sparkfun$_q wiic_serlcd$

Release 0.0.1

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Contents:

Python module for I2C control of the SparkFun Qwiic Serial LCDs.

This package enables the user to access all of the features of these LCD products via a single Qwiic cable. This includes writing text to the screen, adjusting backlight levels (color), customizing splash screen and much much more. They come pre-programmed with the fully open-sourced OpenLCD firmware. All of the capabilities of these LCD screens are each demonstrated in the included 17 examples.

This package can be used in conjunction with the overall SparkFun qwiic Python Package

New to qwiic? Take a look at the entire SparkFun qwiic ecosystem.

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CHAPTER 2

Supported Platforms

The qwiic serlcd python package current supports the following platforms:

- Raspberry Pi
- NVidia Jetson Nano
- Google Coral Development Board

Dependencies

This driver package depends on the qwiic I2C driver: Qwiic_I2C_Py

CHAPTER 4

Documentation

The SparkFun qwiic serlcd documentation is hosted at ReadTheDocs

Installation

5.1 PyPi Installation

This repository is hosted on PyPi as the sparkfun-qwiic-serlcd package. On systems that support PyPi installation via pip, this library is installed using the following commands

For all users (note: the user must have sudo privileges):

```
sudo pip install sparkfun-qwiic-serlcd
```

For the current user:

```
pip install sparkfun-qwiic-serlcd
```

5.2 Local Installation

To install, make sure the setuptools package is installed on the system.

Direct installation at the command line:

```
python setup.py install
```

To build a package for use with pip:

```
python setup.py sdist
```

A package file is built and placed in a subdirectory called dist. This package file can be installed using pip.

```
cd dist
pip install sparkfun_qwiic_serlcd-<version>.tar.gz
```

Example Use

See the examples directory for more detailed use examples.

```python
from __future__ import print_function
import qwiic_serlcd
import time
import sys

def runExample():

    print("\nSparkFun Qwiic SerLCD   Example 1\n")
    myLCD = qwiic_serlcd.QwiicSerlcd()

    if myLCD.connected == False:
        print("The Qwiic SerLCD device isn't connected to the system. Please check
→your connection", \
            file=sys.stderr)
        return

    myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
    myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
    myLCD.clearScreen() # clear the screen - this moves the cursor to the home
→position as well

    time.sleep(1) # give a sec for system messages to complete

    myLCD.print("Hello World!")
    counter = 0
    while True:
        print("counter: %d" % counter)
        myLCD.setCursor(0,1)
        myLCD.print(str(counter))
        counter = counter + 1
        time.sleep(1)
```

```python
if __name__ == '__main__':
    try:
        runExample()
    except (KeyboardInterrupt, SystemExit) as exErr:
        print("\nEnding Example 1")
        sys.exit(0)
```

Table of Contents

7.1 API Reference

7.1.1 qwiic_serlcd

Python module for the SparkFun SerLCD QWIIC products:

[SparkFun 16x2 SerLCD - RGB Backlight (Qwiic)](https://www.sparkfun.com/products/16396) [SparkFun 16x2 SerLCD - RGB Text (Qwiic)](https://www.sparkfun.com/products/16397) [SparkFun 20x4 SerLCD - RGB Backlight (Qwiic)](https://www.sparkfun.com/products/16398)

This python package enables the user to control the SerLCDs via I2C. It is intended to be used by simply plugging in a qwiic cable for power and I2C communicaiton.

This package can be used in conjunction with the overall [SparkFun qwiic Python Package](https://github.com/sparkfun/Qwiic_Py)

New to qwiic? Take a look at the entire [SparkFun qwiic ecosystem](https://www.sparkfun.com/qwiic).

class qwiic_serlcd.**QwiicSerlcd**(*address=None*, *i2c_driver=None*)

> **Parameters**
>
> > - **address** – The I2C address to use for the device. If not provided, the default address is used.
> >
> > - **i2c_driver** – An existing i2c driver object. If not provided a driver object is created.
>
> **Returns** The QwiicSerlcd device object.
>
> **Return type** Object

autoscroll()
> Turn autoscrolling on. This will right-justify text from the cursor.
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

begin()
> Initialize the operation of the SerLCD module
>
> > **Returns** Returns true of the initializtion was successful, otherwise False.
> >
> > **Return type** bool

blink()
> Turn the blink cursor on.
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

clearScreen()
> Sends the command to clear the screen
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

command(*command*)
> Send one setting command to the display. Used by other functions.
>
> > **Parameters** **command** – Command to send (a single byte)
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

connected
> Determine if a device is conntected to the system..
>
> > **Returns** True if the device is connected, otherwise False.
> >
> > **Return type** bool

createChar(*location*, *charmap*)
> Create a customer character :param location: character number 0 to 7 :param charmap: byte array for character
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

cursor()
> Turn the underline cursor on.
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

disableSplash()
> Disable splash screen at power on
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

disableSystemMessages()
> Disable system messages
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

display()
> Turn the display on quickly.

> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

enableSplash()
   Enable splash screen at power on

> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

enableSystemMessages()
   Enable system messages

> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

home()
   Send the home command to the display. This returns the cursor to return to the beginning of the display, without clearing the display.

> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

is_connected()
   Determine if a device is conntected to the system..

> **Returns** True if the device is connected, otherwise False.
>
> **Return type** bool

leftToRight()
   Set the text to flow from left to right.

> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

moveCursorLeft(*count=1*)
   Move the cursor one or more characters to the left.

> **Parameters** **count** – Number of character spaces you'd like to move
>
> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

moveCursorRight(*count=1*)
   Move the cursor one or more characters to the right.

> **Parameters** **count** – Number of character spaces you'd like to move
>
> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

noAutoscroll()
   Turn autoscrolling off.

> **Returns** Returns true if the I2C write was successful, otherwise False.
>
> **Return type** bool

noBlink()
   Turn the blink cursor off.

> > > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > > **Return type** bool

noCursor()
> Turn the underline cursor off.
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

noDisplay()
> Turn the display off quickly.
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

print(*string*)
> Print a string of characters to the LCD
>
> > **Parameters** **string** – The string you would like to print. Aka ASCII characters. example: "Hello"
> >
> > **Returns** Returns true if the I2C writes were successful, otherwise False.
> >
> > **Return type** bool

rightToLeft()
> Set the text to flow from right to left
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

saveSplash()
> Save the current display as the splash Saves whatever is currently being displayed into EEPROM This will be displayed at next power on as the splash screen
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

scrollDisplayLeft(*count=1*)
> Scroll the display one or multiple characters to the left, without changing the text.
>
> > **Parameters** **count** – Number of character spaces you'd like to scroll
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

scrollDisplayRight(*count=1*)
> Scroll the display one or multiple characters to the right, without changing the text.
>
> > **Parameters** **count** – Number of character spaces you'd like to scroll
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

setAddress(*new_addr*)
> Change the I2C Address. 0x72 is the default. Note that this change is persistent. If anything goes wrong you may need to do a hardware reset to unbrick the display. :param new_addr: new i2c address
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

---

setBacklight(*r*, *g*, *b*)

> Set the brightness of each backlight (red, green, blue)
>
> > **Parameters**
> >
> > > • **red** – The new red brightness value (0-255)
> > >
> > > • **green** – The new green brightness value (0-255)
> > >
> > > • **blue** – The new blue brightness value (0-255)
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

setContrast(*contrast*)

> Set the contrast of the LCD screen (0-255)
>
> > **Parameters** **contrast** – The new contrast value (0-255)
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

setCursor(*col*, *row*)

> Set the cursor position to a particular column and row.
>
> > **Parameters**
> >
> > > • **col** – The column postion (0-19)
> > >
> > > • **row** – The row postion (0-3)
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

setFastBacklight(*r*, *g*, *b*)

> Set backlight with no LCD messages or delays :param r: red backlight value 0-255 :param g: green backlight value 0-255 :param b: blue backlight value 0-255
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

specialCommand(*command*, *count=1*)

> Send one (or multiple) special commands to the display. Used by other functions.
>
> > **Parameters**
> >
> > > • **command** – Command to send (a single byte)
> > >
> > > • **count** – Number of times to send the command (if ommited, then default is once)
> >
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

writeChar(*location*)

> Write a customer character to the display :param location: character number 0 to 7
>
> > **Returns** Returns true if the I2C write was successful, otherwise False.
> >
> > **Return type** bool

qwiic_serlcd.**map**(*x*, *in_min*, *in_max*, *out_min*, *out_max*)

> Map a value from one range to another
>
> > **param in_min** minimum of input range

> > > **param in_max** maximum of input range
> > >
> > > **param out_min** minimum of output range
> > >
> > > **param out_max** maximum of output range
> > >
> > > **return** The value scaled to the new range
> > >
> > > **rtype** int

7.2 Example 1: Hello World

Listing 1: examples/ex1_qwiic_serlcd_hello_world.py

```python
#!/usr/bin/env python
#-------------------------------------------------------------------------------
# ex1_qwiic_serlcd_hello_world.py
#
# Simple Example demonstrating how to print "hello world" and a counting number to
# →the SerLCD (Qwiic).
#-------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams - August 29, 2018
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
# board computers.
#
# More information on qwiic is at https://www.sparkfun.com/qwiic
#
# Do you like this library? Help support SparkFun. Buy a board!
#
#==============================================================================
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# OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
# SOFTWARE.
#==============================================================================
# Example 1
```

```python
43   #
44
45   from __future__ import print_function
46   import qwiic_serlcd
47   import time
48   import sys
49
50   def runExample():
51
52           print("\nSparkFun Qwiic SerLCD   Example 1\n")
53           myLCD = qwiic_serlcd.QwiicSerlcd()
54
55           if myLCD.connected == False:
56                   print("The Qwiic SerLCD device isn't connected to the system. Please␣
     ↪check your connection", \
57                           file=sys.stderr)
58                   return
59
60           myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
61           myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
62           myLCD.clearScreen() # clear the screen – this moves the cursor to the home␣
     ↪position as well
63
64           time.sleep(1) # give a sec for system messages to complete
65
66           myLCD.print("Hello World!")
67           counter = 0
68           while True:
69                   print("counter: %d" % counter)
70                   myLCD.setCursor(0,1)
71                   myLCD.print(str(counter))
72                   counter = counter + 1
73                   time.sleep(1)
74
75   if __name__ == '__main__':
76           try:
77                   runExample()
78           except (KeyboardInterrupt, SystemExit) as exErr:
79                   print("\nEnding Example 1")
80                   sys.exit(0)
81
82
```

7.3 Example 2: Backlight

Listing 2: examples/ex2_qwiic_serlcd_backlight.py

```python
1   #!/usr/bin/env python
2   #-----------------------------------------------------------------------------
3   # ex2_qwiic_serlcd_backlight.py
4   #
5   # Simple Example demonstrating various backlight controls on the SerLCD (Qwiic).
6   #
7   # This sketch changes the backlight color and displays text using
```

```
8   # the OpenLCD functions. This works with the original version of
9   # SerLCD. See FastBacklight example for version 1.1 and later.
10  #-----------------------------------------------------------------------
11  #
12  # Written by SparkFun Electronics, August 2020
13  #
14  # Ported from Arduino Library code with many contributions from
15  # Gaston Williams - August 29, 2018
16  #
17  # This python library supports the SparkFun Electroncis qwiic
18  # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
19  # board computers.
20  #
21  # More information on qwiic is at https://www.sparkfun.com/qwiic
22  #
23  # Do you like this library? Help support SparkFun. Buy a board!
24  #
25  #==================================================================================
26  # Copyright (c) 2020 SparkFun Electronics
27  #
28  # Permission is hereby granted, free of charge, to any person obtaining a copy
29  # of this software and associated documentation files (the "Software"), to deal
30  # in the Software without restriction, including without limitation the rights
31  # to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
32  # copies of the Software, and to permit persons to whom the Software is
33  # furnished to do so, subject to the following conditions:
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38  # THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
39  # IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
40  # FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
41  # AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
42  # LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
43  # OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
44  # SOFTWARE.
45  #==================================================================================
46  # Example 2
47  #

49  from __future__ import print_function
50  import qwiic_serlcd
51  import time
52  import sys

54  def runExample():

56          print("\nSparkFun Qwiic SerLCD   Example 2\n")
57          myLCD = qwiic_serlcd.QwiicSerlcd()

59          if myLCD.connected == False:
60                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
    ↪check your connection", \
61                          file=sys.stderr)
62                  return
63
```

```
64          myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
65          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
66
67          time.sleep(1) # give a sec for system messages to complete
68
69          while True:
70                  myLCD.setBacklight(0, 0, 0) # black is off
71                  myLCD.clearScreen() # Clear the display - this moves the cursor to
     ↪home position as well
72                  myLCD.print("Black (off)")
73                  time.sleep(5)
74
75                  myLCD.setBacklight(255, 0, 0) # bright red
76                  myLCD.clearScreen()
77                  myLCD.print("Red")
78                  time.sleep(5)
79
80                  myLCD.setBacklight(0xFF, 0x8C, 0x00) # orange
81                  myLCD.clearScreen()
82                  myLCD.print("Orange")
83                  time.sleep(5)
84
85                  myLCD.setBacklight(255, 255, 0) # bright yellow
86                  myLCD.clearScreen()
87                  myLCD.print("Yellow")
88                  time.sleep(5)
89
90                  myLCD.setBacklight(0, 255, 0) # bright green
91                  myLCD.clearScreen()
92                  myLCD.print("Green")
93                  time.sleep(5)
94
95                  myLCD.setBacklight(0, 0, 255) # bright blue
96                  myLCD.clearScreen()
97                  myLCD.print("Blue")
98                  time.sleep(5)
99
100                 myLCD.setBacklight(0x4B, 0x00, 0x82) # indigo, a kind of dark
     ↪purplish blue
101                 myLCD.clearScreen()
102                 myLCD.print("Indigo")
103                 time.sleep(5)
104
105                 myLCD.setBacklight(0xA0, 0x20, 0xF0) # violet
106                 myLCD.clearScreen()
107                 myLCD.print("Violet")
108                 time.sleep(5)
109
110                 myLCD.setBacklight(0x80, 0x80, 0x80) # grey
111                 myLCD.clearScreen()
112                 myLCD.print("Grey")
113                 time.sleep(5)
114
115                 myLCD.setBacklight(255, 255, 255) # bright white
116                 myLCD.clearScreen()
117                 myLCD.print("White")
118                 time.sleep(5)
```

```python
119
120  if __name__ == '__main__':
121      try:
122              runExample()
123      except (KeyboardInterrupt, SystemExit) as exErr:
124              print("\nEnding Example 2")
125              sys.exit(0)
126
127
```

7.4 Example 3: Set Cursor

Listing 3: examples/ex3_qwiic_serlcd_set_cursor_position.py

```python
1   #!/usr/bin/env python
2   #-----------------------------------------------------------------------------
3   # ex3_qwiic_serlcd_set_cursor_position.py
4   #
5   # Simple Example demonstrating cursor posistion controls on the SerLCD (Qwiic).
6   #
7   # This sketch randomly picks a cursor position, goes to
8   # that position using the setCursor() method, and prints a character
9   #-----------------------------------------------------------------------
10  #
11  # Written by SparkFun Electronics, August 2020
12  #
13  # Ported from Arduino Library code with many contributions from
14  # Gaston Williams - August 29, 2018
15  #
16  # This python library supports the SparkFun Electroncis qwiic
17  # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
18  # board computers.
19  #
20  # More information on qwiic is at https://www.sparkfun.com/qwiic
21  #
22  # Do you like this library? Help support SparkFun. Buy a board!
23  #
24  #==================================================================================
25  # Copyright (c) 2020 SparkFun Electronics
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38  # IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
39  # FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
40  # AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
```

```python
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# OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
# SOFTWARE.
#===============================================================================
# Example 3
#

from __future__ import print_function
import qwiic_serlcd
import time
import sys
import random


def runExample():

        print("\nSparkFun Qwiic SerLCD   Example 3\n")
        myLCD = qwiic_serlcd.QwiicSerlcd()

        if myLCD.connected == False:
                print("The Qwiic SerLCD device isn't connected to the system. Please
→check your connection", \
                        file=sys.stderr)
                return

        myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
        myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
        myLCD.clearScreen()

        time.sleep(1) # give a sec for system messages to complete

        # These constants won't change. But you can change the size of
        # your LCD using them:
        numRows = 2
        # numRows = 4
        numCols = 16
        # numCols = 20

        thisLetter = "a"

        while True:
                randomColumn = random.randint(0, numCols)
                randomRow = random.randint(0, numRows)

                # set the cursor position:
                myLCD.setCursor(randomColumn, randomRow)

                # print the letter:
                myLCD.print(thisLetter) # print to screen
                time.sleep(0.2)

                thisLetter = chr(ord(thisLetter) + 1)
                if thisLetter > "z":
                        thisLetter = "a" # Wrap the variable

if __name__ == '__main__':
        try:
```

7.4. Example 3: Set Cursor

```
97                      runExample()
98          except (KeyboardInterrupt, SystemExit) as exErr:
99                      print("\nEnding Example 3")
100                     sys.exit(0)
101
102
```

7.5 Example 4: Move Cursor

Listing 4: examples/ex4_qwiic_serlcd_move_cursor.py

```python
#!/usr/bin/env python
#-------------------------------------------------------------------------
# ex4_qwiic_serlcd_move_cursor.py
#
# Simple Example demonstrating the move cursor controls on the SerLCD (Qwiic).
#
# This example displays text and then moves the cursor back and forth.  These
# functions are not usually part of the LiquidCrystal library, but these functions
# are available in the Serial OpenLCD display.
#-------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams - August 29, 2018
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
# board computers.
#
# More information on qwiic is at https://www.sparkfun.com/qwiic
#
# Do you like this library? Help support SparkFun. Buy a board!
#
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```

```python
44  # SOFTWARE.
45  #=================================================================================
46  # Example 4
47  #
48
49  from __future__ import print_function
50  import qwiic_serlcd
51  import time
52  import sys
53
54  def runExample():
55
56          print("\nSparkFun Qwiic SerLCD   Example 4\n")
57          myLCD = qwiic_serlcd.QwiicSerlcd()
58
59          if myLCD.connected == False:
60                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
    ↪check your connection", \
61                          file=sys.stderr)
62                  return
63
64          myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
65          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
66          myLCD.clearScreen()
67          myLCD.cursor() # Turn on the underline cursor
68
69          time.sleep(1) # give a sec for system messages to complete
70          myLCD.print("Watch the cursor!")
71
72          while True:
73                  # move cursor left with three function calls
74                  myLCD.moveCursorLeft()
75                  time.sleep(0.5)
76                  myLCD.moveCursorLeft()
77                  time.sleep(0.5)
78                  myLCD.moveCursorLeft()
79                  time.sleep(0.5)
80
81                  # move curor right three spaces in one function call
82                  myLCD.moveCursorRight(3) # notice the optional count argument of "3"
83                  time.sleep(0.5)
84
85                  # move cursor left three spaces in one function call
86                  myLCD.moveCursorLeft(3)
87                  time.sleep(0.5)
88
89                  # move cursor right with three function calls
90                  myLCD.moveCursorRight()
91                  time.sleep(0.5)
92                  myLCD.moveCursorRight()
93                  time.sleep(0.5)
94                  myLCD.moveCursorRight()
95                  time.sleep(0.5)
96
97  if __name__ == '__main__':
98          try:
99                  runExample()
```

```
100            except (KeyboardInterrupt, SystemExit) as exErr:
101                    print("\nEnding Example 4")
102                    sys.exit(0)
103
104
```

7.6 Example 5: Enable Cursor

Listing 5: examples/ex5_qwiic_serlcd_enable_cursor.py

```python
1   #!/usr/bin/env python
2   #-----------------------------------------------------------------------------
3   # ex5_qwiic_serlcd_enable_cursor.py
4   #
5   # Simple Example demonstrating the enable and disable cursor controls on the SerLCD
    ↪(Qwiic).
6   #
7   # This example prints "Hello World!" to the LCD and
8   # uses the cursor()  and noCursor() methods to turn
9   # on and off the cursor.
10  #-----------------------------------------------------------------------------
11  #
12  # Written by SparkFun Electronics, August 2020
13  #
14  # Ported from Arduino Library code with many contributions from
15  # Gaston Williams - August 29, 2018
16  #
17  # This python library supports the SparkFun Electroncis qwiic
18  # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
19  # board computers.
20  #
21  # More information on qwiic is at https://www.sparkfun.com/qwiic
22  #
23  # Do you like this library? Help support SparkFun. Buy a board!
24  #
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```

```python
44  # SOFTWARE.
45  #===========================================================================
46  # Example 5
47  #
48
49  from __future__ import print_function
50  import qwiic_serlcd
51  import time
52  import sys
53
54  def runExample():
55
56          print("\nSparkFun Qwiic SerLCD   Example 5\n")
57          myLCD = qwiic_serlcd.QwiicSerlcd()
58
59          if myLCD.connected == False:
60                  print("The Qwiic SerLCD device isn't connected to the system. Please
    →check your connection", \
61                          file=sys.stderr)
62                  return
63
64          myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
65          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
66          myLCD.clearScreen()
67          myLCD.cursor() # Turn on the underline cursor
68
69          time.sleep(1) # give a sec for system messages to complete
70          myLCD.print("Hello World!")
71
72          while True:
73                  # turn off the cursor
74                  print("Cursor OFF")
75                  myLCD.noCursor()
76                  time.sleep(1)
77
78                  # turn on the cursor
79                  print("Cursor ON")
80
81                  myLCD.cursor()
82                  time.sleep(1)
83
84  if __name__ == '__main__':
85          try:
86                  runExample()
87          except (KeyboardInterrupt, SystemExit) as exErr:
88                  print("\nEnding Example 5")
89                  sys.exit(0)
90
91
```

7.7 Example 6: Blink Cursor

Listing 6: examples/ex6_qwiic_serlcd_blink_cursor.py

```python
#!/usr/bin/env python
#-----------------------------------------------------------------------------
# ex6_qwiic_serlcd_blink_cursor.py
#
# Simple example demonstrating the blinking cursor controls on the SerLCD (Qwiic).
#
# This example prints "Hello World!" to the LCD and
# uses the blink()  and noBlink() methods to turn
# on and off the blinking.
#------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams - August 29, 2018
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
# board computers.
#
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#==================================================================================
# Example 6
#

from __future__ import print_function
import qwiic_serlcd
import time
import sys

def runExample():

```

(continues on next page)

```python
56          print("\nSparkFun Qwiic SerLCD   Example 6\n")
57          myLCD = qwiic_serlcd.QwiicSerlcd()
58
59          if myLCD.connected == False:
60                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
      →check your connection", \
61                          file=sys.stderr)
62                  return
63
64          myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
65          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
66          myLCD.clearScreen()
67          myLCD.cursor() # Turn on the underline cursor
68
69          time.sleep(1) # give a sec for system messages to complete
70          myLCD.print("Hello World!")
71
72          while True:
73                  # turn off the blinking cursor
74                  print("Cursor blinking OFF")
75                  myLCD.noBlink()
76                  time.sleep(5)
77
78                  # turn on the blinking cursor
79                  print("Cursor blinking ON")
80                  myLCD.blink()
81                  time.sleep(5)
82
83  if __name__ == '__main__':
84          try:
85                  runExample()
86          except (KeyboardInterrupt, SystemExit) as exErr:
87                  print("\nEnding Example 6")
88                  sys.exit(0)
89
90
```

7.8 Example 7: Scroll

Listing 7: examples/ex7_qwiic_serlcd_scroll.py

```python
1   #!/usr/bin/env python
2   #-----------------------------------------------------------------------------
3   # ex7_qwiic_serlcd_scroll.py
4   #
5   # Simple example demonstrating the scroll controls on the SerLCD (Qwiic).
6   #
7   # This example prints "Hello World!" to the LCD and uses the
8   # scrollDisplayLeft() and scrollDisplayRight() methods to scroll
9   # the text.
10  #-----------------------------------------------------------------------
11  #
12  # Written by SparkFun Electronics, August 2020
13  #
```

```
14  # Ported from Arduino Library code with many contributions from
15  # Gaston Williams - August 29, 2018
16  #
17  # This python library supports the SparkFun Electroncis qwiic
18  # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
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45  #==================================================================================
46  # Example 7
47  #

49  from __future__ import print_function
50  import qwiic_serlcd
51  import time
52  import sys

54  def runExample():

56          print("\nSparkFun Qwiic SerLCD   Example 7\n")
57          myLCD = qwiic_serlcd.QwiicSerlcd()

59          if myLCD.connected == False:
60                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
    ↪check your connection", \
61                          file=sys.stderr)
62                  return

64          myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
65          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
66          myLCD.clearScreen()

68          time.sleep(1) # give a sec for system messages to complete
69          myLCD.print("Hello World!")
```

```python
 70
 71        while True:
 72                # scroll 13 positions (string length) to the left
 73                # to move it offscreen left:
 74                for i in range(13):
 75                        myLCD.scrollDisplayLeft() # scroll one position left
 76                        time.sleep(0.15) # wait a bit
 77
 78                # scroll 29 positions (string length + display length) to the right
 79                # to move it offscreen right:
 80                for i in range(29):
 81                        myLCD.scrollDisplayRight() # scroll one position right
 82                        time.sleep(0.15) # wait a bit
 83
 84                # scroll 16 positions (display length + string length) to the left
 85                # to move it back to center:
 86                for i in range(16):
 87                        myLCD.scrollDisplayLeft() # scroll one position left
 88                        time.sleep(0.15) # wait a bit
 89
 90                time.sleep(1) # delay at the end of the full loop
 91
 92 if __name__ == '__main__':
 93        try:
 94                runExample()
 95        except (KeyboardInterrupt, SystemExit) as exErr:
 96                print("\nEnding Example 7")
 97                sys.exit(0)
 98
 99
```

7.9 Example 8: Autoscroll

Listing 8: examples/ex8_qwiic_serlcd_autoscroll_with_text.py

```python
 1 #!/usr/bin/env python
 2 #-----------------------------------------------------------------------------
 3 # ex8_qwiic_serlcd_autoscroll_with_text.py
 4 #
 5 # Simple example demonstrating the autoscroll feature on the SerLCD (Qwiic).
 6 #
 7 # This example demonstrates the use of the autoscroll()
 8 # and noAutoscroll() functions to make new text scroll or not.
 9 #-----------------------------------------------------------------------
 10 #
 11 # Written by SparkFun Electronics, August 2020
 12 #
 13 # Ported from Arduino Library code with many contributions from
 14 # Gaston Williams - August 29, 2018
 15 #
 16 # This python library supports the SparkFun Electroncis qwiic
 17 # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
 18 # board computers.
 19 #
```

```python
20    # More information on qwiic is at https://www.sparkfun.com/qwiic
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22    # Do you like this library? Help support SparkFun. Buy a board!
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43    # SOFTWARE.
44    #==================================================================================
45    # Example 8
46    #
47
48    from __future__ import print_function
49    import qwiic_serlcd
50    import time
51    import sys
52
53    def runExample():
54
55            print("\nSparkFun Qwiic SerLCD   Example 8\n")
56            myLCD = qwiic_serlcd.QwiicSerlcd()
57
58            if myLCD.connected == False:
59                    print("The Qwiic SerLCD device isn't connected to the system. Please␣
      ↪check your connection", \
60                            file=sys.stderr)
61                    return
62
63            myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
64            myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
65            myLCD.begin() # call this for default settings (no
66            myLCD.leftToRight()
67            time.sleep(1) # give a sec for system messages to complete
68
69            while True:
70                    myLCD.setCursor(0, 0) # set the cursor to (0,0)
71
72                    for thisChar in range(10): # print from 0 to 9
73                            myLCD.print(str(thisChar))
74                            time.sleep(0.5)
75
```

```python
76                    myLCD.autoscroll() # set the display to automatically scroll
77
78                    for thisChar in range(0,10): # print from 0 to 9
79                            myLCD.setCursor(10+thisChar,1)
80                            myLCD.print(str(thisChar))
81                            time.sleep(0.5)
82
83                    myLCD.noAutoscroll() # turn off automatic scrolling
84                    myLCD.clearScreen() # clear screen for the next loop
85
86   if __name__ == '__main__':
87        try:
88                    runExample()
89        except (KeyboardInterrupt, SystemExit) as exErr:
90                    print("\nEnding Example 8")
91                    sys.exit(0)
92
93
```

7.10 Example 9: Custom Character

Listing 9: examples/ex9_qwiic_serlcd_custom_character.py

```python
1    #!/usr/bin/env python
2    #-------------------------------------------------------------------------------
3    # ex9_qwiic_serlcd_custom_character.py
4    #
5    # This example prints "I <heart> SerLCD!" and a little dancing man
6    # to the LCD.
7    #
8    # Custom characters are recorded to SerLCD and are remembered even after power is
     →lost.
9    # There is a maximum of 8 custom characters that can be recorded.
10   #
11   #-------------------------------------------------------------------------------
12   #
13   # Written by SparkFun Electronics, August 2020
14   #
15   # Ported from Arduino Library code with many contributions from
16   # Gaston Williams - August 29, 2018
17   #
18   # Based on Adafruit's example at
19   #
20   # https://github.com/adafruit/SPI_VFD/blob/master/examples/createChar/createChar.pde
21   #
22   # This example code is in the public domain.
23   # http://www.arduino.cc/en/Tutorial/LiquidCrystalCustomCharacter
24   #
25   # Also useful:
26   # http://icontexto.com/charactercreator/
27   #
28   # This python library supports the SparkFun Electroncis qwiic
29   # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
30   # board computers.
```

```
31   #
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56   #==================================================================================
57   # Example 9
58   #
59
60   from __future__ import print_function
61   import qwiic_serlcd
62   import time
63   import sys
64
65   def runExample():
66
67           print("\nSparkFun Qwiic SerLCD   Example 9\n")
68           myLCD = qwiic_serlcd.QwiicSerlcd()
69
70           if myLCD.connected == False:
71                   print("The Qwiic SerLCD device isn't connected to the system. Please␣
     ↪check your connection", \
72                           file=sys.stderr)
73                   return
74
75           myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
76           myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
77           myLCD.begin() # call this for default settings (no
78           myLCD.leftToRight()
79           time.sleep(1) # give a sec for system messages to complete
80
81           # make some custom characters:
82           heart = [
83           0b00000,
84           0b01010,
85           0b11111,
86           0b11111,
```

```
87              0b11111,
88              0b01110,
89              0b00100,
90              0b00000]
91
92          smiley = [
93              0b00000,
94              0b00000,
95              0b01010,
96              0b00000,
97              0b00000,
98              0b10001,
99              0b01110,
100             0b00000]
101
102         frownie = [
103             0b00000,
104             0b00000,
105             0b01010,
106             0b00000,
107             0b00000,
108             0b00000,
109             0b01110,
110             0b10001]
111
112         armsDown = [
113             0b00100,
114             0b01010,
115             0b00100,
116             0b00100,
117             0b01110,
118             0b10101,
119             0b00100,
120             0b01010]
121
122         armsUp = [
123             0b00100,
124             0b01010,
125             0b00100,
126             0b10101,
127             0b01110,
128             0b00100,
129             0b00100,
130             0b01010]
131
132         myLCD.createChar(0, heart)
133         myLCD.createChar(1, smiley)
134         myLCD.createChar(2, frownie)
135         myLCD.createChar(3, armsDown)
136         myLCD.createChar(4, armsUp)
137
138         myLCD.setCursor(0,0) # set cursor to the top left
139
140         # Print a message to the LCD.
141         myLCD.print("I ")
142         myLCD.writeChar(0) # Print the heart character, stored in location 0
143         myLCD.print(" SerLCD! ")
```

```
144        myLCD.writeChar(1) # Print smiley
145
146        while True:
147
148                myLCD.setCursor(4,1) # column, row
149                myLCD.writeChar(3) # print little man, arms down
150                time.sleep(0.2)
151
152                myLCD.setCursor(4,1) # column, row
153                myLCD.writeChar(4) # print little man, arms up
154                time.sleep(0.2)
155
156 if __name__ == '__main__':
157        try:
158                runExample()
159        except (KeyboardInterrupt, SystemExit) as exErr:
160                print("\nEnding Example 9")
161                sys.exit(0)
162
163
```

7.11 Example 10: Display On/Off

Listing 10: examples/ex10_qwiic_serlcd_turn_off_display.py

```
1  #!/usr/bin/env python
2  #-------------------------------------------------------------------------------
3  # ex10_qwiic_serlcd_turn_off_display.py
4  #
5  # This example prints "Hello World!" to the LCD and uses the
6  # display() and noDisplay() functions to turn on and off
7  # the display.
8  #
9  #-------------------------------------------------------------------------------
10 #
11 # Written by SparkFun Electronics, August 2020
12 #
13 # Ported from Arduino Library code with many contributions from
14 # Gaston Williams - August 29, 2018
15 #
16 # This python library supports the SparkFun Electroncis qwiic
17 # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
18 # board computers.
19 #
20 # More information on qwiic is at https://www.sparkfun.com/qwiic
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#===============================================================================
# Example 10
#

from __future__ import print_function
import qwiic_serlcd
import time
import sys

def runExample():

        print("\nSparkFun Qwiic SerLCD   Example 10\n")
        myLCD = qwiic_serlcd.QwiicSerlcd()

        if myLCD.connected == False:
                print("The Qwiic SerLCD device isn't connected to the system. Please
→check your connection", \
                        file=sys.stderr)
                return

        myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
        myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
        myLCD.begin() # call this for default settings (no
        myLCD.leftToRight()
        myLCD.noCursor()
        time.sleep(1) # give a sec for system messages to complete

        # Print a message to the LCD.
        myLCD.print("Hello World!")

        while True:
                myLCD.display() #turn on display
                time.sleep(1)

                myLCD.noDisplay() # turn off display
                time.sleep(1)

if __name__ == '__main__':
        try:
                runExample()
        except (KeyboardInterrupt, SystemExit) as exErr:
                print("\nEnding Example 10")
                sys.exit(0)
```

7.11. Example 10: Display On/Off

```
86
87
```

7.12 Example 11: Text Direction

Listing 11: examples/ex11_qwiic_serlcd_text_direction.py

```python
1    #!/usr/bin/env python
2    #-----------------------------------------------------------------------------
3    # ex11_qwiic_serlcd_text_direction.py
4    #
5    # This example demonstrates how to use leftToRight() and rightToLeft()
6    # to change the where the next character will be printed.
7    #
8    #-----------------------------------------------------------------------
9    #
10   # Written by SparkFun Electronics, August 2020
11   #
12   # Ported from Arduino Library code with many contributions from
13   # Gaston Williams - August 29, 2018
14   #
15   # This python library supports the SparkFun Electroncis qwiic
16   # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
17   # board computers.
18   #
19   # More information on qwiic is at https://www.sparkfun.com/qwiic
20   #
21   # Do you like this library? Help support SparkFun. Buy a board!
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42   # SOFTWARE.
43   #==================================================================================
44   # Example 11
45   #
46
47   from __future__ import print_function
```

```python
import qwiic_serlcd
import time
import sys

def runExample():

        print("\nSparkFun Qwiic SerLCD   Example 11\n")
        myLCD = qwiic_serlcd.QwiicSerlcd()

        if myLCD.connected == False:
                print("The Qwiic SerLCD device isn't connected to the system. Please␣
→check your connection", \
                        file=sys.stderr)
                return

        myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
        myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
        myLCD.begin() # call this for default settings (no
        myLCD.leftToRight()
        myLCD.cursor()
        time.sleep(1) # give a sec for system messages to complete

        thisChar = 'a'

        while True:

                if thisChar == 'j': # reverse directions at 'm'
                        myLCD.rightToLeft() # go right for the next letter

                if thisChar == 'q': # reverse again at 's'
                        myLCD.leftToRight() # go left for the next letter
                        time.sleep(1)

                if thisChar > 'z': # reset at 'z'
                        myLCD.home() # go to (0,0)
                        myLCD.clearScreen() # clear screen
                        thisChar = 'a' # start again at 0

                myLCD.print(thisChar) # print the character
                time.sleep(0.5) # wait a second
                thisChar = chr(ord(thisChar) + 1) # increment the letter

if __name__ == '__main__':
        try:
                runExample()
        except (KeyboardInterrupt, SystemExit) as exErr:
                print("\nEnding Example 11")
                sys.exit(0)
```

7.13 Example 12: Console Input

Listing 12: examples/ex12_qwiic_serlcd_console_input_to_display.py

```python
#!/usr/bin/env python
#-----------------------------------------------------------------------------
# ex12_qwiic_serlcd_console_input_to_display.py
#
# This example demonstrates how to take text input from the python console
# and send it to the LCD.
#
#-----------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams - August 29, 2018
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
# board computers.
#
# More information on qwiic is at https://www.sparkfun.com/qwiic
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#==============================================================================
# Example 12
#

from __future__ import print_function
import qwiic_serlcd
import time
import sys

def runExample():

        print("\nSparkFun Qwic SerLCD   Example 12\n")
        print("\nType CTRL+C to end.\n")
```

(continues on next page)

```python
56          myLCD = qwiic_serlcd.QwiicSerlcd()
57
58          if myLCD.connected == False:
59                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
   →check your connection", \
60                          file=sys.stderr)
61                  return
62
63          myLCD.setBacklight(255, 255, 255) # Set backlight to bright white
64          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
65          myLCD.begin() # call this for default settings
66          myLCD.leftToRight()
67          myLCD.noCursor()
68          time.sleep(1) # give a sec for system messages to complete
69
70          while True:
71
72                  # promt the user to input some text
73                  user_input = input("Please type something to display on the LCD: ")
74
75                  myLCD.clearScreen() # clear the screen
76
77                  myLCD.print(user_input) # print what the user just typed in
78
79                  time.sleep(0.5) # wait a second
80
81  if __name__ == '__main__':
82          try:
83                  runExample()
84          except (KeyboardInterrupt, SystemExit) as exErr:
85                  print("\nEnding Example 12")
86                  sys.exit(0)
87
88
```

7.14 Example 13: Fast Backlight

Listing 13: examples/ex13_qwiic_serlcd_fast_backlight.py

```python
1   #!/usr/bin/env python
2   #-----------------------------------------------------------------------------
3   # ex13_qwiic_serlcd_fast_backlight.py
4   #
5   # This example shows how to use the fastBacklight() method.
6   # It is nice because it doesn't show system messages, and sends the values
7   # in one concatinated block of data (a single command for all 3 values).
8   #
9   #-----------------------------------------------------------------------------
10  #
11  # Written by SparkFun Electronics, August 2020
12  #
13  # Ported from Arduino Library code with many contributions from
14  # Gaston Williams – August 29, 2018
15  #
```

```python
16  # This python library supports the SparkFun Electroncis qwiic
17  # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
18  # board computers.
19  #
20  # More information on qwiic is at https://www.sparkfun.com/qwiic
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43  # SOFTWARE.
44  #==================================================================================
45  # Example 13
46  #
47
48  from __future__ import print_function
49  import qwiic_serlcd
50  import time
51  import sys
52
53  def runExample():
54
55          print("\nSparkFun Qwiic SerLCD   Example 13\n")
56          print("\nType CTRL+C to end.\n")
57          myLCD = qwiic_serlcd.QwiicSerlcd()
58
59          if myLCD.connected == False:
60                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
    ↪check your connection", \
61                          file=sys.stderr)
62                  return
63
64          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
65          myLCD.begin() # call this for default settings (no
66          myLCD.leftToRight()
67          myLCD.noCursor()
68          time.sleep(1) # give a sec for system messages to complete
69
70          while True:
71                  myLCD.setFastBacklight(255, 0, 0) # bright red
```

```python
72                  myLCD.clearScreen()
73                  myLCD.print("Red")
74                  time.sleep(1)
75
76                  myLCD.setFastBacklight(0xFF, 0x8C, 0x00) # orange
77                  myLCD.clearScreen()
78                  myLCD.print("Orange")
79                  time.sleep(1)
80
81  if __name__ == '__main__':
82          try:
83                  runExample()
84          except (KeyboardInterrupt, SystemExit) as exErr:
85                  print("\nEnding Example 13")
86                  sys.exit(0)
87
88
```

7.15 Example 14: Firmware Version

Listing 14: examples/ex14_qwiic_serlcd_show_firmware_version.py

```python
1   #!/usr/bin/env python
2   #-------------------------------------------------------------------------------
3   # ex14_qwiic_serlcd_show_firmware_version.py
4   #
5   # This example prints the devices firmware version on the screen.
6   #
7   #-------------------------------------------------------------------------------
8   #
9   # Written by SparkFun Electronics, August 2020
10  #
11  # Ported from Arduino Library code with many contributions from
12  # Gaston Williams - August 29, 2018
13  #
14  # This python library supports the SparkFun Electroncis qwiic
15  # qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
16  # board computers.
17  #
18  # More information on qwiic is at https://www.sparkfun.com/qwiic
19  #
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#=======================================================================================
# Example 14
#

from __future__ import print_function
import qwiic_serlcd
import time
import sys

def runExample():

        print("\nSparkFun Qwiic SerLCD   Example 14\n")
        print("\nType CTRL+C to end.\n")
        myLCD = qwiic_serlcd.QwiicSerlcd()

        if myLCD.connected == False:
                print("The Qwiic SerLCD device isn't connected to the system. Please
→check your connection", \
                        file=sys.stderr)
                return

        myLCD.setBacklight(255, 255, 255) # bright white
        myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
        myLCD.begin() # call this for default settings (no
        myLCD.leftToRight()
        myLCD.noCursor()
        time.sleep(1) # give a sec for system messages to complete

        while True:
                myLCD.command(ord(',')) # send the comma to display the frimware
→version
                time.sleep(0.5) # Firmware will be displayed for 500ms, so keep re-
→printing it

if __name__ == '__main__':
        try:
                runExample()
        except (KeyboardInterrupt, SystemExit) as exErr:
                print("\nEnding Example 14")
                sys.exit(0)
```

7.16 Example 15: System Messages On/Off

Listing 15: examples/ex15_qwiic_serlcd_message_enable.py

```python
#!/usr/bin/env python
#-------------------------------------------------------------------------------
# ex15_qwiic_serlcd_message_enable.py
#
# This example demonstrates how to turn off the system messages displayed when
# the user changes a setting. For instance 'Contrast: 5' or 'Backlight: 100%' is
# no longer displayed.
#
# Note - This example and the disableSystemMessages() and enableSystemMessages()
# commands are only supported on SerLCD v1.2 and above.
#
#-------------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams - August 29, 2018
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
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#===============================================================================
# Example 15
#

from __future__ import print_function
import qwiic_serlcd
import time
import sys

```

(continues on next page)

```python
56  def runExample():
57
58          print("\nSparkFun Qwiic SerLCD   Example 15\n")
59          print("\nType CTRL+C to end.\n")
60          myLCD = qwiic_serlcd.QwiicSerlcd()
61
62          if myLCD.connected == False:
63                  print("The Qwiic SerLCD device isn't connected to the system. Please
    ↪check your connection", \
64                          file=sys.stderr)
65                  return
66
67          myLCD.setBacklight(255, 255, 255) # bright white
68          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
69          myLCD.begin() # call this for default settings (no
70          myLCD.leftToRight()
71          myLCD.noCursor()
72          time.sleep(1) # give a sec for system messages to complete
73
74          myLCD.disableSystemMessages() # Now whenever you change a system setting like
    ↪Contrast,
75          # SerLCD will not display the setting. This makes changing the setting faster,
    ↪ and also
76          # invisible to the user.
77
78          #myLCD.enableSystemMessages() # This will re-enable the printing of system
    ↪messages
79
80          myLCD.clearScreen()
81          myLCD.print("Hello World!")
82
83          counter = 0
84
85          while True:
86                  # do something that would normally cause a system message
87                  # let's change color of backlight values every other count value
88                  if (counter % 2) == 0:
89                          myLCD.setBacklight(255, 0, 0)
90                  else:
91                          myLCD.setBacklight(0, 255, 0)
92
93                  time.sleep(0.1) # give it a sec to change backlight
94
95                  print("counter: %d" % counter)
96                  myLCD.setCursor(0,1)
97                  myLCD.print(str(counter))
98                  counter = counter + 1
99                  time.sleep(1)
100
101 if __name__ == '__main__':
102          try:
103                  runExample()
104          except (KeyboardInterrupt, SystemExit) as exErr:
105                  print("\nEnding Example 15")
106                  sys.exit(0)
107
108
```

7.17 Example 16: Custom Splash

Listing 16: examples/ex16_qwiic_serlcd_set_splash.py

```python
#!/usr/bin/env python
#-------------------------------------------------------------------------------
# ex16_qwiic_serlcd_set_splash.py
#
# This example demonstrates how to create your own custom splash screen.
#
# This is done by first writing the text you want as your splash to the display,
# then 'saving' it as a splash screen.
#
# You can also disable or enable the displaying of the splash screen.
#
# Note – The disableSplash() and enableSplash() commands
# are only supported on SerLCD v1.2 and above. But you can still use the
# toggle splash command (Ctrl+i) to enable/disable the splash.
#
#-------------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Originally written for the Arduino Library by Nathan Seidle 2/16/2019
#
# Ported to this python example by Pete Lewis 8/18/2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams – August 29, 2018
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
# board computers.
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```

```python
54  # SOFTWARE.
55  #=====================================================================================
56  # Example 16
57  #
58
59  from __future__ import print_function
60  import qwiic_serlcd
61  import time
62  import sys
63
64  def runExample():
65
66          print("\nSparkFun Qwiic SerLCD   Example 16\n")
67          print("\nType CTRL+C to end.\n")
68          myLCD = qwiic_serlcd.QwiicSerlcd()
69
70          if myLCD.connected == False:
71                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
    ↪check your connection", \
72                          file=sys.stderr)
73                  return
74
75          myLCD.setBacklight(255, 255, 255) # bright white
76          myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
77          myLCD.begin() # call this for default settings (no
78          myLCD.leftToRight()
79          myLCD.noCursor()
80          time.sleep(1) # give a sec for system messages to complete
81
82          myLCD.clearScreen()
83          myLCD.print("Tea-O-Matic")
84          time.sleep(1)
85
86          myLCD.saveSplash() # save this current text as the splash screen at next␣
    ↪power up
87
88          myLCD.enableSplash() # This will cause the splash to be displayed at power on
89          #myLCD.disableSplash() # This will supress the splash from being displayed at␣
    ↪power on
90
91          counter = 0
92
93          myLCD.clearScreen()
94          myLCD.print("Cups of tea: ")
95
96          while True:
97                  print("counter: %d" % counter)
98                  myLCD.setCursor(0,1)
99                  myLCD.print(str(counter))
100                 counter = counter + 1
101                 time.sleep(1)
102
103 if __name__ == '__main__':
104         try:
105                 runExample()
106         except (KeyboardInterrupt, SystemExit) as exErr:
107                 print("\nEnding Example 16")
```

```
108            sys.exit(0)
109
110
```

7.18 Example 17: Change I2C Address

Listing 17: examples/ex17_qwiic_serlcd_change_i2c_address.py

```python
#!/usr/bin/env python
#-------------------------------------------------------------------------------
# ex17_qwiic_serlcd_change_i2c_address.py
#
# This example demonstrates how to change the i2c address on your LCD.
# Note, once you change the address, then you will need to intatiate your class
# using your new address.
#
# Once you have changed the address, you can try using the optional instantiation
# line of code that is currently commented out.
#
# There is a set range of available addresses from 0x07 to 0x78, so make sure your
# chosen address falls within this range.
#
# The next thing to note is that when you change the address you'll
# need to call an instance of the QwiicSerlcd class that includes your new
# address, like so: "myLCD = qwiic_serlcd.QwiicSerlcd(address=YOUR_NEW_ADDRESS_HERE)"
# so that the new address is fed to all the available functions.
#
# Finally if for some reason you've forgotten your new address. No big deal, run a
# hardware reset on your screen to get it back to the default address (0x72).
# To cause a hardware reset, simply tie the RX pin LOW, and they cycle power
# (while continuing to hold RX low). Then release RX, and cycle power again.
#
#-------------------------------------------------------------------------------
#
# Written by SparkFun Electronics, August 2020
#
# Ported from Arduino Library code with many contributions from
# Gaston Williams - August 29, 2018
#
# Some code/comments/ideas ported from the Qwiic Quad Relay Arduino Library
# Written by Elias Santistevan, July 2019
#
# This python library supports the SparkFun Electroncis qwiic
# qwiic sensor/board ecosystem on a Raspberry Pi (and compatable) single
# board computers.
#
# More information on qwiic is at https://www.sparkfun.com/qwiic
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63   #===============================================================================
64   # Example 17
65   #
66
67   from __future__ import print_function
68   import qwiic_serlcd
69   import time
70   import sys
71
72   old_address = 0x72 # default
73   new_address = 0x71 # must be within 0x07 to 0x78, DEFAULT: 0x72
74
75   def runExample():
76
77          print("\nSparkFun Qwiic SerLCD   Example 17\n")
78          print("\nType CTRL+C to end.\n")
79          myLCD = qwiic_serlcd.QwiicSerlcd(address=old_address)
80
81          print("Attemping to connect to %s..." % hex(myLCD.address))
82
83          if myLCD.connected == False:
84                  print("The Qwiic SerLCD device isn't connected to the system. Please␣
     ↪check your connection", \
85                          file=sys.stderr)
86                  return
87          else:
88                  print("Connected!")
89                  myLCD.setBacklight(255, 255, 255) # bright white
90                  myLCD.setContrast(5) # set contrast. Lower to 0 for higher contrast.
91                  myLCD.begin() # call this for default settings (no
92                  myLCD.leftToRight()
93                  myLCD.noCursor()
94                  time.sleep(1) # give a sec for system messages to complete
95
96                  myLCD.clearScreen()
97
98                  myLCD.setAddress(new_address) # note this updates class member myLCD.
     ↪address to the new_address
99
100                 if myLCD.connected == True:
101                         print("Address changed to %s successfully!" % hex(myLCD.
     ↪address))
```

```
102                        myLCD.clearScreen()
103                        myLCD.print("My new add: %s" % hex(myLCD.address))
104               else:
105                        print("Address change failed :(")
106        while True:
107                time.sleep(1) # do nothing
108
109 if __name__ == '__main__':
110        try:
111                runExample()
112        except (KeyboardInterrupt, SystemExit) as exErr:
113                print("\nEnding Example 17")
114                sys.exit(0)
115
116
```

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