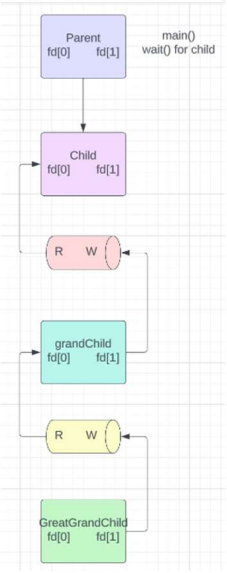
Name: Timothy Caole
Date: 1/23/2024

Program1C

Processes.cpp Report

1) **Explain your design and the algorithm for your Processes.cpp, support your explanation using flowcharts or other figures.**

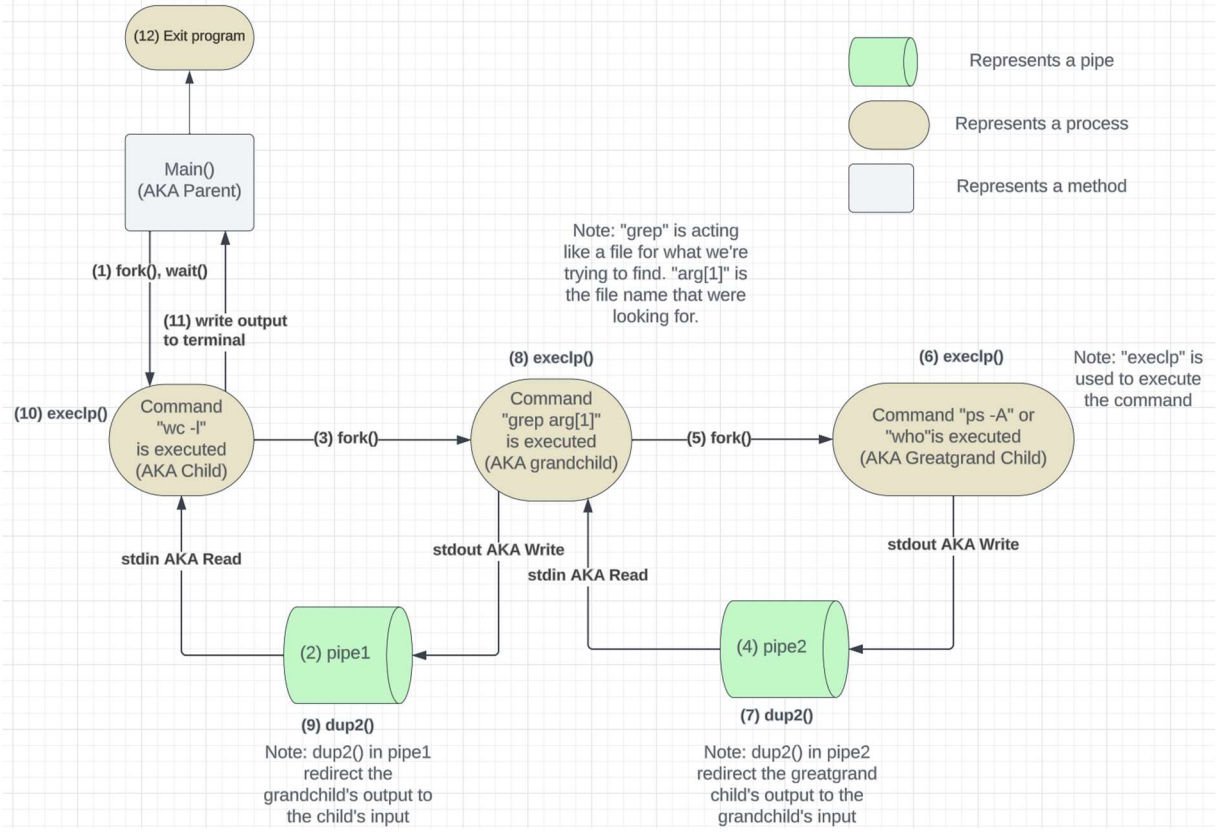
Figure 1.1 – Chapter 3 Lecture Notes



Using figure 1.1 as a reference to create the Processes.cpp file which is shown in figure 1.2.

Seen in figure 1.2, is the Processes.cpp file design, fork() is used to create a parent-child-grandchild-greatgrandchild process. It uses pipes for communicating between each process. The parent will create a child that runs the command “wc -l” which will count the lines. The child creates a grandchild to execute the command “grep arg[1]”. The grandchild will create a greatgrandchild which will execute “ps -A” which will list the processes, taken from the input of the first pipe which is sent out through the second pipe.

Figure 1.2 – Process.cpp diagram



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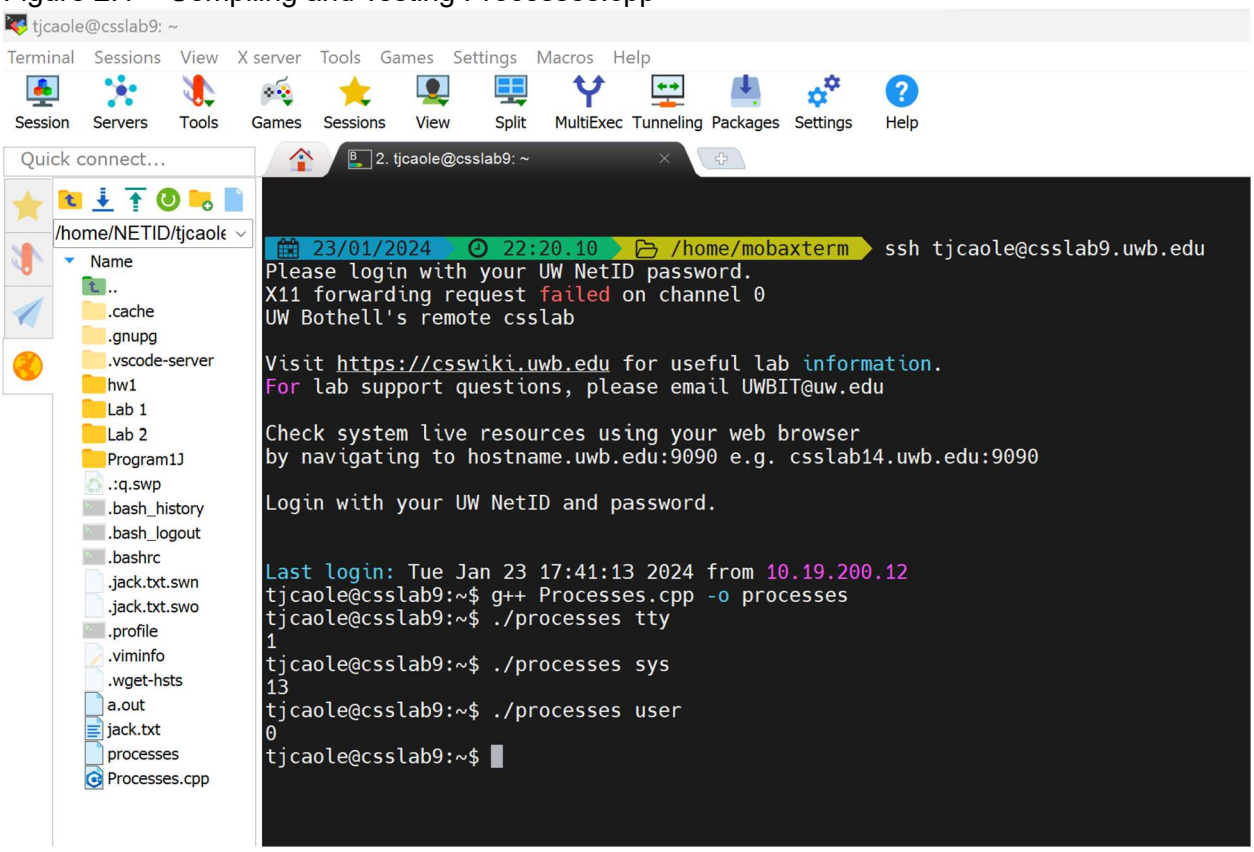
2) Explain how to test your Processes.cpp.

Figure 2.1 – Compiling and Testing Processes.cpp



Seen in figure 2.1, to compile the Processes.cpp file by typing the following command, noting that the command is case sensitive, “g++ Processes.cpp -o processes”. To test the code we can type the following command “./processes NAMEOFPROCESS”, note that the NAMEOFPROCESS can be any file name, which will result in a number of files that have the same name of NAMEOFPROCESS.

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3) Output:

Figure 3.1 –Terminal Results

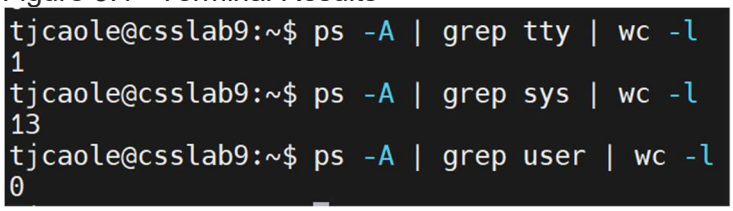
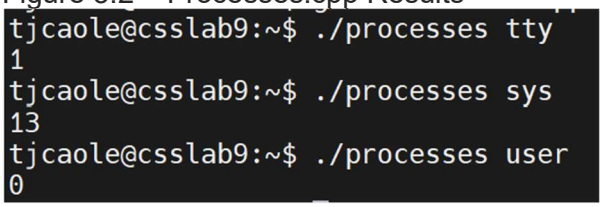


Figure 3.2 – Processes.cpp Results



Notes:

1) Open MobaXterm, don't forget to connect Big-IP Edge Client
2) Log in using the following,:

ssh <netID>@csslab<9-12>.uwb.edu E.g: ssh tjcaole@csslab9.uwb.edu
password: your netid password E.g

3) Create a Clion account to download and install the Clion IDE
4) Create a cpp. And start coding

5) There will be an error stating that function pipe(), wait(), fork(), is "use of undeclared identifier" and the import folder syst/wait.h "file is not found". However when compiled in MobaXterm using, noting cap sensitive, pro