

Put your final design and discussion here

**What can we learn from the visualization?**

1- we can learn where the authors in the dataset are located in the geomap. This map consist of the authors that are located in only spain. 2- we can also learn the histogram of these authors based on their title. 3- finally, the bubble chart explains where every version of the all the authors located in spain.

**What is the name for the type of visualization(s) used?**

1- geographic map 2- histogram 3- bubble chart



image/code here

**What are all visual mappings used?**

position(reprLong, reprLat) color-(histogram & bubble chart - title), geomap - authors, tooltips, interactive

**Was there any special data preparation done?**

None

**What are the limitations of your design?**

limitations- it only specifies color and does not have cool visualization effects, improvements- adding more visualtions types such as treemaps

Put your initial followup design concept here

# Making maps

For this, the [map tutorials](#) are very helpful. The idea here is to show settlements as points on a map.

## Map itself

To get map background, you need a shape file which contains the different areas you want to draw on screen. In this case we're looking for a world map so the different "shapes" are different contries. If you look at the json file, you'll have a shape for each contry which consists of a set of points describing the outline of each country. Note that I'm "stealing" the map data from the [vega site](#).

```
mapData = dataFromUrl "https://vega.github.io/vega/data/world-110m.json"
           [ topojsonFeature "countries" ]
```

Then we need to create a vega-lite layer to show the geographic data.

`maFill` is a function to set the fill of marks to a constant.

```
mapSpec : Spec
mapSpec =
  asSpec
    [ mapData, geoshape [ maFill "#4c566a" ] ]
```

## Settlement positions

There are a number of feature types in the dataset so we need to set up a vega lite filter to only show those types. Think of this operation by itself as a kind of function that runs over the dataset.

```
settlementTrans =
  transform
    << filter (fiExpr "datum.featureType == 'settlement'")
```

Then we can bring in the settlements which you can put on the map by basically making a scatterplot but using the latitude and longitude.

```
settlementEnc =
  encoding
    << position Latitude [ pName "reprLat" ]
    << position Longitude [ pName "reprLong" ]
```

And then we can put it all together. Ideally this map should zoom or at least cut off north and south america and antarctica but that's left as an exercise to the reader 😊

### What can we learn from the visualization?

1- we can learn where the authors in the dataset are located in the geomap. This map consist of the authors that are located in only germany. 2- we can also learn an opacity area Chart based on the authors. 3- finally, the ordering timeperiods of each author on a bar chart .

### What is the name for the type of visualization(s) used?

1- geo map 2- opacity area chart 3- ordering marks chart

**v=map**

### What are all visual mappings used?

position(repLat, repLong), (interactive, ordering in ascending order , tooltip color-timePeriods / authors)

### Was there any special data preparation done?

none

### What are the limitations of your design?

limitations- it only specifies color and does not have cool visualization effects, improvements- adding more visualtions types such as treemaps

Put your 2nd followup design concept here

### **What can we learn from the visualization?**

1- we can learn where the authors in the dataset are located in the geomap. This map consist of the authors that are located in only greece. 2- we can also learn the rule chart of these authors based on their currentVersion. 3- finally, the bar chart explains where every creator of the all the authors located in spain.

### **What is the name for the type of visualization(s) used?**

1- geo map 2-bar chart 3-rule Chart

### **What are all visual mappings used?**

position(repLat,repLong) (interactive , tooltip color- timePeriods / authors, to\_dict())

### **Was there any special data preparation done?**

none

### **What are the limitations of your design?**

limitations- it only specifies color and does not have cool visualization effects,  
improvements- adding more visualtions types such as treemaps

Put your 3rd design concept here

**What can we learn from the visualization?**

1- we can learn where the authors in the dataset are located in the geomap. This map consist of the authors that are located in only UK. 2- we can also learn the negative chart to show which reprLatLong is negative or positive. 3- finally, the multi selection scatter plot, you can select the colors of any creator and the data of the author will be selected based on that color.

**What is the name for the type of visualization(s) used?**

1- geo map 2-negative chart 3- multi selction scatter plot



image/code here

**What are all visual mappings used?**

position(reprLat, reprLong) color-authors/created, tooltips, multiSelction, interactive, datum\_nonfarm\_change, labels, ticks,

**Was there any special data preparation done?**

none

**What are the limitations of your design?**

limitations- it only specifies color and does not have cool visualization effects, improvements- adding more visualtions types such as treemaps

Put your 3rd design concept here

### What can we learn from the visualization?

1- we can learn where the authors in the dataset are located in the geomap. This map consist of the authors that are located in only Italy. 2- we can also learn the bar chart of these authors based on their creators.

### What is the name for the type of visualization(s) used?

1- geo map 2- barchat



image/code here

### What are all visual mappings used?

position(reprLong, reprLat) color-(authors, creators), tooltips, interactive, column, legend

### Was there any special data preparation done?

none

### What are the limitations of your design?

limitations- it only specifies color and does not have cool visualization effects, improvements- adding more visualtions types such as treemaps