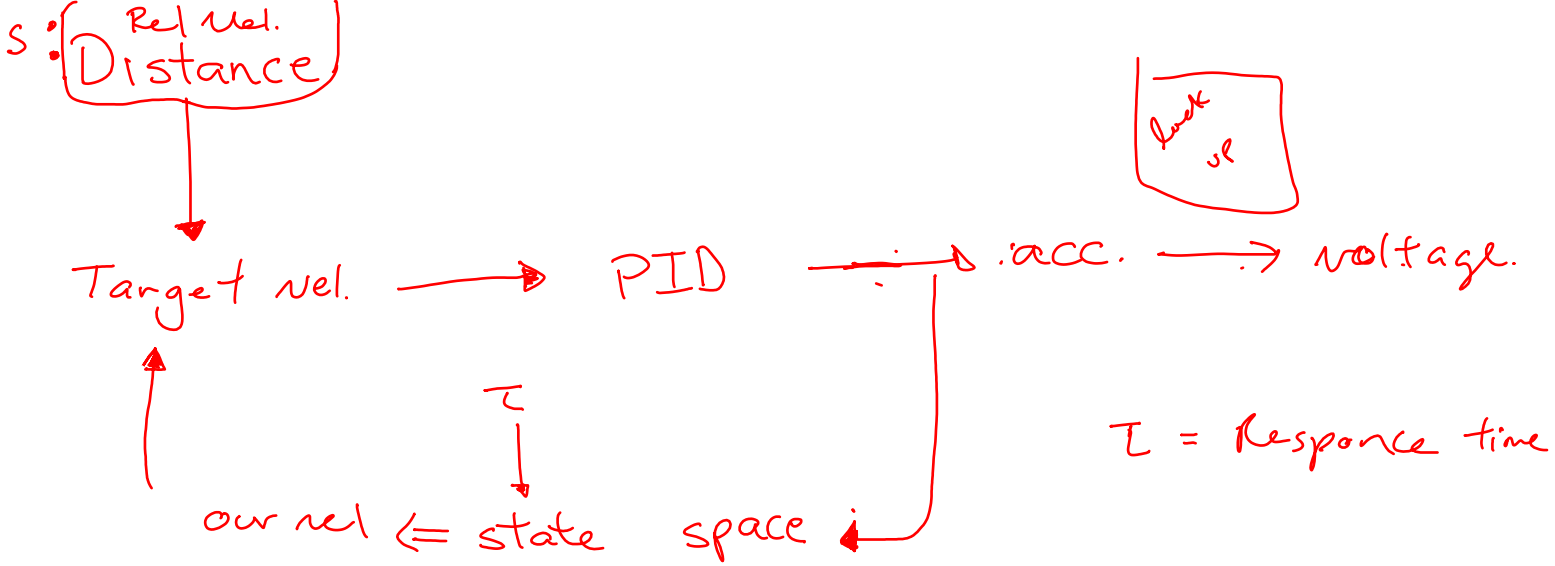

τ = Responce time

$$\begin{bmatrix} \dot{v} \\ \dot{x} \end{bmatrix} = \begin{bmatrix} -1/\tau & 0 \\ 1 & 0 \end{bmatrix} \begin{bmatrix} v \\ x \end{bmatrix} + \begin{bmatrix} 1/\tau \\ 0 \end{bmatrix} a$$

Rel vel
our vel
Distance x2
time between samples.

```
target vel (...) {
    if (distance: good) {
      adjust speed to lead car speed
    } else { adjust speed to be in safe distance. }

    // Safe distance depends on our breaking time
       data and lead car speed.
```

Assumptions:
- No lateral movement
- low velocities
- No acc. on mil scale