Purpose of Module
This module provides functions to control the motors, read the light sensor, and read the bumper sensors on the CMPE118 Cockroach 3000.

INTERFACE
Module Functions

RoachInit
PROTOTYPE: void RoachInit(void)
CONTENTS: This is the initialization routine for the Roach functions.
PARAMETERS: none
RETURNS: nothing

RightMtrSpeed
PROTOTYPE: uchar RightMtrSpeed(char newSpeed)
CONTENTS: This function is used to set the speed and direction of the right motor. A negative value is reverse and 0 is stop.
PARAMETERS: NewSpeed -- a speed value between -10 and 10
RETURNS:
OK_OPERATION == The registration was successful.
ERR_BADSPEED == An invalid speed was given.

LeftMtrSpeed
PROTOTYPE: uchar LeftMtrSpeed(char newSpeed)
CONTENTS: This function is used to set the speed and direction of the left motor. A negative value is reverse and 0 is stop.
PARAMETERS: NewSpeed -- a speed value between -10 and 10
RETURNS:
OK_OPERATION == The registration was successful.
ERR_BADSPEED == An invalid speed was given.

LightLevel
PROTOTYPE: uchar LightLevel(void)
CONTENTS: This will read the light sensor, returns a number proportional to the amount of light being received.
PARAMETERS: none
RETURNS: An 8-bit value indicating the amount of light present.

ReadFrontLeft, ReadFrontRight, ReadBackLeft, ReadBackRight
PROTOTYPE: int ReadFrontLeft(void)
CONTENTS: This will read the 10-bit magnetic field value for a bumper sensor.
PARAMETERS: none
RETURNS: An integer value corresponding to the magnetic field reading for the bump sensor. The value should normally be around 512. If a bumper is hit, the corresponding value will swing high (towards 1024) or low (towards 0) depending on the position of the magnet to the sensor.

IsFrontLeftBumped, IsFrontRightBumped, IsBackLeftBumped, IsBackRightBumped
PROTOTYPE: int IsFrontLeftBumped(void)
CONTENTS: This will check a bumper sensor and determine if a bump has occurred.
PARAMETERS: none
RETURNS: A non-zero value if a bump is detected or zero under normal conditions.