

12 September 2020

Exercise 1

Two processes use a pipe to synchronize and a section of memory to share and exchange some data between them. More specifically:

- Process P1 reads from standard input a sequence of strings and it writes these strings onto the shared memory. It stops this process when the string "STOP" is encountered. Before stopping, it wakes-up process P2 using a pipe.
- When process P2 starts running, it reads the strings from the shared memory and it writes them on standard output transforming each capital letters into a small letter and each small letter into a capital letter. When it has done it wakes-up process P1 using a pipe.

Organize the entire program in which P1 and P2 are supposed to run forever.
Please remind the following system calls.

```
key_t ftok (const char *path, int id);
int shmget (key_t key, size_t size, int flag);
void *shmat (int shmid, const void *addr, int flag);
int shmdt (const void *addr);
```

Solution