



Data Visuals!

"Data is a precious thing and will last longer than systems themselves."

- Tim Berners-Lee

Introduction

As the first module within the specialized Data Visualization curriculum, this module serves as an introduction to creating visualizations using Flourish. The students will get a good idea of what's expected of them, as well as what they can expect of the class throughout the rest of the year.

Objectives

1. Students will gain an understanding on the importance of visualizations
2. Students will be introduced to Flourish Studio.

Agenda

1. Flourish Setup and Demonstration
2. Time to Create and Share!

Facilitation Notes

1. Make sure to help the students use Flourish. There are many graph types presented which can be overwhelming at first, but starting with a predetermined data set and graph type can help students build confidence.

Activities

Setting Up Flourish (7 minutes)

Purpose:

Set up a personalized accounts using school emails to get started with Flourish

Materials:

[Flourish Website](#)

IMSA Email

Directions:

1. Go to the Flourish homepage and click sign up
2. Select sign up with email and input prompted information
3. When the screen comes to select company, skip and enter studio directly

Making a Line Graph in Flourish (10 minutes)

Purpose:

Gives students a basic understanding of how to sort through data in Flourish and create a simple line chart

Materials:

England Bird [Dataset](#)

Directions:

1. Click on new visualization once in Flourish
2. Under starting points, click on line chart
3. Select data and upload england bird dataset

The screenshot shows the Flourish interface with a data table and visualization settings. The table has two columns, D and E, and 14 rows of data. The visualization settings on the right include an 'Upload data' button, a 'Data' section with 'SELECT COLUMNS TO VISUALISE' options, and a 'Labels/time' section with a 'REQUIRED' label and a pink 'A' button. The 'Values' section has a purple 'B-E' button. The 'Charts grid' section has a pink button, the 'Row filter' section has a blue button, and the 'Info for custom popups' section has a light blue button.

	D	E
Column 3	Column 4	
26200	17200	
26600	17800	
27500	18500	
28700	19400	
29600	10200	
20500	10900	
21200	11500	
21803	11931	
22600	12600	

4. Delete rows 1-14 by selecting the rows, right clicking, then delete rows
5. Select the correct columns in the values section to achieve desired graph

Untitled visualisation
by Shiraz Baxamusa Publicly visible

Create a story Export & publish

Preview Data

Year	All (130)	Unsmoothed data	Smoothed data	Smoothed 2.5 CI	Smoothed 97.5 CI	All (19)	Unsmoothed data	Smoothed data	Smoothed 2.5 CI	Smoothed 97.5 CI	Generalist (7)	Unsmoothed data
1970	100	100	100	100	100	100	100	100	100	100	100	100
1971	102.6657937829	102.054506106963	101.377535733025	103.293411741736	103.393952429385	98.6808752057945	97.1969891290355	100.257977604239	100.022574953645	98.6808752057945	97.1969891290355	100.257977604239
1972	107.67801607403	104.138457274323	102.8953313368	106.194158376718	103.480074676319	98.0759668573848	95.1630275908398	101.142493259928	104.502305468556	98.0759668573848	95.1630275908398	101.142493259928
1973	107.300575851608	105.898839991033	104.305555998792	108.64023268463	100.299935201268	98.2926722081215	94.2986664250998	102.648335443378	105.188854466833	98.2926722081215	94.2986664250998	102.648335443378
1974	109.02898386698	107.334140584184	105.531295321035	110.458201203975	101.376511433838	99.6551123025452	94.6948070676556	105.230373950102	101.729236013933	99.6551123025452	94.6948070676556	105.230373950102
1975	111.758802784747	108.109542911985	106.103246220411	111.823474005408	106.51229514957	101.720185801848	95.8248863055671	107.595053418501	114.198203668548	101.720185801848	95.8248863055671	107.595053418501
1976	111.095804913436	108.463403749214	106.270925636688	112.840065586532	108.930990403554	103.167793145678	96.8741952393328	110.177330337267	112.850571902493	103.167793145678	96.8741952393328	110.177330337267
1977	113.458921365867	107.732927899452	105.367939949965	112.08498009814	111.589717143449	102.884591550723	96.0595241550599	110.669593880265	114.988736635487	102.884591550723	96.0595241550599	110.669593880265
1978	106.149071787705	106.035756342284	103.286285518179	110.71922064558	103.833297371472	100.474825674083	93.3717918917233	108.491595440073	111.659981833527	100.474825674083	93.3717918917233	108.491595440073
1979	101.655217285633	104.560114574078	101.540286779851	109.4437294195	97.7812364576156	96.734139395036	90.0064153397223	103.920846661653	107.632276516029	97.7812364576156	96.734139395036	90.0064153397223
1980	108.601494586399	108.400181189376	100.400181189376	108.645057071182	97.11109705418	92.4415465313625	85.7679935557243	100.049590722056	104.232278346464	97.11109705418	92.4415465313625	85.7679935557243
1981	108.748329770906	102.864534809371	99.5722652493913	107.687313009331	93.1925525421688	87.6974397823303	80.6428399591936	95.2883802645248	107.977187594245	93.1925525421688	87.6974397823303	80.6428399591936
1982	99.3549852176408	101.323432674705	97.8912478144465	106.003846025041	82.1132228284034	82.7896997844228	75.380772609252	90.7090923465259	105.789707769943	82.1132228284034	82.7896997844228	75.380772609252
1983	102.583468879351	99.8317205391059	96.455905400156	104.295337258153	81.338202528108	78.4582122775713	70.8939634998073	86.249207527705	105.8998393887	99.8317205391059	96.455905400156	104.295337258153
1984	103.170483179489	98.2081508549673	94.868912346271	102.40014907519	80.5404609051409	74.5839457096203	67.0618089173063	81.9777923437322	105.364451699436	94.868912346271	94.868912346271	102.40014907519
1985	98.8151064690335	96.3202849911985	93.1753058675493	100.448334179278	74.2373965565033	70.7713617923787	63.4552503041392	77.422059696319	103.247269315397	96.3202849911985	93.1753058675493	100.448334179278
1986	93.280927444865	94.9745493140225	91.977275077088	99.343202932458	68.5999867535687	67.3685240958874	60.182639586898	73.45395832441	103.01319698911	94.9745493140225	91.977275077088	99.343202932458
1987	93.4568568037686	95.0333679221951	91.9248363417133	99.628039255475	65.1453291022192	65.0427287187332	58.1290480913527	70.8601981717055	99.2147139700542	95.0333679221951	91.9248363417133	99.628039255475

Upload data Saved

Labels/time (REQUIRED) A

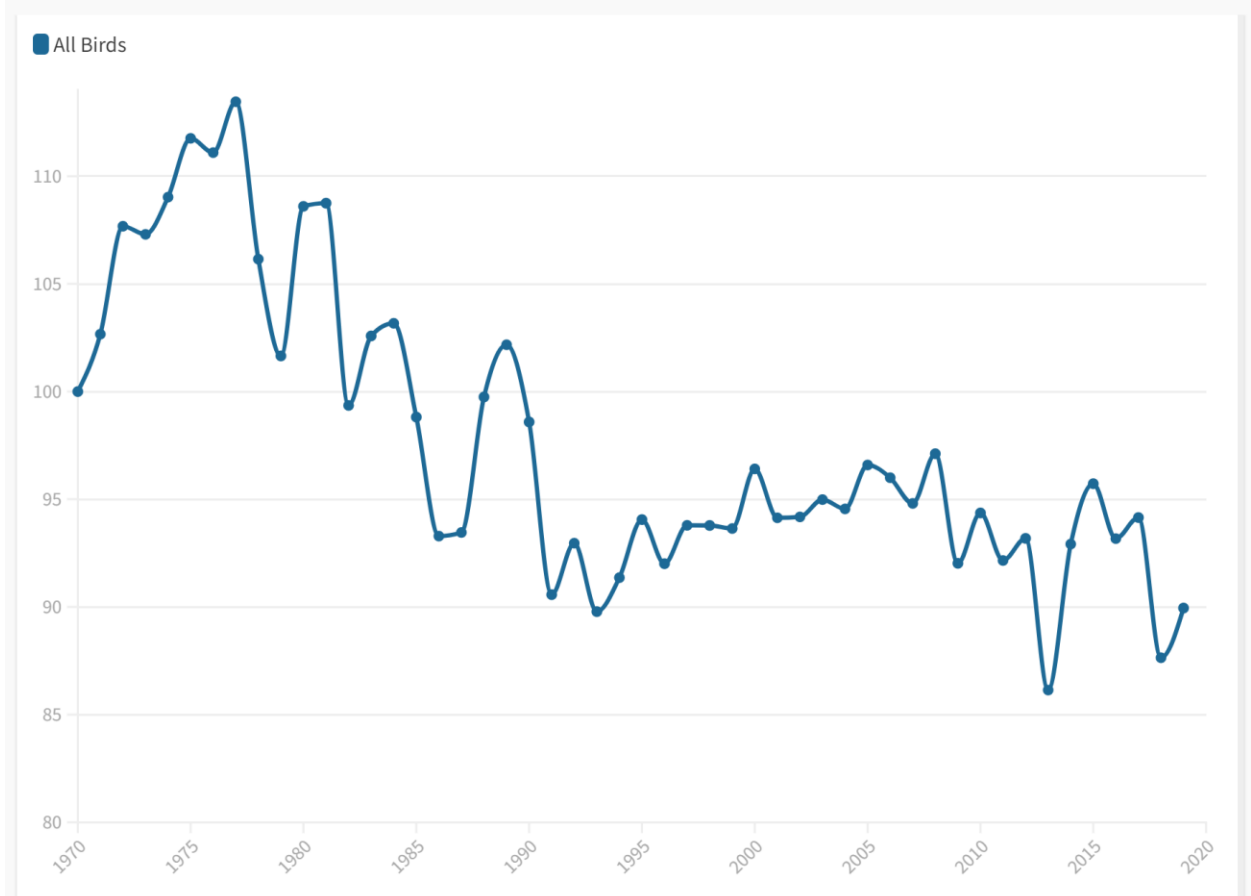
Values B-E

Charts grid

Row filter

Info for custom popups

6. Give a sensible title to each row
7. One Possible End Result:



Making a Basic Map Graph in Flourish (10 minutes)

Purpose:

Teach students how to use Flourish for more difficult maps

Materials:

Flourish

World Potato Exports [Dataset](#)

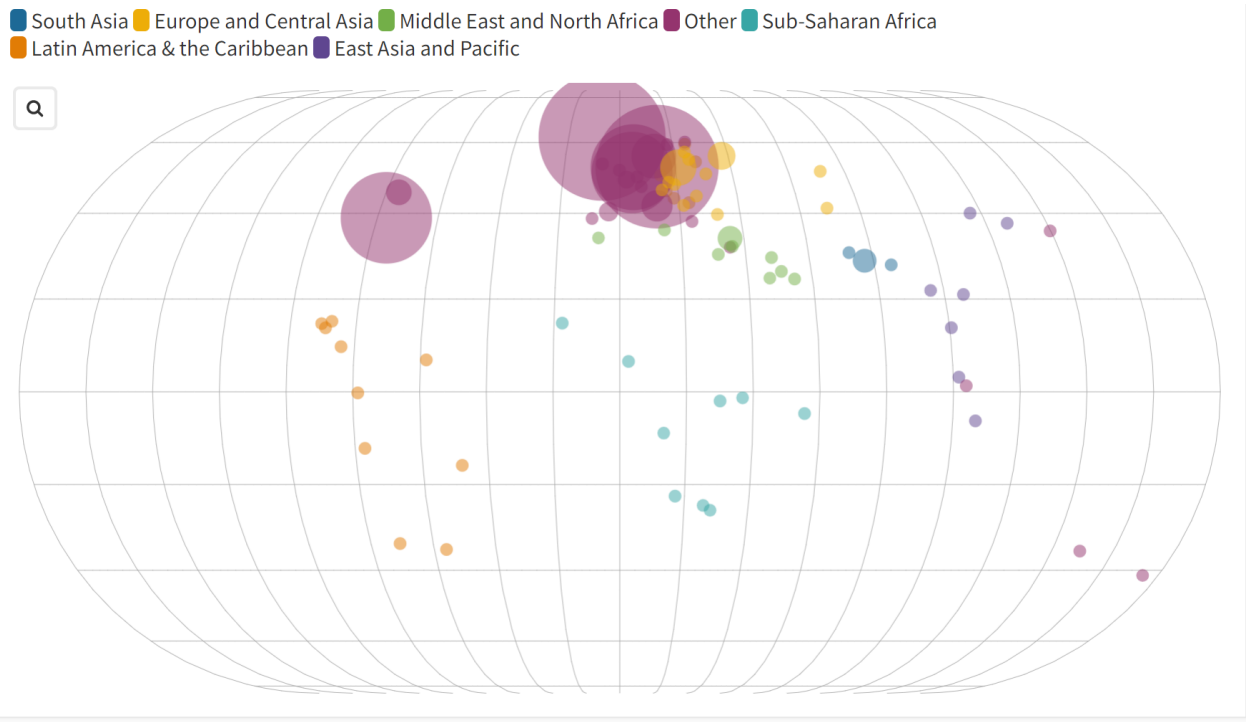
Directions:

1. Select new visualization and scroll down to click world map
2. Select points tab in data and import dataset

The screenshot displays the Flourish interface with a data table and a world map visualization. The data table has the following columns: Name, Longitude, Latitude, World Bank region, and Trade Value, (1000USD). The world map visualization shows a world map with colored points representing data points. The interface includes a 'Points' tab selected in the top right, and a 'SELECT COLUMNS TO VISUALISE' section with the following settings: Name (A), Longitude (B), Latitude (C), Colour category (D), Value (E), and Metadata for popups (F). A small world map icon with a question mark is visible in the bottom right corner of the visualization area.

	A	B	C	D	E	F	G	H	I
1	Name	Longitude	Latitude	World Bank region	Trade Value, (1000USD)				
2	Afghanistan	69.1761	34.5228	South Asia					
3	Albania	19.8172	41.3317	Europe and Central Asia					
4	Algeria	3.05097	36.7397	Middle East and North Africa					
5	American Samoa	-170.691	-14.2846	Other					
6	Andorra	1.5218	42.5075	Other					
7	Angola	13.242	-8.81155	Sub-Saharan Africa	0.32				
8	Antigua and Barbuda	-61.8456	17.1175	Latin America & the Caribbean					
9	Argentina	-58.4173	-34.6118	Latin America & the Caribbean					
10	Armenia	44.509	40.1596	Europe and Central Asia					
11	Aruba	-70.0167	12.5167	Other					
12	Australia	149.129	-35.282	Other	106.54				
13	Austria	16.3798	48.2201	Other					
14	Azerbaijan	49.8932	40.3834	Europe and Central Asia					
15	Bahamas, The	-77.339	25.0661	Latin America & the Caribbean					
16	Bahrain	50.5354	26.1921	Middle East and North Africa	0.14				
17	Bangladesh	90.4113	23.7055	South Asia					
18	Barbados	-59.6105	13.0935	Latin America & the Caribbean					
19	Belarus	27.5766	53.9678	Europe and Central Asia	1842.4				
20	Belgium	4.36761	50.8371	Other	87246.84				
21	Belize	-88.7913	17.3613	Latin America & the Caribbean					

3. Assign correct roles to each of the columns
4. Play around with points layer primarily and other settings to achieve desired graph
5. One possible example:



Visualization Assignment (20 minutes)

Purpose:

Familiarize students with use of Flourish and practice creating embedded visualizations.

Materials:

Flourish

Candy.csv [dataset](#)

Directions:

1. Give students the dataset near the end of class with the instructions for them to create the best visualization they can before the next class period.
2. Students will upload pictures of their visualizations to a Padlet during the next module and share if they thought theirs was truly spectacular.
3. Send students a link to the instructions document, just in case the students need more clarification: [Instructions Document](#).
4. Provide the students with the remainder of the module (-15 minutes) to work on their visualizations.