



CSCI 4500: Operating Systems

Program 1: System Calls Explanation

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An Example: Left
echo one two three | Right
wc -w
pipe()

- Red color: echo (command), one two three (parameters)
- Green color: wc (command), -w (parameters)
- parse() :
 1. please get these words – echo, one, two, three and wc, -w, you need to store which one is command and which are the parameters
 2. check there exists pipe() when you get these words.
- If pipe() does not exist → use the following same way to deal with
- If pipe() exists:
 1. Create the pipe for Left and Right to communication to each other
 2. Create the child process to execute left command's process → fork()
 - i. If pid < 0 (please check my slides)
 - ii. If pid == 0 (please check my slides)
 3. Create the child process to execute right command's process → fork()
 - i. If pid < 0 (please check my slides)
 - ii. If pid == 0 (please check my slides)
 4. Currently, parents are still alive, so need to wait for each child to terminate.

An Example: echo one two three | wc -w

