Operating System Homework 1

1. If the process is in foreground, the shell will call the `waitpid()` function after the child executed, therefore after the child has terminated, the system will release the usage of child process. If the process is not in foreground, the shell has singal handler to catch child's `SIGCHLD`, and the shell call `waitpid()` to release the child process.
2. The shell will call `tcsetpgrp()` function to set the process group into terminal foreground. So the signal will send only to foregound process. When the shell is in foreground, the shell's signal handler will catch the signal such as `SIGTSTP` to prevent from terminating the shell.
3. To implement `>`, use `dup2()` function to exchange process `STDOUT` with an output file by using `open()` function. To implement `<`, also use `dup2()` and `open()` to exchange `STDIN` and input file.
4. Android use Blinder as IPC mechanisms. Blinser is consist of Service, ServiceManager, and Binder Kernel Driver. Once the service is start, it will register on Binder Kernel. If one service want to use another service, it will ask ServiceManager and the ServiceManager will send the target service to the service. Then two service can communicate by shared memory, PMEM, and ashmem.