Course COMP-8567
Assignment 03
Winter 2023
Due Date: Mar/16/2023
50 Marks

Write a C program **minishell** (**ms$**) that goes into an infinite loop waiting for user's commands. Once a command is entered, the program should assemble and execute each command using fork(), exec() and other system calls as required with the following rules and conditions.

Rule 1: The argc of any individual command or program should be >=1 and < =6

- **ms$ ls -1 ~/chapter2 -S -n //valid**
- **ms$ cat new.txt //valid**

Rule 2: The argc of induvial commands or programs that are used along with the special characters listed below should be >=1 and <=6

- Ex: **ms$ ls -1 ~/chapter2 -S -n | wc -w** //the first command has argc=5 and the second command has argc=2 which are used along with the special | character

Special Characters

The program should handle the following special characters (In accordance to Rule 2 and the additional rules listed below)

- | **Piping** (up to 5 piping operations should be supported)

  Ex ms$ cat ex1.c|grep std|wc| wc -w

  // Every command/program can have argc >=1 and <=6 as per Rule 2
- >, <, >> **Redirection**

  Ex: ms$ ls -1 >>dislist.txt
- && **Conditional Execution** // upto 5 conditional execution operators should be supported and could possibly be a combination of && and ||

Ex : **ms$ ex1 && ex2 && ex3 && ex4 && ex5**

- **ms$ c1 && c2 || c3 && c4**

- || **Conditional Execution** // see &&
- & **Background Processing**
  - **ms$ ex1 &** //should run ex1 in the background
- ; **Sequential execution** of commands (up to 5 commands) the argc of each command should be >=1 and <=6 as per Rule 1

  Ex: **ms$ cat e1.txt; cat e2.txt ; ls ; date**

Note: You have to use fork() and exec() along with other pertinent system calls to run commands from minishell

Submission:

Upload minishell.c