TEST CASE DOCUMENT

INTRODUCTION:

The scope of this document is:

1. To provide test cases and test results for Minix-Custom-Shell-Prompt functionalities.
2. To do negative testing for Minix-Custom-Shell-Prompt functionalities.

MINIX CUSTOM SHELL FUNCTIONALITIES:

1. **Your shell shall first execute a PROFILE file which defines the PATH variable that will allow you to access programs provided in /bin and /usr/bin. Once the PROFILE file is executed, you will be in a HOME directory specified by you in the PROFILE file. The PATH and HOME variables do not replace those of the Ash shell from which your shell is instantiated.**

   Feature: The new shell (named Minix-Custom-Shell-Prompt) will contain its own profile file(Shell_profile) and use the variables from that file to display the prompt, home directory and alarm. The shell allows the user to access all the executables from /usr/bin and /bin directories.

   a. Ignore comment lines starting with # in PROFILE

   b. Can read PATH from PROFILE and sets the environment accordingly. Currently tested with /bin and /usr/bin. One can check the environment variables settings using “env” command in MINIX CUSTOM (provided the PATH was set correctly).

   Negative Testing: Use and modify PROFILE to set the environment. If this file is not present, then Shell throws an error and assumes current directory as the home directory and proceeds.

2. **In a command line of your shell you will be able to exercise any executable programs including the utilities provided in /bin and /usr/bin.**

   Feature: All the commands as per PATH setting can be executed in our shell. We have tested using /bin and /usr/bin

   - “ls”, “ls –al”, “who”, “cat main.c”, “date” “vi main.c”, “pwd” “mkdir tmp” “rm -rf tmp”, “time sleep 3” , “which wc” etc

Negative Test case: For non-existing commands like,

qwerty → Handled exception by showing user friendly message like **"Command not found in custom shell"** and returning the prompt to the user.

4. **Your shell will set an alarm which fires 5 seconds after it has launched a command. After the alarm fired, your shell will ask the user whether he/she wants to terminate the command and will terminate the command if the user approves. The user can turn on and off this feature in the PROFILE file or in a command.**

In the profile file(SHELL_PROFILE) we have added an attribute called "**alarmEnabled**" used to configure and customize alarm.

Case: alarmEnabled=false.

In this scenario when the shell opens and the user enters the command, the shell return the prompt after successful execution of command.

Test Case 1:

/usr/src/Minix-Custom-Shell-Prompt$: whoami

root

/usr/src/Minix-Custom-Shell-Prompt$:

Case: alarmEnabled=true.

In this scenario, as soon as the user enter the command and after successful execution, a prompt will be shown to the user with the message **"Do you want to exit. Enter y/n".**

Test case 1:

/usr/src/Minix-Custom-Shell-Prompt$: whoami

root

Do you want to exit.Enter y/n

Y

Successsful Exit

#

Test Case2:

/usr/src/Minix-Custom-Shell-Prompt$: ls

Do you want to exit.Enter y/n

n

/usr/src/Minix-Custom-Shell-Prompt$: ls

5. **Your shell shall support a command line with parentheses and the sequence and parallel execution operators (";" and "&"). A command line is a command or a set of commands connected by the operators. A pair of parentheses encloses a command line which can be treated as a commands. Therefore cmd&(cmd1;cmd2) is a valid command line specifying that cmd will be executed in parallel with (cmd1;cmd2).**

Parallel Execution (&)

Test case 1:

When both commands are valid commands then following will be shown

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:whoami&pwd

root

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 2:

When one of the input is junk command and other is valid command, then following will be shown.

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:abci&pwd

Command Not found

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 3:

When one of the command is upper case and other is valid command

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:WHOAMI&pwd

Command Not found

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 4:

When there are more than 2 & also, it should execute parallelly

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:whoami&pwd&datedate

root

/usr/src/Minix-Custom-Shell-Prompt

Tue Feb 28 04:28:56 GMT 2017

/usr/src/Minix-Custom-Shell-Prompt$

Sequential Execution: (;)

All the commands are executed sequentially one after the other

Test case 1:

When both commands are valid commands then following will be shown

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:whoami;pwd

root

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 2:

When one of the input is junk command and other is valid command, then following will be shown.

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:abci;pwd

Command Not found

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 3:

When one of the command is upper case and other is valid command

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:WHOAMI;pwd

Command Not found

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 4:

When there are more than 2 & also, it should execute parallelly

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:whoami;pwd;datedate

root

/usr/src/Minix-Custom-Shell-Prompt

Tue Feb 28 04:28:56 GMT 2017

/usr/src/Minix-Custom-Shell-Prompt$

Combination of Semi-colon (;) and Ampersand(&) and Parenthesis()

Test case 1:

When both commands are valid commands then following will be shown

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:(whoami)

root

Test case 2:

When one of the input is junk command and other is valid command, then following will be shown.

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:abci;(pwd)

Command Not found

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 3:

When both valid commands are inside brackets then following will be shown

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:(whoami;pwd)

root

/usr/src/Minix-Custom-Shell-Prompt

/usr/src/Minix-Custom-Shell-Prompt$

Test case 4:

When all all three (Ampersand, semi-colon,parenthesis) all three are used together.

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:whoami;(pwd&who)

root

/usr/src/Minix-Custom-Shell-Prompt

root console Mon Feb 27 10:40

/usr/src/Minix-Custom-Shell-Prompt$

Test case 5:

When all the parentheses are not ending properly following will be shown.

#./customshell

/usr/src/Minix-Custom-Shell-Prompt$:whoami;(pwd&who

Parenthesis is not proper

/usr/src/Minix-Custom-Shell-Prompt$:

EXTRA FEATURES:

1. Provision for user to write comments in PROFILE file and these comments are skipped by the program.

2. Provision for user to display special/or any characters at prompt along with current working directory. Example: $

3. MINIX Custom shell supports both traditional commands and commands with Semi-colon;' and Ampersand '&' and Parenthesis'()'

4. Added support to quit the shell using commands like '**quit'**, '**exit'**.
5. Handled commands such as '**cd ..**' to go back to the parent directory.
6. Handled gracefully the exceptions if commands such as Pipe '**|**', Redirection operators such as **'<' and '>'**.
7. Handled scenarios when the input is having malformed parenthesis.
8. Handled scenarios when user press **control+C**, to show the prompt whether the user wants to exit from the shell
9. If the profile file is not available, then create a profile file with pre-defined configurations.
10. Handled scenarios when commands such as double ampersand or double semi-colon are given.