

# Data Visualization through Tableau

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# Data Visualization through Tableau

Category	Description
Definition	Visual representation of data for easier understanding and additional insight
Concept	Combine science of data and statistics with graphic arts
DPA	Data Presentation Architecture Goal: Identify, locate, manipulate, format, and present data
Interaction	Lets users interact with data by seeing different representation Example: See one company in context of industry Example: See groups of companies in context of industry

**LEFTRONIC**

**QlikView**

 **tableau**  
SOFTWARE

# Data Visualization through Tableau

The screenshot shows the Tableau Software website. At the top, the URL is [www.tableausoftware.com](http://www.tableausoftware.com). The Tableau logo is on the left, and navigation links for "Buy", "Sign In", and "English" are on the right. Below the logo, there are links for "Products", "Solutions", "Learning", "Support", "Partners", and "About". A prominent orange "FREE TRIAL" button is on the right. The main banner features the text "EASY TO USE, EASY TO LOVE" and "Make analytics easy for everyone." with a "SEE HOW" button. In the center, a laptop displays a "Daily Sales Dashboard: West Region" with a line chart, a map of the West, and a table of sales data. On the right, three dark grey boxes promote "FAST ANALYTICS FOR EVERYONE" (Tableau Desktop), "BUSINESS INTELLIGENCE" (Tableau Server), and "ANALYTICS IN THE CLOUD" (Tableau Online), each with a "GO" button.

www.tableausoftware.com

Buy Sign In English

Products Solutions Learning Support Partners About

FREE TRIAL

EASY TO USE,  
EASY TO LOVE

Make analytics easy for everyone.

SEE HOW

Daily Sales Dashboard: West Region

FAST ANALYTICS FOR EVERYONE

Tableau Desktop

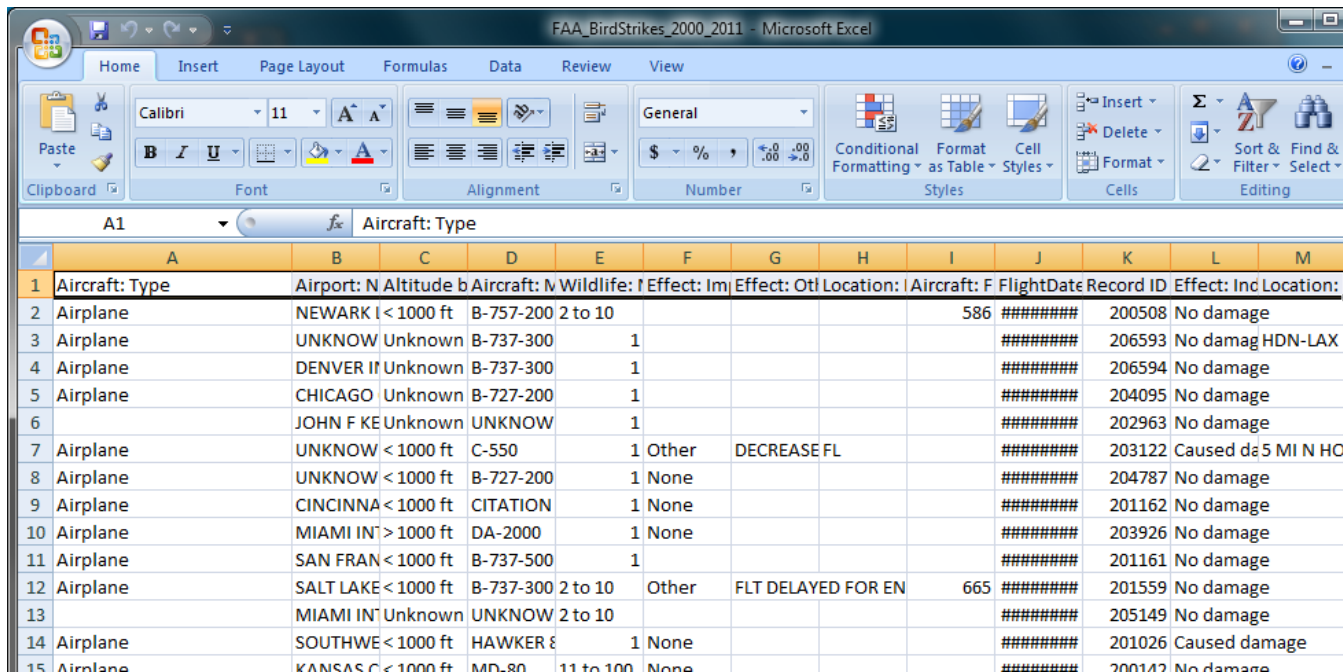
BUSINESS INTELLIGENCE

Tableau Server

ANALYTICS IN THE CLOUD

Tableau Online

# Data Visualization through Tableau

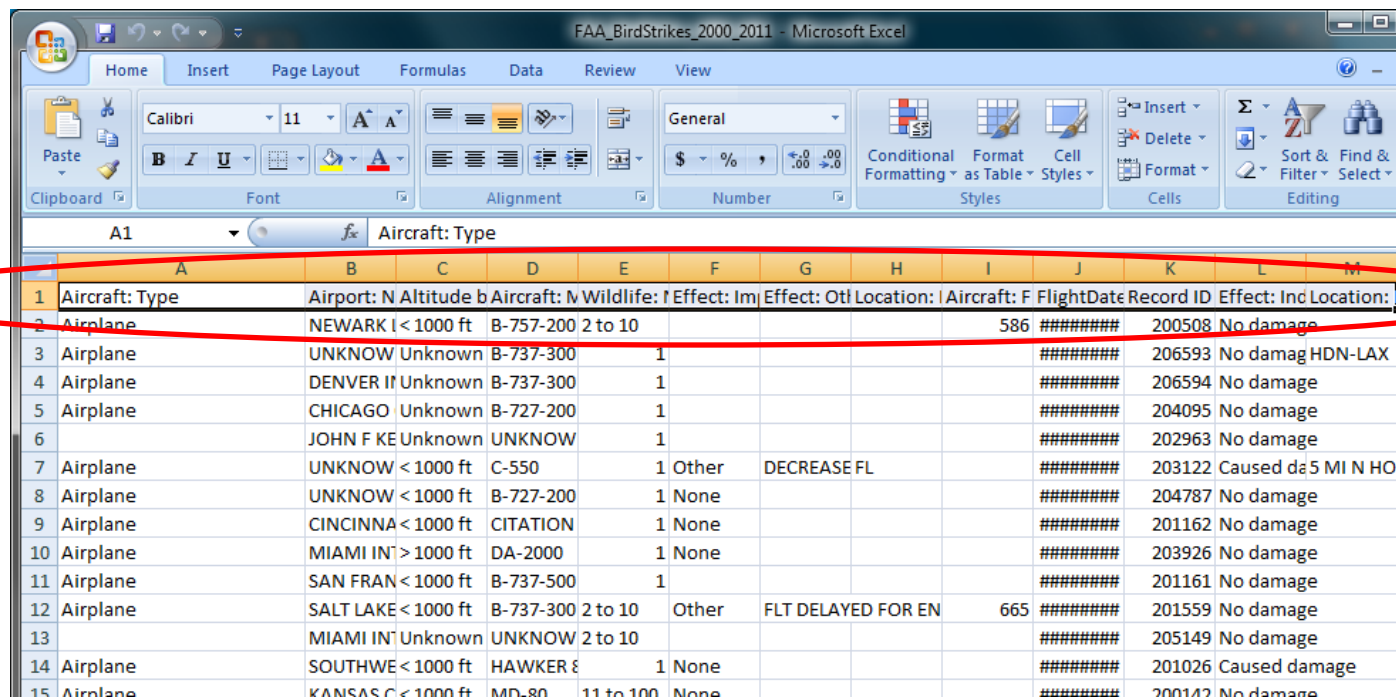


	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Aircraft: Type	Airport: N	Altitude b	Aircraft: N	Wildlife: I	Effect: Im	Effect: Ot	Location: I	Aircraft: F	FlightDate	Record ID	Effect: Ind	Location:
2	Airplane	NEWARK	< 1000 ft	B-757-200	2 to 10				586	#####	200508	No damage	
3	Airplane	UNKNOWN	Unknown	B-737-300	1					#####	206593	No damage	HDN-LAX
4	Airplane	DENVER	Unknown	B-737-300	1					#####	206594	No damage	
5	Airplane	CHICAGO	Unknown	B-727-200	1					#####	204095	No damage	
6		JOHN F KE	Unknown	UNKNOWN	1					#####	202963	No damage	
7	Airplane	UNKNOWN	< 1000 ft	C-550	1	Other	DECREASE FL			#####	203122	Caused da	5 MI N HO
8	Airplane	UNKNOWN	< 1000 ft	B-727-200	1	None				#####	204787	No damage	
9	Airplane	CINCINNA	< 1000 ft	CITATION	1	None				#####	201162	No damage	
10	Airplane	MIAMI IN	> 1000 ft	DA-2000	1	None				#####	203926	No damage	
11	Airplane	SAN FRAN	< 1000 ft	B-737-500	1					#####	201161	No damage	
12	Airplane	SALT LAKE	< 1000 ft	B-737-300	2 to 10	Other	FLT DELAYED FOR EN		665	#####	201559	No damage	
13		MIAMI IN	Unknown	UNKNOWN	2 to 10					#####	205149	No damage	
14	Airplane	SOUTHWE	< 1000 ft	HAWKER 8	1	None				#####	201026	Caused damage	
15	Airplane	KANSAS C	< 1000 ft	MD-80	11 to 100	None				#####	200142	No damage	

Typical dataset: Aircraft bird strikes from 2000-2011, from FAA

- What departure airport resulted in the highest cost for bird strikes?
- What conditions are associated with high numbers of bird strikes?

# Data Visualization through Tableau



FAA\_BirdStrikes\_2000\_2011 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

A1 Aircraft: Type

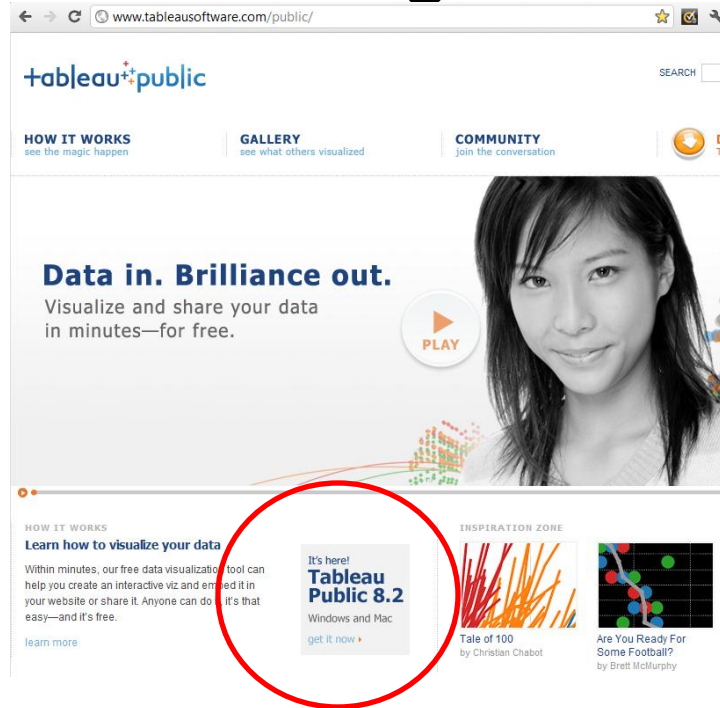
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Aircraft: Type	Airport: N	Altitude b	Aircraft: b	Wildlife: f	Effect: Im	Effect: Ot	Location: I	Aircraft: F	FlightDate	Record ID	Effect: Ind	Location:
2	Airplane	NEWARK	< 1000 ft	B-757-200	2 to 10				586	#####	200508	No damage	
3	Airplane	UNKNOWN	Unknown	B-737-300	1					#####	206593	No damage	HDN-LAX
4	Airplane	DENVER	IF	Unknown	B-737-300	1				#####	206594	No damage	
5	Airplane	CHICAGO	Unknown	B-727-200	1					#####	204095	No damage	
6		JOHN F KE	Unknown	UNKNOWN	1					#####	202963	No damage	
7	Airplane	UNKNOWN	< 1000 ft	C-550	1	Other	DECREASE FL			#####	203122	Caused damage	5 MI N HO
8	Airplane	UNKNOWN	< 1000 ft	B-727-200	1	None				#####	204787	No damage	
9	Airplane	CINCINNATI	< 1000 ft	CITATION	1	None				#####	201162	No damage	
10	Airplane	MIAMI INT	> 1000 ft	DA-2000	1	None				#####	203926	No damage	
11	Airplane	SAN FRANCISCO	< 1000 ft	B-737-500	1					#####	201161	No damage	
12	Airplane	SALT LAKE CITY	< 1000 ft	B-737-300	2 to 10	Other	FLT DELAYED FOR EN		665	#####	201559	No damage	
13		MIAMI INT	Unknown	UNKNOWN	2 to 10					#####	205149	No damage	
14	Airplane	SOUTHWE	< 1000 ft	HAWKER 8	1	None				#####	201026	Caused damage	
15	Airplane	KANSAS CITY	< 1000 ft	MD-80	11 to 100	None				#####	200117	No damage	

1. Prepare dataset

Remove explanatory material

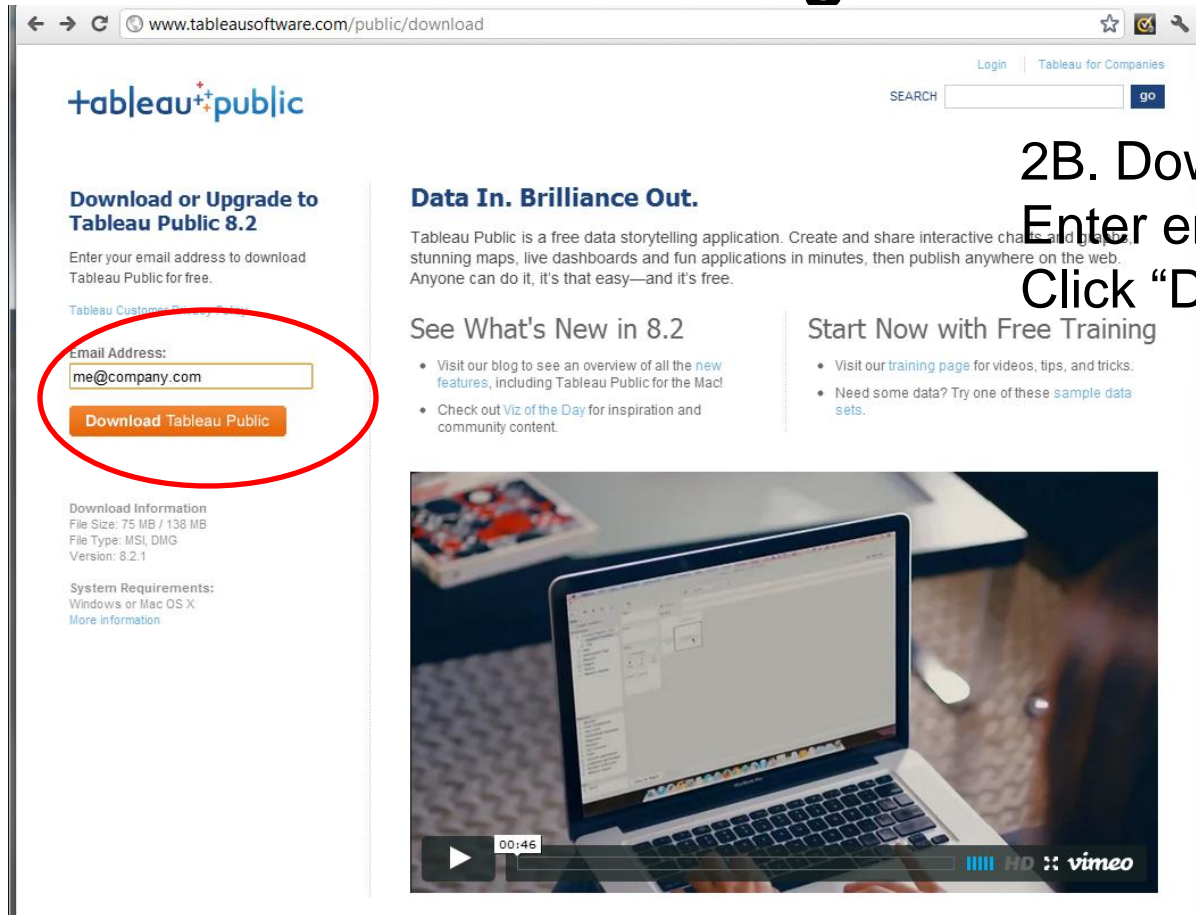
Check that top row contains header with variable names

# Data Visualization through Tableau



2A. Download Tableau Public  
Go to: [tableausoftware.com/public](https://tableausoftware.com/public)  
Click on Tableau Public link

# Data Visualization through Tableau



The screenshot shows the Tableau Public download page. A red circle highlights the 'Email Address' input field containing 'me@company.com' and the 'Download Tableau Public' button. The page includes a search bar, login links, and sections for 'Data In. Brilliance Out.' and 'See What's New in 8.2'.

www.tableausoftware.com/public/download

tableau+public

Login | Tableau for Companies

SEARCH  go

### Download or Upgrade to Tableau Public 8.2

Enter your email address to download Tableau Public for free.

[Tableau Customer Privacy Policy](#)

Email Address:

**Download Tableau Public**

Download Information  
File Size: 75 MB / 138 MB  
File Type: MSI, DMG  
Version: 8.2.1

System Requirements:  
Windows or Mac OS X  
[More information](#)

### Data In. Brilliance Out.


Tableau Public is a free data storytelling application. Create and share interactive charts and graphs, stunning maps, live dashboards and fun applications in minutes, then publish anywhere on the web. Anyone can do it, it's that easy—and it's free.

### See What's New in 8.2

- Visit our [blog](#) to see an overview of all the [new features](#), including Tableau Public for the Mac!
- Check out [Viz of the Day](#) for inspiration and community content.

### Start Now with Free Training

- Visit our [training page](#) for videos, tips, and tricks.
- Need some data? Try one of these [sample data sets](#).



00:46 HD :: vimeo

## 2B. Download Tableau Public

Enter email address

Click “Download” and follow steps

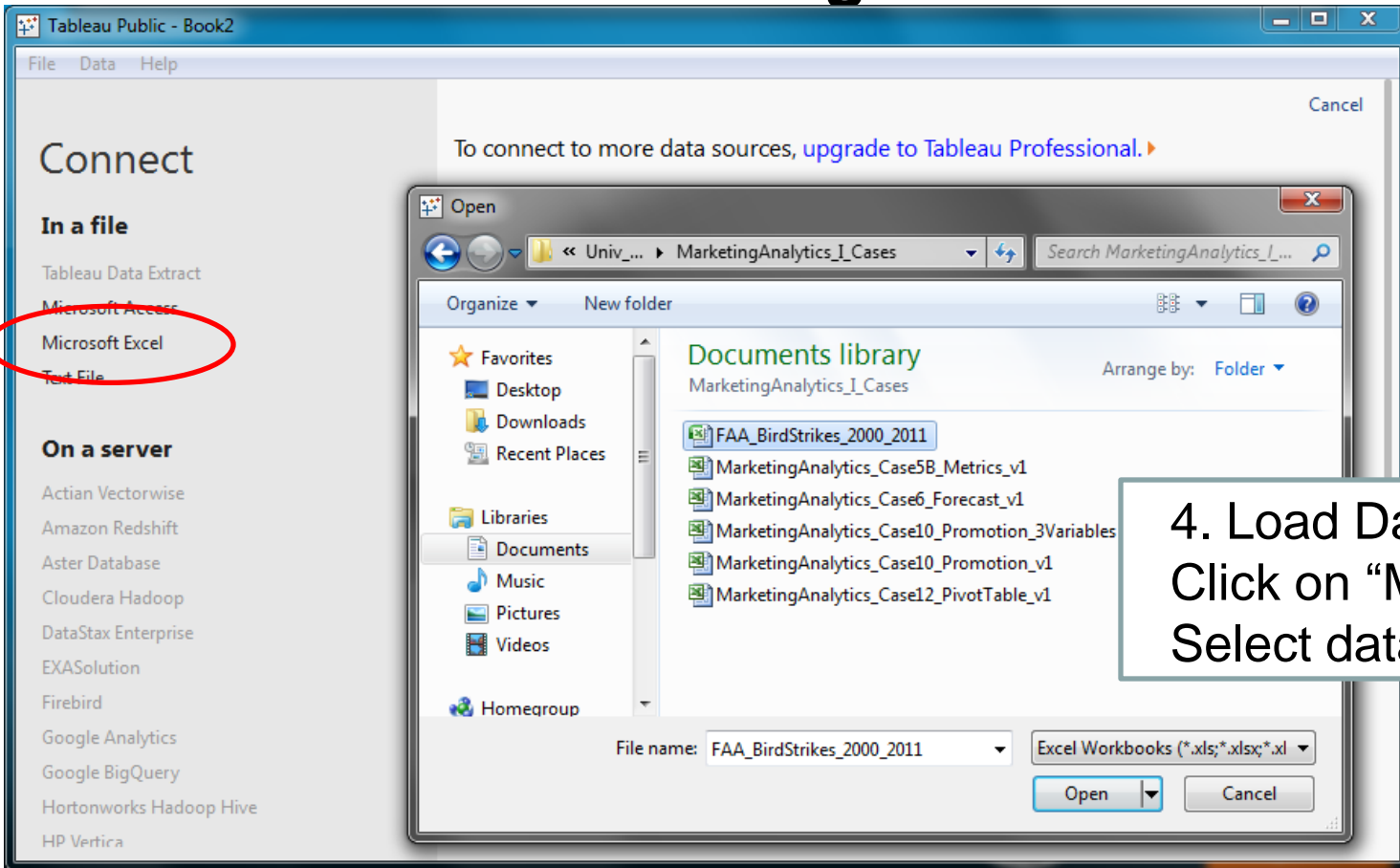
# Data Visualization through Tableau

The screenshot shows the Tableau Public website homepage. At the top left is the 'tableau public' logo. Below it, a section titled 'Create a viz now' lists two steps: '1. Open your data (.xls or .txt)' and '2. Drag & drop to visualize'. The 'Open Data' button, which is orange with a right-pointing arrow, is circled in red. To the right of this section is a large grey box with the text 'Open. Create. Share.' Below this is a red maintenance banner that reads: 'Tableau Public Server Maintenance', 'Tableau Public servers will be undergoing maintenance on Thursday, August 21st from 6:00P-6:30P PST. During this time you will not be able to publish to the servers and visualizations will appear as static images.' Below the banner are three buttons: 'Get Started', 'Find Training & Templates', and 'Get Inspired'. In the center is a preview of a Tableau dashboard showing a line chart and a scatter plot. To the right of the preview is an orange button that says 'Watch the Getting Started Video'. Below this is the 'Viz of the Day' section, which features four cards for 'Today', 'Yesterday', 'Two Days Ago', and 'More Vizes'. Each card shows a different visualization: a map of Belarus, a map of the United States, a bar chart of 2014 SEC Football Coaches, and a network diagram. To the right of these cards is a Twitter feed with the text 'Join the conversation'. At the bottom, there are three sections: 'Looking for Data?' with links to sample data sets, 'Training and Tutorials' with a link to start learning, and 'Join Us' and 'Like Us' with social media icons for Twitter, Facebook, LinkedIn, and YouTube.

3. Launch Tableau Public  
Launch application (auto-launches)  
Click on “Open Data”

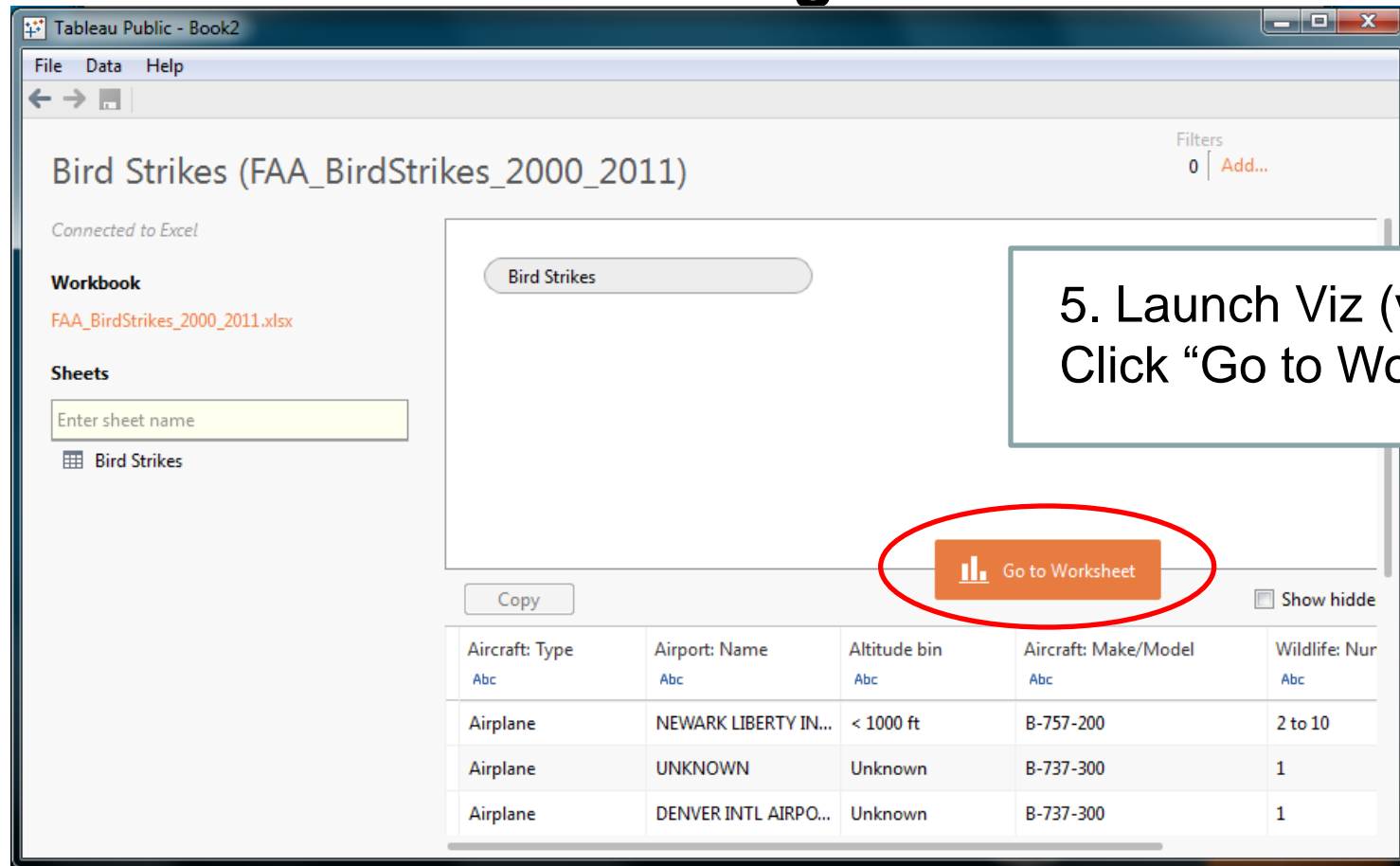


# Data Visualization through Tableau



4. Load Data  
Click on “Microsoft Excel”  
Select dataset

# Data Visualization through Tableau



The screenshot shows the Tableau Public interface for a workbook named 'Tableau Public - Book2'. The main view is titled 'Bird Strikes (FAA\_BirdStrikes\_2000\_2011)' and is connected to an Excel file 'FAA\_BirdStrikes\_2000\_2011.xlsx'. The 'Sheets' pane on the left shows a single sheet named 'Bird Strikes'. The main workspace displays a table of bird strike data. At the bottom of the workspace, there is a 'Go to Worksheet' button, which is circled in red. The table data is as follows:

Aircraft: Type Abc	Airport: Name Abc	Altitude bin Abc	Aircraft: Make/Model Abc	Wildlife: Nur Abc
Airplane	NEWARK LIBERTY IN...	< 1000 ft	B-757-200	2 to 10
Airplane	UNKNOWN	Unknown	B-737-300	1
Airplane	DENVER INTL AIRPO...	Unknown	B-737-300	1

5. Launch Viz (visualization)  
Click “Go to Worksheet”

# Data Visualization through Tableau

The screenshot shows the Tableau Public interface with the following elements:

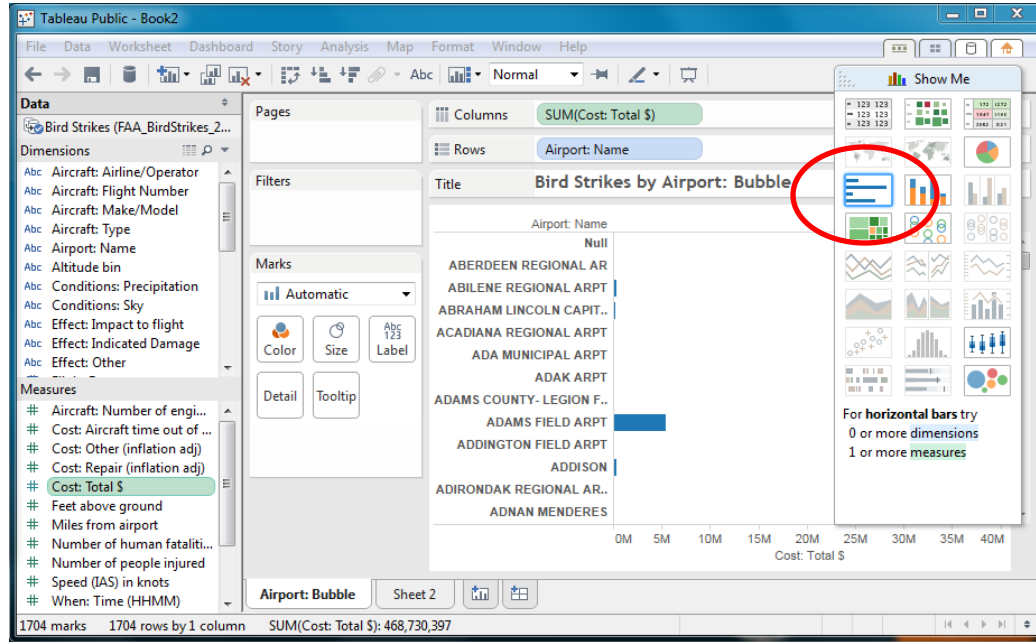
- Data Pane (Left):**
  - Dimensions:** Record ID, Remains of wildlife collec..., Remains of wildlife sent t..., Remarks, Reported: Date, When: Phase of flight, When: Time of day, Wildlife: Number struck, Wildlife: Size, Wildlife: Species, Measure Names.
  - Measures:** Cost: Total \$, Feet above ground, Miles from airport, Number of human fataliti..., Number of people injured, Speed (IAS) in knots, When: Time (HHMM), Latitude (generated), Longitude (generated), Number of Records, Measure Values.
- Columns and Rows Shelves:** Empty, with "Drop field here" prompts.
- Marks Card:** Set to "Automatic".
- Filters:** Empty.
- Detail and Tooltip:** Empty.
- Right Panel:** "Show Me" view showing various chart templates.

Annotations and Labels:

- Dimensions:** T/F: True/ False, Calendar/Watch: Date/Time, Abc: Text
- Measures:** #: Numeric Data
- Latitude (generated):** O (Globe): Geo-location Data

6. Note Layout of Data in Left Column  
Dimensions: Categorical fields; Describe data points; Often text-based  
Measures: Numerical fields; Used in mathematical calculations

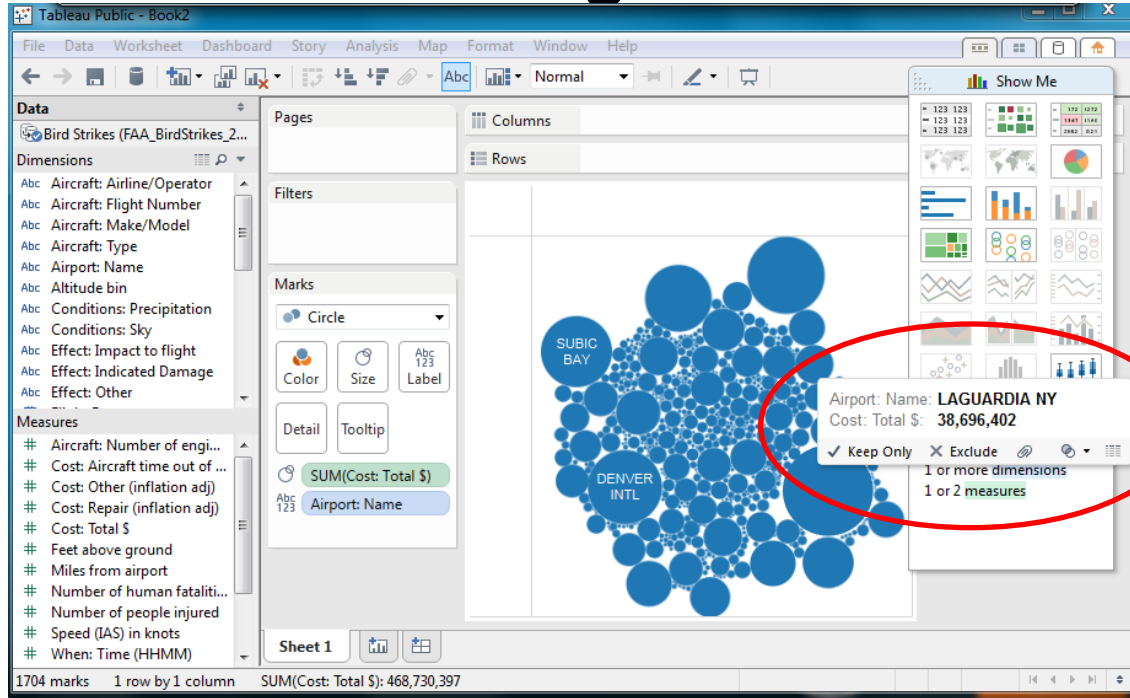
# Data Visualization through Tableau



## 7. Build visualization

Drag "SUM(Cost: Total \$)" into Columns area & Airport: Name into Rows  
"Show Me" palette shows available chart types for that set of data  
Default in this case is Bar Chart; Cannot see all data; Not a good "story"

# Data Visualization through Tableau

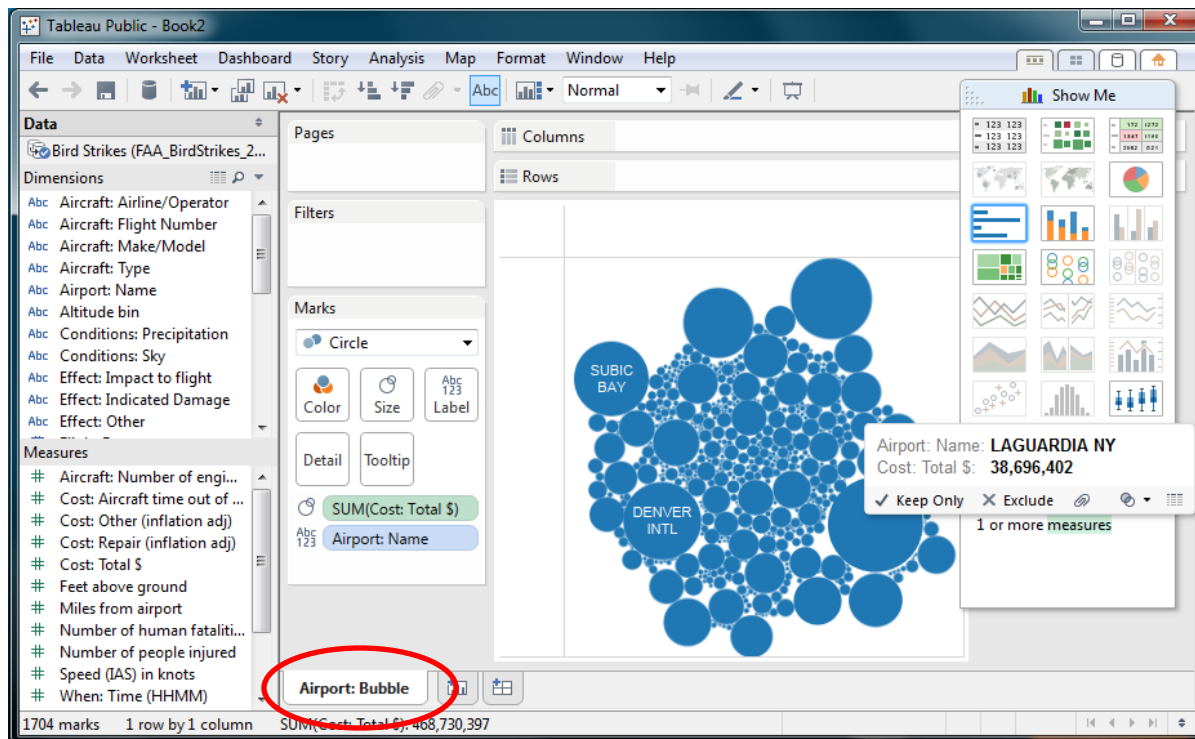


8. Select more compelling view

Click on each option until you get a more interesting vizualization

Winner: “Packed Bubbles” view; Size of bubble represents cost

# Data Visualization through Tableau

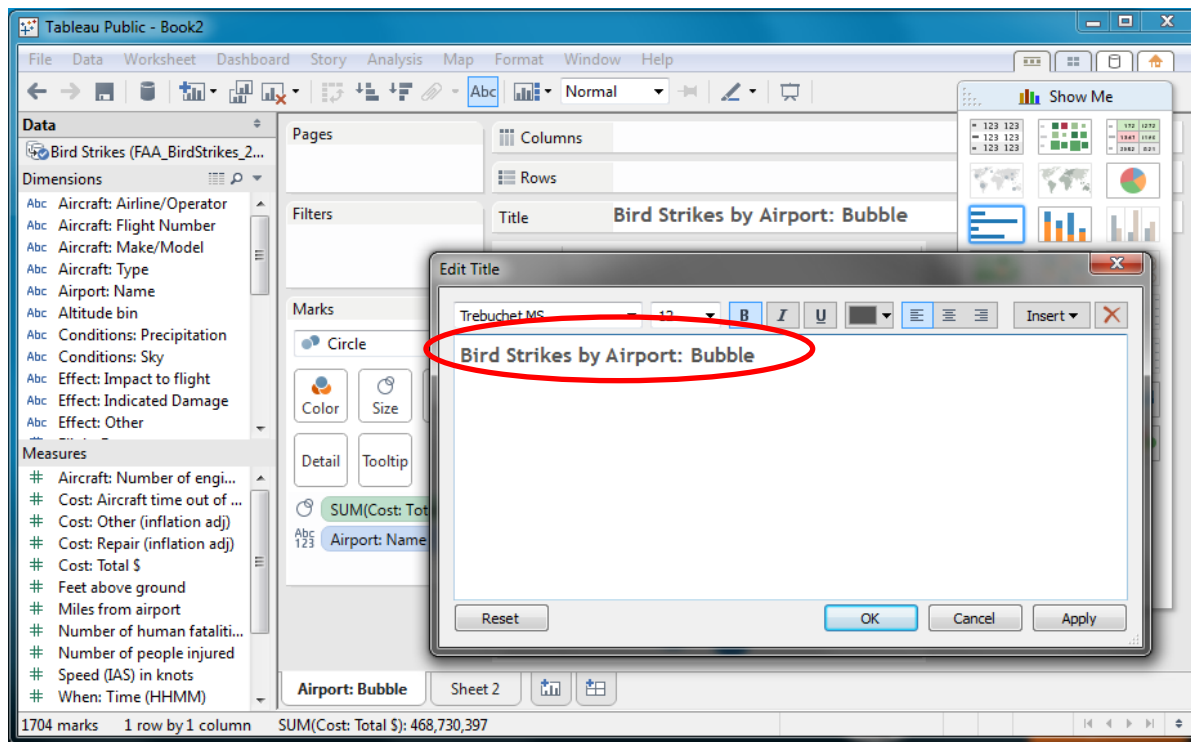


9. Keep Packed Bubble visualization by labeling Tab  
Click on “+” icon on next tab to open new sheet

The screenshot shows the Tableau Desktop interface. The 'Reset Cards' menu is open, and the 'Title' card is highlighted with a red circle. The background view is a bubble chart titled 'Airport: Bubble'. The status bar at the bottom shows '1704 marks', '1 row by 1 column', and 'SUM(Cost: Total \$): 468,730,397'.

Click on chart icon. Select “Title”

# Data Visualization through Tableau



10B. Add title

Enter title. In this case, “Bird Strikes by Airport: Bubble”. Click OK

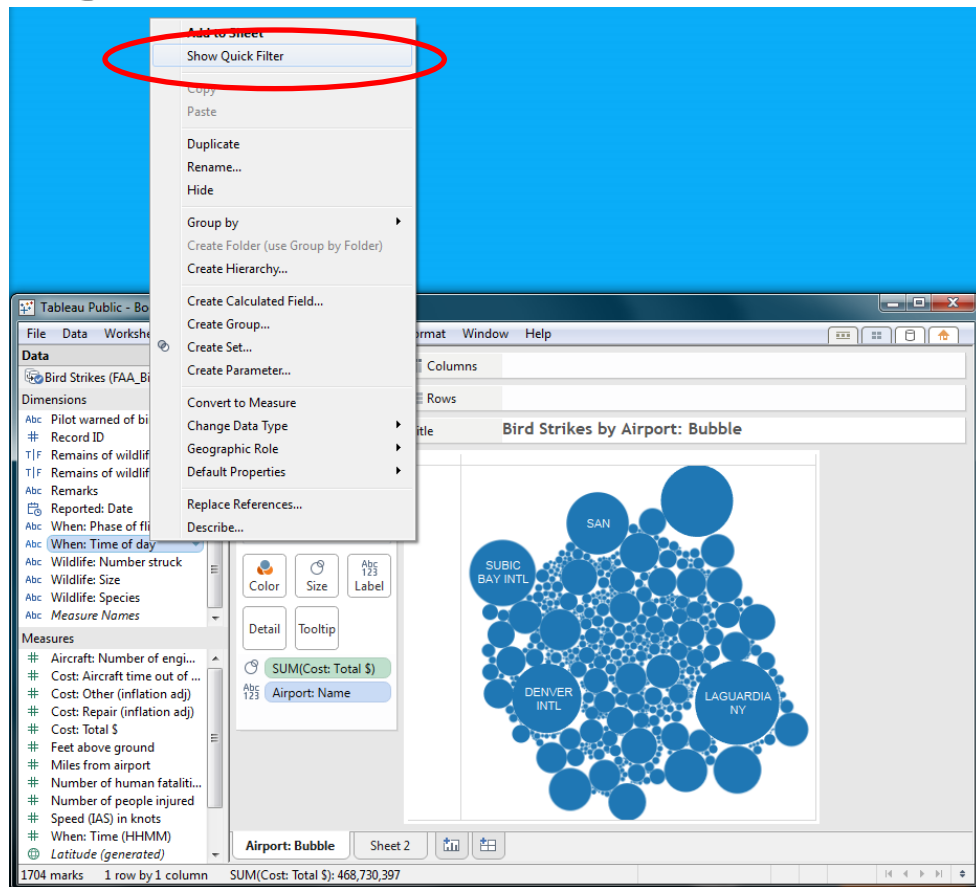


# Data Visualization through Tableau

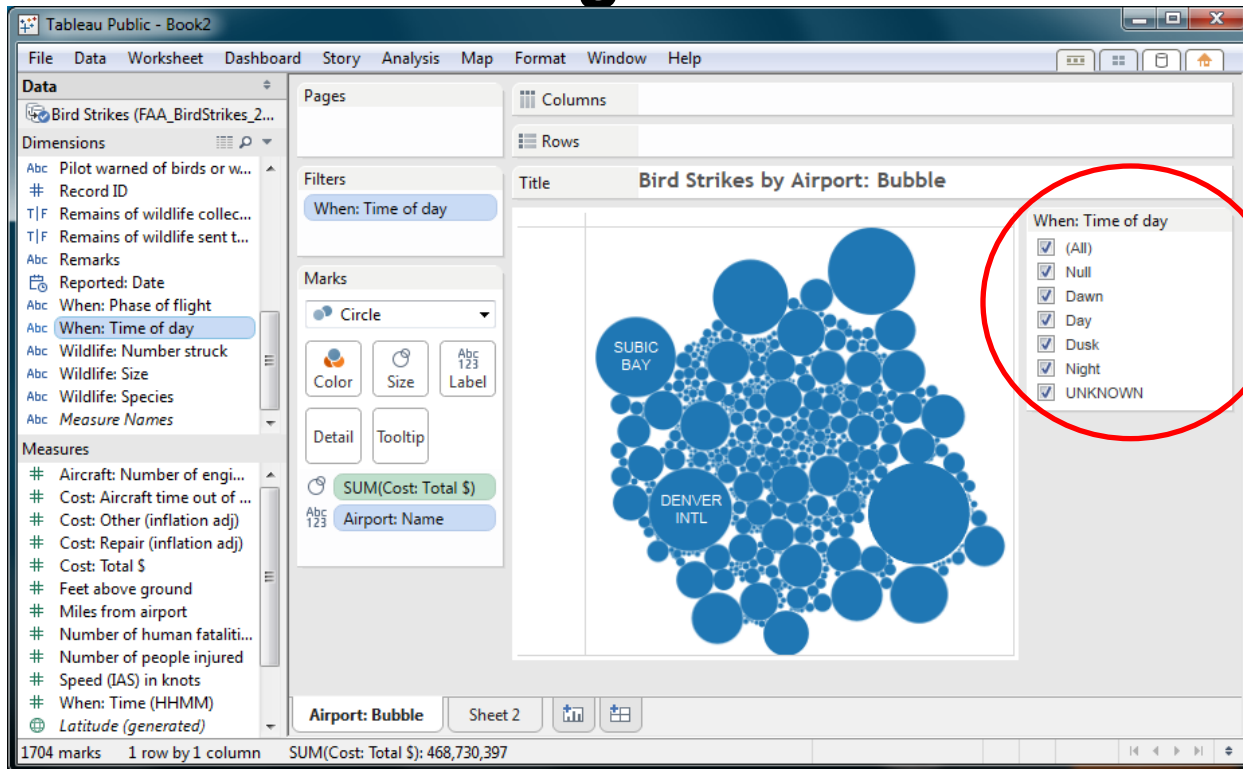
## 11. Filter Data

Right-click on:  
“When: Time of Day”

Click Show Quick Filter



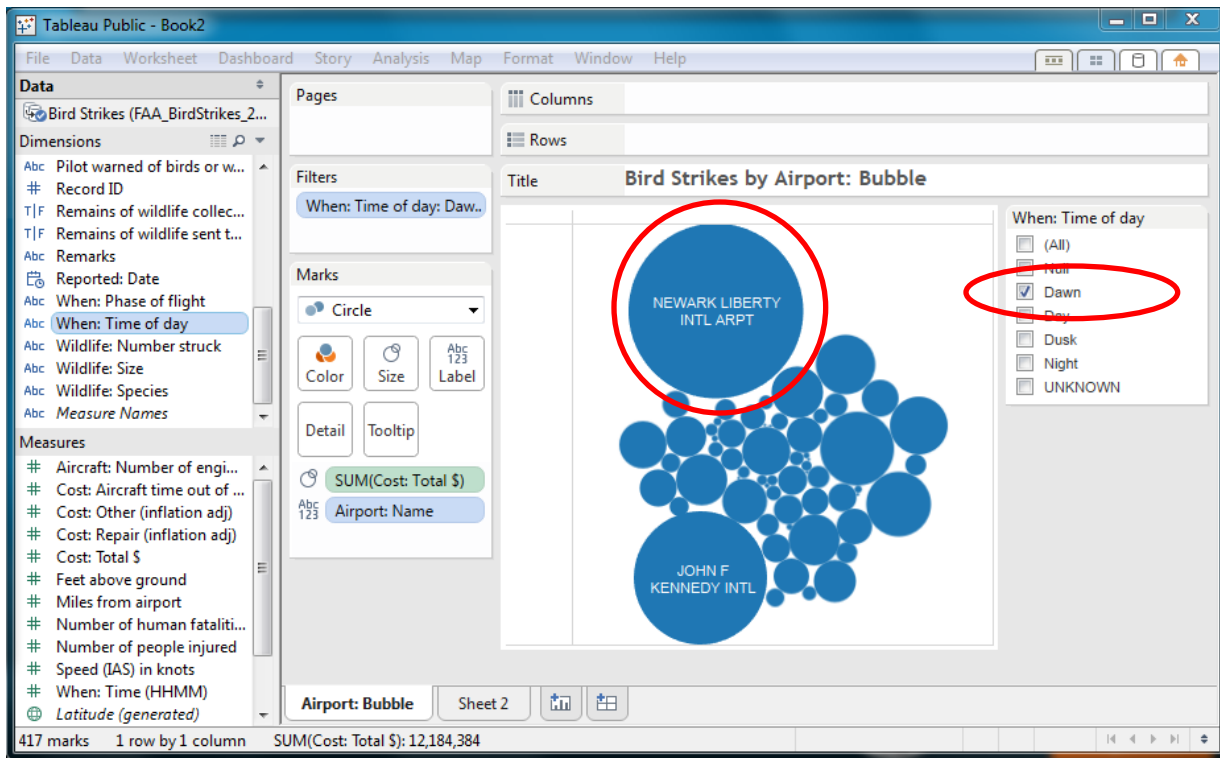
# Data Visualization through Tableau



12. Select Time of Day to view filtered results

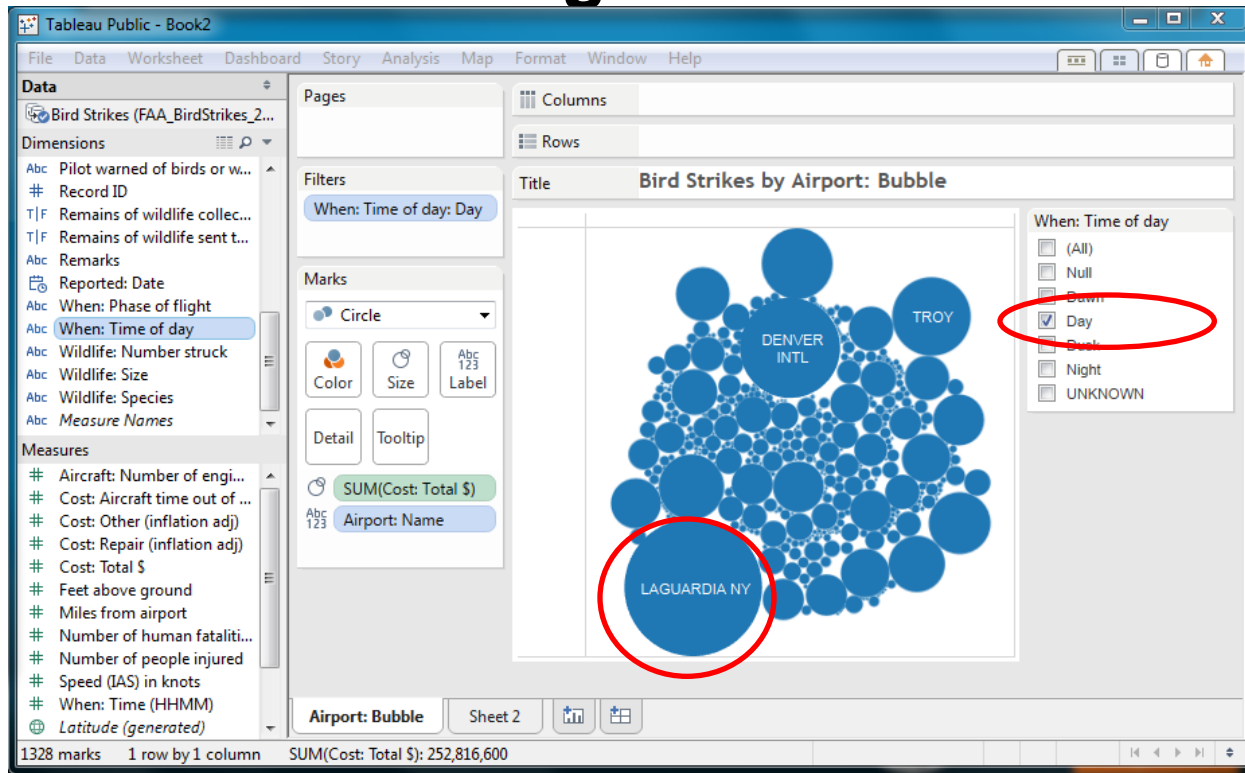
Hint: Go to Window → “Show Toolbar” and deselect to see filter bar

# Data Visualization through Tableau



13A. Explore how Time of Day affects number of bird strikes  
Dawn: Newark Liberty Intl (New Jersey): #1 for bird strike cost at dawn

# Data Visualization through Tableau



13B. Explore how Time of Day affects number of bird strikes  
Dusk: La Guardia airport (New York): #1 for bird strike cost at daytime

The screenshot shows the Tableau Desktop interface with a bubble chart titled "Bird Strikes by Airport: Bubble". The chart displays data points as blue circles of varying sizes, representing the number of bird strikes at different airports. The largest bubble is labeled "ORLANDO SANFORD INTL AIRPORT", and another prominent bubble is labeled "SUBIC BAY INTL". A red circle highlights the "ORLANDO SANFORD INTL AIRPORT" bubble, and a red oval highlights the "Dusk" option in the "When: Time of day" legend.

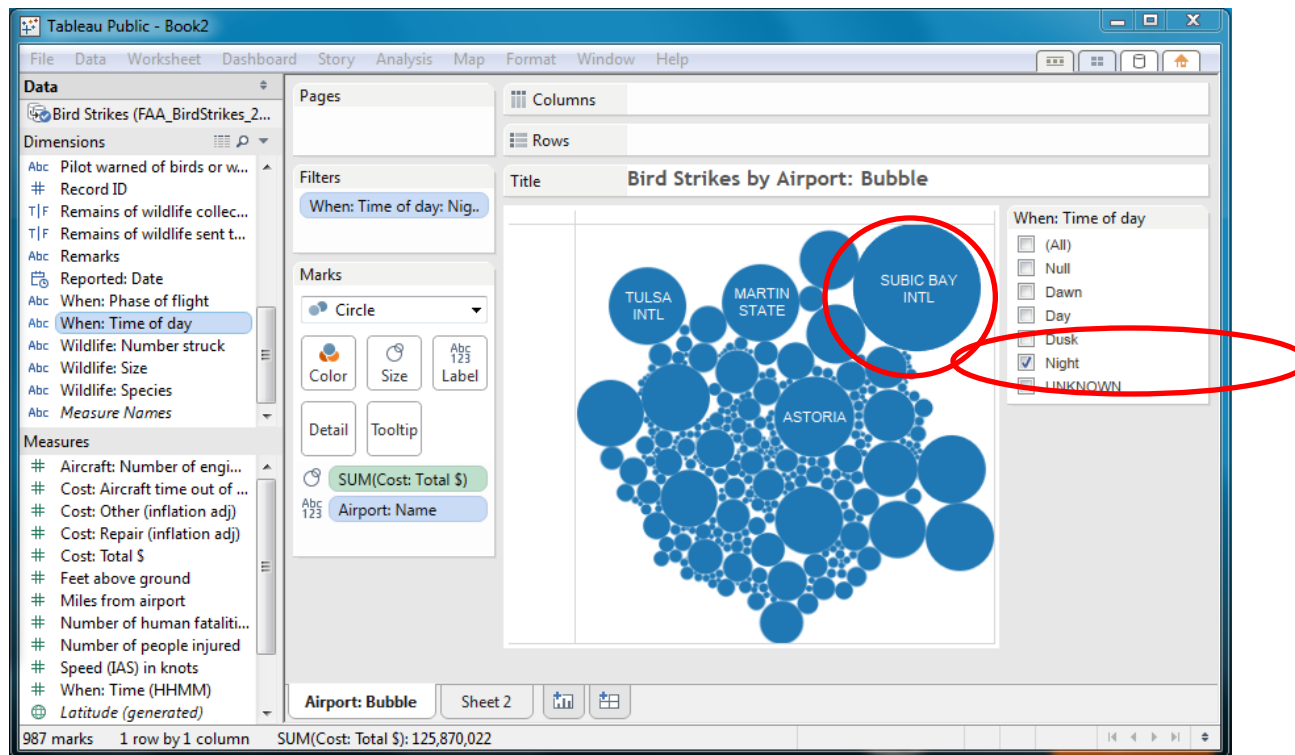
The interface includes the following components:

- Data Source:** "Bird Strikes (FAA\_BirdStrikes\_2...)"
- Dimensions:** Pilot warned of birds or w..., Record ID, Remains of wildlife collec..., Remains of wildlife sent t..., Remarks, Reported: Date, When: Phase of flight, When: Time of day (selected), Wildlife: Number struck, Wildlife: Size, Wildlife: Species, Measure Names.
- Measures:** Aircraft: Number of engi..., Cost: Aircraft time out of ..., Cost: Other (inflation adj), Cost: Repair (inflation adj), Cost: Total \$, Feet above ground, Miles from airport, Number of human fataliti..., Number of people injured, Speed (IAS) in knots, When: Time (HHMM), Latitude (generated).
- Filters:** When: Time of day: Dusk
- Marks:** Circle (selected), Color, Size, Label (selected), Detail, Tooltip.
- Aggregations:** SUM(Cost: Total \$), Airport: Name.
- Legend:** When: Time of day (Dusk selected).

The status bar at the bottom indicates "498 marks", "1 row by 1 column", and "SUM(Cost: Total \$): 24,059,695".

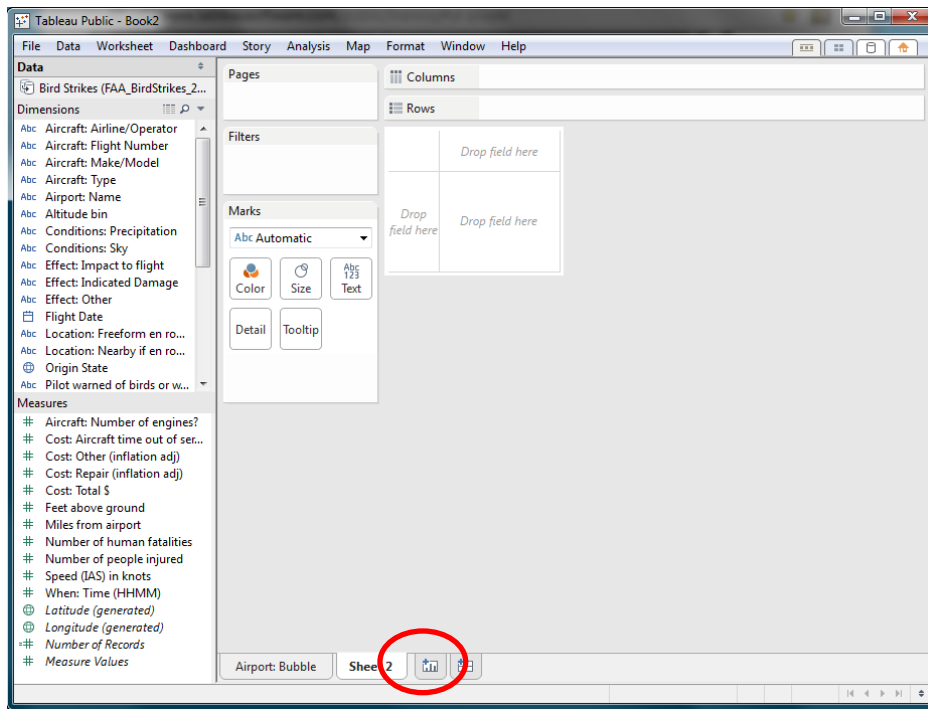
© Stephan Sorger 2016; [www.StephanSorger.com](http://www.StephanSorger.com); Tableau 1

# Data Visualization through Tableau



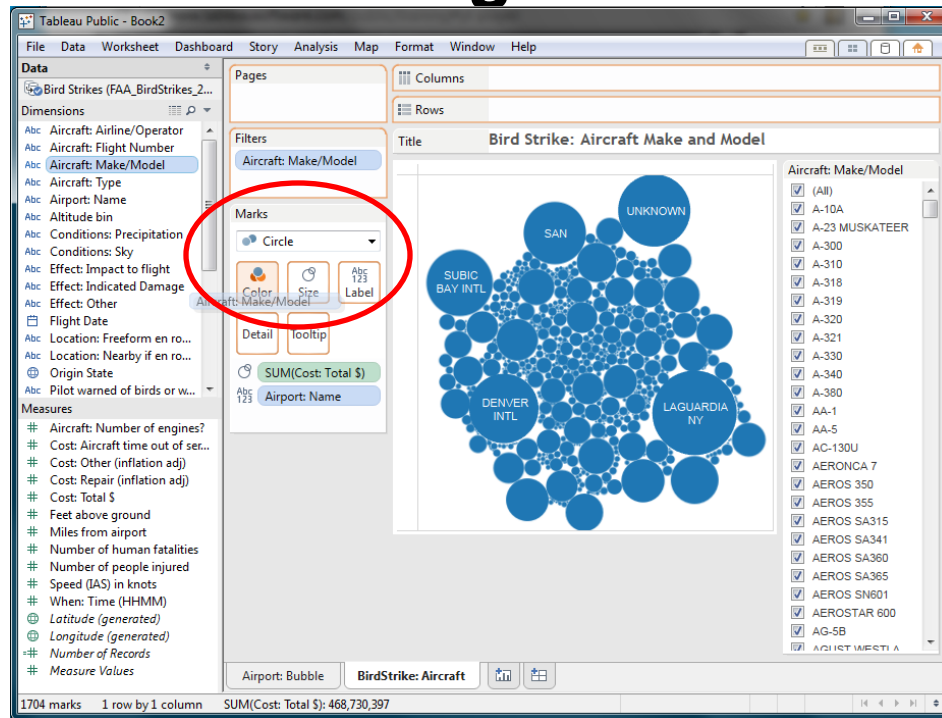
13D. Explore how Time of Day affects number of bird strikes  
Night: Subic Bay International (Philippines): #1 in bird strike cost at night

# Data Visualization through Tableau



14. Create new view showing impact of different aircraft makes and models  
Create new view by clicking on + (chart) icon tab at bottom  
“Sheet 2” can be renamed “BirdStrike: Aircraft”

# Data Visualization through Tableau

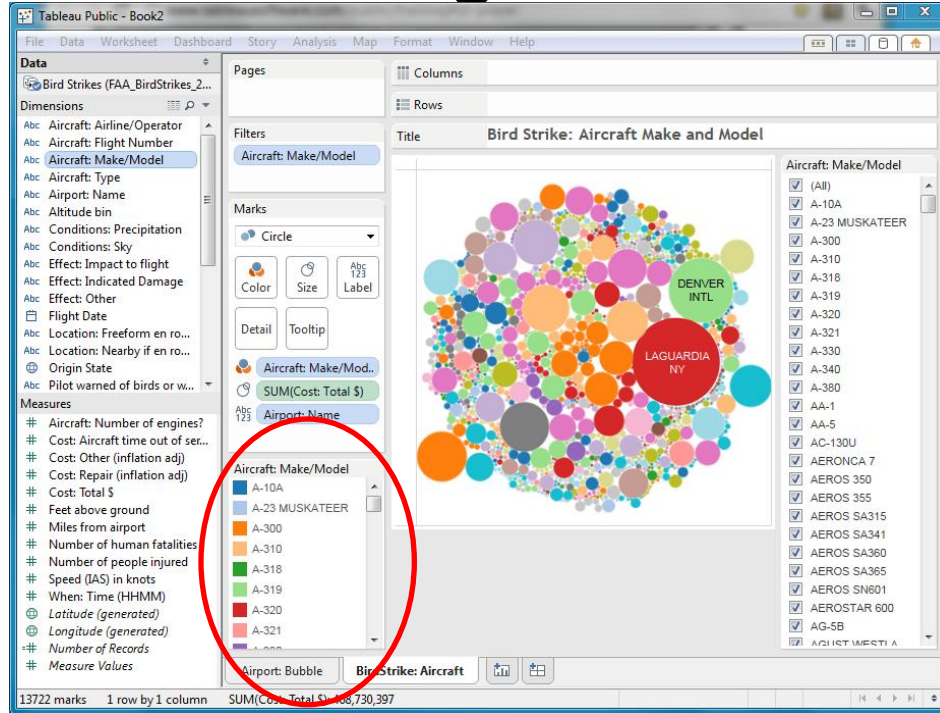


15. Create new view showing impact of different aircraft makes and models  
Re-created bubble view

Drag “Aircraft Make/Model” to “Color” to show make/model in color

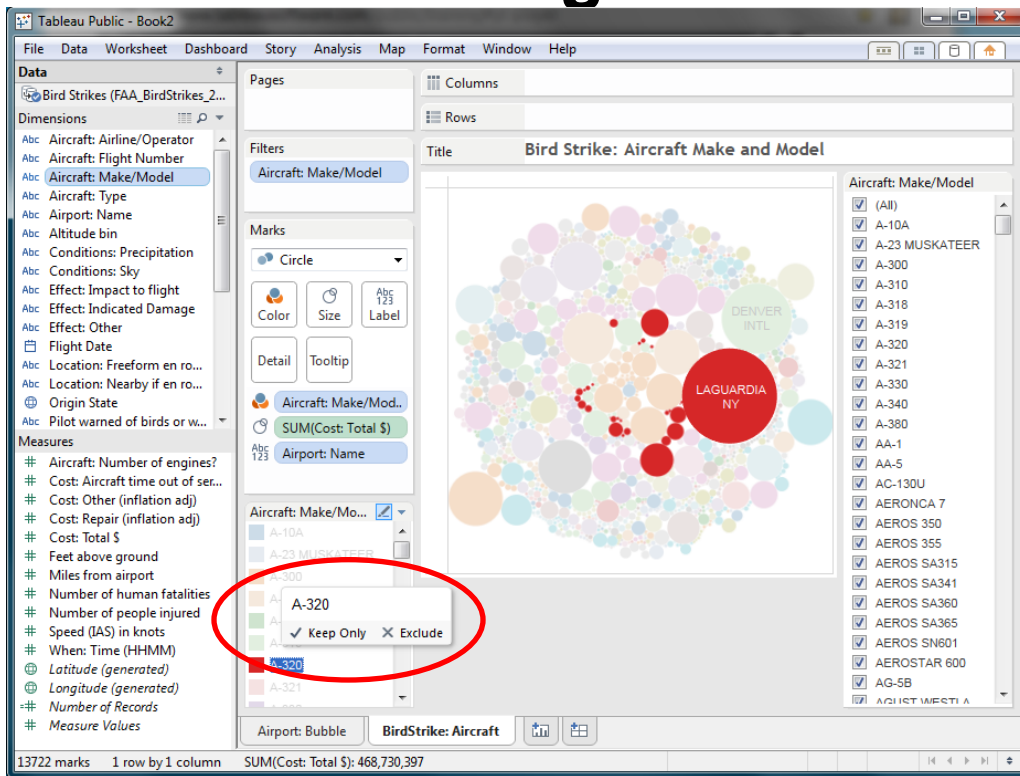


# Data Visualization through Tableau



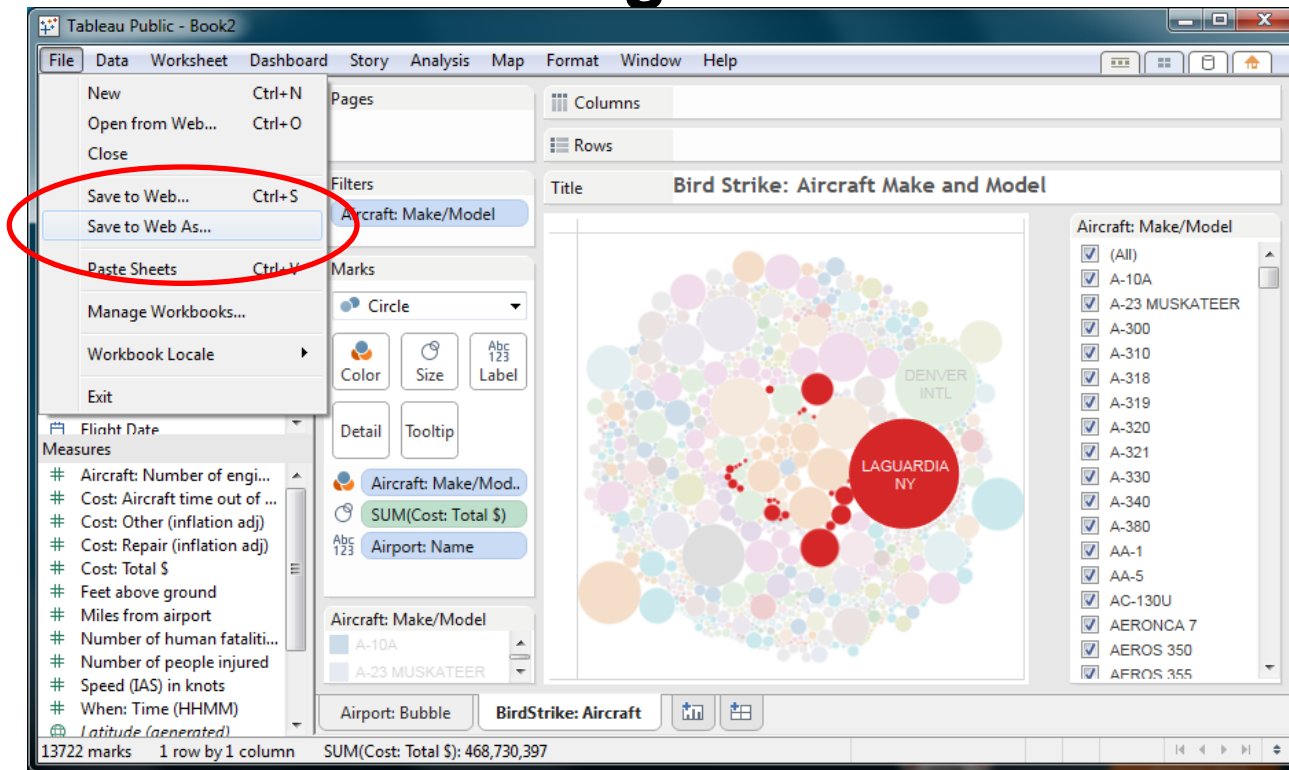
16. Create new view showing impact of different aircraft makes and models  
Result shows different aircraft makes and models in different colors  
Click through list on lower left to find aircraft most involved in bird strikes

# Data Visualization through Tableau



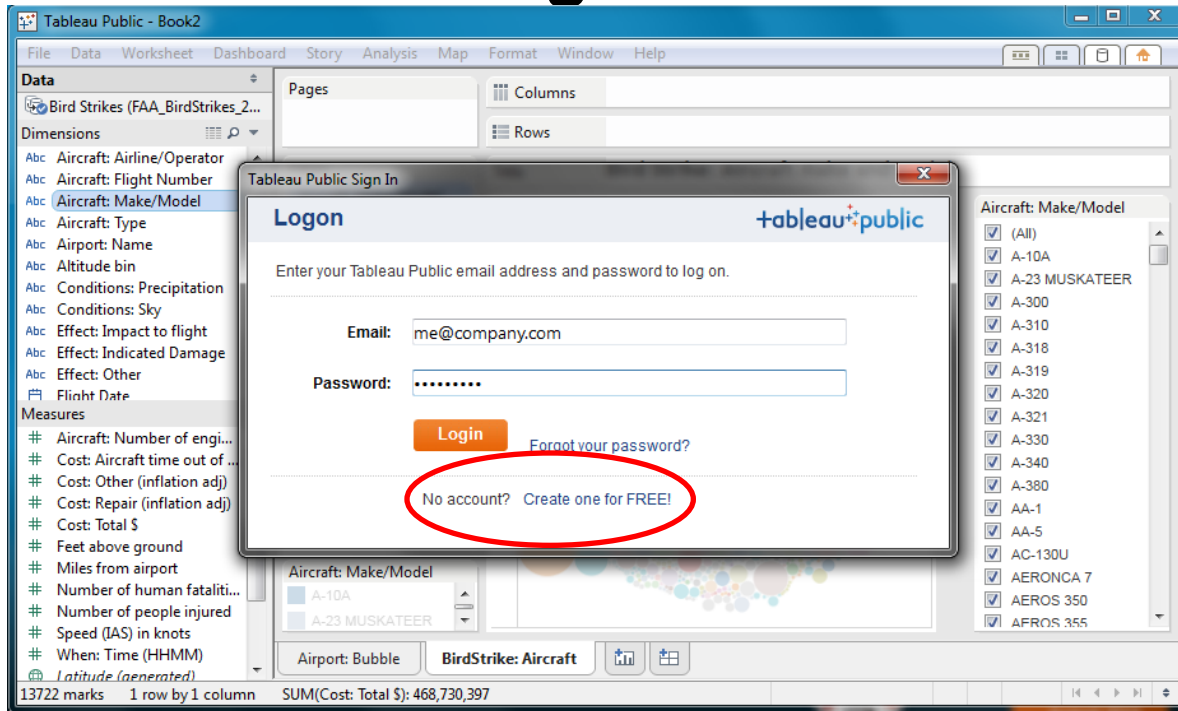
17. Create new view showing impact of different aircraft makes and models  
We find that A-320 responsible for much cost at #1 airport, LaGuardia

# Data Visualization through Tableau



18. Save visualization by publishing to the web  
Click File → Save to Web As...

# Data Visualization through Tableau

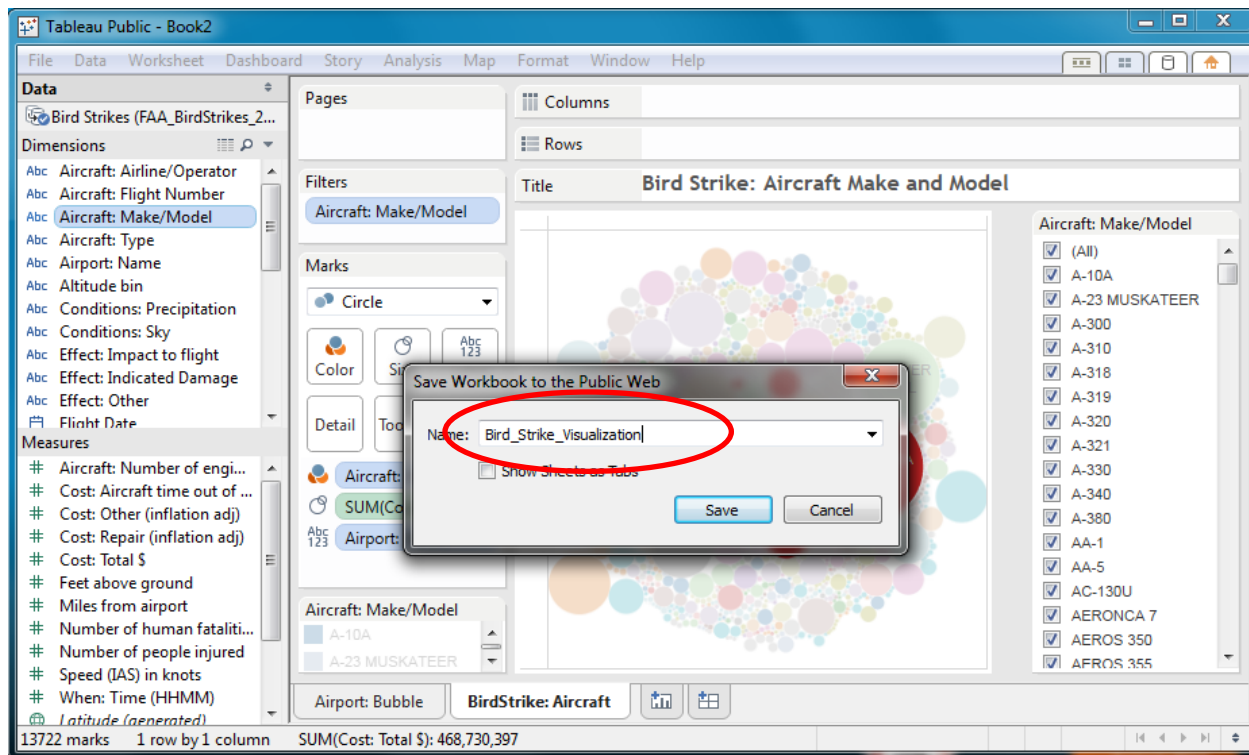


19. Save visualization by publishing to the web

Enter Email and Password

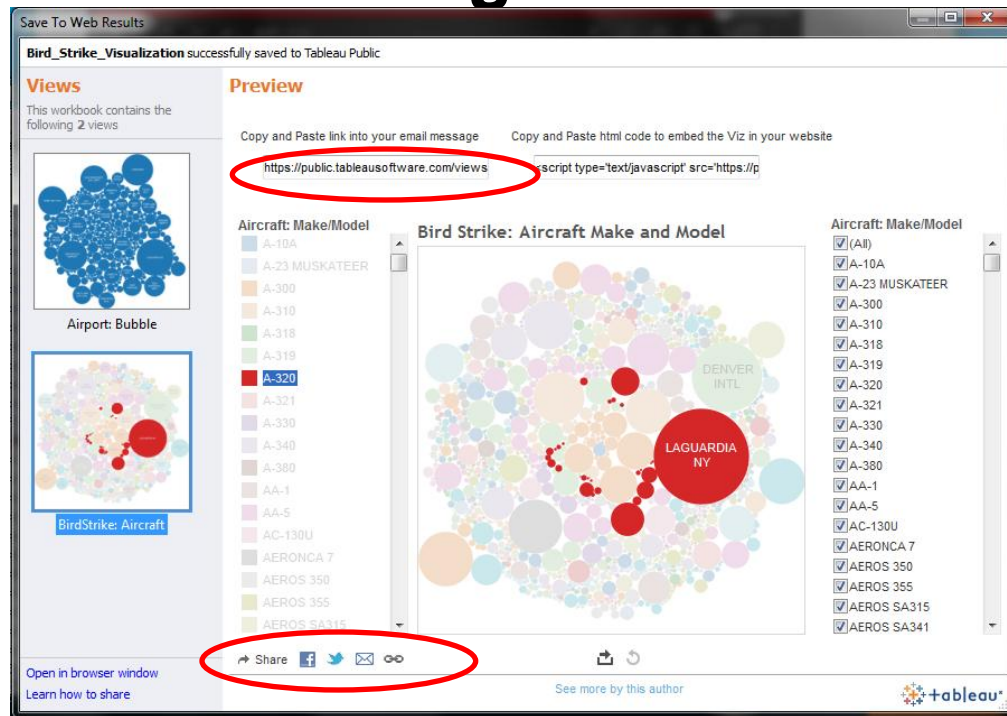
If you have not already done so, create an account so you can save viz.

# Data Visualization through Tableau



20. Save visualization by publishing to the web  
Enter Name and click "Save"

# Data Visualization through Tableau



21. Save visualization by publishing to the web  
Share with weblink  
Share with social media