59 PM).

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