

1) PTTY représente un port qui simule l'envoi des trames GPS.

L'exécution doit avoir en paramètre -p et le nom du port. D'après notre console, notre port se situe dans /dev/pts/0

ON lance donc: ./gps_reader -p /dev/pts/1 (correspondant au port afficher par run.sh)

2) Il n'y a pas de gestionnaire de signaux définis. S'il y a interruption de la boucle while, le file descriptor fd n'est pas fermé.

3) Dans la trame GPGLL, l'heure se situe après les coordonnées géographiques dans la 5ème position.

4) Pour ouvrir: `int fd = open(port, O_RDWR | O_NOCTTY);`

Pour écouter: `select(fd+1, &fdset, NULL, NULL, NULL);` (bloquant)

Pour lire: `int bytes = read (fd, buff, sizeof(buff));`

Pour fermer: `close(fd);`

5)

```
huseyin@huseyin-Lenovo-ideapad-100-15IBY: ~/Bureau/embsys/labs/sysprog/gps_reader
Fichier  Édition  Affichage  Rechercher  Terminal  Aide
Port 2: $GPVTG,055.2,T,034.9,M,006.0,011.1,K
Port 1: $GPGLL,4847.27,N,00751.68,E,122206,A
Port 2: $GPGLL,4839.54,N,00743.94,E,122206,A
Port 1: $GPVTG,056.5,T,036.2,M,007.3,013.5,K
Port 2: $GPVTG,055.2,T,034.9,M,006.0,011.1,K
Port 1: $GPGLL,4847.33,N,00751.74,E,122210,A
Port 2: $GPGLL,4839.60,N,00744.00,E,122210,A
Port 1: $GPVTG,056.5,T,036.2,M,007.3,013.5,K
Port 2: $GPVTG,055.2,T,034.9,M,006.0,011.1,K
Port 1: $GPGLL,4847.39,N,00751.80,E,122214,A
Port 2: $GPGLL,4839.66,N,00744.06,E,122214,A
Port 1: $GPVTG,056.5,T,036.2,M,007.3,013.5,K
Port 2: $GPVTG,055.2,T,034.9,M,006.0,011.1,K
Port 1: $GPGLL,4847.45,N,00751.86,E,122218,A
Port 2: $GPGLL,4839.72,N,00744.12,E,122218,A
Port 1: $GPVTG,056.5,T,036.2,M,007.3,013.6,K
Port 2: $GPVTG,055.2,T,034.9,M,006.0,011.2,K
Port 1: $GPGLL,4847.51,N,00751.92,E,122222,A
Port 2: $GPGLL,4839.78,N,00744.18,E,122222,A
Port 1: $GPVTG,056.5,T,036.2,M,007.3,013.6,K
Port 2: $GPVTG,055.2,T,034.9,M,006.0,011.2,K
Port 1: $GPGLL,4847.57,N,00751.98,E,122226,A
Port 2: $GPGLL,4839.84,N,00744.24,E,122226,A
```

6) On peut voir dans la fenêtre ci-dessous l'heure et le PID du père

```
huseyin@huseyin-Lenovo-ideapad-100-15IBY:~/Bureau/embsys/labs/sysprog/gps_reader
$ make
gcc util.c reader.c -o gps_reader -I. -I../gps/include
^[[Ahuseyin@huseyin-Lenovo-ideapad-100-15IBY:~/Bureau/embsys/labs/sysprog/gps_re
$ ./gps_reader -p /dev/pts/1 -q /dev/pts/3
Current local time and date: Thu Nov 29 12:47:28 2018
Parent PID : 1940
Port 1: $GPVTG,060.3,T,040.0,M,011.1,020.5,K
Port 2: $GPVTG,059.0,T,038.7,M,009.8,018.1,K
Port 1: $GPGLL,4910.12,N,00814.54,E,124730,A
Port 2: $GPGLL,4902.38,N,00806.80,E,124730,A
Port 1: $GPVTG,060.3,T,040.0,M,011.1,020.6,K
Port 2: $GPVTG,059.0,T,038.7,M,009.8,018.2,K
Port 1: $GPGLL,4910.18,N,00814.60,E,124734,A
Port 2: $GPGLL,4902.44,N,00806.86,E,124734,A
```

```
x/ttrefox -contentproc -chldpid 8 -tsfForBrowser -preLen 5/16
huseyin 3703 0.0 0.0 4512 716 pts/4 S+ 12:47 0:00 ./gps_reader -p
/dev/pts/1 -q /dev/pts/3
huseyin 3727 0.0 0.0 46860 3844 pts/5 R+ 12:49 0:00 ps -u
huseyin@huseyin-Lenovo-ideapad-100-15IBY:~$ ps -o ppid=-p 3703
1940
huseyin@huseyin-Lenovo-ideapad-100-15IBY:~$
```