Sense HAT

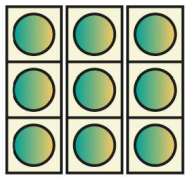
Python 3 cheat sheet

Enabling the
Astro Pi mission

To add Sense HAT functionality to your Python programs, add the following lines to import the library for the Sense HAT:

```
from sense_hat import SenseHat
sense = SenseHat()
```

From that point forwards, you can use any of the set of functions from the Sense HAT library.



LED Matrix

`sense.set_pixel(0, 0, 255, 0, 0)`	Sets the top left LED to the colour red.
`sense.show_letter("J", text_colour=[0, 0, 255])`	Displays the letter "J" on the screen in blue.
`sense.show_message("msg", text_colour=[0, 255, 0])`	Displays the message "msg" on the matrix in green.
`sense.load_image("creeper.png", redraw=True)`	Loads an 8x8 image "creeper.png" image and displays it.
`sense.clear()`	Clears the LEDs and switches them all off.
`sense.set_rotation(r=0)`	Sets the rotation of the LED matrix.

```
R = [255, 0, 0]  # Red
W = [255, 255, 255]  # White

pixel_list = [W, W, W, R, R, W, W, W,
              W, W, R, W, W, R, W, W,
              W, W, W, W, W, R, W, W,
              W, W, W, W, R, W, W, W,
              W, W, W, R, W, W, W, W,
              W, W, W, R, W, W, W, W,
              W, W, W, W, W, W, W, W,
              W, W, W, R, W, W, W, W]

sense.set_pixels(pixel_list)
```

Defines two RGB colours, stored as variables **R** and **W**.

Uses `set_pixels` to draw a picture on the LED matrix, with each item in the **pixel_list** an instance of **R** or **W**.

Note: Make sure to never mix up the `set_pixel` and `set_pixels` commands!

Scrolling Message

```
from sense_hat import SenseHat

sense = SenseHat()

while True:
    sense.show_message("Spaaaaaaace!!", scroll_speed=0.05, text_colour=[255, 255, 0], back_colour=[0, 0, 255])
```

Environmental Sensing

```
from sense_hat import SenseHat

sense = SenseHat()

while True:
    t = sense.get_temperature()
    p = sense.get_pressure()
    h = sense.get_humidity()

    t = round(t, 1)
    p = round(p, 1)
    h = round(h, 1)

    msg = "Temp = %s, Pressure = %s, Humidity = %s" % (t, p, h)

    sense.show_message(msg, scroll_speed=0.05)
```

Rotating letter “J”

```
from sense_hat import SenseHat
import time

sense = SenseHat()

sense.show_letter("J")

while True:
  accelerometer_data = sense.get_accelerometer_raw()

  x = round(accelerometer_data['x'], 0)
  y = round(accelerometer_data['y'], 0)

  if x == -1:
      sense.set_rotation(180)
  elif y == -1:
      sense.set_rotation(90)
  elif y == 1:
      sense.set_rotation(270)
  else:
      sense.set_rotation(0)

  time.sleep(0.1)
```