OS - Assignment 2 (Shared Memory)

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To create two independent programs/processes that communicate with each other, we use the ***Shared Memory (shm)*** set of commands to achieve this.

Receiver.c : This program creates a memory location with the command

int shmid = shmget(key, 1024, IPC_CREAT | 0666)

The key here is the UID of the user, which is same throughout the user's session, and hence, other programs running on the same system can access the memory location with the shmid and the key.

The program then takes in input string from the user and checks if the string contains the sub-string 'C00L'. If is contains, it writes the memory location with the given input string from the user.

*fgets(input, 1024, stdin); /*Take input string from user*/*

if(strstr (input,"C00L"))

memcpy(memory,input,1024);

Processor.c: This program too, runs in an infinite loop and accesses the same memory location which is created by receiver.c with the same Key of the user.

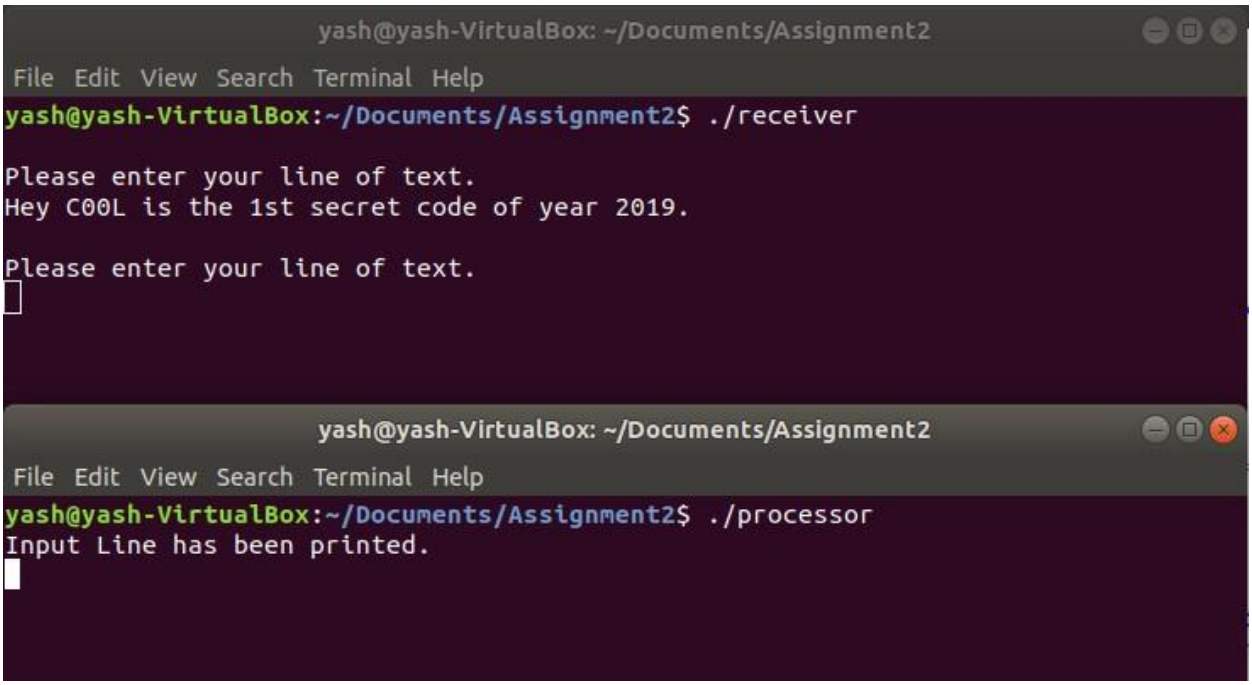
The program opens the file 'secrets.out'. If there is no such file, the program creates it.

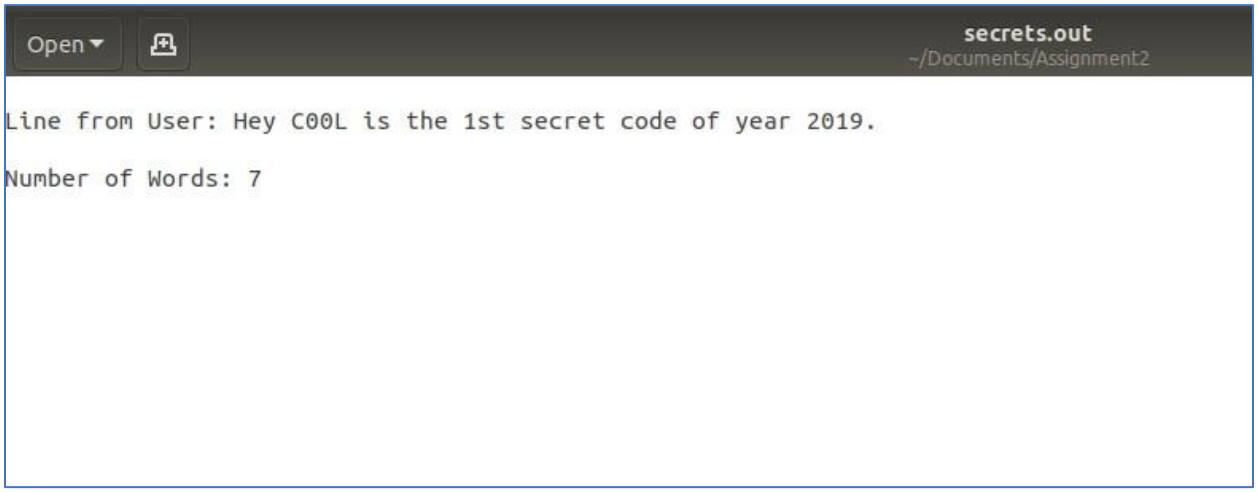
fopen("secrets.out","w")

Then, the program keeps on checking if there is some content on the shared memory location. As soon as it finds any content, it counts the number of digits in the string and prints it in the file 'secrets.out'.

It then clears the content on the memory location so that receiver.c can ask the user for input again.

Please Find Attached the screenshots:


yash@yash-VirtualBox: ~/Documents/Assignment2
File Edit View Search Terminal Help
yash@yash-VirtualBox:~/Documents/Assignment2$ ./receiver
Please enter your line of text.
Hey C00L is the 1st secret code of year 2019.
Please enter your line of text.
yash@yash-VirtualBox: ~/Documents/Assignment2
File Edit View Search Terminal Help
yash@yash-VirtualBox:~/Documents/Assignment2$ ./processor
Input Line has been printed.


Open
secrets.out
~/Documents/Assignment2
Line from User: Hey C00L is the 1st secret code of year 2019.
Number of Words: 7