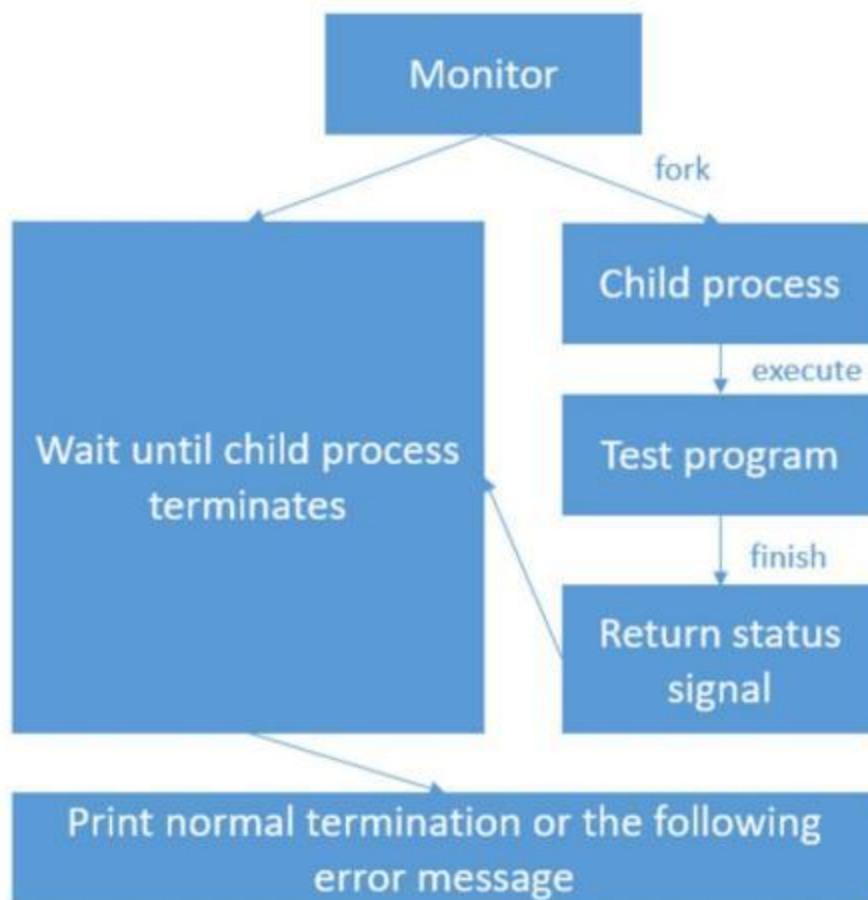# CSC3150 Project1 Report

Ye Chao   **120090600**

Program1

The main flow chart for Program 1 is:

Basic Idea of Program 1

In this task, write a program that implement the functions below:

fork a child process to execute the test program.
When child process finish execution, the parent process will receive the SIGCHLD signal by

wait() function.
The termination information of child   print out.

Implementation

fork()

To create a child process and return process identification number.

execve()

To execute child process.

waitpid()

To make the parent process wait for the child process to execute.

Print the signal

Use printf() to print the signal.

Out put:

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./floating
Process start to fork
I'm the Parent Process, my pid = 1772
I'm the Child Process, my pid = 1773
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGFPE program

Parent process receiving the SIGCHLD signal
child process get SIGFPE signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./kill
Process start to fork
I'm the Parent Process, my pid = 1781
I'm the Child Process, my pid = 1782
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGKILL program

Parent process receiving the SIGCHLD signal
child process get SIGKILL signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./abort
Process start to fork
I'm the Parent Process, my pid = 1764
I'm the Child Process, my pid = 1765
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGABRT program

Parent process receiving the SIGCHLD signal
child process get SIGABRT signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./pipe
Process start to fork
I'm the Parent Process, my pid = 1761
I'm the Child Process, my pid = 1762
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGPIPE program

Parent process receiving the SIGCHLD signal
child process get SIGPIPE signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./bus
Process start to fork
I'm the Parent Process, my pid = 1769
I'm the Child Process, my pid = 1770
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGBUS program

Parent process receiving the SIGCHLD signal
child process get SIGBUS signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./hangup
Process start to fork
I'm the Parent Process, my pid = 1776
I'm the Child Process, my pid = 1777
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGHUP program

Parent process receiving the SIGCHLD signal
child process get SIGHUP signal
CHILD EXECUTION FAILED
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./illegal_instr
Process start to fork
I'm the Parent Process, my pid = 1778
I'm the Child Process, my pid = 1779
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGILL program

Parent process receiving the SIGCHLD signal
child process get SIGILL signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./terminate
Process start to fork
I'm the Parent Process, my pid = 1751
I'm the Child Process, my pid = 1752
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGTERM program

Parent process receiving the SIGCHLD signal
child process get SIGTERM signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./stop
Process start to fork
I'm the Parent Process, my pid = 1749
I'm the Child Process, my pid = 1750
Child process start to execute test program:
------------CHILD PROCESS START------------
This is the SIGSTOP program

Parent process receiving the SIGCHLD signal
child process get SIGSTOP signal
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./segment_fault
Process start to fork
I'm the Parent Process, my pid = 1746
I'm the Child Process, my pid = 1747
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGSEGV program

Parent process receiving the SIGCHLD signal
child process get SIGSEGV signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./terminate
Process start to fork
I'm the Parent Process, my pid = 1751
I'm the Child Process, my pid = 1752
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGTERM program

Parent process receiving the SIGCHLD signal
child process get SIGTERM signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./trap
Process start to fork
I'm the Parent Process, my pid = 1754
I'm the Child Process, my pid = 1755
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGTRAP program

Parent process receiving the SIGCHLD signal
child process get SIGTRAP signal
CHILD EXECUTION FAILED
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./normal
Process start to fork
I'm the Parent Process, my pid = 1758
I'm the Child Process, my pid = 1759
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the normal program

-------------CHILD PROCESS END-------------
Parent process receiving the SIGCHLD signal
Normal termination with EXIT STATUS = 0
```

```
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./segment_fault
Process start to fork
I'm the Parent Process, my pid = 1746
I'm the Child Process, my pid = 1747
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGSEGV program

Parent process receiving the SIGCHLD signal
child process get SIGSEGV signal
CHILD EXECUTION FAILED
vagrant@csc3150:~/csc3150/source/program1$ ./program1 ./trap
Process start to fork
I'm the Parent Process, my pid = 1754
I'm the Child Process, my pid = 1755
Child process start to execute test program:
-------------CHILD PROCESS START-------------
This is the SIGTRAP program

Parent process receiving the SIGCHLD signal
child process get SIGTRAP signal
CHILD EXECUTION FAILED
```

Program2

The main flow chart for Program 2 is: