Visualizing Spatial Data

Matthew Renze
SOFTWARE CONSULTANT

@matthewrenze www.matthewrenze.com

Overview

Visualizing Spatial Data

Demo

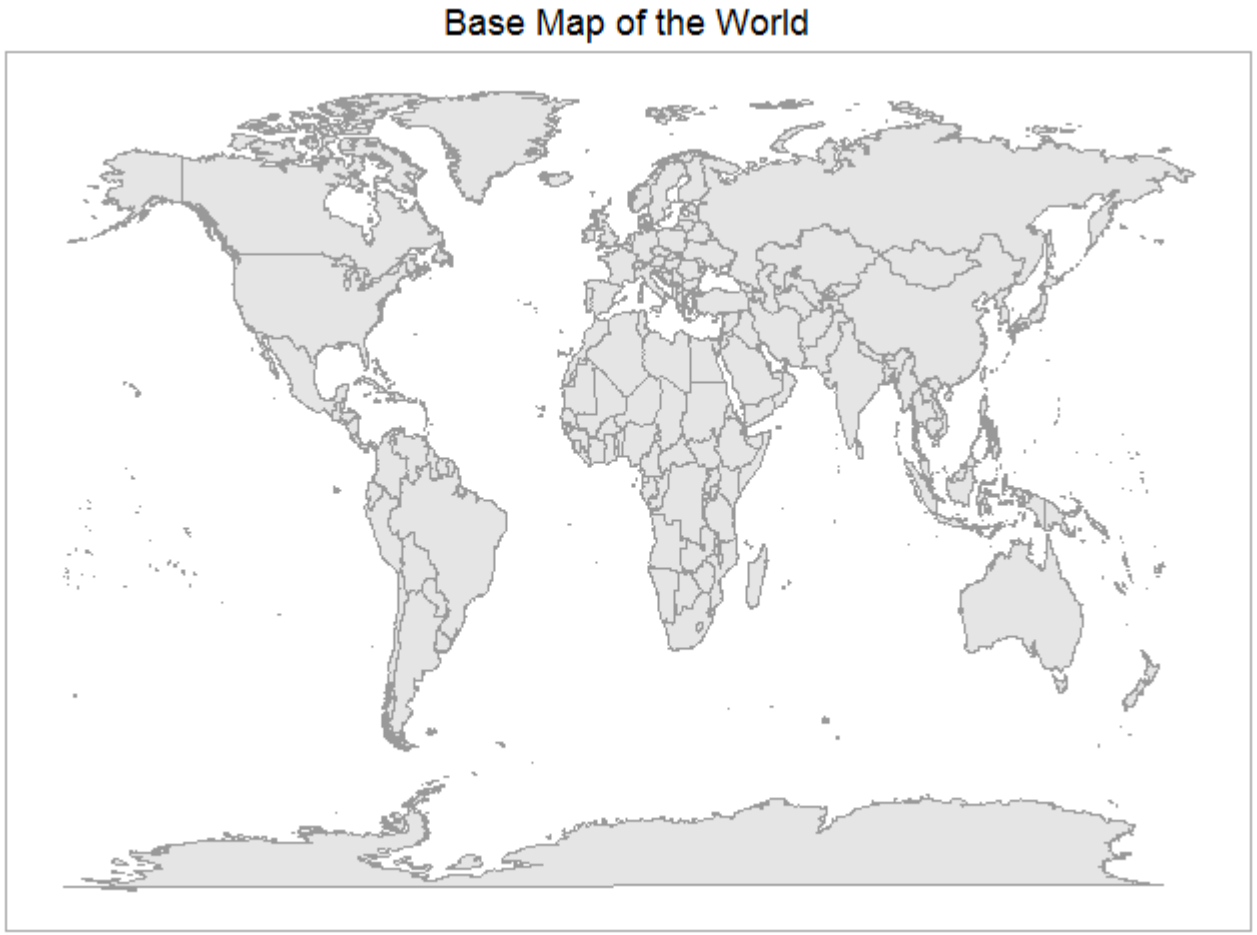
Spatial Data Analysis

Two numeric variables

Longitude

Latitude

Other variables



Spatial Data Analysis

Two numeric variables

Longitude

Latitude

Other variables

Country	Longitude	Latitude	Temperature (Celsius)
Afghanistan	66.00	33.00	12.60
Argentina	-64.00	-34.00	14.80
Australia	135.00	-25.00	21.65
Austria	13.33	47.33	6.35
Bahamas	-77.37	25.04	24.85
Belgium	4.00	50.83	9.55

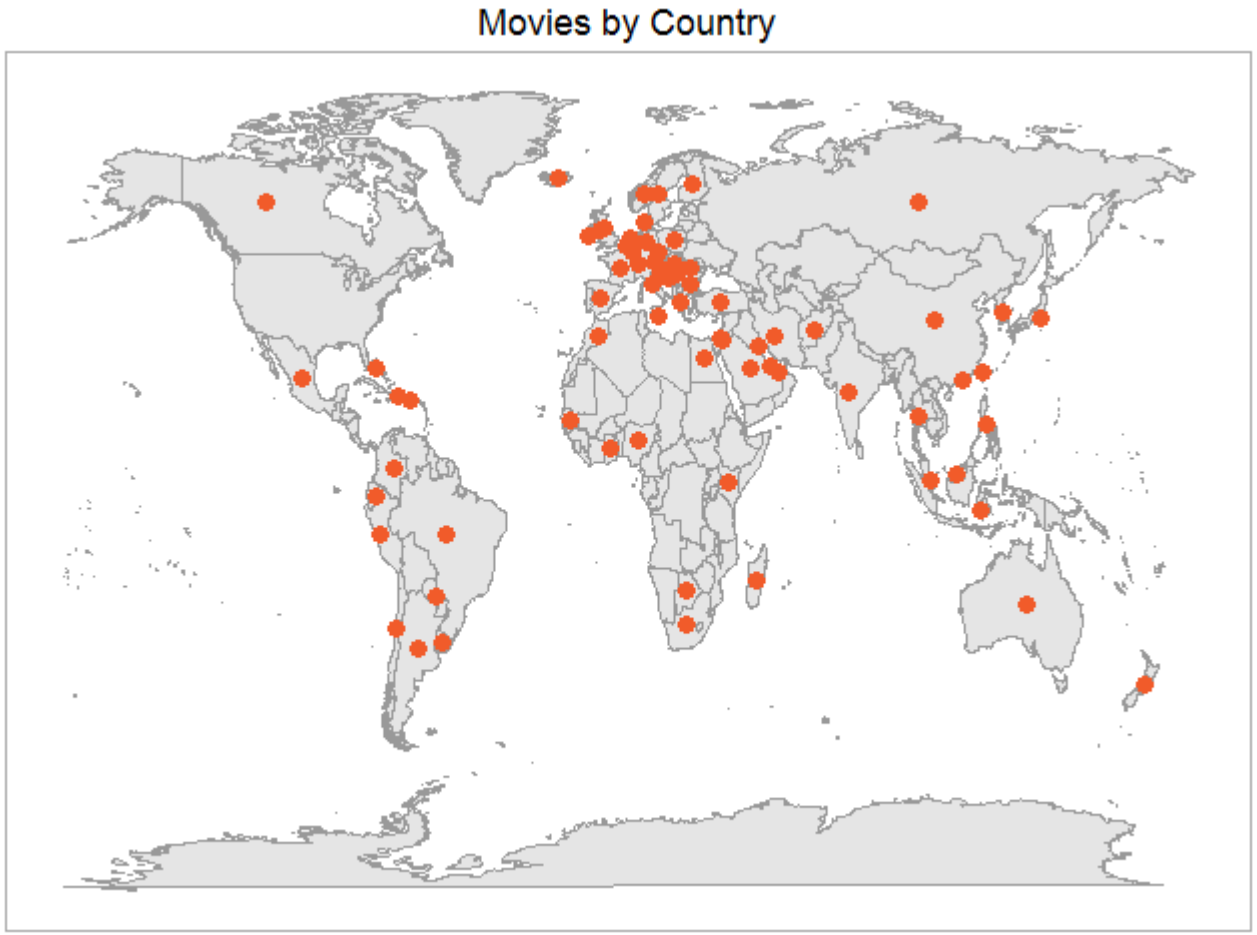
Dot Density Map

Similar to a scatterplot

Longitude and latitude

Small number of points

Display a 3rd variable

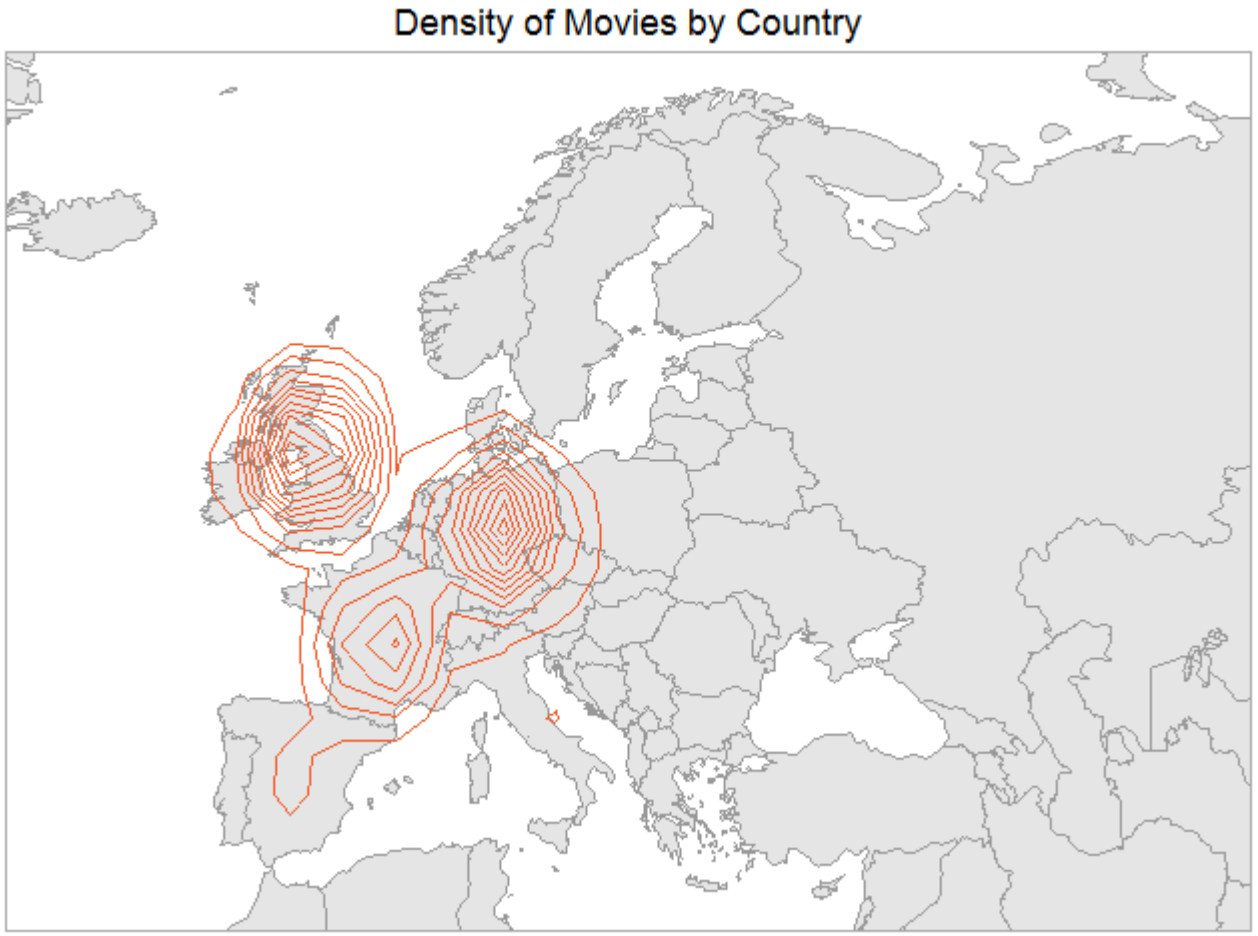


Contour Map

Similar to a contour plot

Contour lines

Large number of points

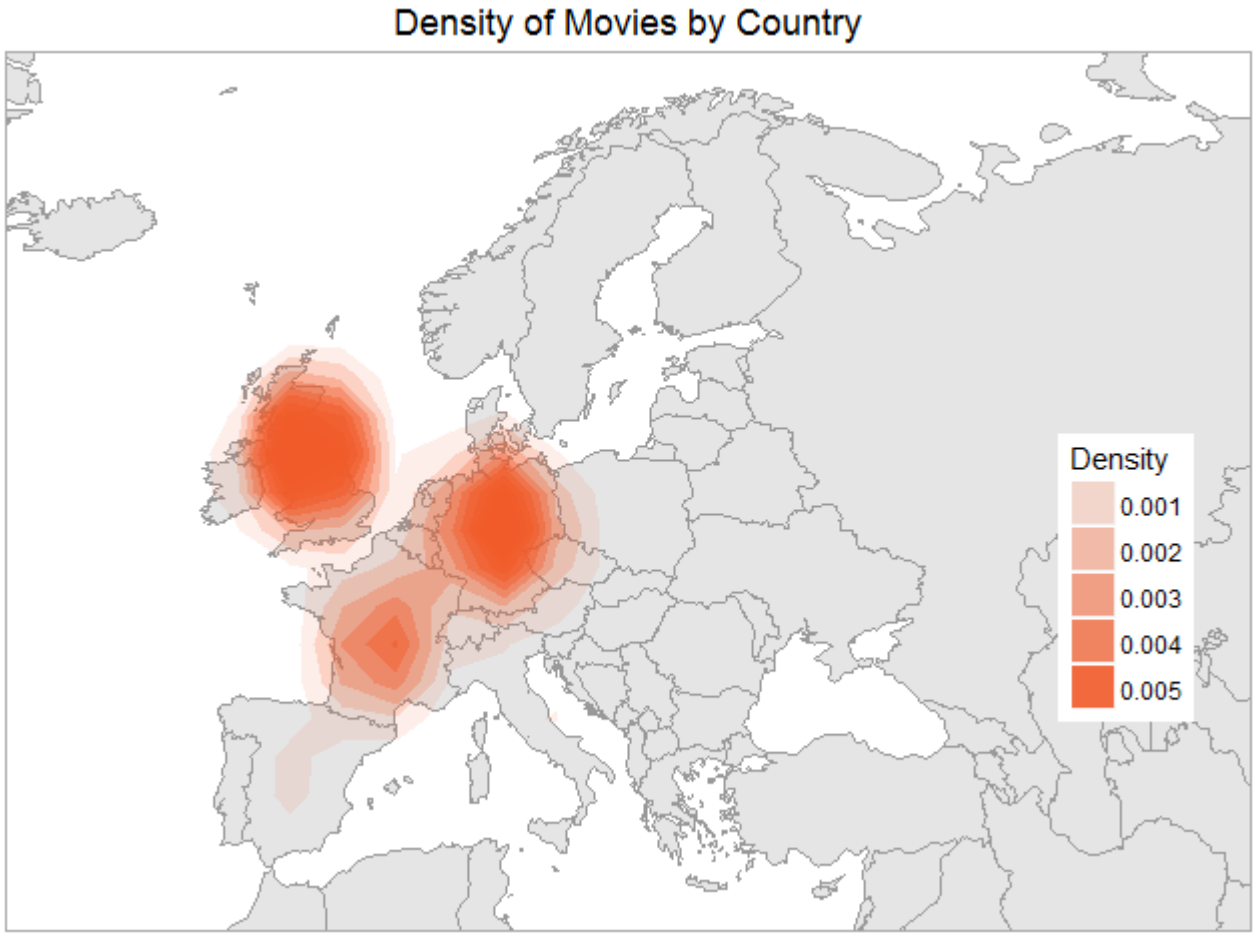


Level Map

Similar to a level plot

Filled contour polygons

Large number of points

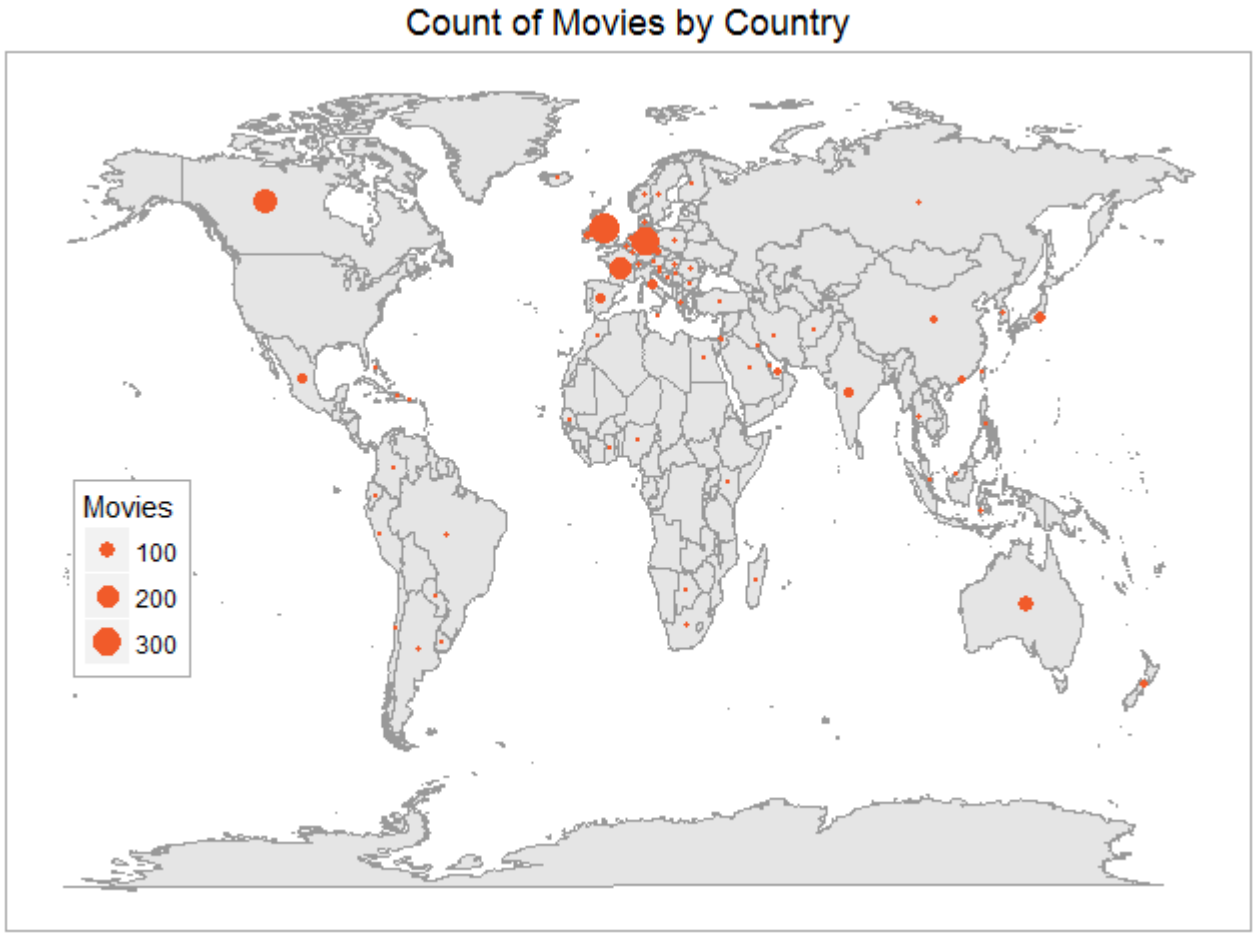


Bubble Map

Similar to a bubble chart

Sized by area

Small number of points



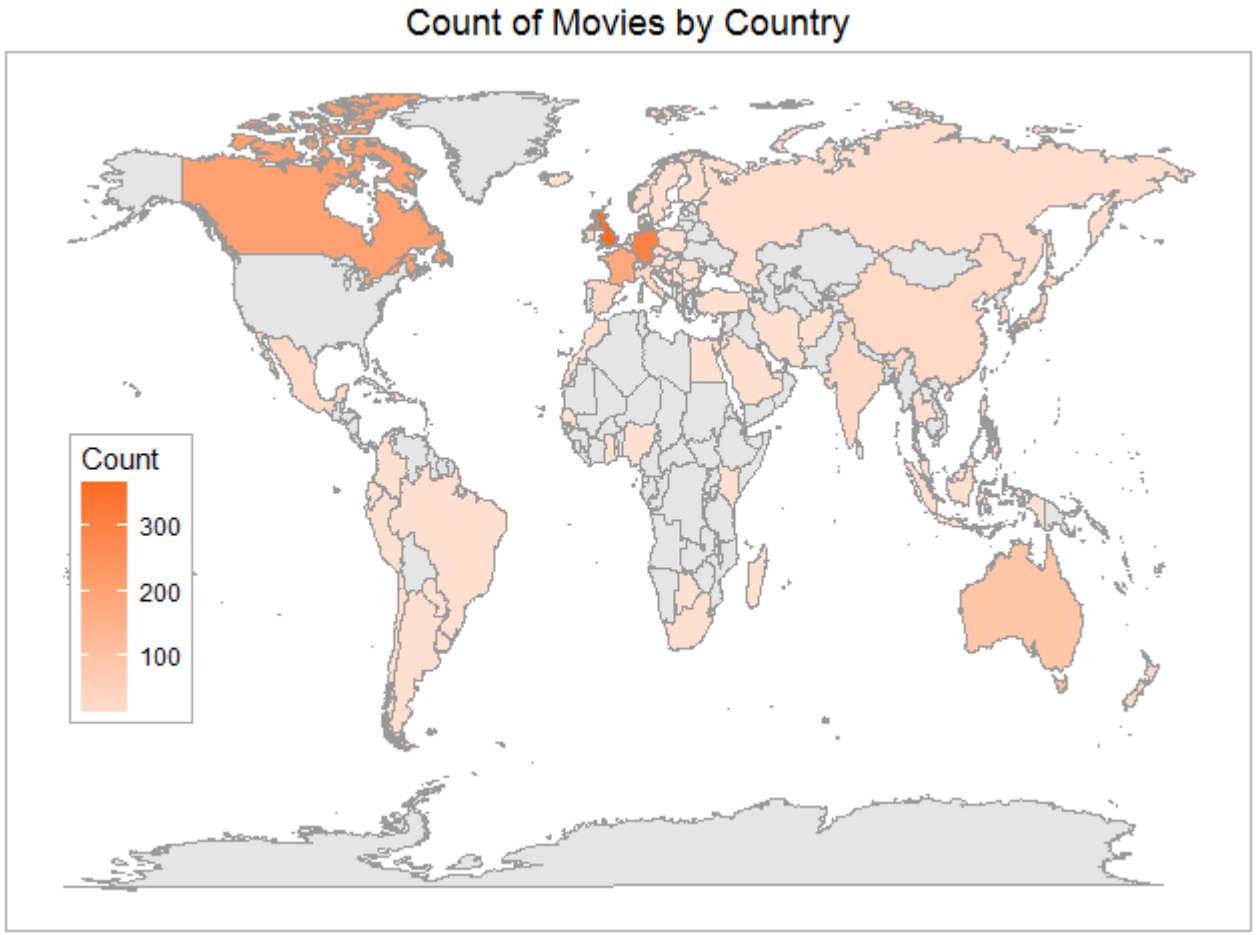
Choropleth

Areas filled with color

Geo-political boundaries

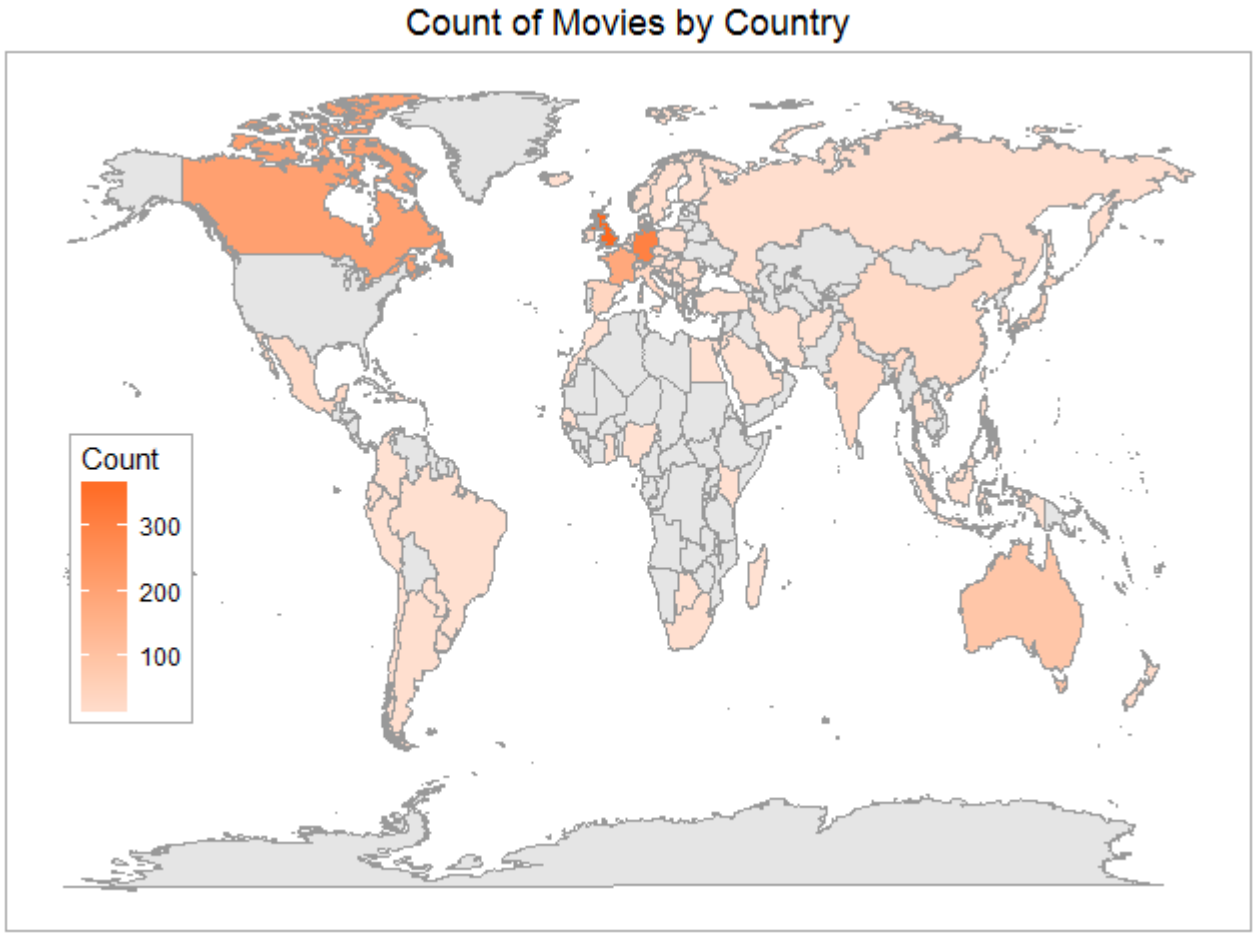
Colored by 3rd variable

Normalize values



Map Projections

Mercator projection



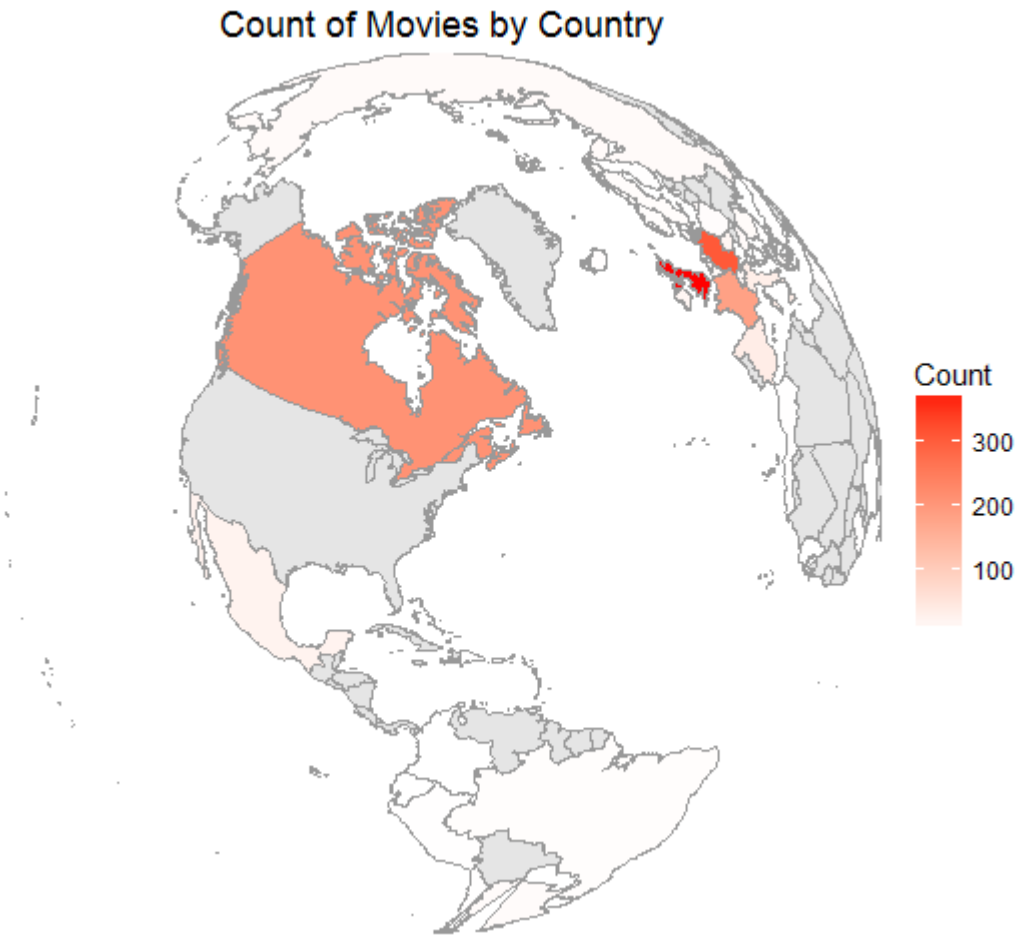
Map Projections

Mercator projection

Orthographic projection

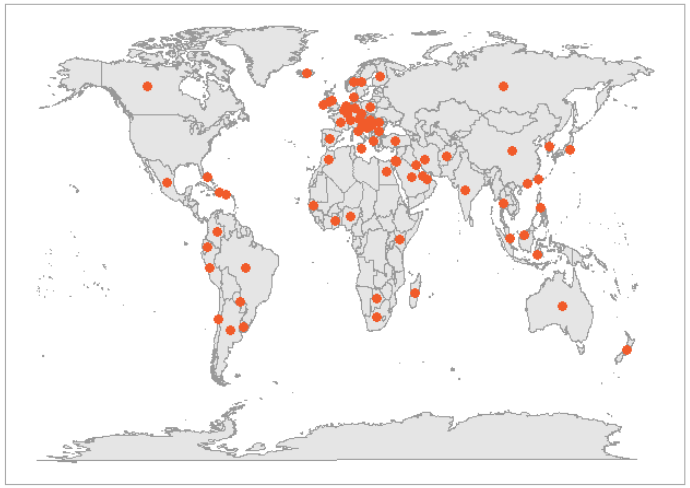
2D projection of 3D sphere

Prevents distortion

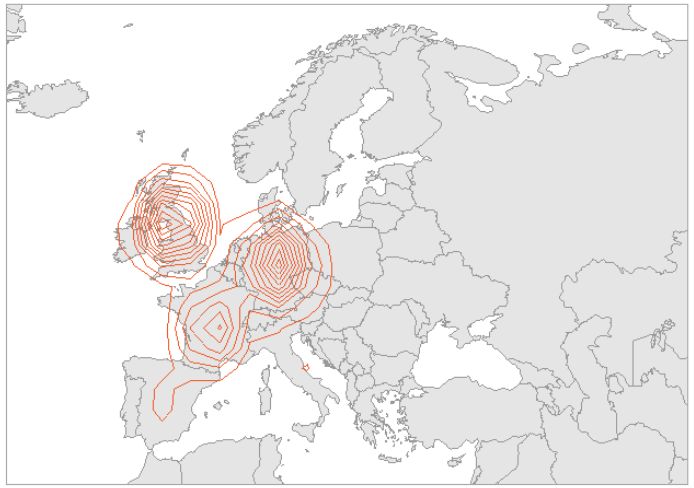


Spatial Data Visualization

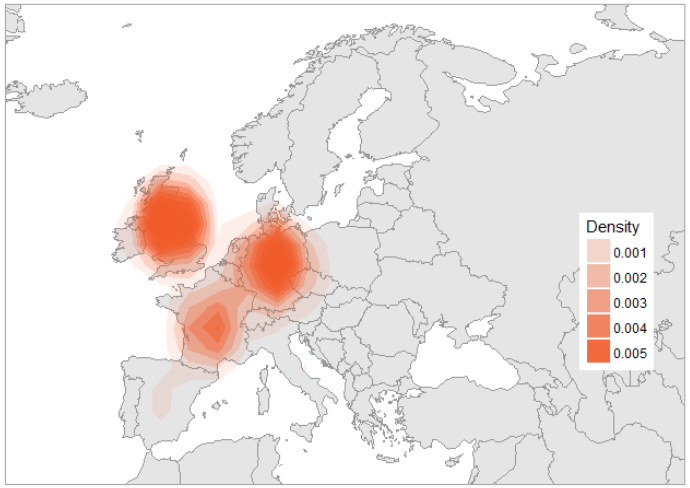
Movies by Country



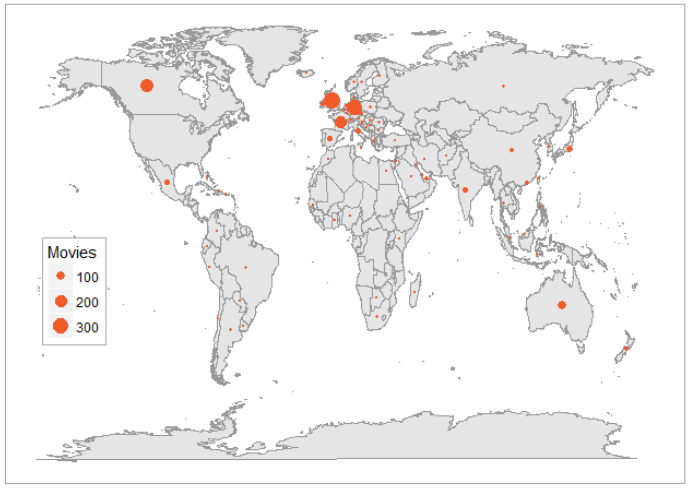
Density of Movies by Country



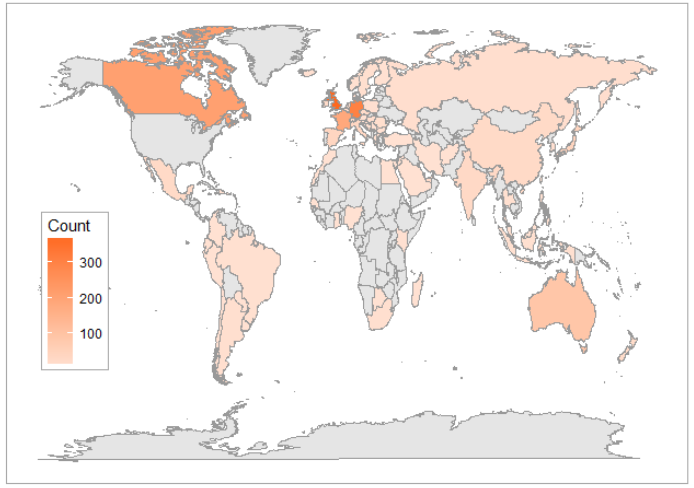
Density of Movies by Country



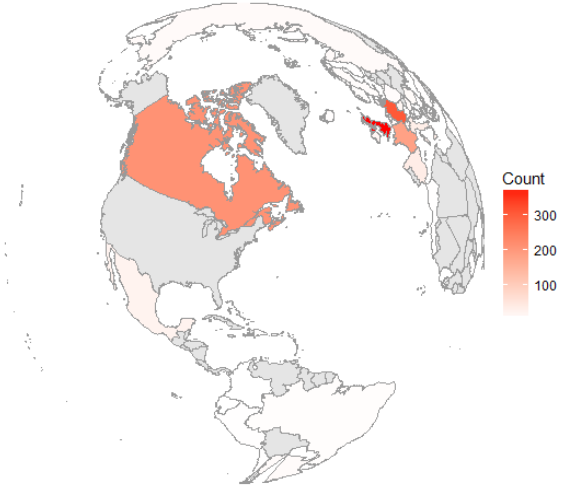
Count of Movies by Country



Count of Movies by Country



Count of Movies by Country



PROD. NO.
SCENE
TAKE
ROLL

1. What countries are we distributing movies to?
2. Where do we distribute the most movies?

Create a Base Map

Load Movies by Country Data

Create a Dot Density Map

Create a Contour Map

Zoom into a Map

Create a Level Map

Load Countries Data Set

Create a Bubble Map

Join Shape Data

Create a Choropleth

Reproject a Map

Summary

Visualizing Spatial Data

Demo