SE423 Laboratory Assignment 7 RCServo Test Program

Goals for this Lab Assignment:

1. Learn where to connect RC Servos to the robot and drive them with similar code you developed in HW #4.

Exercise 1: Drive RC Servos connected to the Robot

Your instructor will take you through all the coding for this exercise. You will be using a new "Starter" project called "FinalProjectwithCANAprilStarter". You will be using this project starter in Lab 7 also.

The robot car can connect and drive five RC Servos (we will probably not use more than two). Your instructor will show you where to connect the RC Servos and that they are driven with PWM outputs EPWM3A, EPWM3B, EPWM5A, EPWM5B and EPWM6A. Perform the following steps to have the robot drive RC Servos:

1. In Timer2's ISR, (which is called by default every 40ms.) first read the value of the encWheel:

   RCangle = readEncWheel();

   Then call the five RC servo functions and pass RCangle to each of them:

   setEPWM3A_RCServo(RCangle) //RCangle is a value from -90 to 90

   setEPWM3B_RCServo(RCangle) //RCangle is a value from -90 to 90

   setEPWM5A_RCServo(RCangle) //RCangle is a value from -90 to 90

   setEPWM5B_RCServo(RCangle) //RCangle is a value from -90 to 90

   setEPWM6A_RCServo(RCangle) //RCangle is a value from -90 to 90
2. Then print the value of RCangle to the robot's text LCD screen. Run your code. Now by spinning the encoder wheel in your hand, you can watch the text LCD screen and dial in the angle that moves the RC servos to certain angles. **Show this code working to your Instructor and test that all 5 RC Servo connections work.**