22.6. `colorsys` — Conversions between color systems

Source code: Lib/colorsys.py

The `colorsys` module defines bidirectional conversions of color values between colors expressed in the RGB (Red Green Blue) color space used in computer monitors and three other coordinate systems: YIQ, HLS (Hue Lightness Saturation) and HSV (Hue Saturation Value). Coordinates in all of these color spaces are floating point values. In the YIQ space, the Y coordinate is between 0 and 1, but the I and Q coordinates can be positive or negative. In all other spaces, the coordinates are all between 0 and 1.

> **See also:** More information about color spaces can be found at http://www.poynton.com/ColorFAQ.html and https://www.cambridgeincolour.com/tutorials/color-spaces.htm.

The `colorsys` module defines the following functions:

`colorsys.`**`rgb_to_yiq`**(*r*, *g*, *b*)
: Convert the color from RGB coordinates to YIQ coordinates.

`colorsys.`**`yiq_to_rgb`**(*y*, *i*, *q*)
: Convert the color from YIQ coordinates to RGB coordinates.

`colorsys.`**`rgb_to_hls`**(*r*, *g*, *b*)
: Convert the color from RGB coordinates to HLS coordinates.

`colorsys.`**`hls_to_rgb`**(*h*, *l*, *s*)
: Convert the color from HLS coordinates to RGB coordinates.

`colorsys.`**`rgb_to_hsv`**(*r*, *g*, *b*)
: Convert the color from RGB coordinates to HSV coordinates.

`colorsys.`**`hsv_to_rgb`**(*h*, *s*, *v*)
: Convert the color from HSV coordinates to RGB coordinates.

Example:

```
>>> import colorsys
>>> colorsys.rgb_to_hsv(0.2, 0.4, 0.4)
(0.5, 0.5, 0.4)
```

```
>>> colorsys.hsv_to_rgb(0.5, 0.5, 0.4)
(0.2, 0.4, 0.4)
```