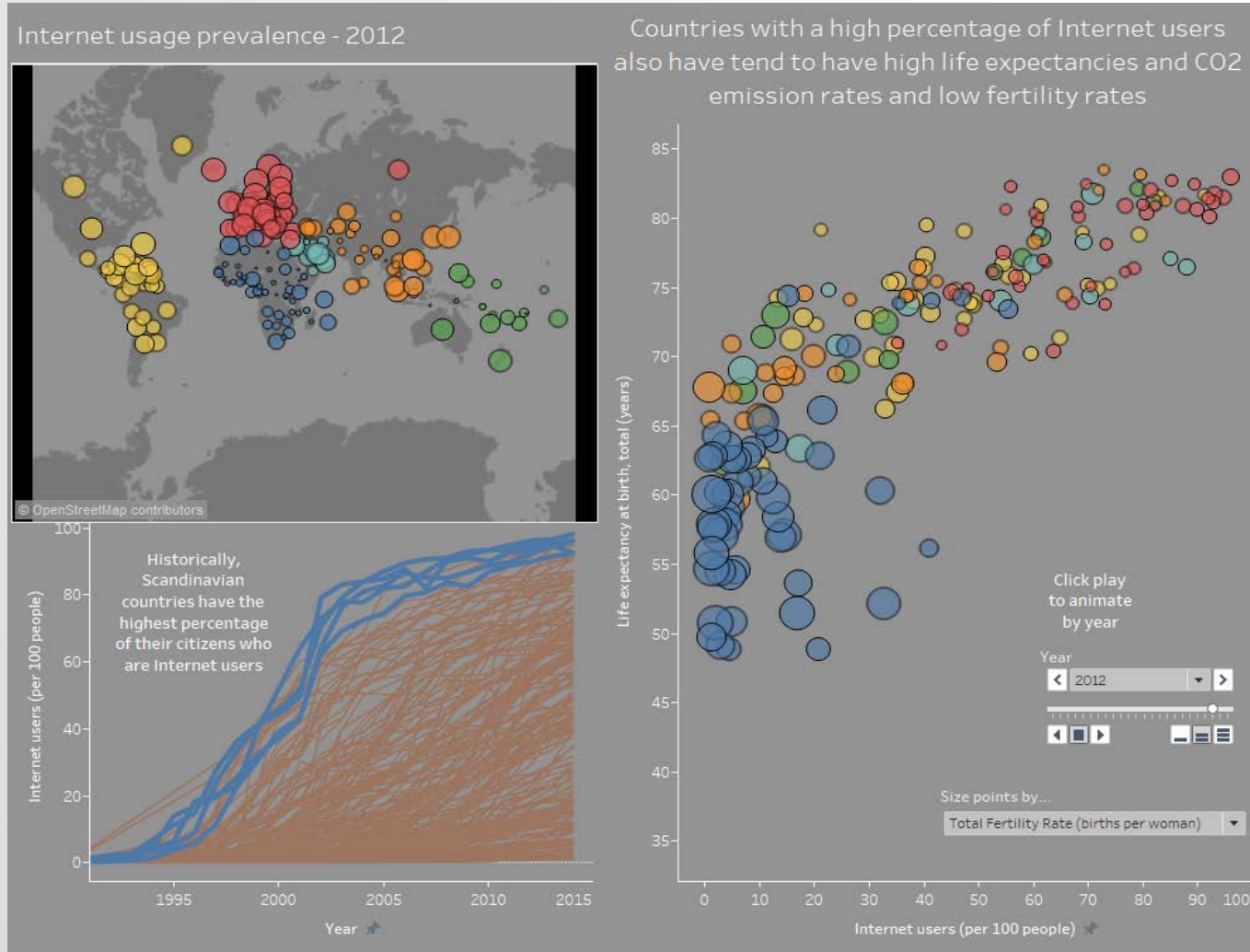




INTERACTIVE DASHBOARDS IN TABLEAU

Drs. Silas Bergen and Todd Iverson
Winona State University
ICOTS 2018
Kyoto, Japan
July 8, 2018

WORLD BANK INTERACTIVE DASHBOARD:



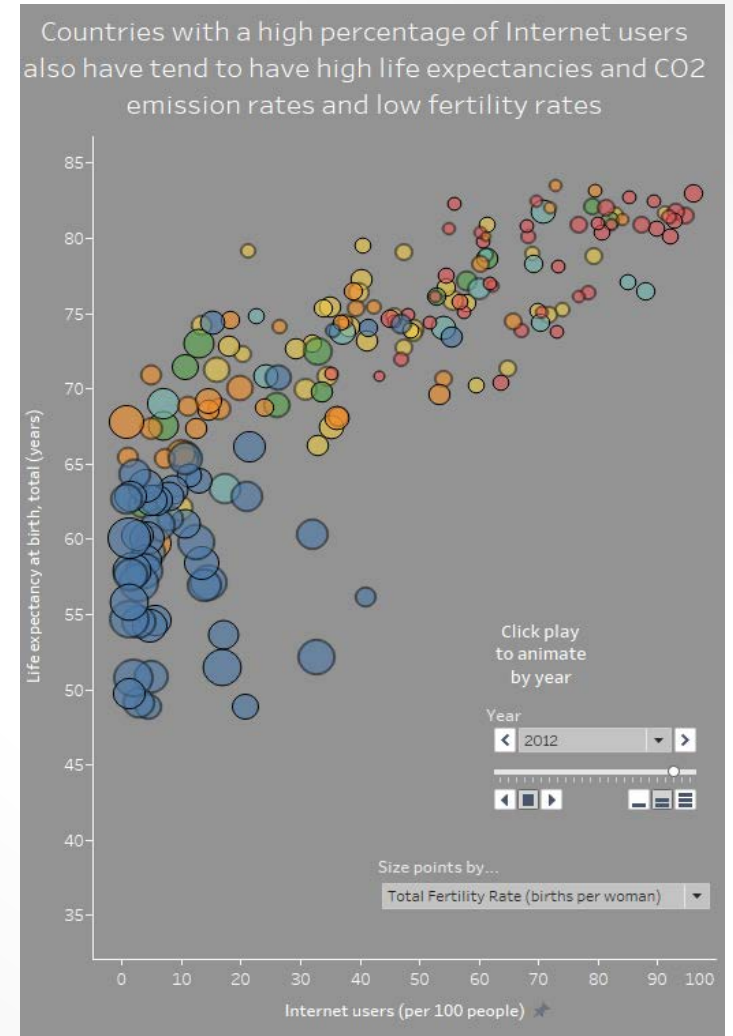
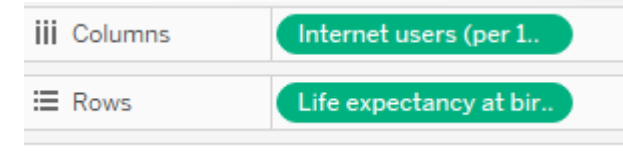
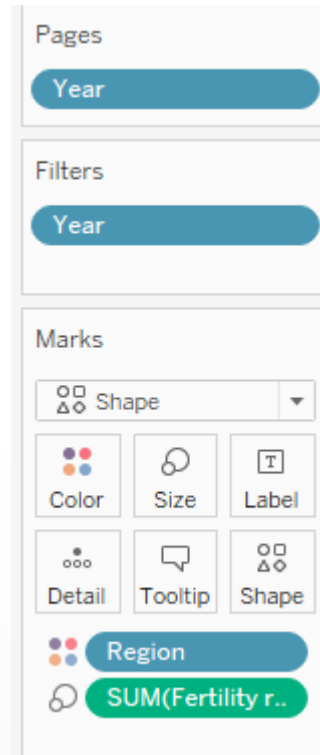
Modified from Chapter 13:
Communicating Data with Tableau
By Ben Jones

Fully interactive version:

<https://public.tableau.com/profile/silas.bergen#!/vizhome/WorldBankDataVisualizations/Internetusage>

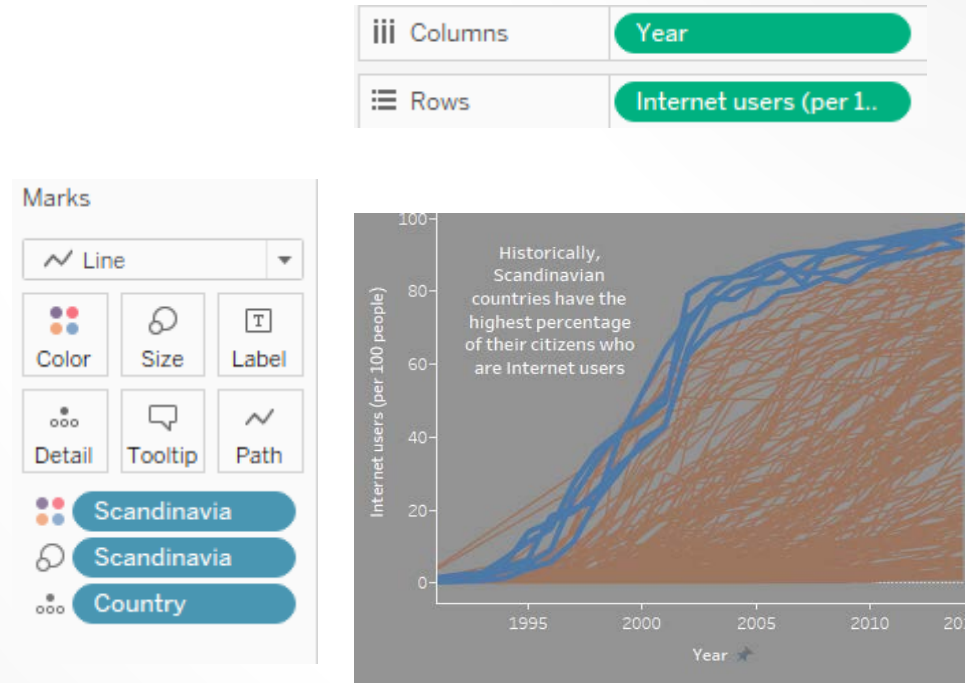
3-WAY SCATTERPLOT

- Geom: Shape (circle)
 - Internet → *X*
 - Life expectancy → *Y*
 - Fertility rate → *Size*
 - Region → *Color*
 - Year → *Filter*
- Optional animation:
 - Year → Pages



INTERNET USAGE BY COUNTRY OVER TIME

- Geom: Line
 - Year → X
 - Internet → Y
 - Scandinavia → Color
 - Scandinavia → Size
 - Country → Detail



- Annotate with right click → Annotate → Area

INTERNET USAGE BY COUNTRY OVER TIME

- To create **Scandinavia**:
 - Right-click Country → Create Calculated Field
 - Enter following code:

```
IF
[Country]=="Denmark" THEN "Yes" ELSEIF
[Country]=="Finland" THEN "Yes" ELSEIF
[Country]=="Iceland" THEN "Yes" ELSEIF
[Country]=="Sweden" THEN "Yes" ELSEIF
[Country]=="Norway" THEN "Yes"
ELSE "No"
END
```



Scandinavia

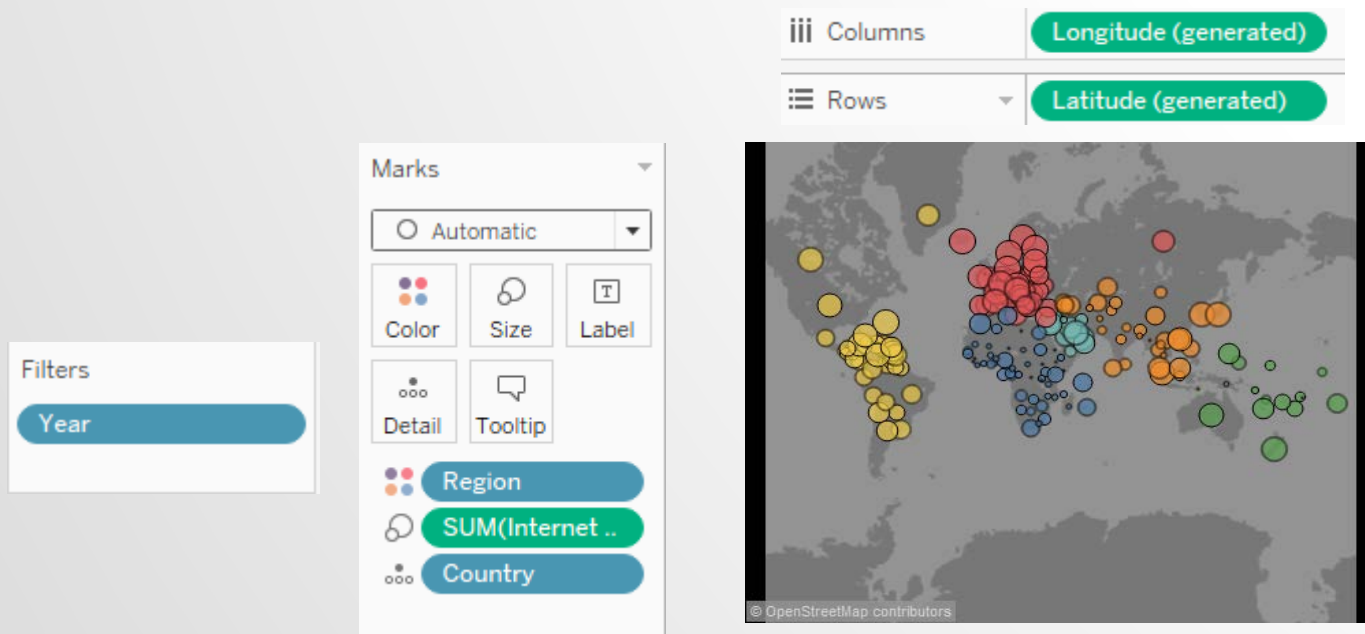
```
IF
[Country]=="Denmark" THEN "Yes" ELSEIF
[Country]=="Finland" THEN "Yes" ELSEIF
[Country]=="Iceland" THEN "Yes" ELSEIF
[Country]=="Sweden" THEN "Yes" ELSEIF
[Country]=="Norway" THEN "Yes"
ELSE "No"
END
```

The calculation is valid.

Apply OK

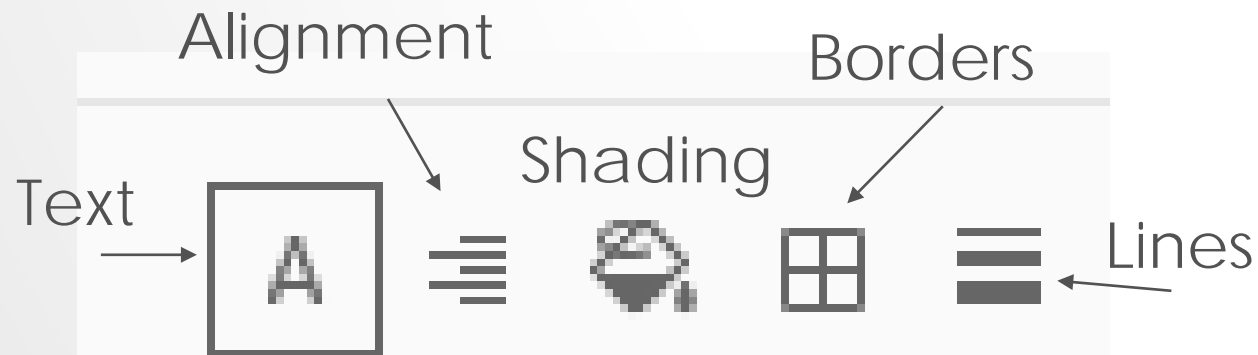
WORLD MAP OF INTERNET USAGE

- Geom: Point
 - Longitude → X
 - Latitude → Y
 - Region → Color
 - Internet → Size
 - Year → Filter
- } Tableau automates with **Country** → *Detail*



BELLS AND WHISTLES: THE FORMAT PANE

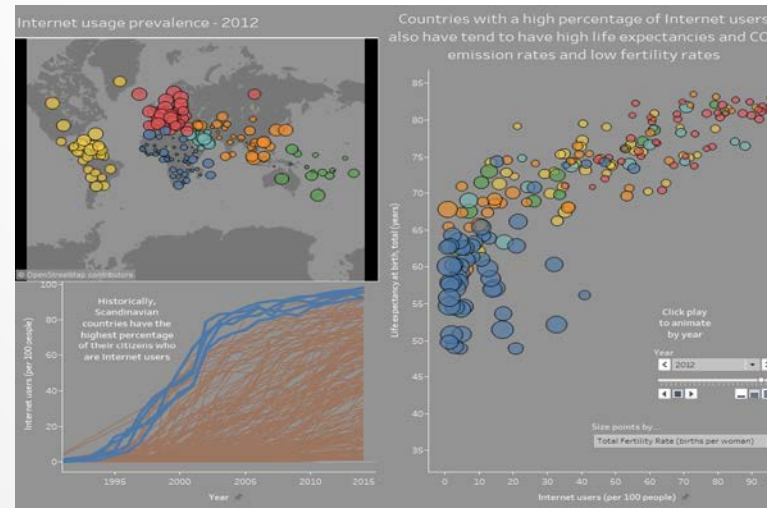
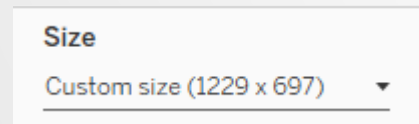
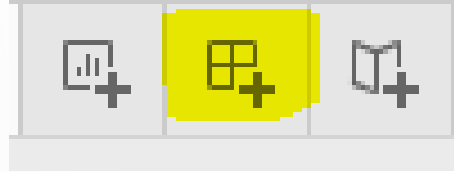
- Right-click → Format
- The formatting pane has 5 tools



- Right-click sheet name → Copy Formatting to paste formatting across multiple worksheets

DASHBOARD: BRINGING IT ALL TOGETHER

- Click New Dashboard:
- Arrange worksheets as desired
- Use Size dropdown to customize size



DASHBOARD: INTERACTIONS

- Two important action types
- **Highlight actions:** hovering over a data point on one worksheet *highlights* corresponding data points on other worksheets;
- **Filter actions:** hovering over or selecting a data point on one worksheet *filters* corresponding data points on other worksheets.

HIGHLIGHT ACTION

- Click **Dashboard → Actions...**
- **Add Action → Highlight**
- Complete the dialogue box as shown. Some things to think about:
 1. From which worksheets do you want the interactivity to be sourced? Select these in the "Source Sheets" box
 2. Which worksheets do you want the interactivity to target? Select these in the "Target Sheets" box
 3. **Important: Which fields do you want to control the interactivity?** Control this with the "Target Highlighting." **Note that the field(s) you select must be present on all selected target and source sheets for the action to work properly!**
 4. Do you want the action to run on hover, or select? Let's select "Hover" here.

Edit Highlight Action

Name: Country highlight

Source Sheets:

- ☐ Internet usage
- ☐ 3-way Scatterplot
- ☒ Internet Usage map 1
- ☐ Scandinavia

Run action on:

- 4
-
-

Target Sheets:

- ☐ Internet usage
- ☒ 3-way Scatterplot
- ☒ Internet Usage map 2
- ☒ Scandinavia

Target Highlighting:

- ☒ Selected Fields 3
- ☐ Dates and Times
- ☐ All Fields

Fields:

- ☒ Country
- ☐ Region
- ☐ Year

OK Cancel

FILTER ACTION

- Dashboard → Actions...
- Add Action → Filter
- Set up the Source and Target sheets as before, but note a few new options:
 1. What do you want to happen when the filter is removed? Leave or show all? (I have never encountered a situation where the “Exclude all values” option made sense.)
 2. Filtering by a specified field is accomplished by clicking **Add Filter...** at the bottom of the dialogue box, and selecting **Country**.
- Set up the dialogue box as shown

Edit Filter Action

Name:

Source Sheets:

☐ Internet usage

☐ 3-way Scatterplot

☒ Internet Usage map

☐ Scandinavia

Run action on:

☐ Run on single select only

Target Sheets

☐ Internet usage

☒ 3-way Scatterplot

☒ Internet Usage map

☒ Scandinavia

Clearing the selection will:

☐ Leave the filter

☒ Show all values 1

☐ Exclude all values

Target Filters

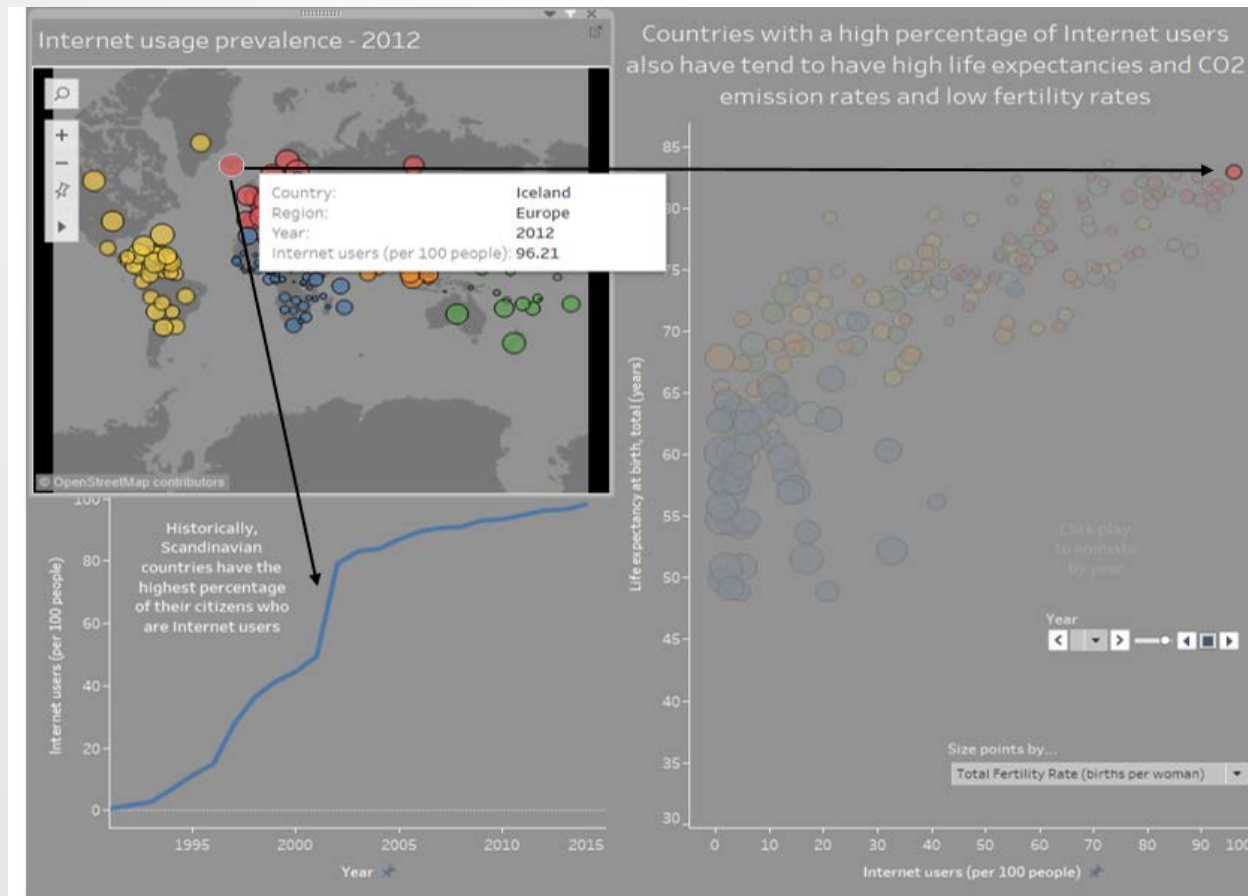
☒ Selected Fields ☐ All Fields

Source Field	Target Field	Target Data Source
Country	Country	Indicators (WorldBankSheets)

2

CREATE!

- Reproduce dashboard with interactions indicated by arrows



PUBLISH

- File → Save to Tableau Public As...
- Share your link: you're good to go!