Colour as a tool to distinguish -

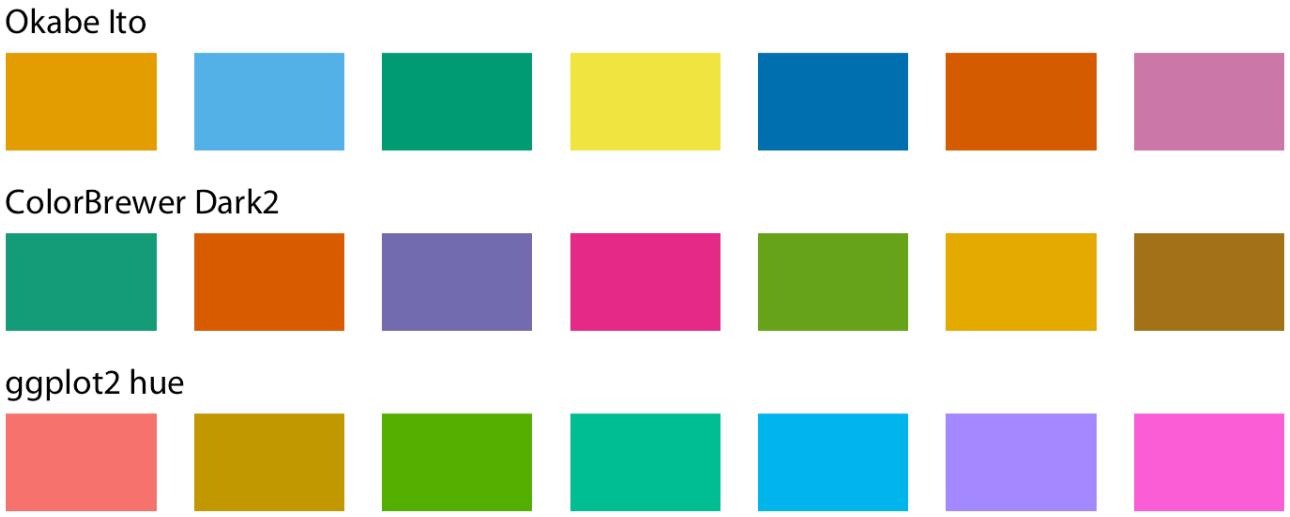
types of colour scale

1. Qualitative scale

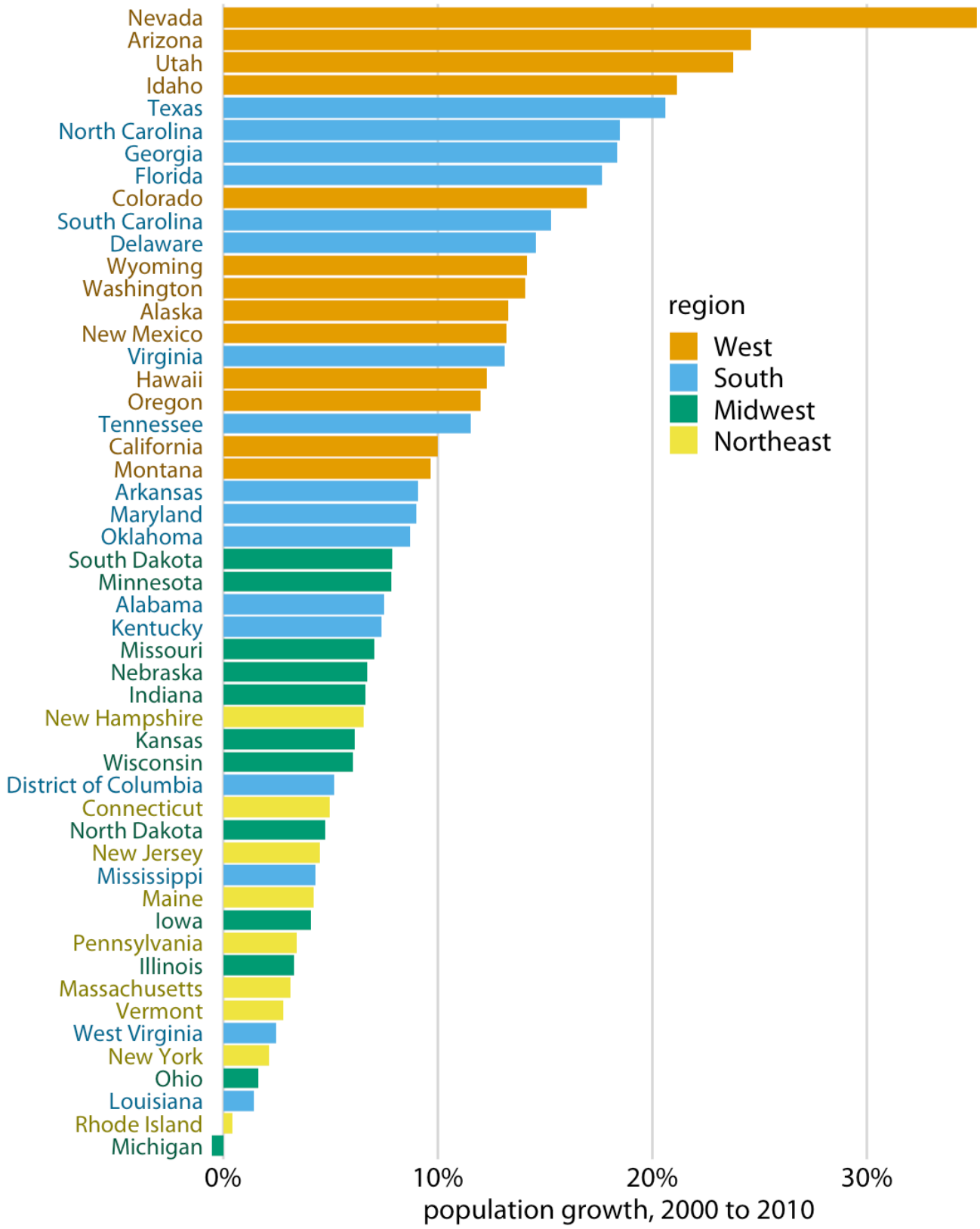
To distinguish discrete items or groups that do not have an internal order.
eg. different countries on a map or different manufactures of a certain product.

conditions -
I. These scales contain a finite set of specific colours that are chosen to look clearly distinct from each other.
II. No colour should stand out relative to each other.
III. The colours should not create the impression of an order.

Color scales -



population growth from 2000 to 2010 in U.S. states arranged in order of their population growth, and coloured according to geographic region. in West and South have seen largest population growth whereas Midwest and the Northeast have grown much less.


Nevada
Arizona
Utah
Idaho
Texas
North Carolina
Georgia
Florida
Colorado
South Carolina
Delaware
Wyoming
Washington
Alaska
New Mexico
Virginia
Hawaii
Oregon
Tennessee
California
Montana
Arkansas
Maryland
Oklahoma
South Dakota
Minnesota
Alabama
Kentucky
Missouri
Nebraska
Indiana
New Hampshire
Kansas
Wisconsin
District of Columbia
Connecticut
North Dakota
New Jersey
Mississippi
Maine
Iowa
Pennsylvania
Illinois
Massachusetts
Vermont
West Virginia
New York
Ohio
Louisiana
Rhode Island
Michigan
region
West
South
Midwest
Northeast
0%
10%
20%
30%
population growth, 2000 to 2010

Colour to Represent Data Values -

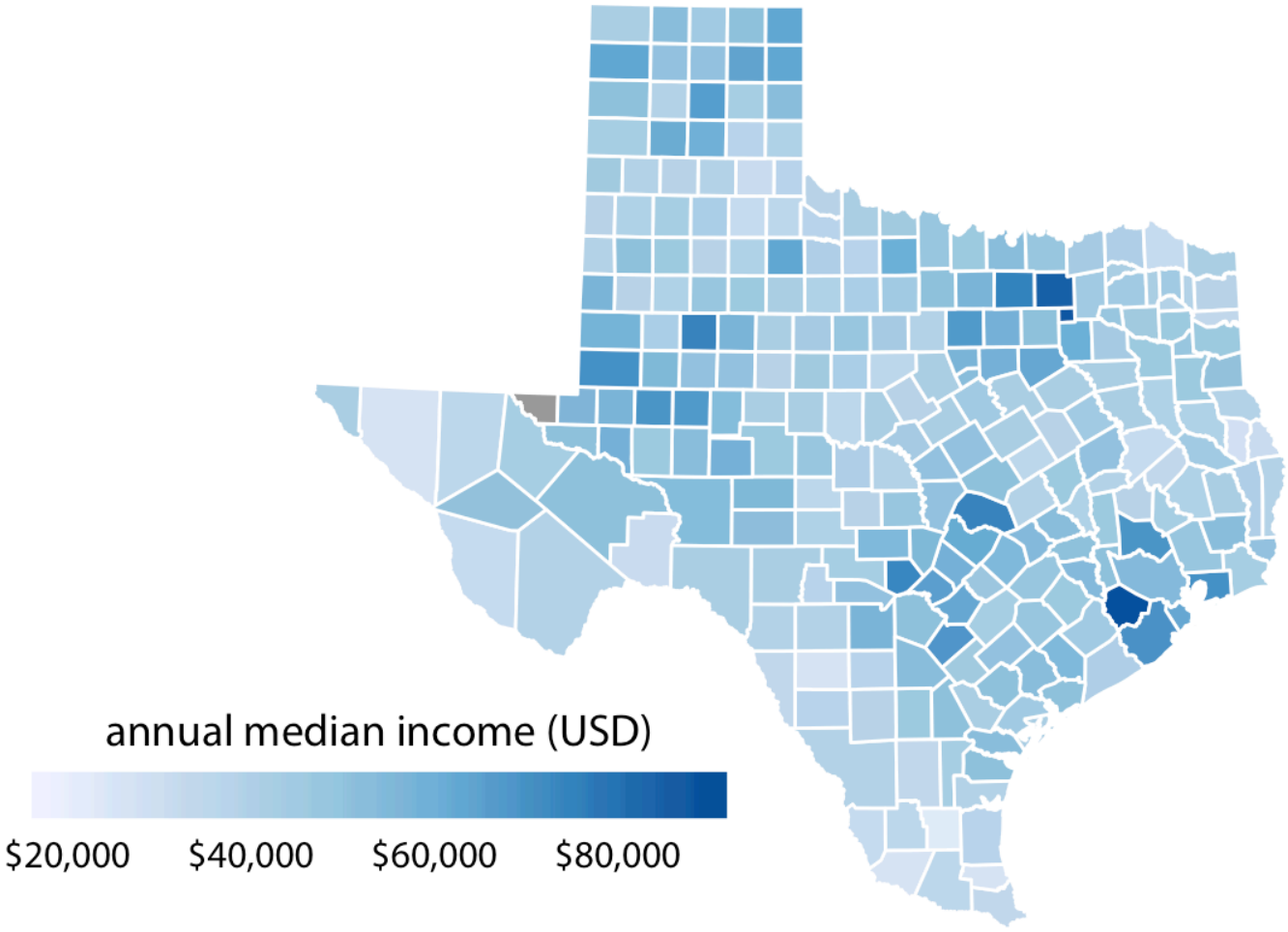
2. Sequential Scale

This type of scale is use to represent continuous data values such as temperature, income, or speed
Scale contains a sequence of colours that clearly indicates
I. which values are larger or smaller then which other ones
II. how distinct two specific values are from each other

Single hue sequential scales(eg. from dark blue to light blue)
Multiple hue sequential scales(eg. from dark red to light yellow) these scales tend to flow colour gradients that can be seen in the natural world

Color scale -

Type to enter textRepresenting data values as colours is particularly useful when we want to show how the data values vary across geographic regions. In this case, we can draw a map of the geographic regions and colour them by the data values.



3. Diverging scales -

in some cases, we need to visualise the deviation of data values in one or two directions relative to natural midpoint.
eg. dataset containing both positive and negative values that deviating from zero.

if we stitched two sequential scale from a common midpoint generally from light colour. Diverging scales need to be balanced, so that the progression from light colours in the center to dark colours to the outside is approximately the same in either direction. Otherwise, the perceived magnitude of a data value would fell above or below the midpoint value.

Colour scale -

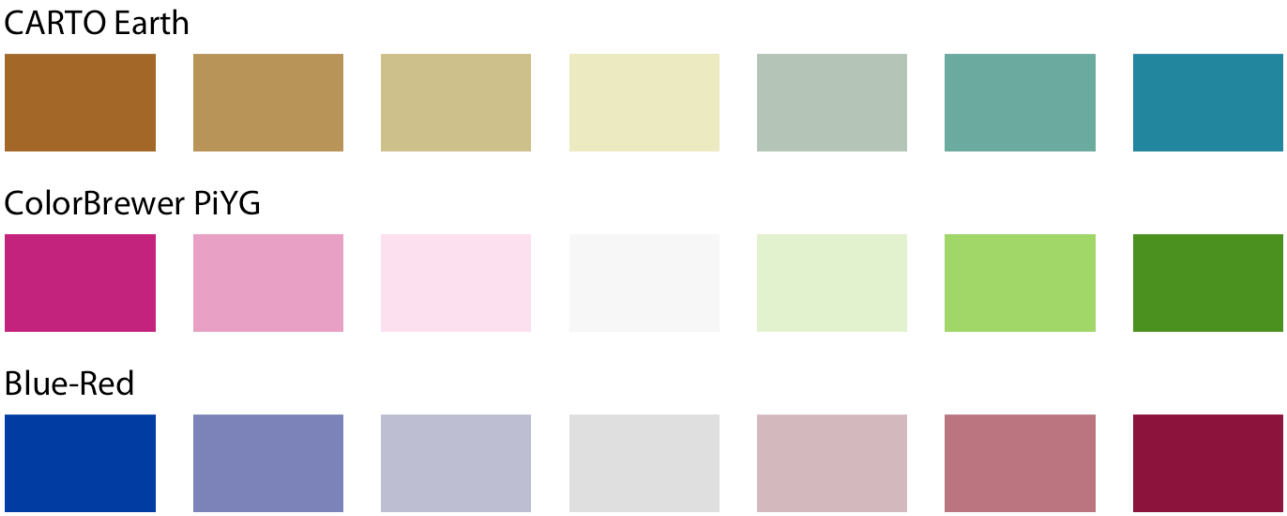
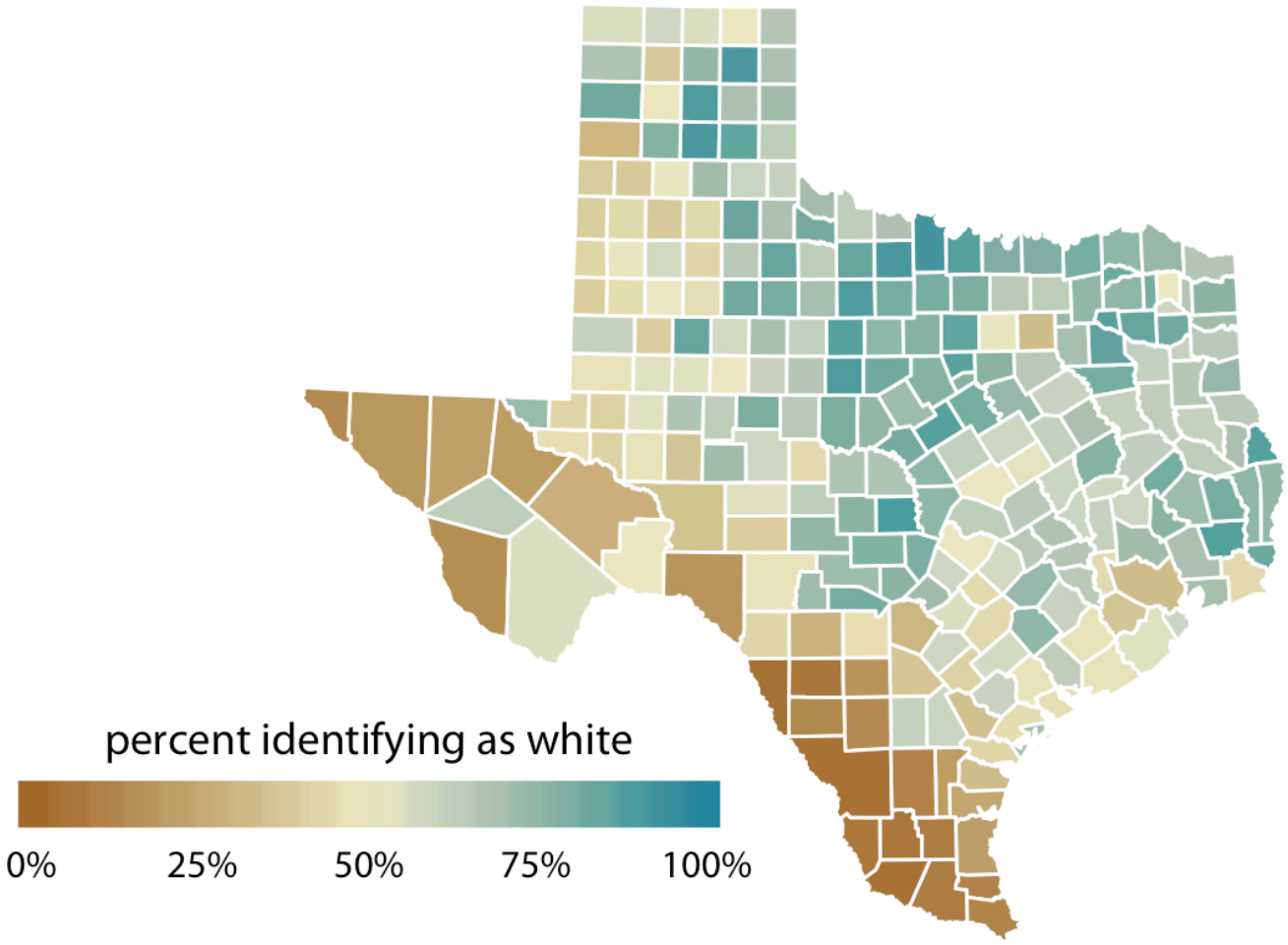


Figure shows the percentage of people identifying as white in Texas counties. Even though percentage is always a positive number, a diverging scale is justified here, because 50% is a meaningful midpoint value. Numbers above 50% indicate that whites are in the majority and numbers below 50% indicate the opposite.

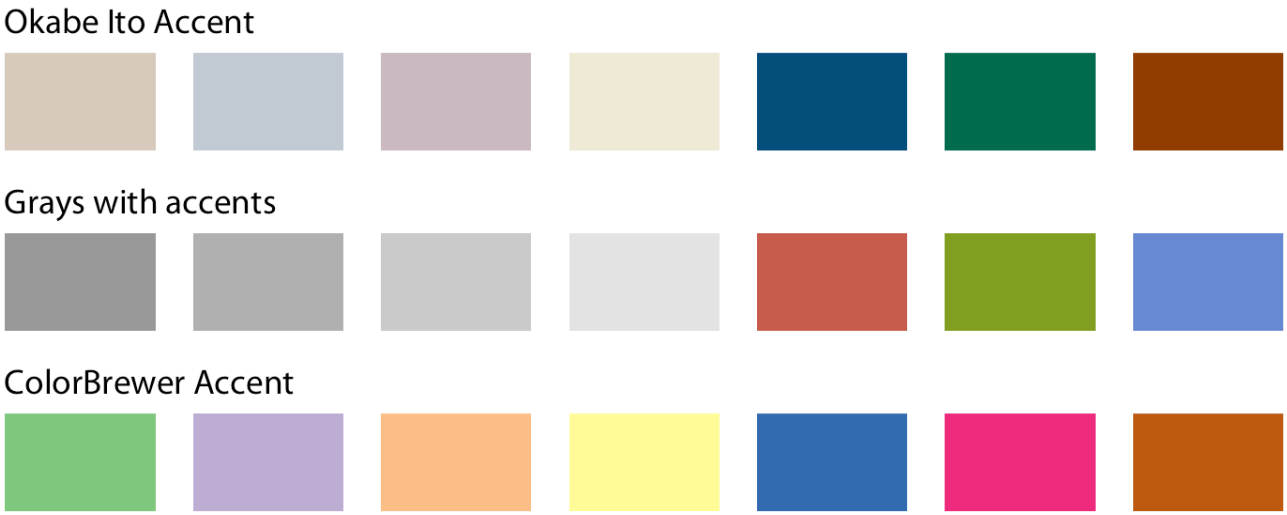


Colour as a Tool to Highlight -

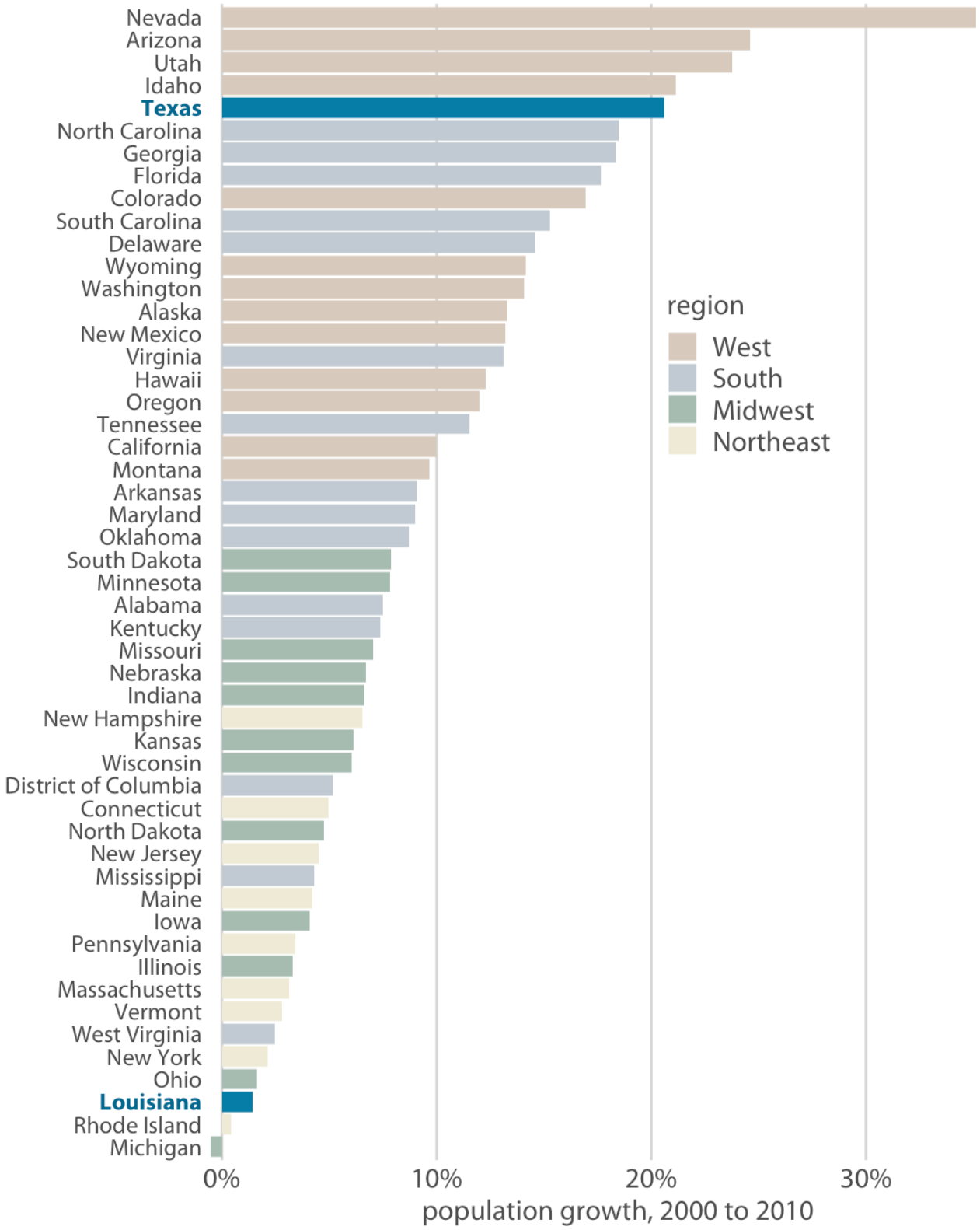
Colour can also be an effective tool to highlight specific elements in the data. In a dataset there may some key information that tells the whole story and we can strengthen the story by highlighting that part of dataset by colours.

an easy way to achieve this by set of colours that vividly stand out against the rest of the figure. this effect can be achieved with ascent colour scale, which are colour scale that contain both a set subbed/ lighter/dimmer colour and matching set of stronger/brighter/darker/ saturated.

Colour scale -



In figure we highlighted two specific states, Texas and Louisiana. Both states are in the south Texas was the fifth-fastest growing and whereas the Louisiana was the third-slowest growing state.


Nevada
Arizona
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Idaho
Texas
North Carolina
Georgia
Florida
Colorado
South Carolina
Delaware
Wyoming
Washington
Alaska
New Mexico
Virginia
Hawaii
Oregon
Tennessee
California
Montana
Arkansas
Maryland
Oklahoma
South Dakota
Minnesota
Alabama
Kentucky
Missouri
Nebraska
Indiana
New Hampshire
Kansas
Wisconsin
District of Columbia
Connecticut
North Dakota
New Jersey
Mississippi
Maine
Iowa
Pennsylvania
Illinois
Massachusetts
Vermont
West Virginia
New York
Ohio
Louisiana
Rhode Island
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population growth, 2000 to 2010