May 13, 2016: IBM Watson User Guide

In this IBM Watson User Guide, you will create dashboards and utilitize the following capabilities: <u>Exploring, Predicting, and Collecting</u>.

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Administration:

First, you will need to sign up for IBM Watson Analytics

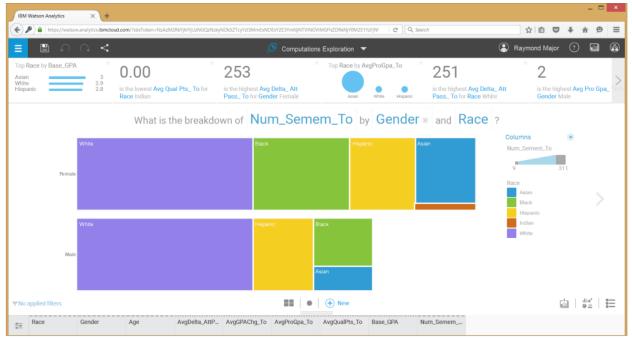
- a. Visit the website: <u>http://www.ibm.com/analytics/watson-analytics/us-en/</u>
- b. Sign up by clicking the "Try it for free" button.
- c. After signing up, start the app.

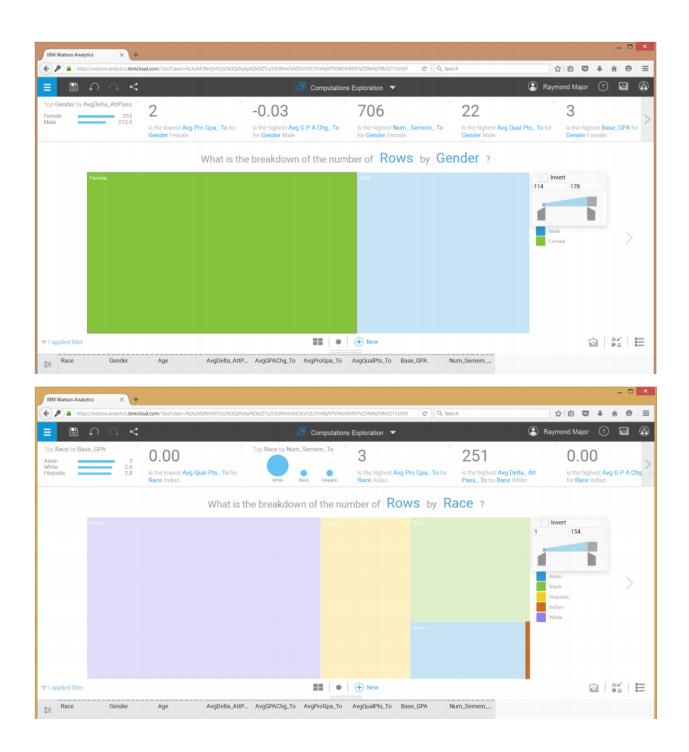
Second, Download Excel file: "Computations.xlsx" (Download link: http://www.nvc.vt.edu/rmajor/bit5534/Docs/Computations.xlsx)

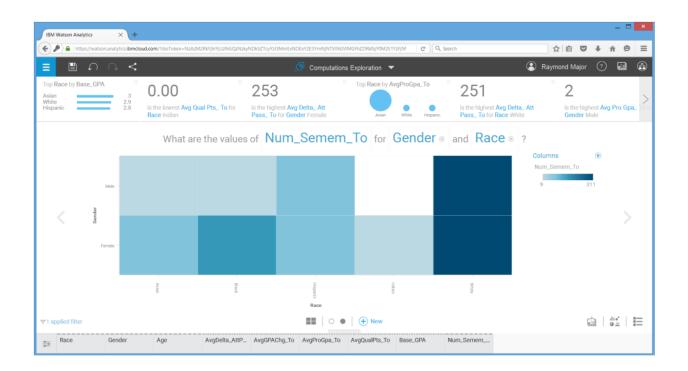
Dashboards to Build: Exploring

Below will be a sequence of instructions on creating the exact dashboards below (and as shown on the website http://www.nvc.vt.edu/rmajor/bit5534/Dashboards.htm:

IBM: Dashboard for Exploring Watson



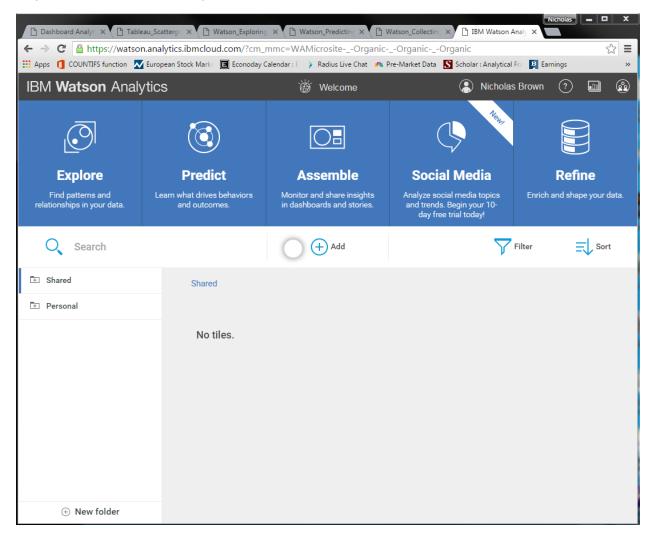




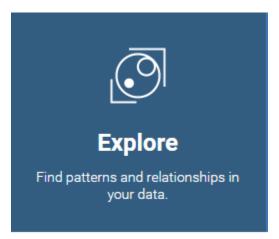
Above are the dashboards as displayed on the course website: <u>http://www.nvc.vt.edu/rmajor/bit5534/Docs/Watson_Exploring.pdf</u>

Dashboard: Num_Semem_To by Gender and Race?

Step 1: Go to IBM Watson Analytics website.



2: Click on "Explore" at the top left corner.



3: The "Create new exploration" window will appear. Click on "Drop file or browse" at the bottom left side corner and locate the downloaded "Computations.xlsx" file. (Visit this page if you need to download: <u>http://www.nvc.vt.edu/rmajor/bit5534/Docs/Computations.xlsx</u>)

Choose a data set	 Create new exp		
🛨 Shared			
🕂 Personal			
Q Search			
Name \downarrow		Type \downarrow	Modified \downarrow
Computations		XLSX	May 12, 2016
Or add your data	个		
: <u> </u>	Upload data		

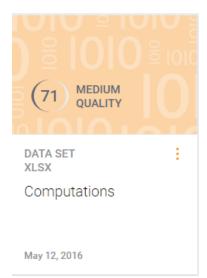
4: Then choose which worksheet you would like to use, and keep the default sheet "The_Student_Data." Click Confirm:

Tell us about your data Computations						
Which worksheet do you want to use?						
The_Student_Da	ata					
			Confirm Cancel			

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5: The file will load and when ready, choose the Data Set, entitled, "Computations" on your home screen:



6: The "Here are some starting ponts for 'Computations' " wizard will appear. Choose the third option entitled, "What is the breakdown of **AvgProGPA_To** by **Gender** and **Race**?":

Here are so	me starting	points for	'Computations	s ^t .		×
O Ask a qu	estion				How to ask a quest	ion 🔿
What is the tr Num_Semer Age by Geno	m_To over	AvgDel	the values of ta_AttPass_To e by Gender and	What is the breakdown of AvgProGpa_To by Gender and Race?	What is the relationship between AvgGPAChg_To and AvgQualPts_To by Age?	>
Create new	Explore	() Predict	Assemble	Or shape data	Refine	

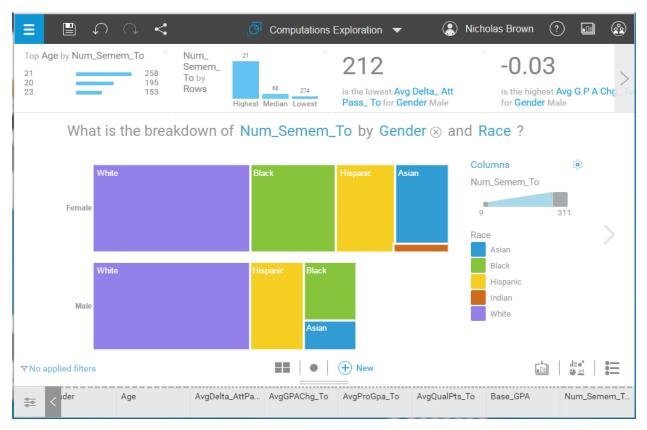
7: Now replace "AvgProGpa_To" in the question prompt:

What is the breakdown of AvgProGpa_To by Gender (2) and Race ?

By clicking on it and selecting "Num_Semem_To". The question should now read as follows:

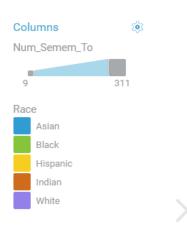
What is the breakdown of Num_Semem_To by Gender \otimes and Race ?

8. The final product will appear as follows:



Dashboard: Breakdown of the number of Rows by Gender?

This assumes you have already created the first dashboard and will now progress to the next one. If you have not completed the first dashboard, then re-visit the instructions above and import the data. When the 'exploration question prompt' appears, follow the below instructions.

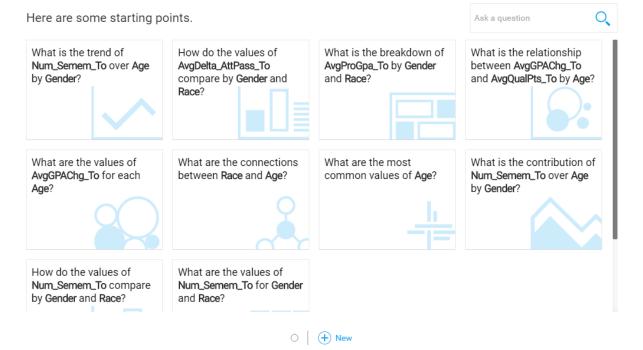


Step 1: Click on the side arrow

located to the right of the dashboard results.

2: A new exploration question prompt will appear:

What do you want to explore next?



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3: Select "What is the breakdown of AvgProGpa_To by Gender and Race?"

What is the brock AvgProGpa_To and Race?	

4: Now replace "AvgProGpa_To" in the question prompt:

What is the breakdown of AvgProGpa_To by Gender \otimes and Race ?

By clicking on it and selecting "Rows" (You will have to navigate thru to find 'Rows'). The question should now read as follows:

What is the breakdown of the number of Rows by Gender \otimes and Race ?

5: Now delete $Gender \otimes_{by clicking on the} \otimes_{button and replace} Race_{with} Gender$ and the question should read as follows:

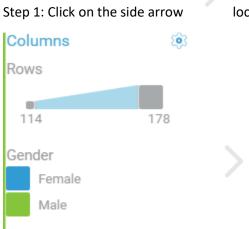
What is the breakdown of the number of Rows by Gender ?

6: This is what the final dashboard will look like:

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Top (Fema Male		emem_To ×	212 is the lowest Avg Del Pass_ To for Gender		-0.03 is the highest Avg for Gender Male	X G P A Chg_ To	2 is the highest Av for Gender Male		× >
	What is Female	the brea	kdown of the I		Rows by G	ender ?	Columns Rows		
<							114 Gender Female Male	178	>
∀No	applied filters				H H New				
\$ \$	Race	Gender	Age	AvgDelta_AttPa	AvgGPAChg_To	AvgProGpa_To	AvgQualPts_To	Base_GPA	^{Ni} >

Dashboard: Breakdown of the number of Rows by Race?

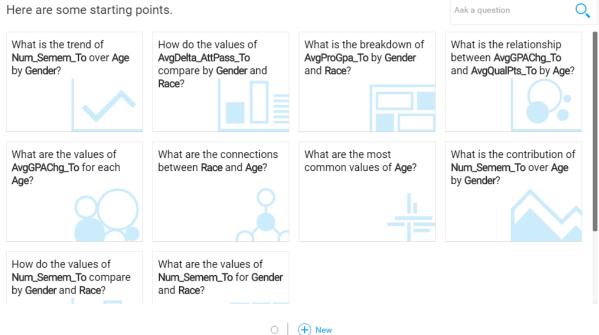
This assumes you have already created the previous dashboards and will now progress to the next one. If you have not completed the first dashboard, then re-visit the instructions above and import the data. When the 'exploration question prompt' appears, follow the below instructions.



located to the right of the dashboard results.

2: A new exploration question prompt will appear:

What do you want to explore next?



3: Select "What is the breakdown of AvgProGpa_To by Gender and Race?"

What is the br AvgProGpa_To and Race?	

4: Now replace "AvgProGpa_To" in the question prompt:

What is the breakdown of AvgProGpa_To by Gender \otimes and Race ?

By clicking on it and selecting "Rows" (You will have to navigate thru to find 'Rows'). The question should now read as follows:

What is the breakdown of the number of Rows by Gender \otimes and Race ?

5: Now delete Gender \otimes by clicking on the \otimes button and the question should read as follows:

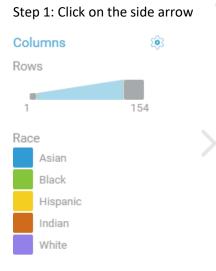
What is the breakdown of the number of Rows by Race ?

6: This is what the final dashboard will look like:



Dashboard: values of Num_Semem_To for Gender and Race?

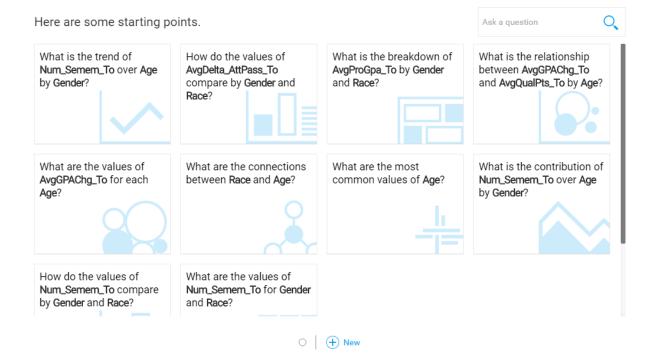
This assumes you have already created the previous dashboards and will now progress to the next one. If you have not completed the first dashboard, then re-visit the instructions above and import the data. When the 'exploration question prompt' appears, follow the below instructions.



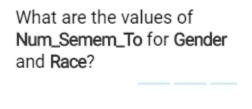
located to the right of the dashboard results.

2: A new exploration question prompt will appear:

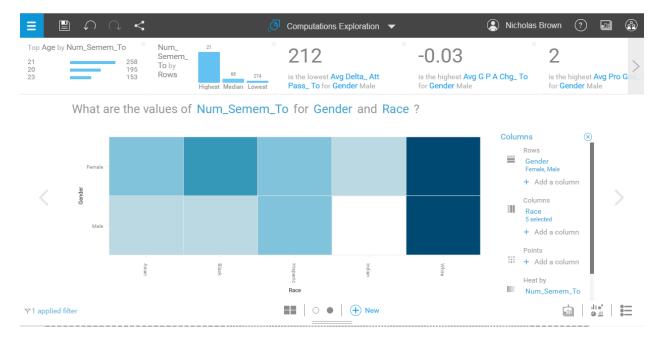
What do you want to explore next?



3: Select "What are the values of Num_Semen_To for Gender and Race?"



4: This is what the final dashboard will look like:



Dashboards to Build: Predicting

Below will be a sequence of instructions on creating the exact dashboards below (and as shown on the website <u>http://www.nvc.vt.edu/rmajor/bit5534/Dashboards.htm</u>:

IBM: Dashboard for Watson Predictions

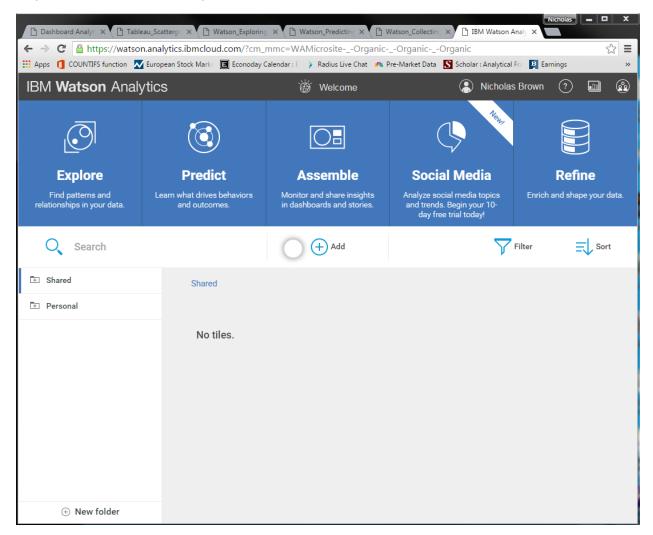


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IBM Watson Analytics	🛞 StudentPredictions 💌	Raymond Major	0	2	۵
	Data Quality Report			Clos	e .
	The data quality score measures the degree to which the data is suitable for predictive analysis. It is an average of the data quality score for every field in the data set, as determined by missing and constant values, influential categories, outliers, imbalance and skewness.				
	Note that data sets with low quality scores may be suitable for data exploration even if they are not suitable for predictive analysis.				
Average Quality Sco	Data Quality by Field				
low quality Computatio Results by Quality M	Search for a field AvgCu3PB_TO Gender AvgDexpt_ Base_GPA- AvgDexpt_ Base_GPA- AvgDexpt_ Do 20 30 40 50 60 70 80 50 10 20 30 40 50 60 70 80 50 Center AvgDexpt_ Do 20 30 40 50 60 70 80 50 Center AvgDexpt_ Do 20 30 40 50 60 70 80 50 Center AvgDexpt_ Do 20 30 40 50 60 70 80 50 Center AvgDexpt_ AvgDexpt_ Do 20 30 40 50 60 70 80 50 Center AvgDexpt_ Center AvgDexpt_ Center AvgDexpt_ Center AvgDexpt_ Center Center AvgDexpt_ Center	100			
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6 fields (67%) have skew	ed distributions.				

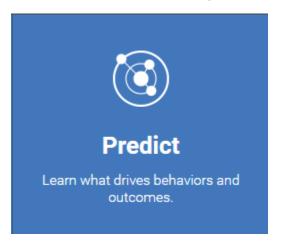
Above are the dashboards as displayed on the course website: <u>http://www.nvc.vt.edu/rmajor/bit5534/Docs/Watson_Predicting.pdf</u>

Dashboard: Top Predictors of Num_Semem_To

Step 1: Go to IBM Watson Analytics website.



2: Click on the "Predict" at the top left corner.



3: The "Create new prediction" window will appear. Click on "Drop file or browse" at the bottom left side corner and locate the downloaded "Computations.xlsx" file. (Visit this page if you need to download: <u>http://www.nvc.vt.edu/rmajor/bit5534/Docs/Computations.xlsx</u>)

Choose a data set	🎯 Cr	eate new predic	tion		×
+ Shared					
🖭 Personal					
Q Search					
Name \downarrow		Тур	e↓ Qu	ality \downarrow	Modified \downarrow
Computations		XLS	X 71		May 13, 2016
Computations		XLS	X 71		May 12, 2016
Or add your data	Uŗ	♪ bload data		Sample data	

4: Enter the (1) Name of your Workbook as "StudentPredictions" and (2) keep the default selection of "Num_Semem_to" as the target, then click "Create":

IBM Watson Analytics	I New Prediction	•	Nicholas Brown	?	•0:	
Create a new analysis						
1. Name your workbook						
StudentPredictions						
2. Select target(s) to predict: up to 5 targets may	be added					
Select target 🔹						
Num_Semem 🗶						
Edit this workbook's field properties						
	Create Cancel					

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- 5: The file will load while creating a new workbook.
- 6: Your first prediction model will appear as follows:

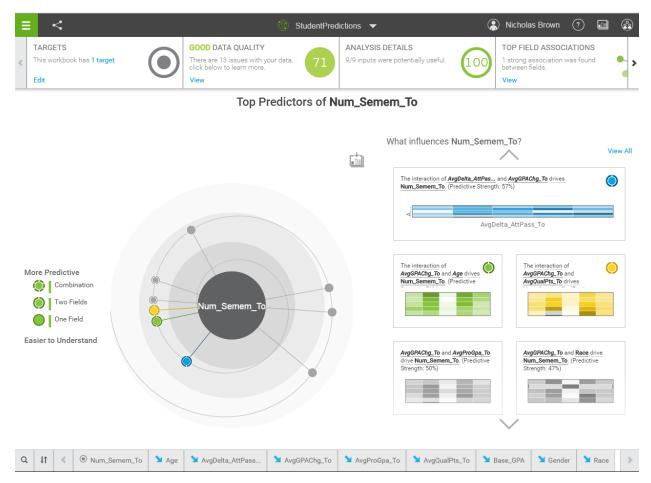
≡ <	StudentPred	🔝 Nicholas Brown 🤅) 🖬 🚳	
TARGETS This workbook has 1 target Edit	GOOD DATA QUALITY There are 13 issues with your data, click below to learn more. View	ANALYSIS DETAILS 9/9 inputs were potentially use	eful. (100) TOP FIELD ASSOCIA 1 strong association was between fields. View	
	Top Predictors of N	um_Semem_To		
More Predictive (Combination	Num_Sem		To. (Predictive Num_Semem_To. (Pre	View All
Q 11 《 Num_Semem_To Age	▶ AvgDelta_AttPass ▶ AvgGPAChg_To	🔪 AvgProGpa_To 🔰 Avg	QualPts_To 🎽 Base_GPA 🎽 Gender	🔪 Race 🔉

7: Now click on and highlight the following buttons "Two Fields" and "Combinations", located on the left side, to generate the next prediction model:



Easier to Understand

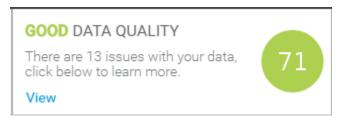
8. The second model appears as follows:



9: Now locate the ribbon on the top of the page:



10: Select the "Good Data Quality" option by clicking "View":

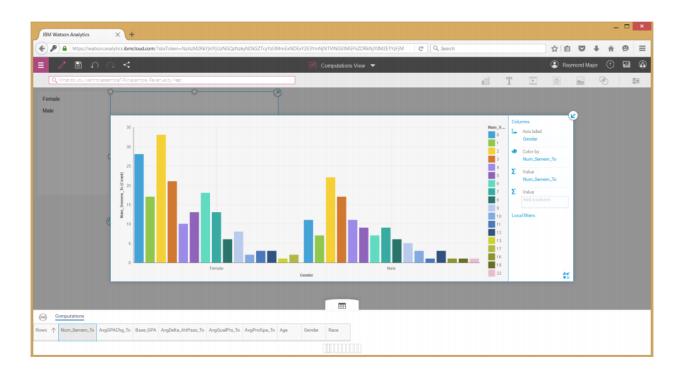




11: The final dashboard screen describes the quality of the data:

Dashboards to Build: Collecting (Assembling)

Below will be a sequence of instructions on creating the exact dashboards below (and as shown on the website <u>http://www.nvc.vt.edu/rmajor/bit5534/Dashboards.htm</u>:



IBM: Dashboard for Watson Collecting (Assembling):

Above is the dashboard as displayed on the course website: <u>http://www.nvc.vt.edu/rmajor/bit5534/Docs/Watson_Collecting.pdf</u>

Dashboard: Colored Barchart

Step 1: Go to IBM Watson Analytics website.

🕐 Dashboard Analyt X 🕐 Tableau_Scattergn X 🕐 Watson_Exploring X 🕐 Watson_Predicting X 🕐 Watson_Collecting X 🕐 Watson_Collecting X								
← C A https://watson.analytics.ibmcloud.com/?cm_mmc=WAMicrositeOrganicOrganic ☆								
🔛 Apps 🚺 COUNTIFS function 📈 European Stock Marke 🔲 Econoday Calendar : E 🍃 Radius Live Chat 🥠 Pre-Market Data 🚺 Scholar : Analytical Fre 📮 Earnings 🔅 🔅								
IBM Watson Anal	ytics	👹 Welcome	Nicholas	s Brown ? 💷 🚳				
Ī								
Explore	Predict	Assemble	Social Media	Refine				
Find patterns and relationships in your data.	Learn what drives behaviors and outcomes.	Monitor and share insights in dashboards and stories.	Analyze social media topics and trends. Begin your 10- day free trial today!	Enrich and shape your data.				
Q Search		Add	∇	Filter Sort				
🖅 Shared	Shared							
🕂 Personal								
	No tiles.							
\oplus New folder								

2: Click on "Assemble," located in the upper center ribbon.

Assemble
Monitor and share insights in dashboards and stories.

3: The "Create new view" window will appear. Click on "Drop file or browse" at the bottom left side corner and locate the downloaded "Computations.xlsx" file. (Visit this page if you need to download: http://www.nvc.vt.edu/rmajor/bit5534/Docs/Computations.xlsx) or you can click on the existing file previously loaded.

Choose a data set			
🖭 Personal			
9 , Search			
Name \downarrow		Type \downarrow	Modified \downarrow
Computations		XLSX	May 13, 2016
Computations		XLSX	May 12, 2016
Or add your data	•		D
	T		2

4: You can keep the default name of "Computations View" and then click "Freeform" under Tabbed Layout. Once it is highlighted, click on "Create" located at the top right:

IBM Watson Ar	nalytics	🐸 Create 🔻	🈩 Nicholas Brown ? 💷 🧯
1. Name your view Computations View			Create Cancel
2. Select a template			
Dashboard	Tabbed layout		
Single page	Freeform	Visualizations in a freeform layout appear exactly as you size and place them in the view, regardless of the screen size. In the other layout, the size and position of visualizations adjust to fit into the screen.	
			1
Tabbed			
Infographics			
Story			
Slide show			
Vertical slide show			
- G			
O Time journey			

5: A blank worksheet will appear:

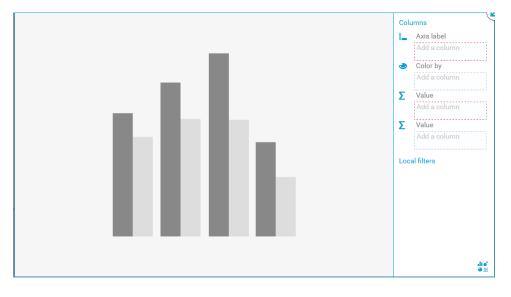
≡	🖉 🗎 🗸) () <			🕮 Computat	ions View 🔻			(Nich	iolas Brown	?	•
0	What do you want t	o assemble? For e	xample, Reve	nue by			∎D≣	т					
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Rows	Num_Semem_To	AvgGPAChg_To	Base_GPA	AvgDelta_AttPass_To	AvgQualPts_To	AvgProGpa_To	Age	Gender	Race				
			.∎∏≣										

6: Click the chart button within the menu ribbon:

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Q What do you want to assemble? For example, Revenue by	∎D≣	T I	•				-00

7: From the list of visualizations, select the vertical bar graph button :





8. A generic chart will appear with unpopulated columns listed to the right:

9: Populate the Axis label by clicking and dragging "Gender" into the Add a column box; then drag "Num_Semem_To" into the 'Color by' box and also into the 'Value' box . As you populate your data, the final chart will look like this:

