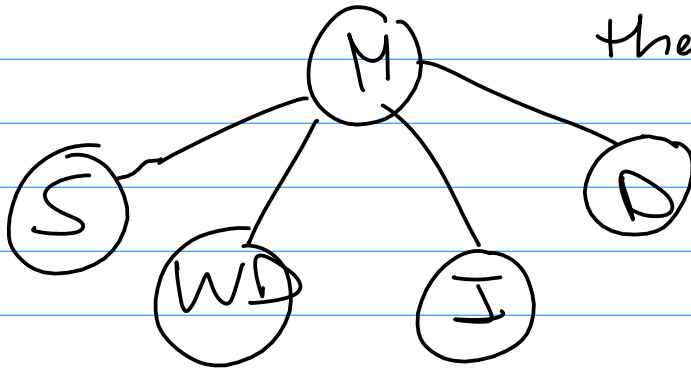


Assignment 1:

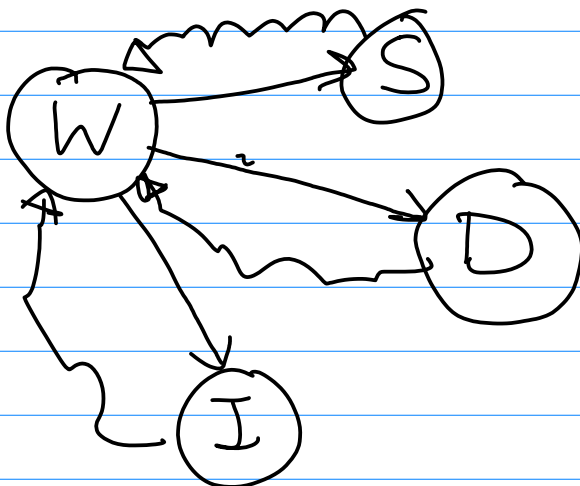
server, driver, input, WD

Master : forks and executes all processes. Before of this, there is a description that introduces the program.



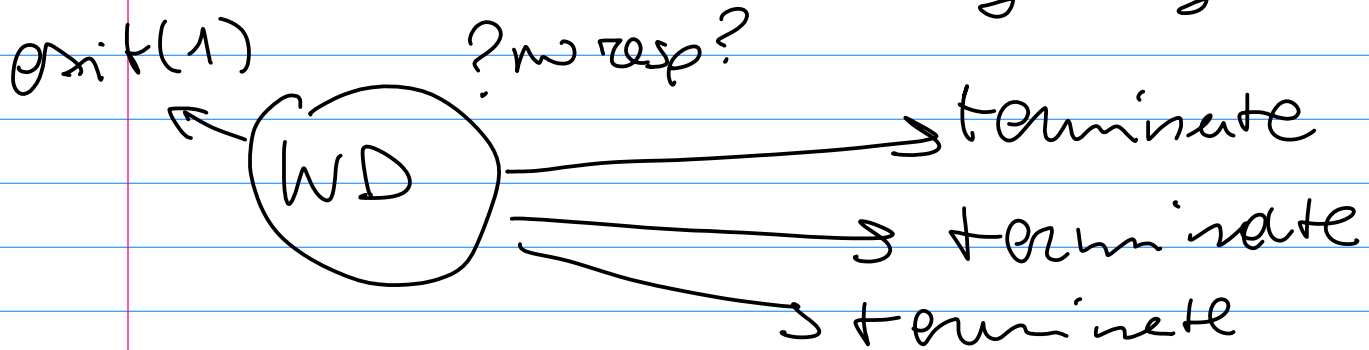
sends to watchdog the PID of S, I, D

WATCH DOG (W)



WD sends signals to all the other processes

If the WD doesn't receive a response from one process so it means that there is an anomaly, it will close everything.



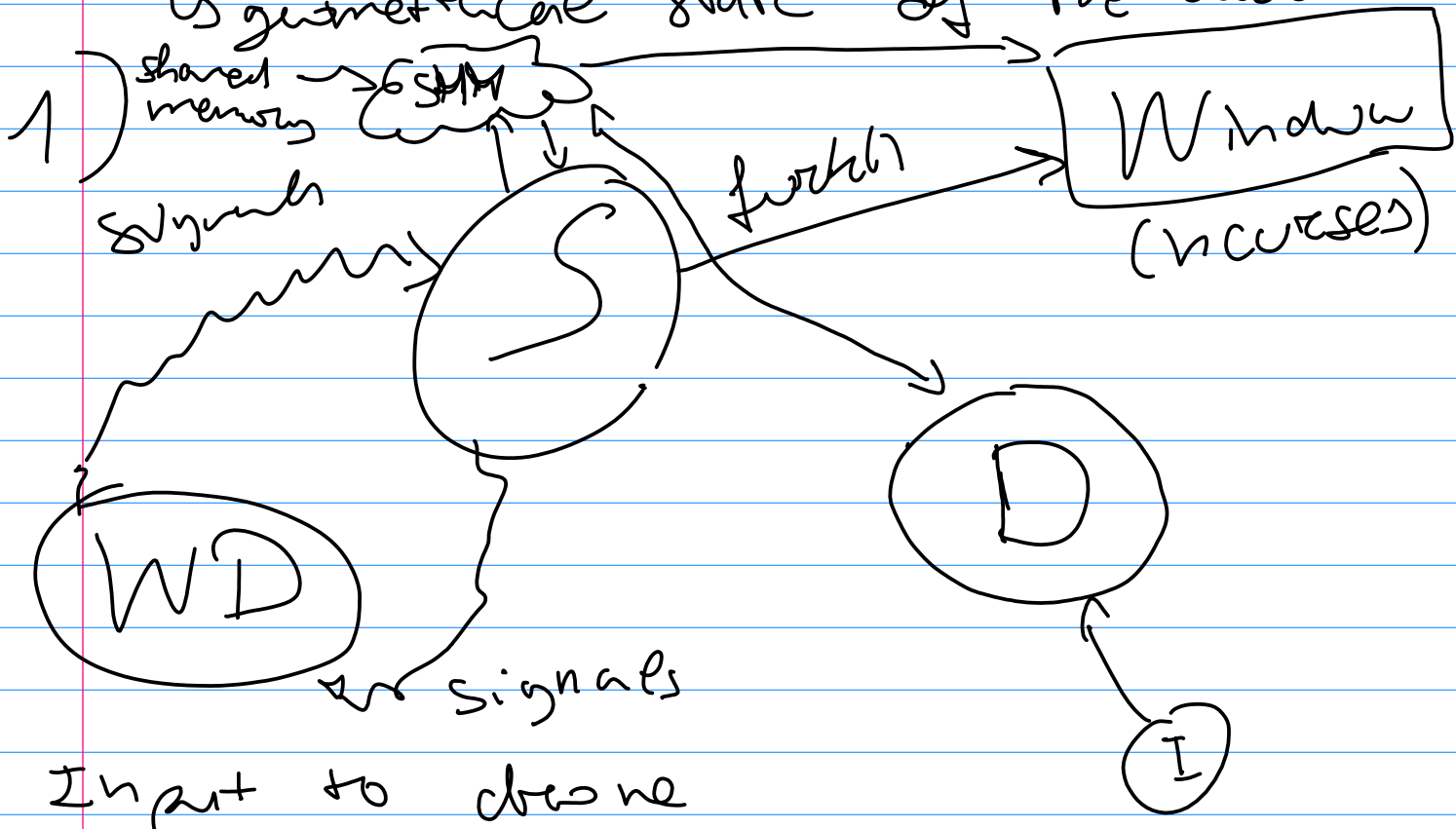
SERVER

Uses shared memory

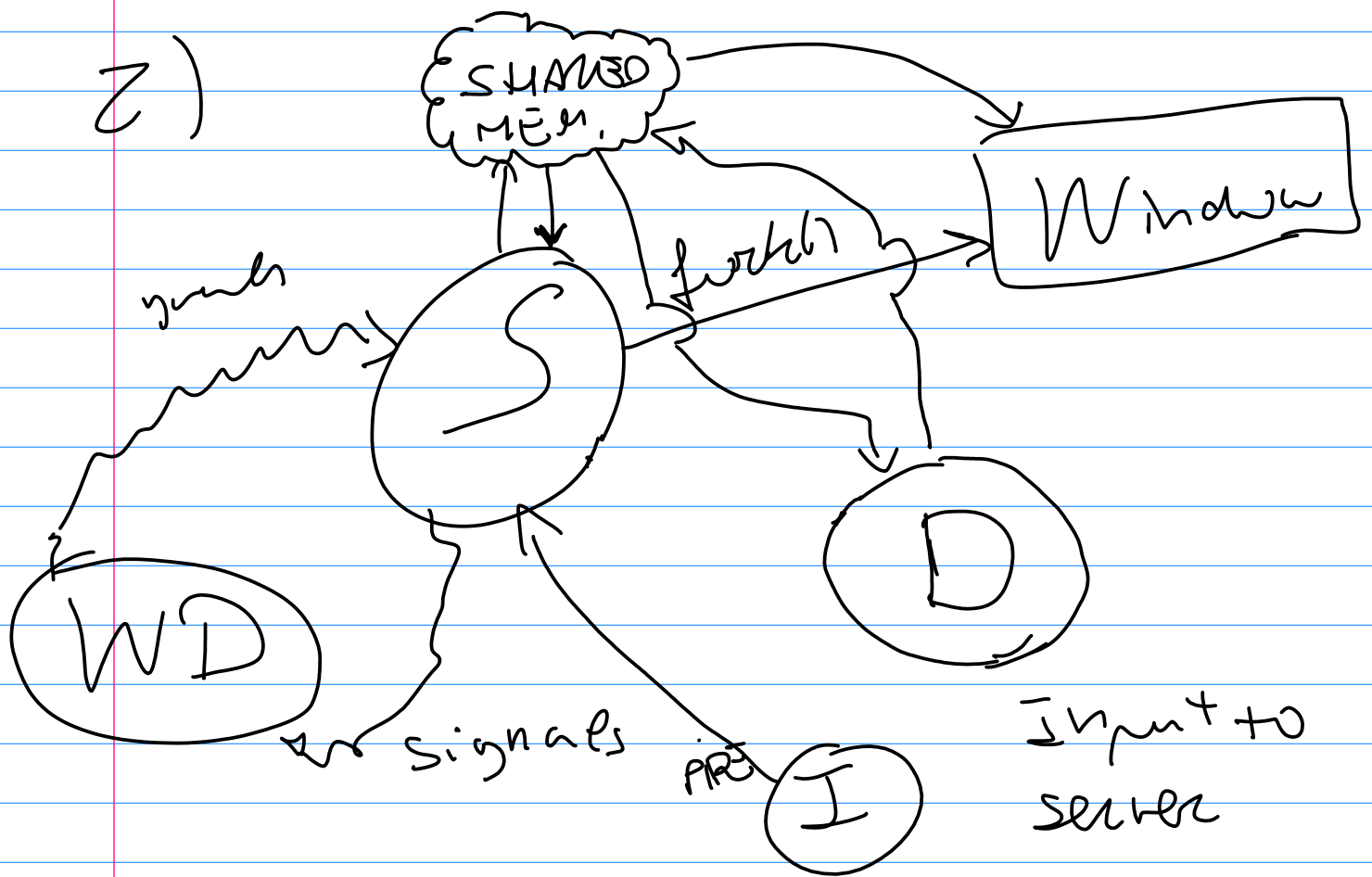
WHICH ARCHITECTURE?

Manages BLACKBOARD

Is geometrical state of the world



- SIMPLER CODE
- LESS LATENCY

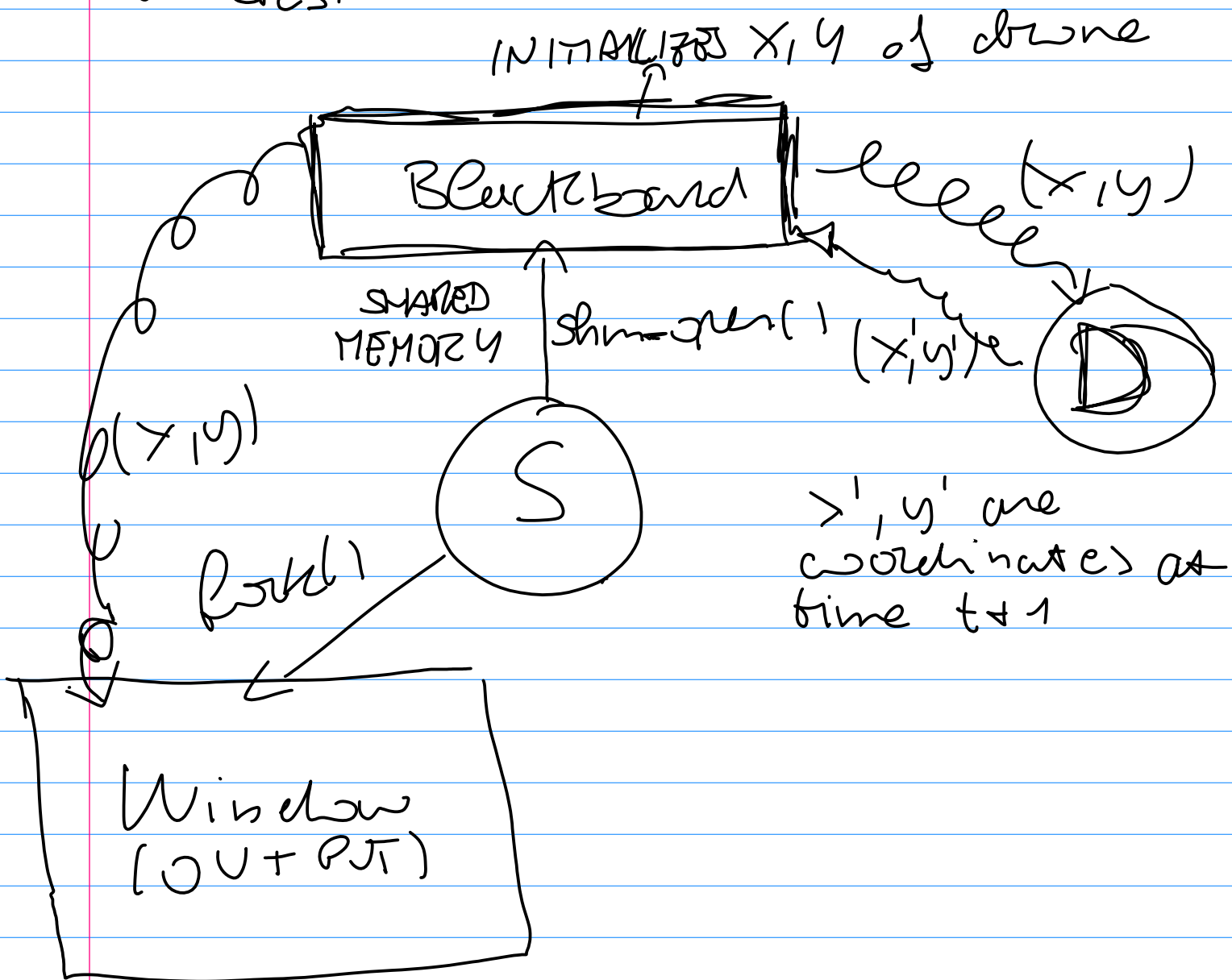


- MORE STABILITY
- BETTER IF I WILL ~~upgrade the system~~
- UPGRADE THE SYSTEM

I choose the 1) Architecture

why? → Because in 1st Assignment, the structure is relatively simple to manage.

Let's see better how server works:



DHWB

$T = \text{periodo}$
 $10 \div 100 \text{ ms}$

$m \rightarrow \text{massa}$

$k \rightarrow \text{coefficient of viscosity}$

$P \rightarrow \text{position}$

$$F_{\text{TOT}} = m \frac{d^2 P}{dt^2} + k \frac{dP}{dt}$$

↓

$$F_{\text{TOT}} = m \cdot a + k v$$

By pressing a key you increment
of $\text{mod } F$ the force in the
direction selected.

To this force, there is the
friction force that ~~counteracts~~
the motion:

generated \rightarrow $F - k \cdot v = m \cdot a$ (2nd Newton Law)

\nwarrow \uparrow \uparrow
known

so, calling V' , x' , y' the coordinates and velocity at time $t+T$

$$a = \frac{F - KV}{m}$$

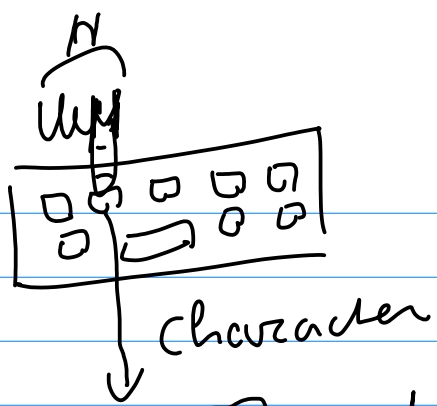
↓ integrate in $t \rightarrow t+T$

$$V' = V + a \cdot T$$

$$\begin{cases} x' = x + V_x' T + \frac{a_x}{2} T^2 \\ y' = y + V_y' T + \frac{a_y}{2} T^2 \end{cases}$$

INPUT

Reads characters and then sends them with a pipe to ~~done~~.



INPUT

character
pipeline

Draw