

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The main title is centered in the upper half of the slide.

INVESTIGATING COURSE LEVEL ENROLLMENT PATTERNS

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GOALS

- There are 2 simple goals for this session:
 - Show how a visual daily enrollment dashboard can help inform decisions
 - Demonstrate how to create a daily enrollment dashboard with Tableau
- In order to do this we will be going back and forth between this PPT and Tableau, however I will document in the PPT how to make the dashboard so you can try it at home.

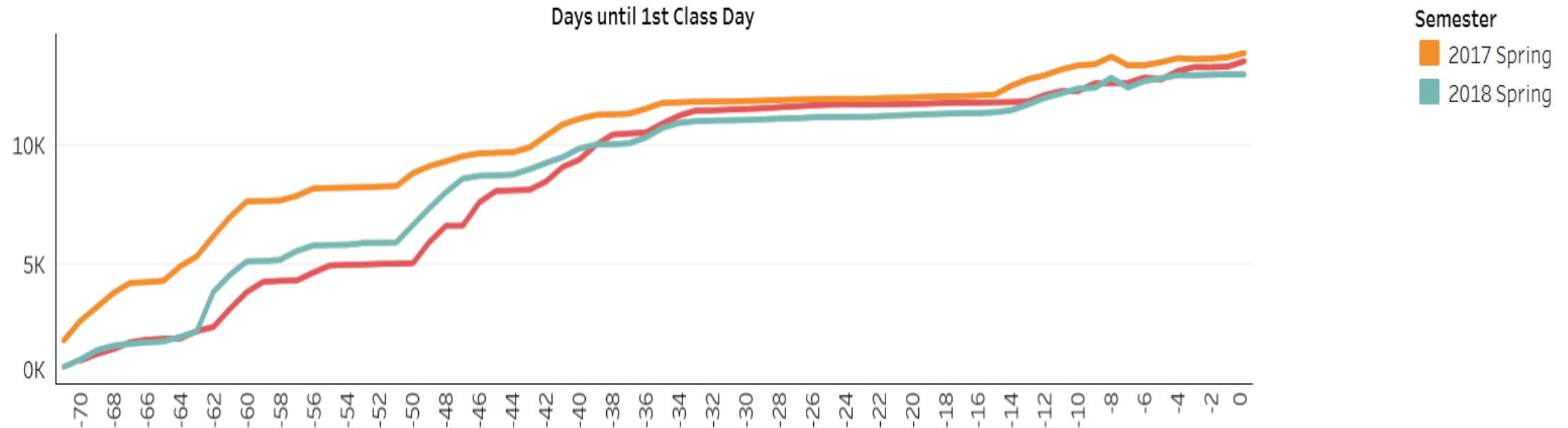
DAILY ENROLLMENT DASHBOARDS

- Most daily enrollment reports show what the current enrollment is as of that day with maybe a comparable equivalent to a prior day.
- While useful, it does not provide a quick visual to help us understand if there is an upcoming enrollment “bump” or if the course is off track from prior semesters.
- One of the benefits of the dashboard we will talk about today is that administration and faculty could now look at the patterns and have data to back up decisions about staffing and cancellations, especially useful if a course has the majority of students typically enroll only days before the start.

COLLEGE LEVEL EXAMPLE

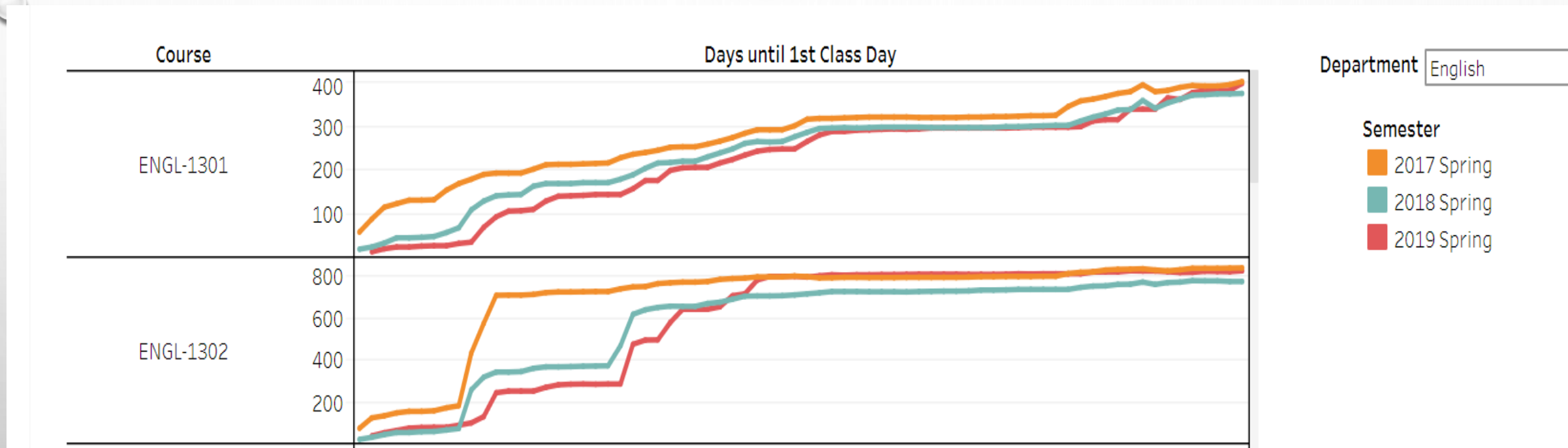
Enrollment Over Time

Department



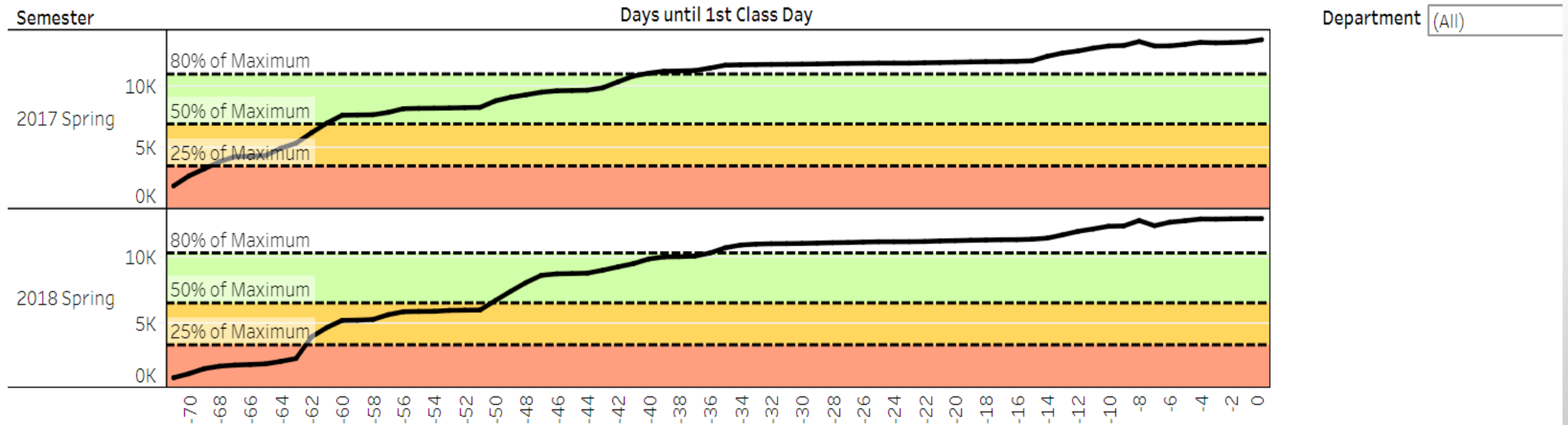
- This dashboard shows aggregate enrollment, by day, approaching the 1st class day for the entire college.

COURSE LEVEL EXAMPLE



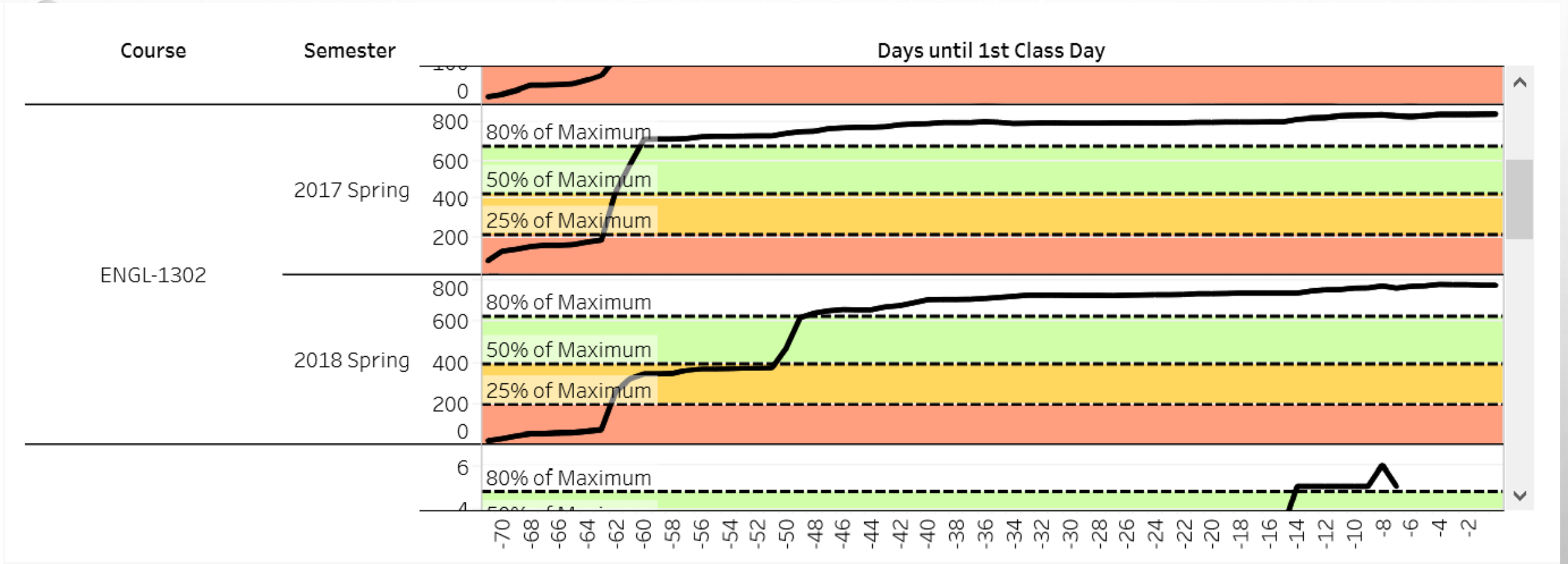
- This dashboard shows unduplicated enrollment, by day, by class, approaching the 1st class day.
- You can see interesting patterns within these charts. Notice about ¼ of ENGL-1301 enrolls around 14 days out.

COLLEGE LEVEL ANALYTICS



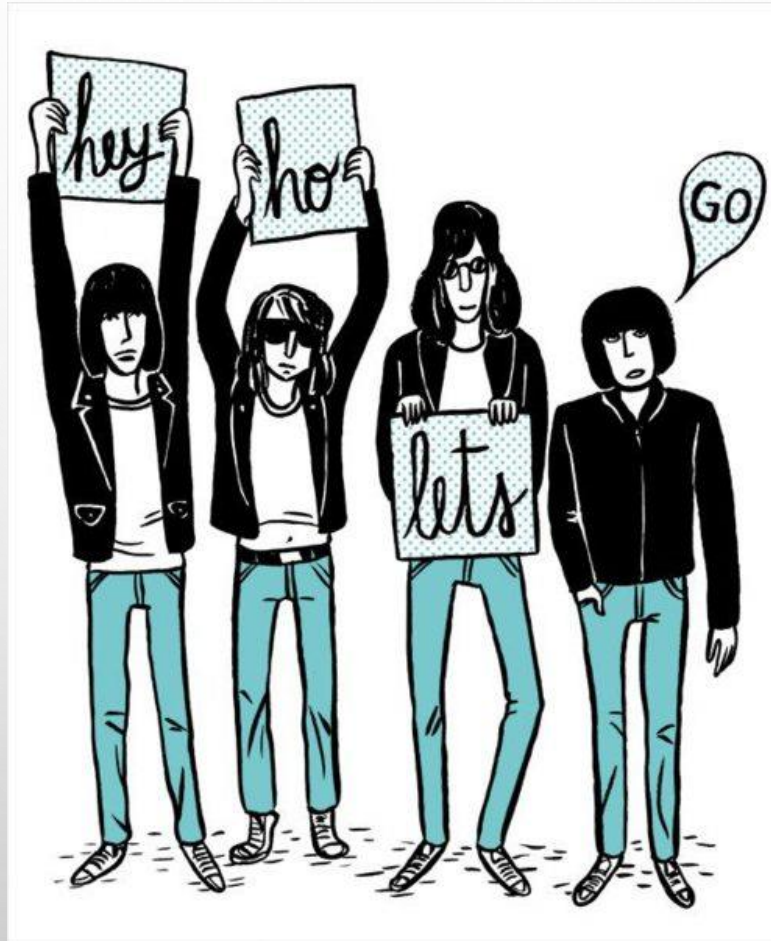
- This dashboard shows the past 2 semesters with a distribution band breaking it into 25%, 50%, and 80% of the maximum enrollment.
- While the 50% crossover is about 12 days different, the 80% happens within days of each other.

COURSE LEVEL ANALYTICS



- Again, the same distribution bands, but at the course level.

LET'S GO TO THE DASHBOARDS



TECHNICAL INFO

- Alvin Community College is an Ellucian Colleague school and uses Zogotech as a data warehouse. We use Tableau to create dashboards for our internal stakeholders.
- Tableau's latest version can connect to a huge number of data sources, including Microsoft Analysis Services and SQL server, which is what Zogotech uses.
- We use Tableau Public for publishing our data. We do not include any personally identifiable information on any dashboard and we hide the dashboard in Public. This means that unless someone has the direct link to the dashboard, or can appropriately guess keywords in the search function, it will be very difficult to find.

MANIPULATING THE DATA

- Currently we download the data and clean it up and create our dashboards off of static data.
- This means we have to download the data, clean it, copy it over into the existing data source to update it and then refresh the dashboard file before uploading it.
- However, as we expand with the ability to connect directly to Microsoft's Analysis Services, we are reworking our dashboards to connect to the live data so that all we need to do is open the tableau file, refresh, and upload the latest version.

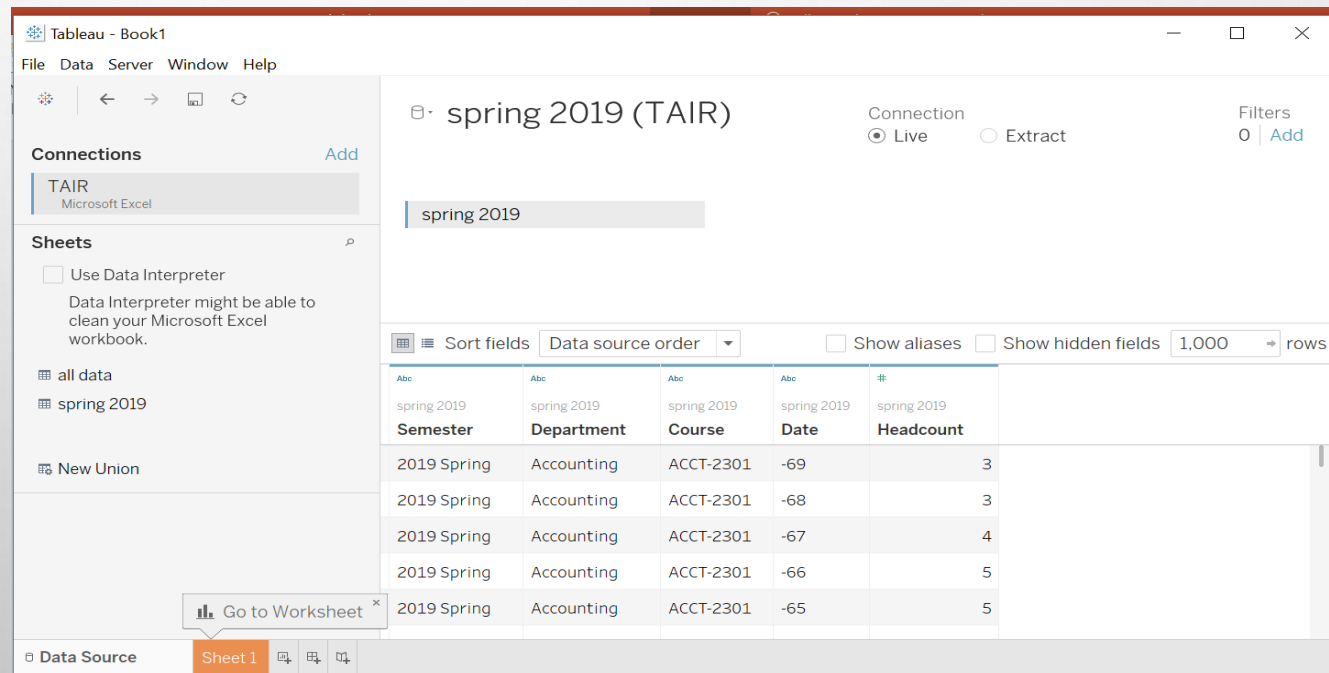
DATASET

- At it's most simple you need a file with the following columns:
 - Semester
 - Department
 - Course
 - Date (in this example it is a countdown to 1st class day)
 - Headcount (in this example it is unduplicated)

	A	B	C	D	E
1	Semester	Department	Course	Date	Headcount
2	2019 Spring	Accounting	ACCT-2301	-69	3
3	2019 Spring	Accounting	ACCT-2301	-68	3
4	2019 Spring	Accounting	ACCT-2301	-67	4
5	2019 Spring	Accounting	ACCT-2301	-66	5
6	2019 Spring	Accounting	ACCT-2301	-65	5
7	2019 Spring	Accounting	ACCT-2301	-64	5
8	2019 Spring	Accounting	ACCT-2301	-63	6

LET'S MAKE A DASHBOARD!

- Open Tableau
 - Connect to your file (in this case it is an excel file)
 - If you have more than one worksheet in the file you will need to pick the worksheet that has your data and drag it to the top middle of the screen (our worksheet is called Spring 2019)



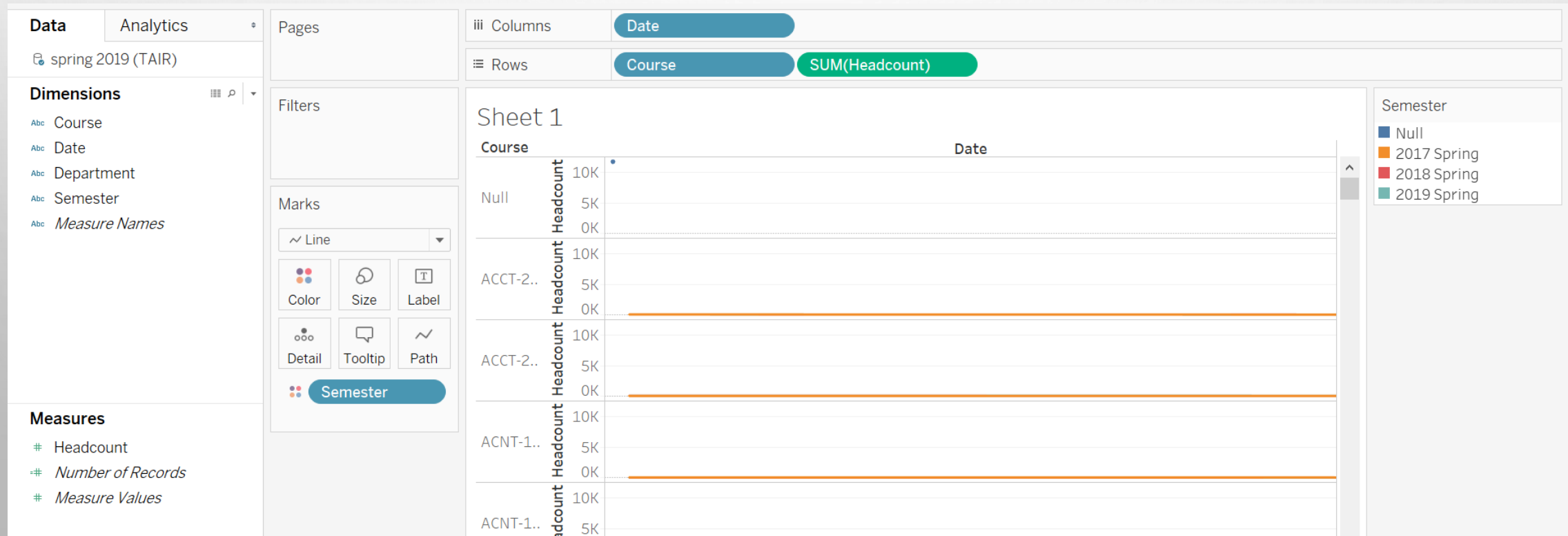
The screenshot shows the Tableau interface with the following components:

- Connections:** TAIR (Microsoft Excel)
- Sheets:** Use Data Interpreter (unchecked), all data, spring 2019, New Union
- Data Source:** spring 2019 (TAIR), Connection: Live, Filters: 0
- Table:** A table with columns: Semester, Department, Course, Date, Headcount. The data is sorted by Date in descending order.

Semester	Department	Course	Date	Headcount
2019 Spring	Accounting	ACCT-2301	-69	3
2019 Spring	Accounting	ACCT-2301	-68	3
2019 Spring	Accounting	ACCT-2301	-67	4
2019 Spring	Accounting	ACCT-2301	-66	5
2019 Spring	Accounting	ACCT-2301	-65	5

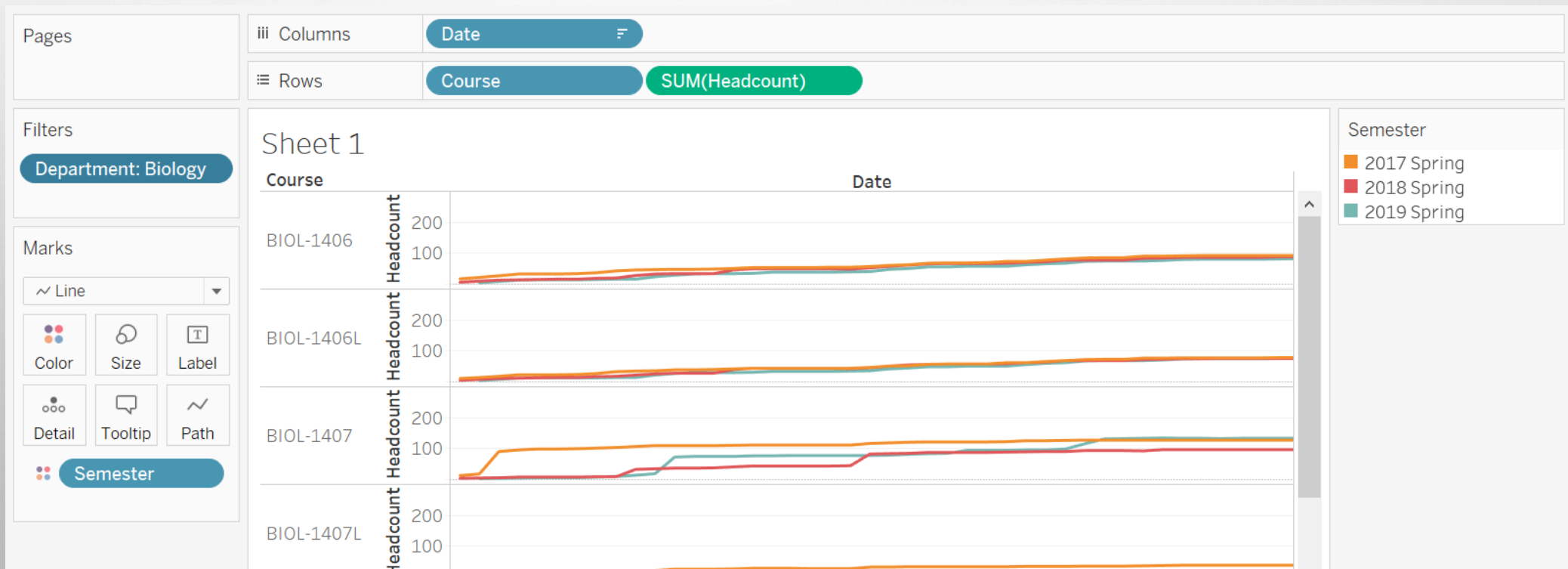
LET'S MAKE A DASHBOARD! PT2

- Go to Sheet 1 (it's a default name Tableau uses)
 - 1) Drag Date to Columns
 - 2) Drag Course to Rows
 - 3) Drag Headcount (from the Measures) to Rows after Course
 - 4) Drag Semester and drop it onto the Color option in the Marks Card



LET'S MAKE A DASHBOARD! PT 3

- We're almost there!
 - Drag Department into the Filters Card (Choose a Department)
 - Anything in a filters card will be able to be used as a filter in the dashboard
 - We also need to right-click on Date and Sort it Descending (otherwise it goes from 1st day out)



LET'S MAKE A DASHBOARD! PT 4

- Let's make the Analytics sheet!
- Right-click the Sheet 1 tab and duplicate the sheet.
- Drag Semester out of Marks card to the left to make it go away
- Drag Semester from the Dimensions card to the rows between Course and Headcount
- Click on the pull Down on Semester and Filter it to only show the past 2 semesters (if you use these analytics on a semester in progress it continually calculates off of maximum enrollment for that semester – which is not helpful if a semester is on-going)

LET'S MAKE A DASHBOARD! PT 4 SCREENSHOT



LET'S MAKE A DASHBOARD! PT 5

- Right click the Headcount Axis on any class and Edit Axis
- Choose Independent Axis Ranges for each row or column
- Click on the Analytics Tab Next to Data on the left
- Drag Distribution Band onto the sheet and make the following changes to it:
- That's the Course Analytics Sheet!
- Note: This shows bands based on the Maximum (highest) enrollment of the period

Edit Reference Line, Band, or Box

Line Band **Distribution** Box Plot

Scope

Entire Table Per Pane Per Cell

Computation

Value: 25%,50%,80% of Maximum

Label: Computation

Formatting

Line: -----

Fill: Stoplight

Fill Above

Fill Below

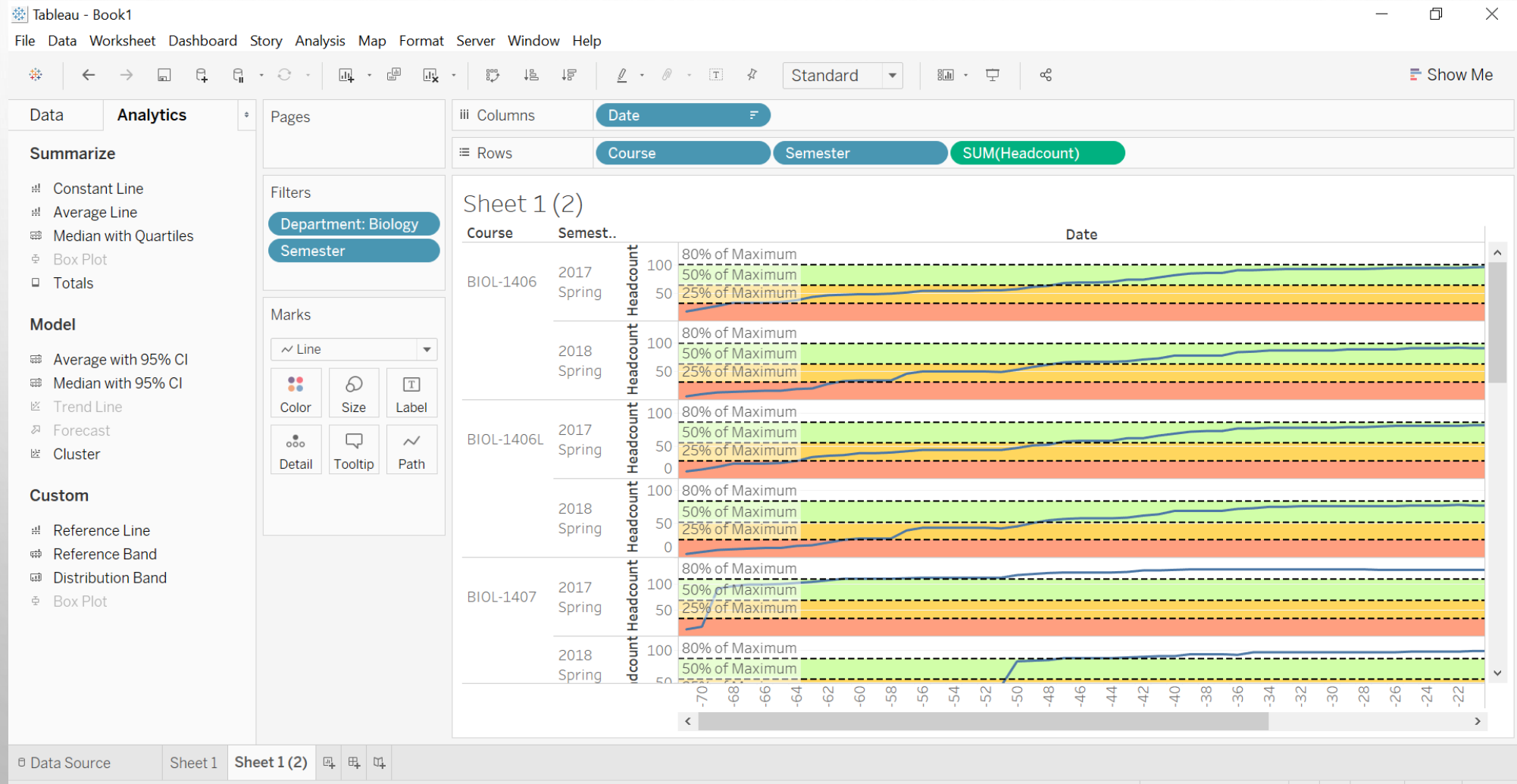
Symmetric

Reverse

Show recalculated band for highlighted or selected data points

OK

LET'S MAKE A DASHBOARD! PT 5 SCREENSHOT



LET'S MAKE A DASHBOARD! PT 6

- Sheet Tips:
 - If you want to make a Department sheet – just don't add the Course element to the Rows
 - I suggest right-clicking on the semester key and changing the colors of at least the newest semester to be easy to find. A dark bold color is good.
 - I hide the Title or change it on the sheets. It's up to your preferences.

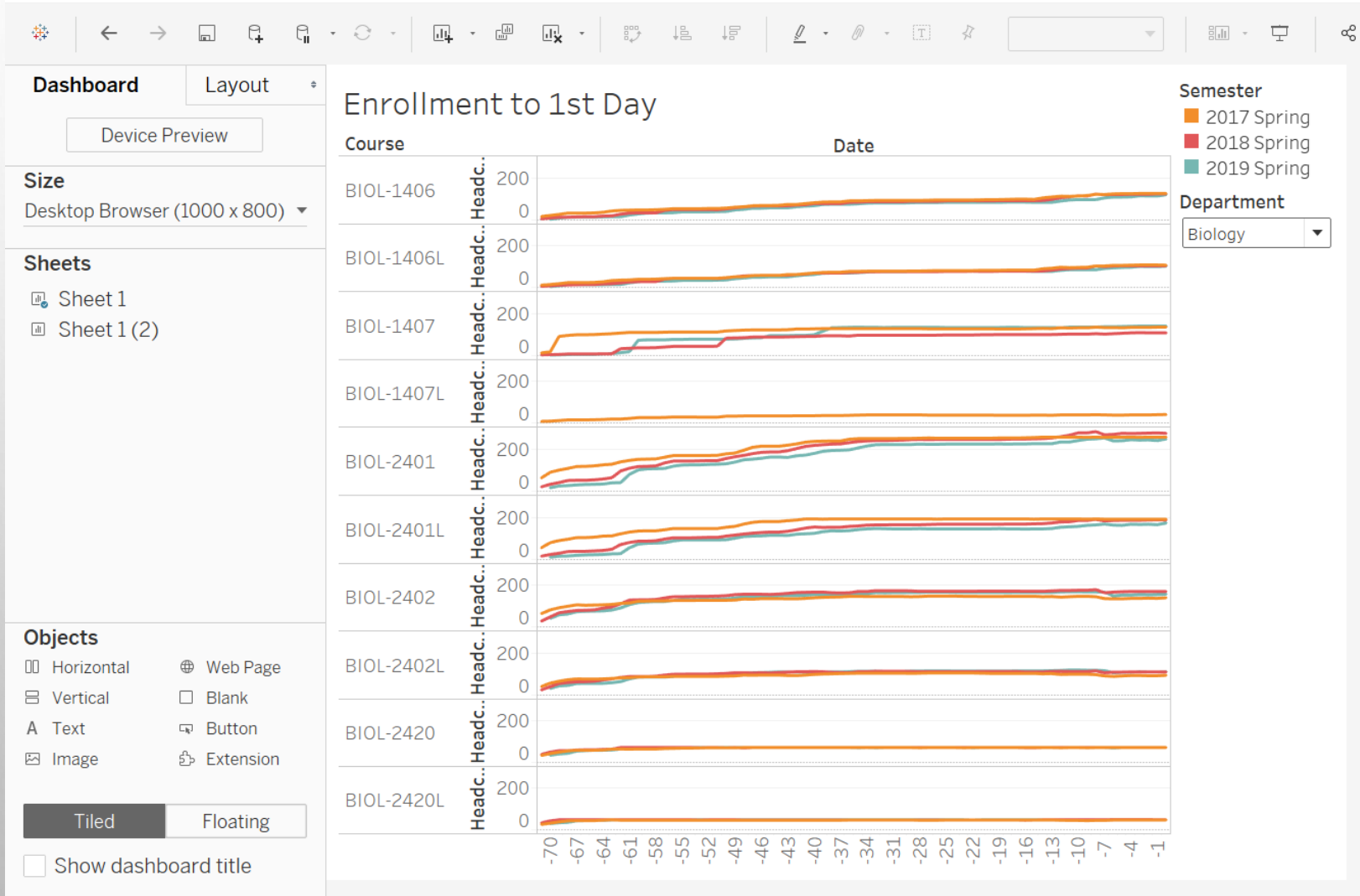
LET'S MAKE A DASHBOARD! PT 7

- Let's put these sheets in a Dashboard!
- Click Dashboard – New Dashboard
- You'll see the sheets listed on the left – drag sheet 1 over
- This will put the courses on the page – click the courses block and use the down arrow at the edge of the courses and choose FIT – Fit Width.
- Then use the arrow again to open the filters and choose Department. This adds a Department filter.
- Click on Department and use the arrow to change it to Single Value dropdown (my preference)
- I also changed the Title of the sheet to Enrollment to 1st Day

LET'S MAKE A DASHBOARD! PT 7 SCREENSHOT

Tableau - Book1

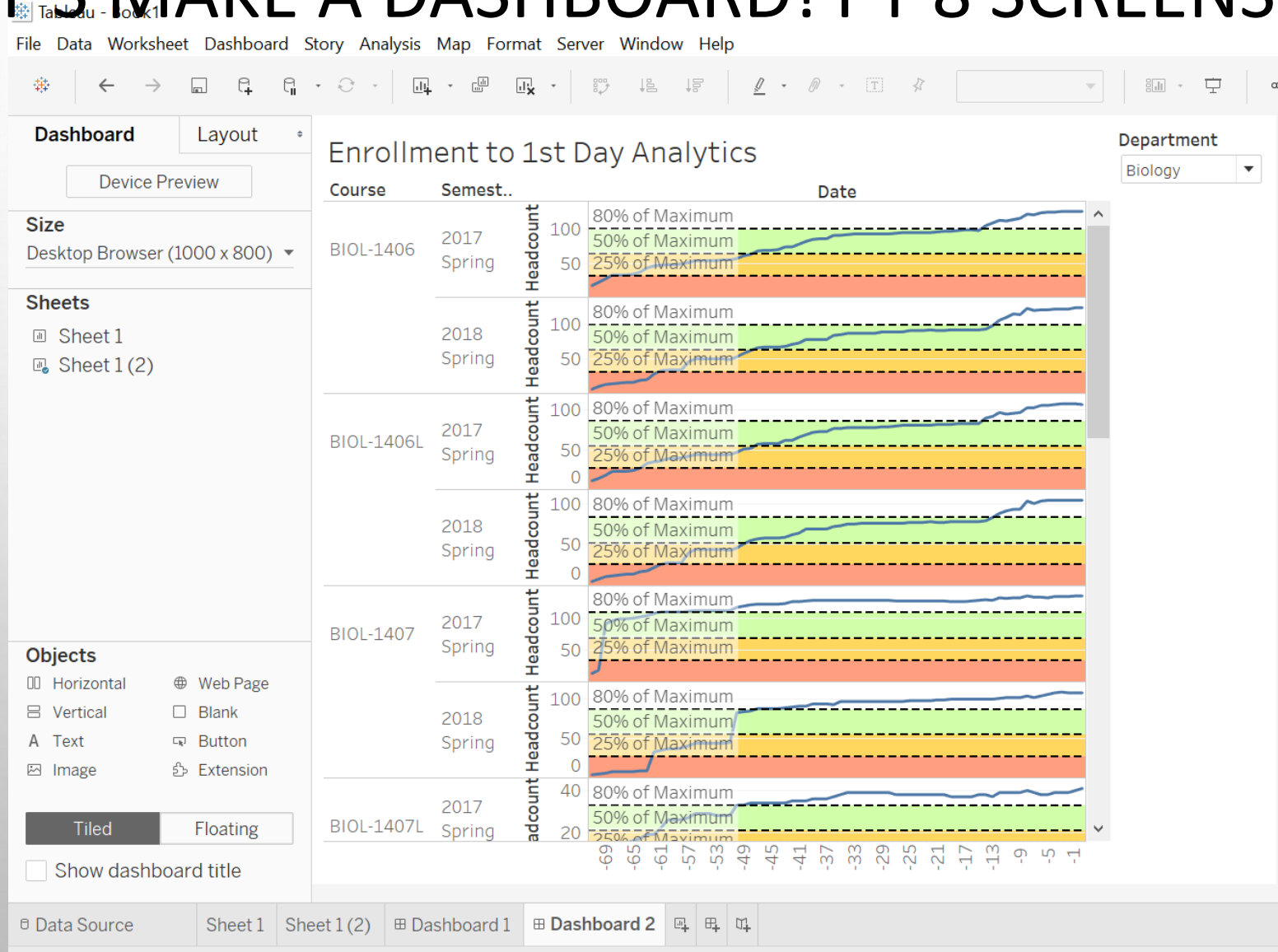
File Data Worksheet Dashboard Story Map Format Server Window Help



LET'S MAKE A DASHBOARD! PT 8

- Let's put the Analytics sheet in a Dashboard!
- Click Dashboard – New Dashboard
- You'll see the sheets listed on the left – drag sheet 1 (2) – [the one that has your analytics] over
- This will put the courses on the page – click the courses block and use the down arrow at the edge of the courses and choose FIT – Fit Width.
- Then use the arrow again to open the filters and choose Department. This adds a Department filter.
- Click on Department and use the arrow to change it to Single Value dropdown (my preference)
- I also changed the Title of the sheet to Enrollment to 1st Day Analytics

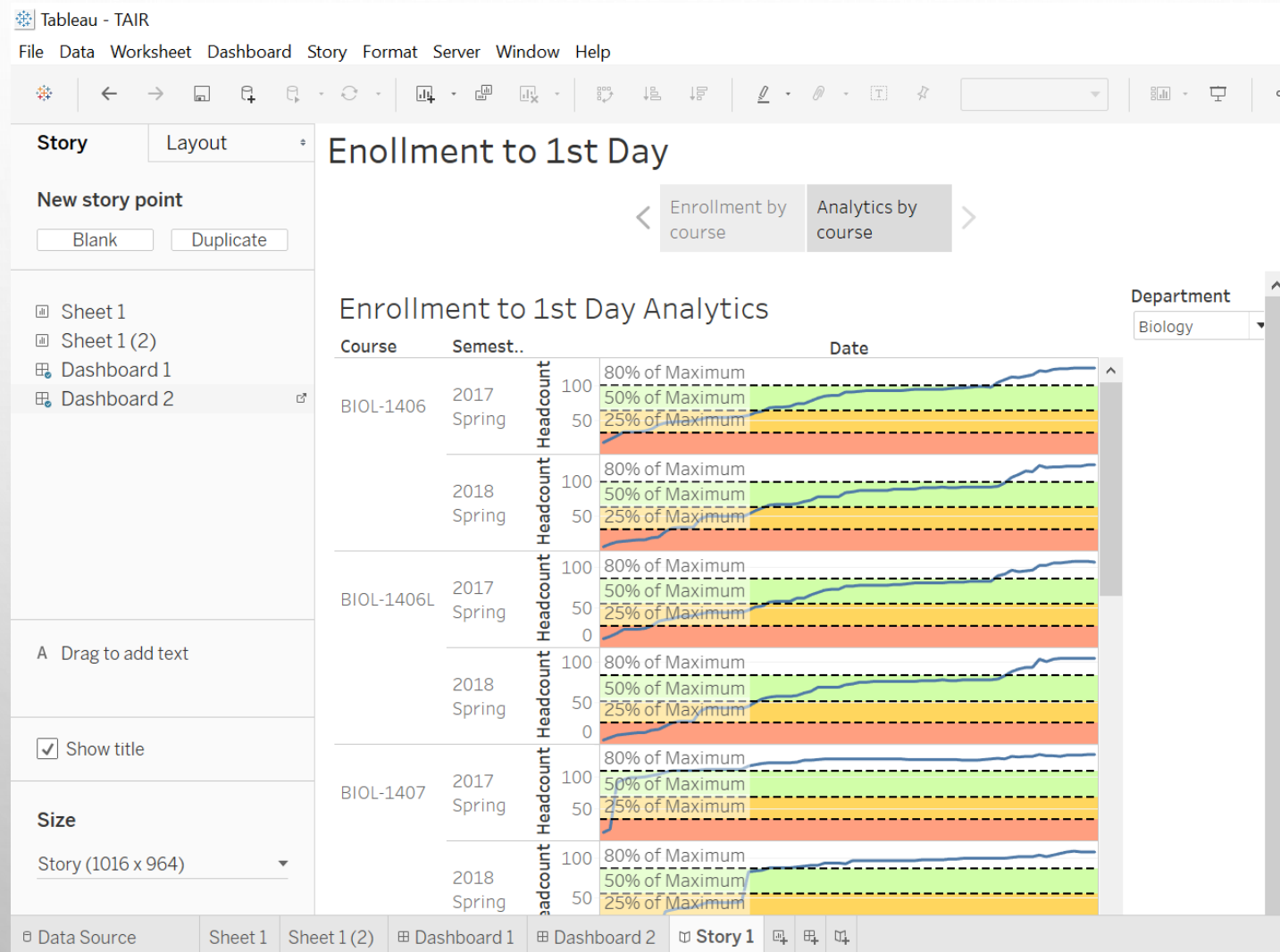
LET'S MAKE A DASHBOARD! PT 8 SCREENSHOT



LET'S MAKE A DASHBOARD! PT 9

- You could publish each dashboard separately, but Tableau has a Story option, which allows for multiple Dashboards.
- Click Story – New Story
- You'll see the dashboards listed on the left – drag Dashboard 1 over
- This will put the dashboard on the page
- Change the Title and at add a caption put “Enrollment by Course”
- Click New Story Point “Blank” on the left
- Drag Dashboard 2 (the analytics) over and rename the caption to “Analytics by Course”

LET'S MAKE A DASHBOARD! PT 9 SCREENSHOT



YOU'RE DONE!

- Now you can publish these to Tableau Public!
- You may find that you want to mess with the size of the Story (it has width and height options) or the Dashboards.
- When you go to publish it will have few steps – such as having you run an extract (Data – extract data). Any time you update your data source you will need to run this again.
- You can just append any new data to the data file, open Tableau, run the extract, check everything is showing, and then publish it again.
- Don't forget to use the TAIR APP to review this session!

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ANY QUESTIONS?

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