

Operating Systems CS-450 Assignment #1

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Details of the Code and Test cases made:

Used stack (push and pop) to store the command in the stack and tried to order the items in the stack as per the priority in the parenthesis which is not able to be executed

Now the code only performs the linux commands only in the order which the user give as input. I have tried to read the input and store it in the stack. In the stack I tried arranging the items which was read and taken as input from the user. And prioritize the command as per the requirement.

The following are the successful inputs and the desired out which I have tested

```
nss@nss-VirtualBox:~/Learnings$ gcc Assignment1.c -o Work
nss@nss-VirtualBox:~/Learnings$ ./Work
$ echo operating system ; ls
operating system
Assignment1.c pipe-simple pipe-simple.c s1.c s1.sh sample.c test Work
nss@nss-VirtualBox:~/Learnings$ ./Work
$ ls -ltr ; echo Operating System
total 44
-rwxrwxr-x 1 nss nss 7572 Feb  7 19:03 pipe-simple
-rw-rw-r-- 1 nss nss  368 Feb  7 19:05 pipe-simple.c
-rwxrwxr-x 1 nss nss  700 Feb  9 21:38 s1.c
-rwxrwxr-x 1 nss nss 8060 Feb 12 19:19 test
-rwxrwxr-x 1 nss nss 2449 Feb 12 19:20 Assignment1.c
-rw-rw-r-- 1 nss nss 2449 Feb 12 19:21 sample.c
-rw-rw-r-- 1 nss nss  719 Feb 12 19:21 s1.sh
-rwxrwxr-x 1 nss nss 8064 Feb 12 19:23 Work
Operating System
nss@nss-VirtualBox:~/Learnings$ ./Work
$ ls ; pwd
Assignment1.c pipe-simple pipe-simple.c s1.c s1.sh sample.c test Work
/home/nss/Learnings
nss@nss-VirtualBox:~/Learnings$ ./Work
$ ps ; pwd
  PID TTY          TIME CMD
 2619 pts/4    00:00:00 bash
 3577 pts/4    00:00:00 test
 4500 pts/4    00:00:00 test
 5222 pts/4    00:00:00 pipe-simple
23183 pts/4    00:00:00 test
23197 pts/4    00:00:00 test
29179 pts/4    00:00:00 Work
29180 pts/4    00:00:00 sh
29181 pts/4    00:00:00 ps
/home/nss/Learnings
nss@nss-VirtualBox:~/Learnings$ ./Work
$ date ; who
Sun Feb 12 19:27:39 CST 2017
nss      tty7          2017-02-06 14:06 (:0)
nss@nss-VirtualBox:~/Learnings$
```

In the above testing scenarios I have successfully tested the command and got the desired output as per the first task given in the assignment to use the ; operator for running multiple commands. The following are also the successful execution of this task in the code.

```

nss@nss-VirtualBox:~/Learnings$ ./Work
$ echo Student ; ls ; pwd
Student
Assignment1.c pipe-simple pipe-simple.c s1.c s1.sh sample.c test Work
/home/nss/Learnings
nss@nss-VirtualBox:~/Learnings$ ./Work
$ ls -ltr ; pwd ; who
total 44
-rwxrwxr-x 1 nss nss 7572 Feb  7 19:03 pipe-simple
-rw-rw-r-- 1 nss nss  368 Feb  7 19:05 pipe-simple.c
-rwxrwxr-x 1 nss nss  700 Feb  9 21:38 s1.c
-rwxrwxr-x 1 nss nss 8060 Feb 12 19:19 test
-rwxrwxr-x 1 nss nss 2449 Feb 12 19:20 Assignment1.c
-rw-rw-r-- 1 nss nss 2449 Feb 12 19:21 sample.c
-rw-rw-r-- 1 nss nss  719 Feb 12 19:21 s1.sh
-rwxrwxr-x 1 nss nss 8064 Feb 12 19:23 Work
/home/nss/Learnings
nss      tty7      2017-02-06 14:06 (:0)
nss@nss-VirtualBox:~/Learnings$

```

The following are the test cases which got failed to execute in the way which was desired.

```

nss@nss-VirtualBox:~/Learnings$ ./Work
$ echo course ; (ls)
course
Assignment1.c pipe-simple pipe-simple.c s1.c s1.sh sample.c test Work
nss@nss-VirtualBox:~/Learnings$ ./Work
$ pwd ; (who) ; ls -ltr
/home/nss/Learnings
nss      tty7      2017-02-06 14:06 (:0)
total 44
-rwxrwxr-x 1 nss nss 7572 Feb  7 19:03 pipe-simple
-rw-rw-r-- 1 nss nss  368 Feb  7 19:05 pipe-simple.c
-rwxrwxr-x 1 nss nss  700 Feb  9 21:38 s1.c
-rwxrwxr-x 1 nss nss 8060 Feb 12 19:19 test
-rwxrwxr-x 1 nss nss 2449 Feb 12 19:20 Assignment1.c
-rw-rw-r-- 1 nss nss 2449 Feb 12 19:21 sample.c
-rw-rw-r-- 1 nss nss  719 Feb 12 19:21 s1.sh
-rwxrwxr-x 1 nss nss 8064 Feb 12 19:23 Work
nss@nss-VirtualBox:~/Learnings$ ./Work
$ ls ; ((echo thread) ; pwd)
Assignment1.c pipe-simple pipe-simple.c s1.c s1.sh sample.c test Work
thread
/home/nss/Learnings
nss@nss-VirtualBox:~/Learnings$

```

In the above test cases the parenthesis is not able to be read by the code. This make the code execute the similar kind of output which was given by the input as mentioned above.

```

nss@nss-VirtualBox:~/Learnings$ ./Work
$ ech potato ; ls
sh: 1: ech: not found
Assignment1.c pipe-simple pipe-simple.c s1.c s1.sh sample.c test Work
nss@nss-VirtualBox:~/Learnings$
nss@nss-VirtualBox:~/Learnings$ ./Work
$ pdf ; who
sh: 1: pdf: not found
nss      tty7      2017-02-06 14:06 (:0)
nss@nss-VirtualBox:~/Learnings$ ./Work
$ ls -ltr ; pdd ; echo storage
total 44
-rwxrwxr-x 1 nss nss 7572 Feb  7 19:03 pipe-simple
-rw-rw-r-- 1 nss nss  368 Feb  7 19:05 pipe-simple.c
-rwxrwxr-x 1 nss nss  700 Feb  9 21:38 s1.c
-rwxrwxr-x 1 nss nss 8060 Feb 12 19:19 test
-rwxrwxr-x 1 nss nss 2449 Feb 12 19:20 Assignment1.c
-rw-rw-r-- 1 nss nss 2449 Feb 12 19:21 sample.c
-rw-rw-r-- 1 nss nss  719 Feb 12 19:21 s1.sh
-rwxrwxr-x 1 nss nss 8064 Feb 12 19:23 Work
sh: 1: pdd: not found
storage
nss@nss-VirtualBox:~/Learnings$

```

In the above testing I have given the wrong input which dint got executed but the ones which was given in the right way executed successfully without any trouble and produced the desired output.