\*\*Revised by Andrew Capatina 11/26/2017 \*\*

Version 2.0

Note: Algorithm does not include code generated by cubeMX.

1. Declare function prototypes.
2. Declare global variables.
3. Write callback functions.

a.) Callback function will count number of times

Main

1. Initialize OLED.
2. Start base timer.
3. Start timer input capture interrupt.
4. Calculate numerator since value is constant.
5. In a infinite while loop:

a.) Get value of counter.

b.) Wait until it is time to refresh OLED.

i.) Calculate speed.

j.) Send speed to OLED.

c.) else if it isn't time to refresh:

i.) Set speed to zero if count value is above threshold.

OLED\_initialize()

* This function will setup the OLED when intitially entering speed mode.

1. Clear display.
2. Set 8 wire and 2 line interface.
3. Display the cursor.
4. Set cursor to first position.
5. Send string to OLED.

send\_bit()

* This function will set a GPIO outport level high or low. Function will have 3 parameters for the port to write to, the pin number to write to, and the state of the outport.

1. If the state is equal to one, assign the GPIO outport level high.
2. If the state is equal to zero, assign the GPIO outport level low.

send\_byte()

* This function will send a byte of information to the OLED. Uses send\_bit() to write to the appropriate data pins. Function argument is a character.
* Write to data pin 0-7. Use send\_bit() to write to each individual pin.
* Enable OLED functionality.

OLED\_sendCharacter()

* This function will write a character to the OLED. Has one function argument for character to be displayed.

1. Select write mode of OLED.
2. Select character mode of OLED.
3. Enable OLED functionality.
4. Send character to be displayed to OLED.

OLED\_sendCommand()

* This function will send an instruction to OLED. Function argument will be an instruction to be sent.

1. Set OLED into write mode.
2. Set OLED into instruction mode.
3. Enable OLED functionality.

OLED\_sendString()

* This function will send an entire string to OLED. There will be 1 function argument for the string to be displayed.

1. Call sendCharacter to display string. Loop through string until at end of line delimiter.

OLED\_sendInt()

* This function will display an integer on OLED.

1. Convert ineger into string.
2. Call function to send string to OLED.

send\_speed()

* This function will take one argument for the speed to be displayed. Will be used to display speed to OLED.

1. Clear display.
2. Set cursor position.
3. Call function to display integer on OLED.