PID Control Beam Balance: Positioning of Plastic Ball

PID Control Beam Balance BeamBalanceGraph.pde at master · kevjumba PID Control Beam Balance.png

Setup creates a window of size 400\*300 pixels.

Serial.list() lists all serial ports on your computer

This declaration declares a Serial port variable where the processing controller can then read from.

Reads a string from the serial port

Converts it to a float

Maps a number from one range to another

Draws a line

Increments the x variable and draws the graph.

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Get Distance in PositionPID Control Beam Balance BalancePID.ino at master · kevjumba PID Control Beam Balance1.png

Reverse tells me whether I’m using right data or left data. Either one has different ways of calculating error

filters out all the bad inputs

Computes a PID value

Does some filtering to filter out values really close to the target.

Sends a position to the servo

Keeps track of a now and the time change

It must be larger than a certain value to make sense

Finds correct error

Keeps a limit on the sum of the errors

Finds the rate of change

Outputs it as the error

Keeps track of last time and position

Return motor output