PIDController

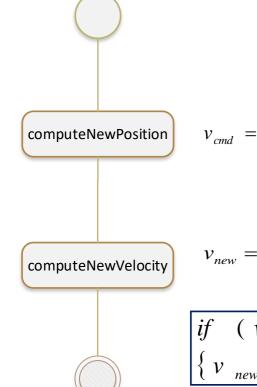
-private Kp: double -private Ki: double -private Kd: double -private T:double

 $\hbox{-private sum} Of Position Error: double$

-Private sumOfVelocityError:double

-public computeNewVelocity():double

-public computeNewPosition():double



$$v_{cmd} = K_p \cdot e_{position} + K_i \cdot \sum_{t=0}^{1} e_{position} (t) + \frac{K_d}{T} \cdot e_{position}$$

$$e_{position} = p_{t \arg et Set Po \operatorname{int}} - p_{current Pos ition}$$

$$v_{new} = K_p \cdot e_{velocity} + K_i \cdot \sum_{t=0}^{1} e_{velocity}(t) + \frac{K_d}{T} \cdot e_{velocity}$$

$$e_{velocity} = v_{cmd} - v_{actual}$$

$$if (v_{new} > 2000)$$
 $\{v_{new} = 2000\}$