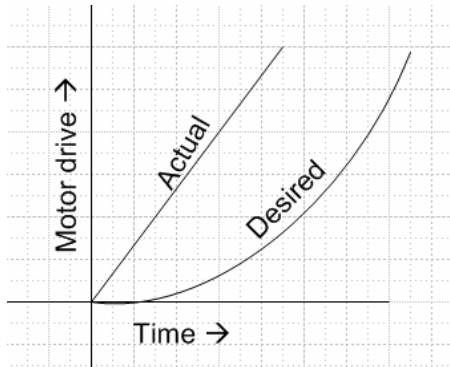
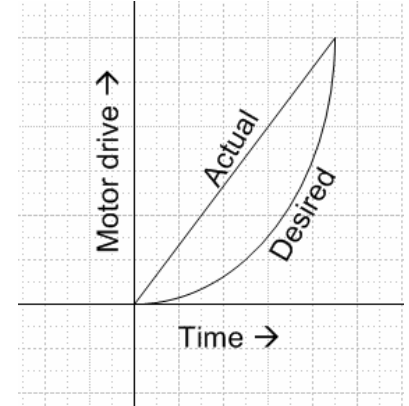


Minutes 12/16/05 Team1720 Programmers Workshop
AT Building, Rm. 214, 5-7pm

Present: Ashley, Nathan, Mike, Cheryl.

We reanalyzed the supposition that a curve could be applied to the joystick drive before being applied to the motor.

The original supposition was that rather than feed the joystick value directly to the motor (which would result in wheel spinning and/or robot rocking if the joystick were moved quickly or "jammed"), we would advance the drive value in a parabolic curve and arrive at the same final value but by ramping up the motor speed rather than "flooring it."



In fact the controlled ramp version would reach the same point but at a later time as shown in the drawing sketch at the left.

The second assumption was that we could actually follow a curve. Because of the program architecture which must loop in order to keep everything functioning, only one value can be put out at a time, then the program will continue to other parts. The loop takes 26 milliseconds (38 per second). That means every time the loop completes another value can be assigned.

In order to determine the value to assign, two things must be known: the current speed and the desired speed.

The current speed can be measured with an encoder geared to the transmission or wheel. The desired speed is known from the joystick position (y value). If the desired speed is within the acceptable limits of acceleration to reach in one step, the joystick value can be applied to the wheel motors directly. If the desired value would cause the robot to accelerate faster than the maximum allowable acceleration (determined by the physical characteristics of the robot) then the maximum value will be used. The constant used is defined as THRESHOLD.

Every time through the loop the same comparison is made: current speed to desired speed. If the delta is greater than allowed, the THRESHOLD value will be added to the current value, otherwise the desired value can be applied.

Next assignment: Ashley: move the inline code into a callable function. Add a speed pickup to 1020,.

Next meeting: Tuesday, Dec 20th, 5-7, AT building, Rm. 144