

I decided to do the project Linux virtual machine and use the language c++. First, I created 3 simple pieces code that would do the three required tasks. One to get the string from the user, one to remove the special characters and one to find the missing letters. These algorithms are very simple ones that just manipulate the string.

Then I started with criteria one. I inserted the code to get string from the user into the Parent process P0, so that it would be inside of it. Then I forked a child process C0 and Implemented remove special chacters algorithm inside of it. I utilized the pipe process to move data between P0 and C0.

Then I started with implementing the criteria two. I used the shmget to create a shared memory from within C0. Then I created Shared_string variable that contained the memory location of shared memory which C0 and P1 could use to attach to the shared memory and read and write from it.

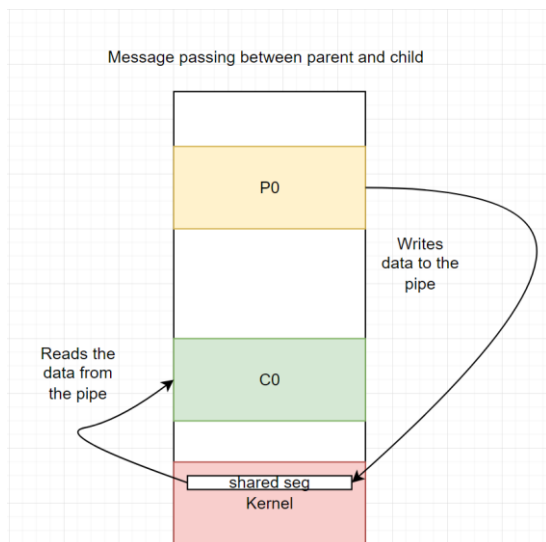
Then criteria three I forked C0 a child process P1 so that the P1 would terminate before C0 would terminate, and it would be separate process from C0. Then implemented the task 3 inside of P1, by attaching it to the shared memory and reading the cleaned string from it. Then I used the algorithm to find out which latter where missing from the cleaned string.

Last condition was termination for the project was termination. Since P1 is child process of C0 it terminates before C0. Then inside of C0 I delete the shared memory before terminating C0. After all other process have been terminated the parent process terminates.

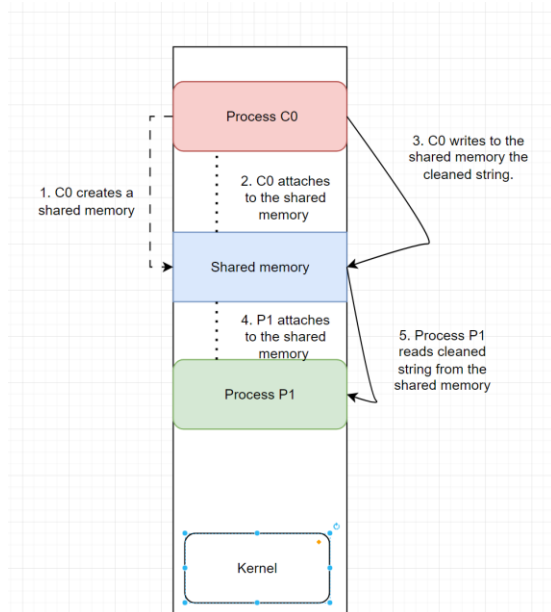
Here are two diagrams of how the data moves with in the project.

I used the pipe function with c++ to move from P0 to C0.

Here is illustration how the data move through the processes.



In case of the shared memory requirement between C0 and P1 used the sghmet commands in c++ to move the data. Here is illustration of how the data move between C0 and P1.



The code is documented and should be easy to read.