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1  /*-----*/
2  /*  5249Z-Ignite                                */
3  /*  Version: 1.2.0                                */
4  /*  File: PID.cpp                                */
5  /*  Description: Defines methods in the PID class */
6  /*-----*/
7  #include "PID.h"
8
9  PID::PID(double kP, double kI, double kD, double samplePeriod){
10     this->kP = kP;
11     this->kI = kI;
12     this->kD = kD;
13     this->samplePeriod = samplePeriod;
14 }
15 double PID::calculatePID(double processVar){
16     double error = setPoint - processVar;
17     double derivative = (error - prevError)/samplePeriod;
18     integral += error * samplePeriod;
19     prevError = error;
20     return error * kP + derivative * kD + integral * kI;
21 }
22 void PID::reset(){
23     prevError = 0;
24     integral = 0;
25 }
26 void PID::setGains(double kP, double kI, double kD){
27     this->kP = kP;
28     this->kI = kI;
29     this->kD = kD;
30 }

```