The Proportional-Integral-Derivative (PID) controller is used to prevent the robot from making disproportionate or oscillatory changes to the black line it is following. This controller is capable of providing an exact and timely adjustment to the control function, therefore enabling the robot to trace and adjust to different types of curves with differing radii whilst remaining on the black line.

<https://www.instructables.com/Line-Follower-Robot-Using-Arduino-2/>