

# Chapter 1

## Color Palettes

### 1.1 Palettes

Roassal contains a rich set of color palettes. The entry point is the class `ColorPalette`. This class contains several palettes, each palette being a set of harmonious color schemes.

Consider the expression `ColorPalette sequential colors: 8 scheme:'GnBu'`: it selects 8 colors from the the sequential set of palettes and the scheme `GnBu`.

```
palette := ColorPalette sequential colors: 8 scheme:'GnBu'.
v := RTView new.
shape := RTBox new size: 30; color: [ :index | palette at: index ].
v addAll: (shape elementsOn: (1 to: 8)).
RTHorizontalLinearLayout on: v elements.
v
```

Each color scheme has a particular purpose, depending on whether you wish to accentuate some colors, pairing colors, or having fading. Each palette contains several color schemes. Each scheme can be selected in different numbers of colors: 3 or 5 or 11 (depends on each scheme).



Figure 1.1: GnBu palette scheme.

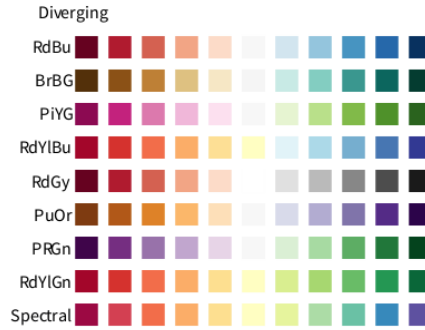


Figure 1.2: Diverging palette.

We have three palettes:

- Qualitative: helps to distinguish different classes of data.
- Sequential: useful for showing graduable data with a very light "low color" increasing darkness to "high color".
- Diverging: it contains color scales with diverging colors on the extremes and transition colors from one extreme to the other.

Each subclass of `ColorPalette` contains detailed and up-to-date class comments.

*All colors, palettes and schemes are from [www.ColorBrewer.org](http://www.ColorBrewer.org) by Cynthia A. Brewer, Geography, Pennsylvania State University.*

## 1.2 Color Normalizer

The `RTMultiLinearColor` class is a subclass of

```
v := RTView new.
n := RTMultiLinearColor new.
shape := RTBox new size: 30; color: n.
elements := shape elementsOn: (0.0 to: 1.0 by: 0.05).

v addAll: elements.
RTGridLayout on: elements.

v
```



Figure 1.3: Simple coloring.

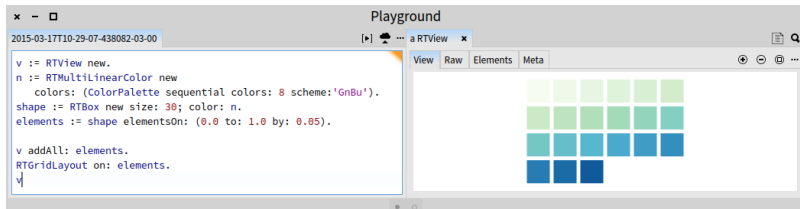


Figure 1.4: Simple coloring using the GnBu schema.

```

v := RTView new.
n := RTMultiLinearColor new
  colors: (ColorPalette sequential colors: 8 scheme:'GnBu').
shape := RTBox new size: 30; color: n.
elements := shape elementsOn: (0.0 to: 1.0 by: 0.05).

v addAll: elements.
RTGridLayout on: elements.
v

```

Such palette can be used in other some maps

```

b := RTMapBuilder new.

countries := RTMapBuilder africanPopulation.
countriesName := countries collect: #first.
max := (countries collect: [ :c | c at: 2 ]) max.

cn := RTMultiLinearColor new
  colors: (ColorPalette sequential colors: 8 scheme:'GnBu');
  command: [ :aCountry | (countries detect: [ :c | c first = aCountry ]) second /
    max ].

b countries: countriesName.
b color: cn.
b scale: 2.

```



Figure 1.5: Population in Africa.

b

RTMultiLinearColorForIdentity