

Assignment 0 Part 2

Documentation

Internal Commands

1. cd - Changes directory of the working program, but not the shell in which it is running.
2. echo - Writes the text in it to Shell window. Also “echo -n” and “echo -e” have been implemented, where “echo -n” does not append a newline and “echo -e” suppresses the interpretation of backslash escapes.”echo \$PWD” is also implemented where echo command works similarly as “pwd” command.
3. history - Displays the history of the all run in the current shell and all the previous executions of shell. Implemented using file handling.
4. pwd - Prints the name of the current working directory.
5. exit - Exits the shell. Coded in a very similar way that any further arguments are ignored and the shell is exited.

External Commands

1. ls - It used to display all the files and directories within a directory. Since inbuilt libraries have been used, therefore all options of ls are applicable.
2. cat - Used to display content of a file in any directory. Since inbuilt libraries have been used, therefore all options of ls are applicable.
3. date - date command is used to display current date and time on the terminal. The command “date -d” is implemented with precaution. Since inbuilt libraries have been used, therefore all options of mkdir are applicable.
4. rm - Remove function implemented with “rm” command to remove any file or directory. Since inbuilt libraries have been used, therefore all options of ls are applicable.
5. mkdir - A new directory is created. Since inbuilt libraries have been used, therefore all options of mkdir are applicable.

Note:

1. Maximum command with 8 arguments (complete words about spaces can be entered in the shell).
2. Each complete word in the command can have a maximum length of 256.

3. Many of the internal commands mentioned do not have enough options, so only options for internal command “echo” are made.
4. For the external command, all options are available as inbuilt binaries have been used, and they allow to access all options using the **execl()** function in C.
5. Shell has been designed in such a way that “cd” command pressed alone shows an error, as in real bash shell it takes to the directory default home directory.
6. “cat” command alone makes the shell to go in a stage of non-working. Therefore, avoid using “cat” command alone in the shell.
7. Both “mkdir” command and “rm” command when entered alone give an error. Therefore, similar has been implemented.
8. Avoid pressing “Enter” key in the shell, as it leads to a segmentation fault and hence, termination of the shell.
9. Also for command “echo”, a function has been implemented which removes double quotes from the beginning and ending of the whole argument sent for “echo”.
10. Similarly, for command “date”, a similar double quote removing function has been implemented to implement proper function of date options.

Test Cases

1. cd /mnt/
2. pwd
3. echo “hey, hello world”
4. history
5. exit abcdefghijklmnopqrstuvwxyz
6. ls -ls
7. cat Problem.java
8. mkdir dir1 dir 2
9. rm -d dir1 dir2
10. date -d “1999-12-25”