

- Personal details -

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Topic: Operating systems

UNIX-shell

Project-1

- Summary -

The biggest benefit is that now I am aware of what steps need to be performed by bash to run a certain command(program) based on several arguments.

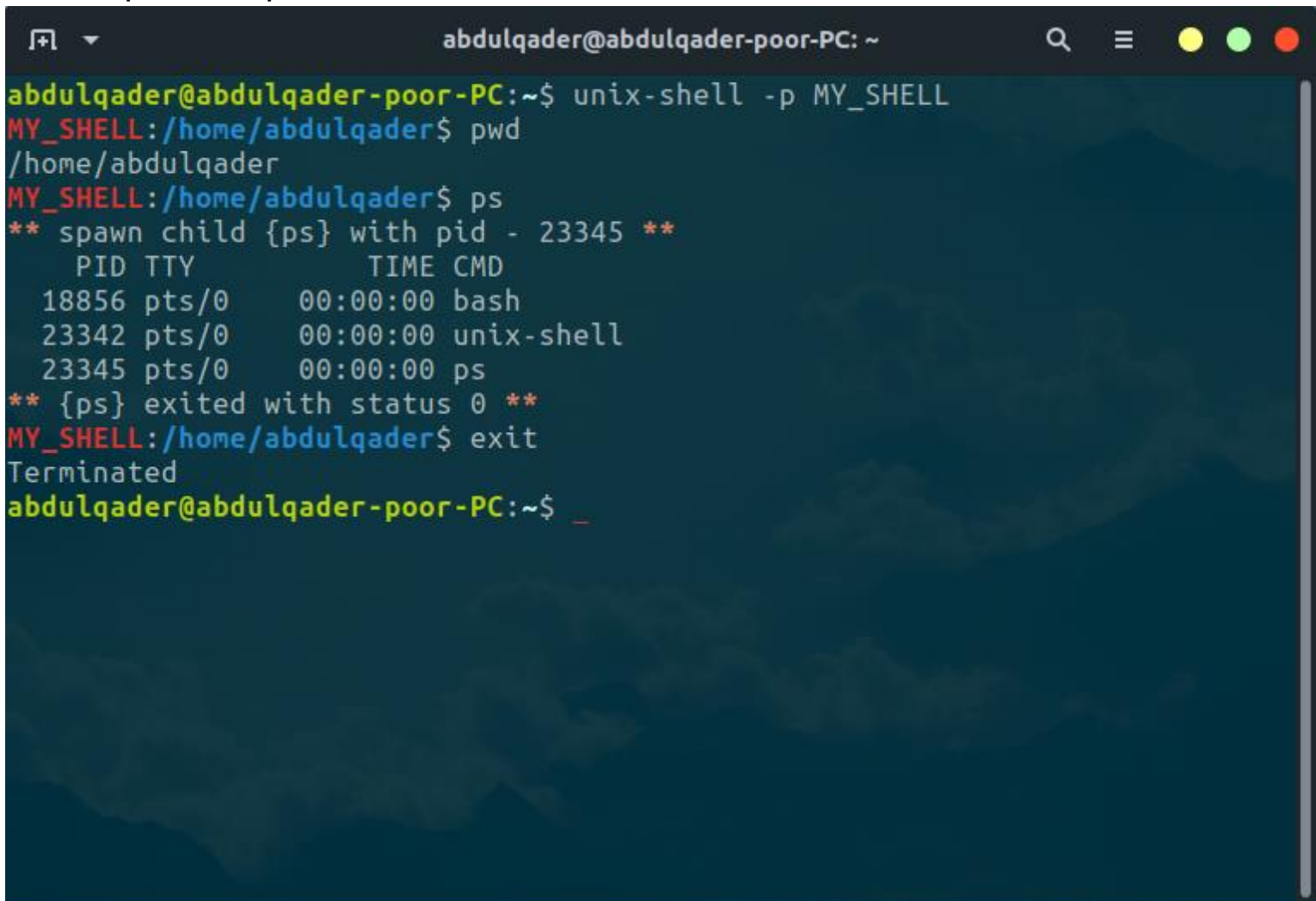
Also, I learned more about dynamic memory allocation since I had to use it while creating (array) that holds the user entered commands.

Aside from that I realized how programs create a command by writing a code then generating the object file to the bin directory (where most of the commands are), so I created my own command which is this project so I can run it from anywhere not only where the output of gcc is.

- Notes -

- Get command: unfortunately, if the get command fails to find the variable within environment it causes a segmentation fault and as a result the bash stops more about that [here](#).
- Set command: if there is already a variable in the environment and you called the set without a value then it will be assigned to NULL.
- I tried to minimize the errors as much as I could but due to lack of time there are still some minor errors.
- Background commands go to zombie (defunct) state for some reason.

Simple sample:

A terminal window titled 'abdulqader@abdulqader-poor-PC: ~' with standard window controls. The terminal shows a user switching from a regular shell to 'MY_SHELL' using 'unix-shell -p MY_SHELL'. Inside 'MY_SHELL', the user runs 'pwd' (showing /home/abdulqader) and 'ps' (showing a table of processes). The 'ps' output shows three processes: 'bash' (PID 18856), 'unix-shell' (PID 23342), and 'ps' (PID 23345). After 'ps' exits, the user runs 'exit', and the terminal returns to the original shell.

```
abdulqader@abdulqader-poor-PC:~$ unix-shell -p MY_SHELL
MY_SHELL:/home/abdulqader$ pwd
/home/abdulqader
MY_SHELL:/home/abdulqader$ ps
** spawn child {ps} with pid - 23345 **
  PID TTY          TIME CMD
 18856 pts/0        00:00:00 bash
 23342 pts/0        00:00:00 unix-shell
 23345 pts/0        00:00:00 ps
** {ps} exited with status 0 **
MY_SHELL:/home/abdulqader$ exit
Terminated
abdulqader@abdulqader-poor-PC:~$ _
```