plant

num
den
A
B
C
D
t1

+ init
+ format
+ num
+ den
+ t1
+ get_system_order
+ system
+ step_response
+ system_response
+ tf2ivp
+ rk4_step

ClosedLoop

plant
control_constraint
set_point
last_time
last_error
integral
filtered_d
last_u
+ plant

+ init(t)
+ format()
+ plant(): Plant
+ closed_loop()
+ step_response():
+ system_response()
+ *controller()*
+ *controller_time_step()*

Extends

PIDClosedLoop

kp
ki
kd
tn
tv
tf

+ init()
+ format()
+ kp ()
+ ki ()
+ kd()
+ tn()
+ tv()
+ controller()
+ controller_time_step()

protected
- private
+ public