

I

Advanced Calculations, Filter and Highlight Actions



Calculated Fields - Index

- Returns the index of the current row in the partition, without any sorting with regard to value.
- Drag Genre and Platform to rows
- Create Calculated Field with function Index
- Convert to Discrete from highlighted area
- Add *Index* to rows

The screenshot displays the Tableau interface. At the top, a dialog box titled 'Index' shows the formula `INDEX()` and a message 'Results are computed along Table (across)'. Below this, it states 'The calculation is valid.' and shows '1 Dependency'. Buttons for 'Apply' and 'OK' are present. In the main workspace, the 'Columns' shelf is empty, and the 'Rows' shelf contains 'Index', 'Genre', and 'Platform'. A context menu is open over the 'Index' field in the Rows shelf, with 'Convert to Discrete' highlighted. The view shows a table with 31 rows, each containing an index, a genre, and a platform.

Index	Genre	Platform
1	Action	3DS
2	Action	2600
3	Action	DC
4	Action	DS
5	Action	GB
6	Action	GBA
7	Action	GC
8	Action	GEN
9	Action	N64
10	Action	NES
11	Action	PC
12	Action	PS
13	Action	PS2
14	Action	PS3
15	Action	PS4
16	Action	PSP
17	Action	PSV
18	Action	SAT
19	Action	SNES
20	Action	Wii
21	Action	WiiU
22	Action	X360
23	Action	XB
24	Action	XOne
25	Adventure	3DO
26	Adventure	3DS
27	Adventure	2600
28	Adventure	DC
29	Adventure	DS
30	Adventure	GB
31	Adventure	GBA

Calculated Fields - Contains

- Contains function returns true if the given string contains the specified substring.
- Drag Product Name to rows
- Create Calculated Field with function Contains
- Drag 'Avery' to filter and choose True from highlighted area

The screenshot displays the Tableau interface. At the top, a text box contains the calculated field formula: `CONTAINS([Product Name], 'Avery')`. Below this, the 'Columns' shelf contains 'Product Name'. The 'Filters' shelf contains a pill labeled 'Avery: True'. A 'Filter [Avery]' dialog box is open, showing the 'General' tab with 'Select from list' selected. The 'Enter search text' field is empty. The 'True' checkbox is checked and highlighted with a red box. The 'Summary' section shows 'Field: [Avery]', 'Selection: Selected 1 of 2 values', 'Wildcard: All', 'Condition: None', and 'Limit: None'. The background shows a data table with 'Product Name' as the column header and a list of values including 'Avery 48', 'Avery 49', 'Avery 51', 'Avery 52', 'Avery 474', 'Avery 478', 'Avery 479', 'Avery 481', 'Avery 482', 'Avery 484', 'Avery 485', 'Avery 487', 'Avery 491', 'Avery 492', 'Avery 493', 'Avery 494', 'Avery 496', 'Avery 497', 'Avery 498', 'Avery 501', 'Avery 503', 'Avery 504', 'Avery 506', 'Avery 507', 'Avery 508', 'Avery 510', 'Avery 511', 'Avery 514', 'Avery 516', 'Avery 520', and 'Avery 4027 File ..'.

Calculated Fields – Case When

- “CASE-WHEN” are used to perform the logical test and return the required value when the test expression is true.
- Open **Sample-superstore-subset-excel** dataset
- Drag Ship Mode to rows
- Create Calculated Fields with function Case When
- Drag Shipping Expense to text
- Change Measure to Minimum

Shipping Expense

```
CASE [Ship Mode]
WHEN 'Regular Air' THEN 1.32
WHEN 'Delivery Truck' THEN 24.15
WHEN 'Express Air' THEN 5.29
END
```

Pages

iii Columns

Rows

Ship Mode

Filters

Sheet 1

Ship Mode	
Delivery Truck	24.15
Express Air	5.29
Regular Air	1.32

Marks

Automatic

Colour

Size

Text

Detail

Tooltip

MIN(Shipping ..

Calculated Fields - Lookup

- LOOKUP function allows to see a value in the column by specifying relative distance from another value.

Example: if you wanted to see next year's value on this year's cell

Notice how the function gives 1 year to the future's value

To see value of 2 years ago, write
lookup(sum([Boys Participation]), -2)

1)

lookup

Results are computed along Table (across).

LOOKUP(SUM([Boys Participation]), 1)

The 1 means that there will be +1 distance between values.

2)

Pages	Columns	Measure Names
Filters	Rows	Year
Measure Names		
Text		
Color		
Size		
Detail		
Tooltip		
Measure Values		
SUM(Boys Participat..		
lookup		

Year	Boys Participation	lookup along Table..
2002/2003	3,988,684	4,038,253
2003/2004	4,038,253	4,110,319
2004/2005	4,110,319	4,217,448
2005/2006	4,217,448	4,321,103
2006/2007	4,321,103	4,372,115
2007/2008	4,372,115	4,422,662
2008/2009	4,422,662	4,455,740
2009/2010	4,455,740	4,494,406
2010/2011	4,494,406	4,484,987
2011/2012	4,484,987	4,489,285
2012/2013	4,489,285	4,527,994
2013/2014	4,527,994	4,519,312
2014/2015	4,519,312	4,544,574
2015/2016	4,544,574	4,563,238
2016/2017	4,563,238	4,565,580
2017/2018	4,565,580	4,534,758
2018/2019	4,534,758	

Filter Actions

- From Dashboard tab, select **actions**.
- Choose **Add Actions**, select **filter**.
- Use *Genres* as the source and *Platforms*, *Total by Year* as target sheets.
- The target sheets will be filtered by the selection of source sheet.

The screenshot shows a dashboard titled 'Console Games' with two charts: 'Sales by Genre' (a pie chart) and 'Yearly Sales' (a line chart). The 'Edit Filter Action' dialog is open, showing the following configuration:

- Name:** Filter1
- Source Sheets:** Dashboard 1 (selected), Genres (checked), Platforms (unchecked), Total by Year (unchecked).
- Run action on:** Hover (selected), Select (disabled), Menu (disabled).
- Run on single select only:** (unchecked)
- Target Sheets:** Dashboard 1 (selected), Genres (unchecked), Platforms (checked), Total by Year (checked).
- Clearing the selection will:** Leave the filter (unchecked), Show all values (selected), Exclude all values (unchecked).
- Target Filters:** Selected Fields (unchecked), All Fields (selected).
- Table:**

Source Field	Target Field	Target Data Source
- Buttons:** Add Filter..., Edit..., Remove, OK, Cancel.

Filter Actions

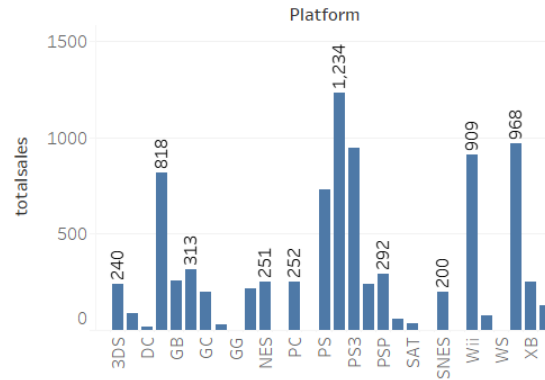
Before Selection:

Console Games

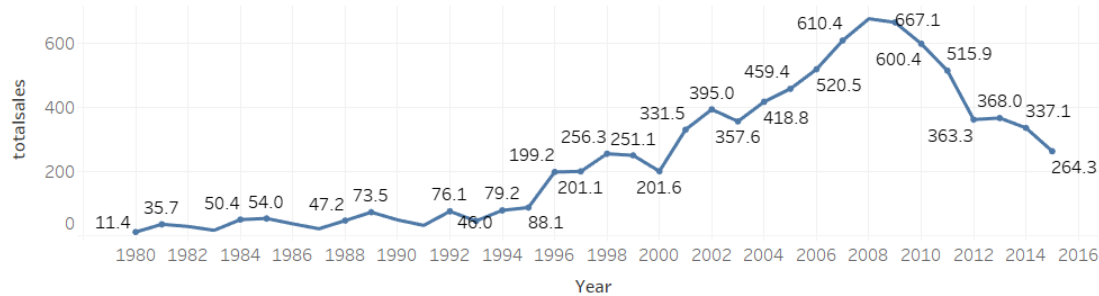
Sales by Genre



Sales by Platform



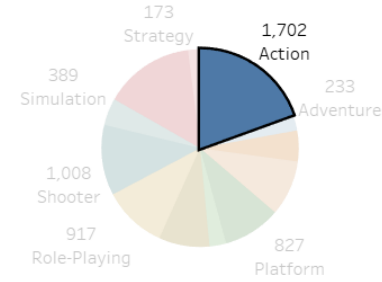
Yearly Sales



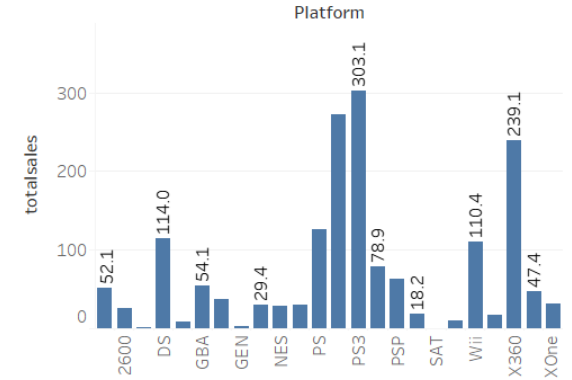
After Selection:

Console Games

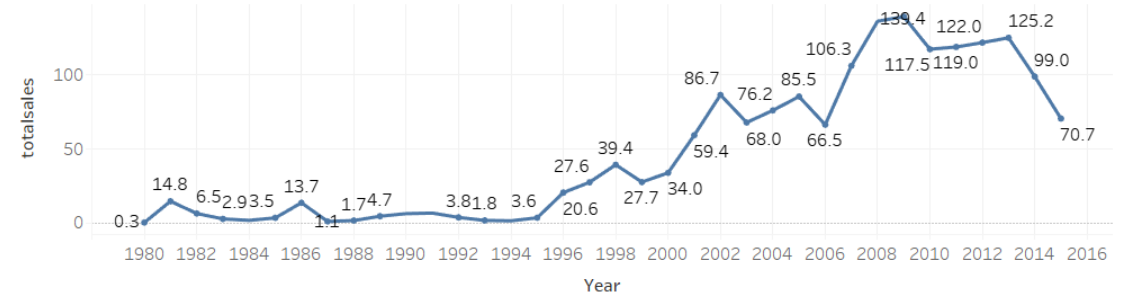
Sales by Genre



Sales by Platform



Yearly Sales



Filter Actions

- Go to dashboard tab, select **Actions**
- Press **Add Actions**, Choose **Filter**
- Use **Genres** as the *Source*, and *Eu Sales* as the target.
- Run action on *Select* and *Exclude* all values.

Note: This can be used for invisible sheets on default.

Add Filter Action

Name: Filter2

Source Sheets

ConsoleGames (ConsoleGames)

Run action on:

☐ Eu Sales

☒ Genres

☐ Platforms

☐ Total by Year

☐ Run on single select only

Target Sheets

Dashboard 1

Clearing the selection will:

☐ Leave the filter

☐ Show all values

☒ Exclude all values

Target Filters

☐ Selected Fields ☒ All Fields

Source Field	Target Field	Target Data Source

Filter Actions

Unselected

Notice how Eu Sales chart becomes visible.

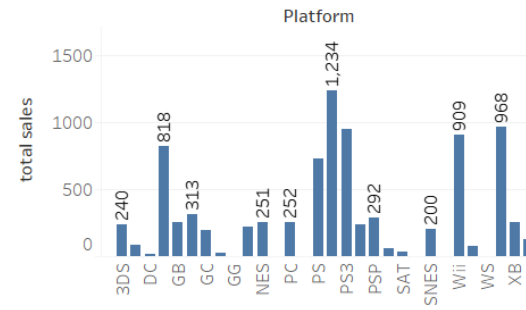
Console Games

Sales by Genre

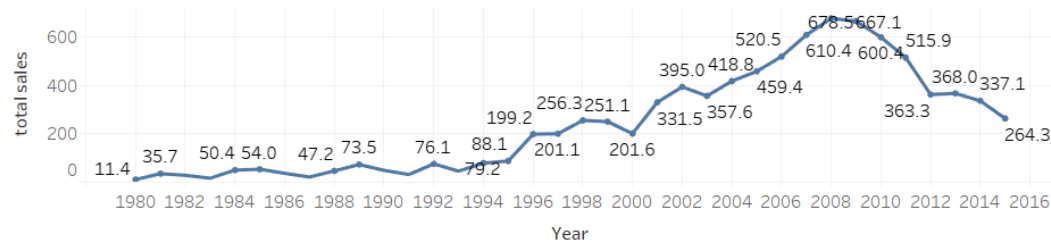


Eu Sales

Sales by Platform

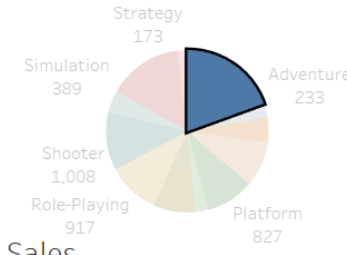


Yearly Sales

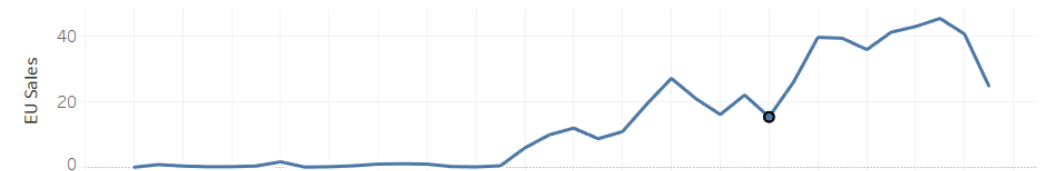


Console Games

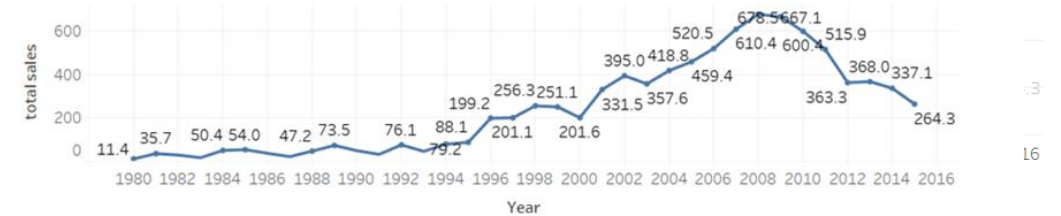
Sales by Genre



Eu Sales



Yearly Sales



Highlight Actions

Create another Sheet that shows *Eu Sales* trend by years.

- Go to dashboard tab, select **Actions**
- Press **Add Actions**, then choose **highlight**
- Choose *Total by Year* as the source.
- Choose *Eu Sales* as the target.
- This means when we highlight a point on *Total by Sales*, the same point will be also highlighted on *Eu Sales' Chart*.

Add Highlight Action

Name: Highlight4

Source Sheets

Dashboard 1

Eu Sales

Genres

Platforms

☒ Total by Year

Run action on:

Hover

Select

Menu

Target Sheets

Dashboard 1

☒ Eu Sales

Genres

Platforms

Total by Year

Target Highlighting

☐ Selected Fields

☐ Dates and Times

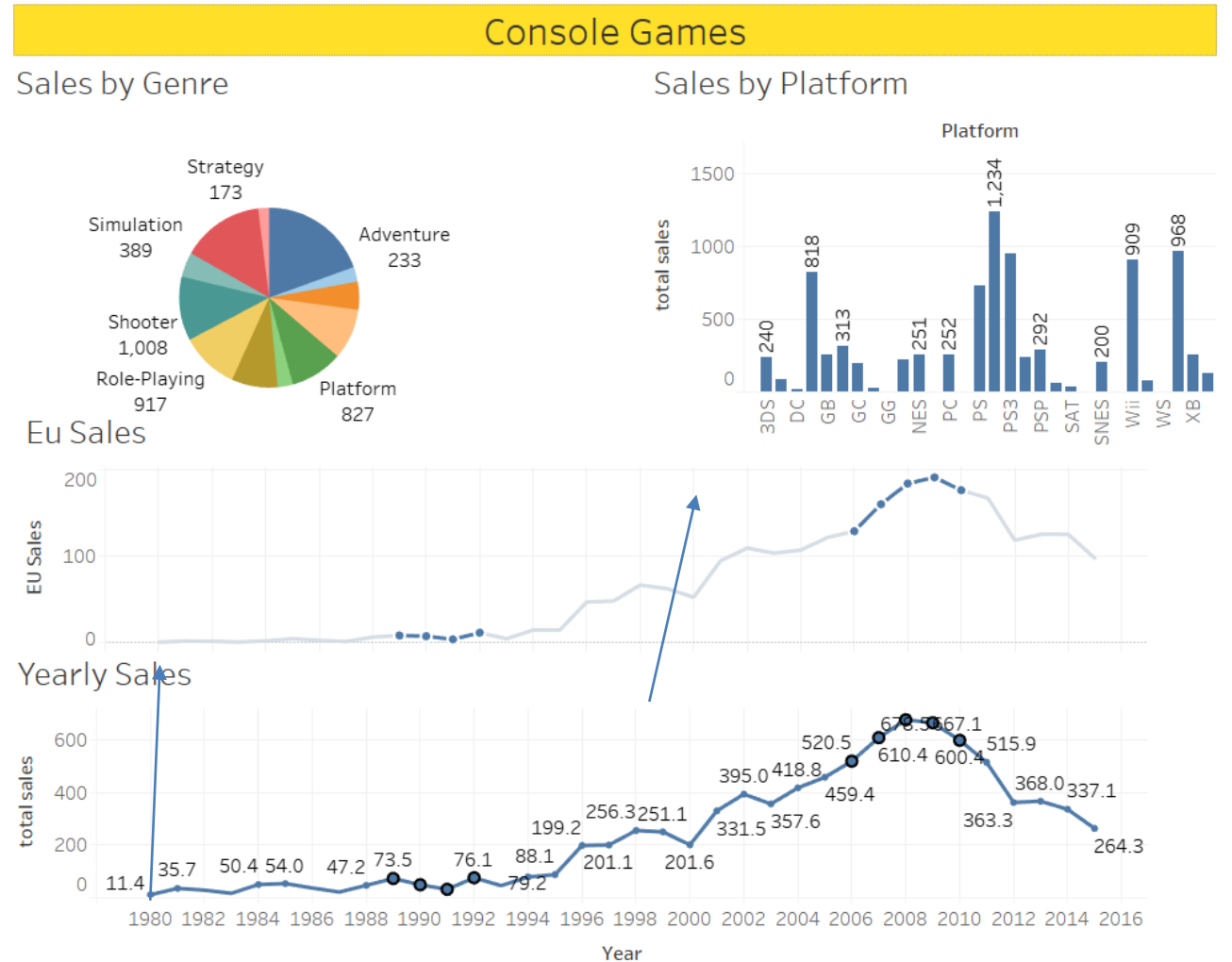
☒ All Fields

Year

OK Cancel

Highlight Actions

- Notice how the exact points on *Eu Sales* are highlighted when we choose from *Yearly sales*.



II

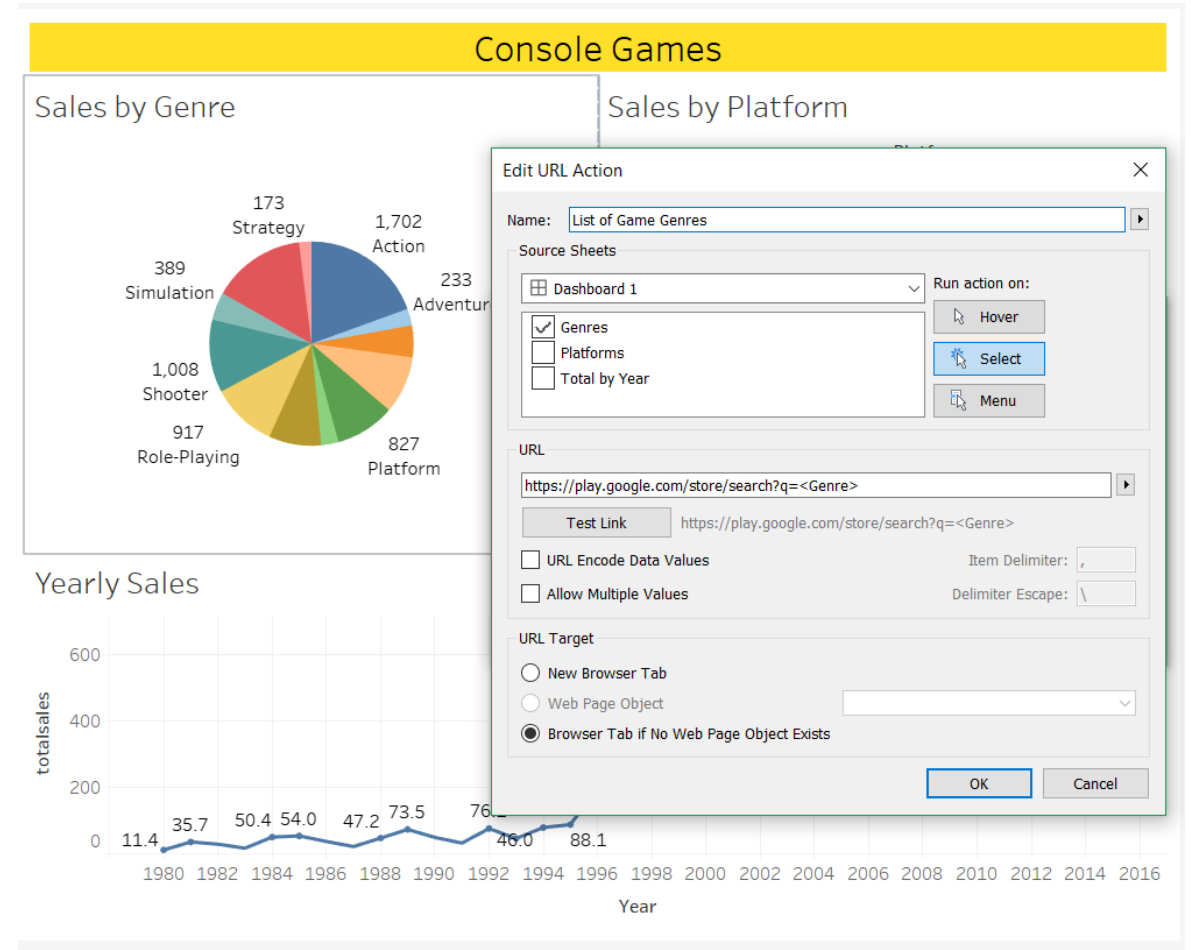
URL Actions and Lollipop Charts



URL Actions

- Go to dashboard tab, choose *Actions*.
- Press Add Actions, choose **Go to URL**.
- Choose **Genre sheet** as source, use **Select** as run action.
- Write the URL code below to the URL box:
- <https://play.google.com/store/search?q=<Genre>>

The **<Genre>** part means that Tableau will swap the text at the end with which Genre you selected on your chart.

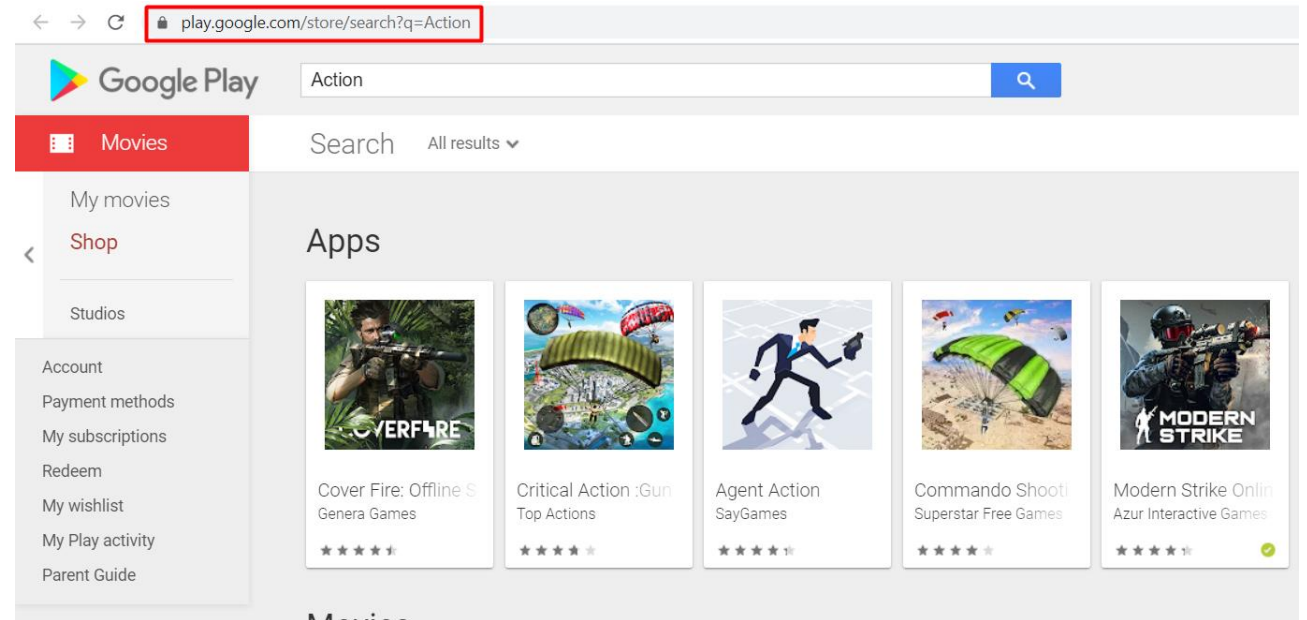
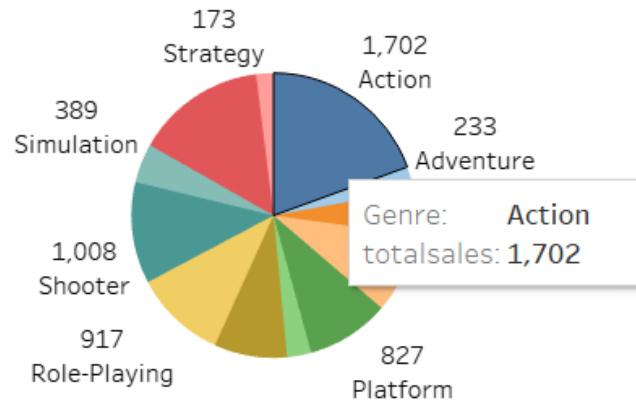


URL Actions

Click on any genre in the dashboard.

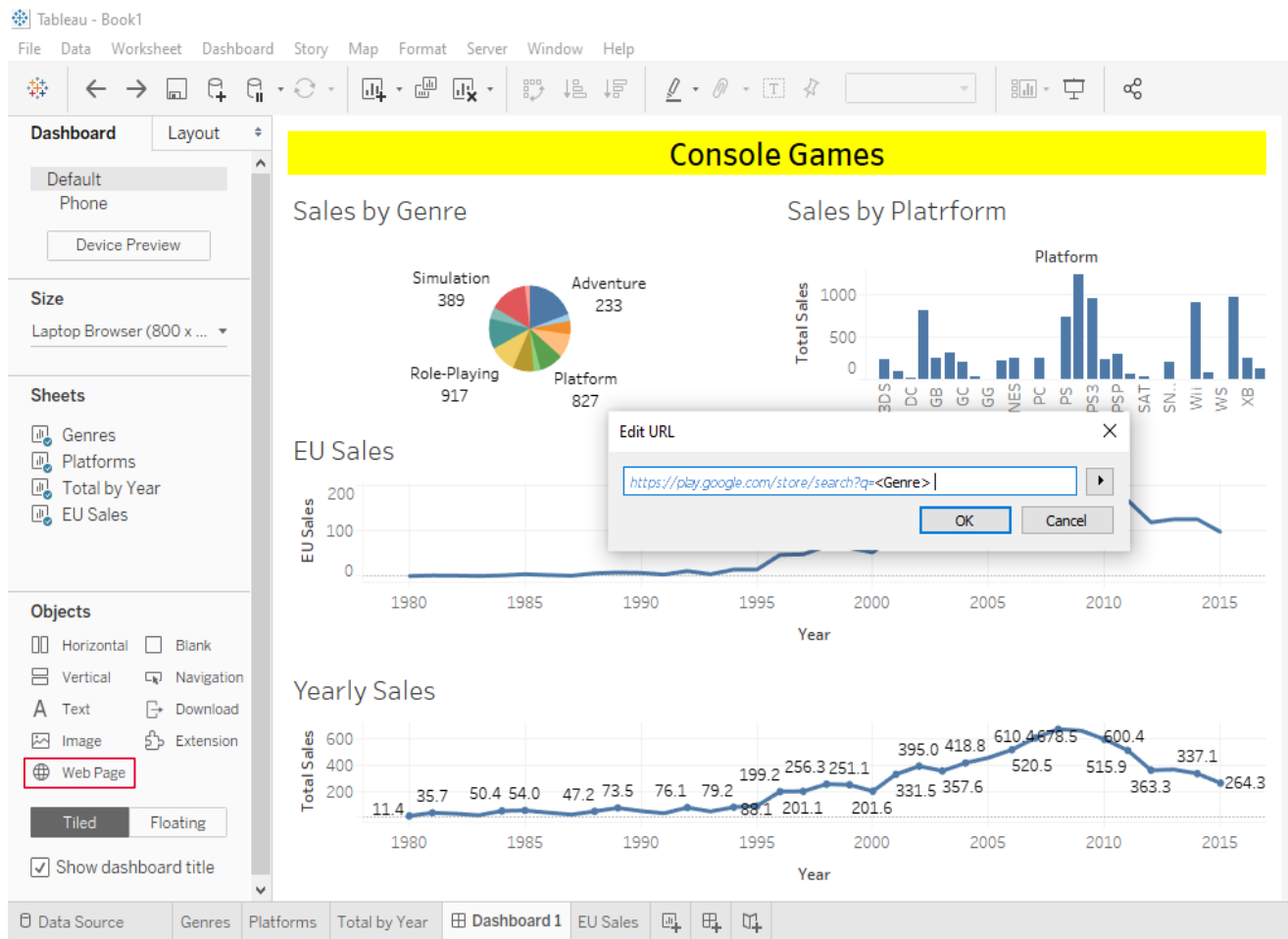
The action will open a link as specified earlier:

Sales by Genre



URL Actions with Web Page Object

- Go to Objects click Web Page from highlighted area
- Enter the following link:
<https://play.google.com/store/search?q=<Genre>>



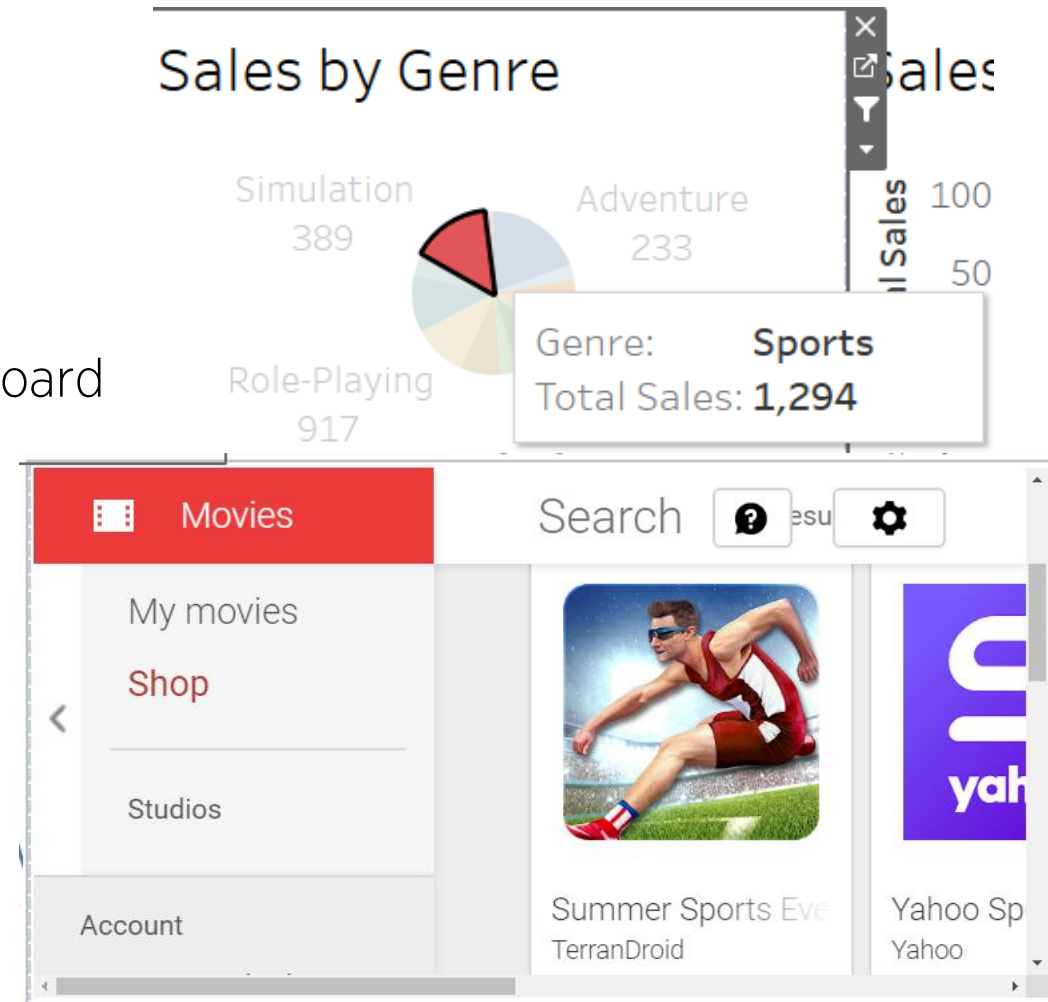
URL Actions with Web Page Object

- Go to worksheet in Dashboard then select Actions
- <https://play.google.com/store/search?q=%3CGenre%3E> write this link in selected area
- Select Genre from highlighted area

The screenshot displays the Tableau interface with a dashboard titled 'Console Games'. The dashboard includes a pie chart for 'Genre' (Simulation: 389, Adventure: 233), a bar chart for 'Sales by Platform', and a line chart for 'Yearly Sales'. A context menu is open over the 'Genre' pie chart, with the 'Actions...' option highlighted. The 'Edit URL Action' dialog box is also open, showing the 'Hyperlink1' action. The 'Source Sheets' list includes 'ConsoleGames (ConsoleGames.)', 'Eu Sales', 'Genres', 'Platforms', and 'Total by Year'. The 'URL' field contains the link 'https://play.google.com/store/search?q=%3CGenre%3E<Genre>'. The 'URL Target' is set to 'Browser Tab if No Web Page Object Exists'. A dropdown menu for the 'Genre' field is visible, showing options like 'Total Sales', 'EU Sales', 'Genre', 'JP Sales', 'NA Sales', 'Name', 'Other Sales', 'Platform', 'Publisher', 'Rank', and 'Year'.

URL Actions with Web Page Object

- Choose any Genre
- The action will open link in Web Page in Dashboard



Lollipop Chart

Lollipop Chart is a chart that reminds of Lollipops. It shows bars for different variables with a circle at peak points.

To show Female Participation by State:

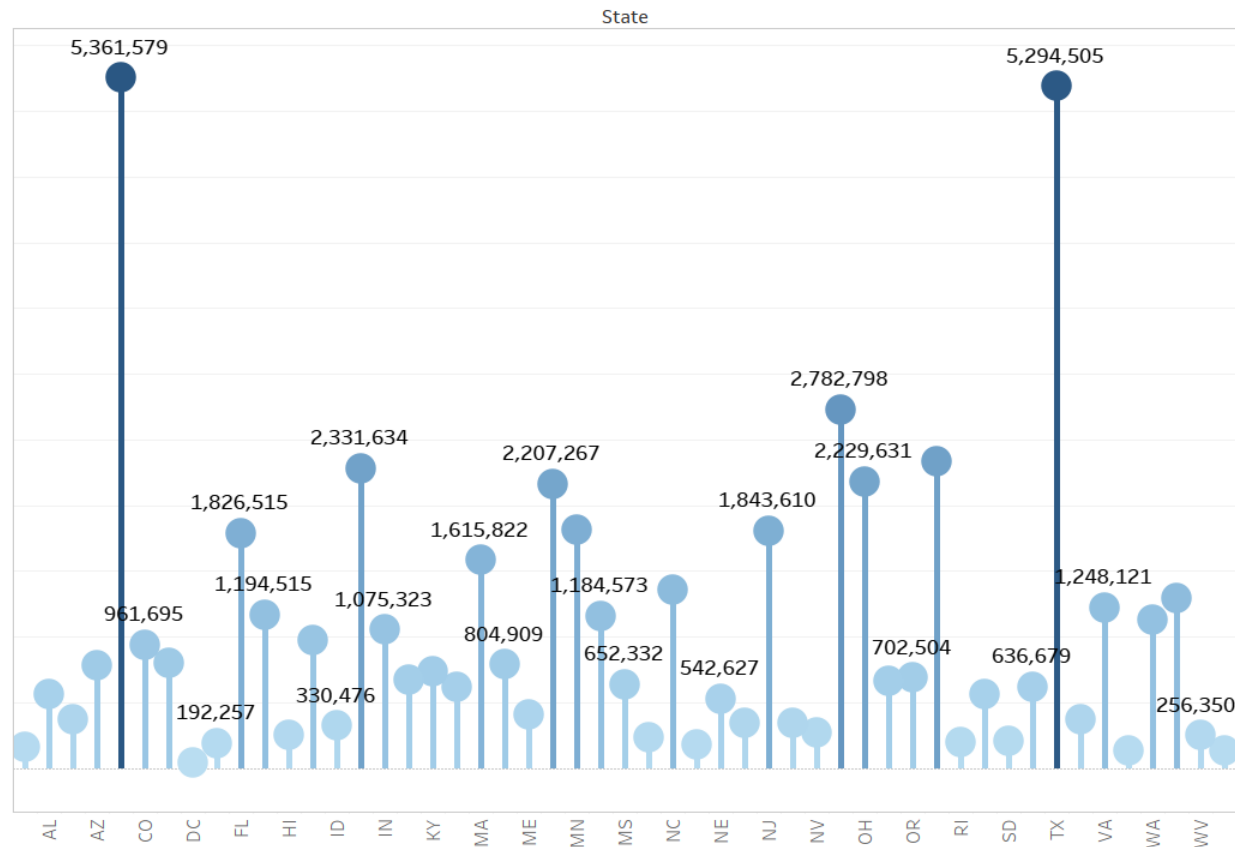
- Add *State* to Column and *Girl Participation* to Rows.
- Make a copy of Girl Participation at Rows, then choose **dual axis**.
- Go to the marks of first Girl Participation. Change the mark to **bar**.
- Change the Second Girl Participation's Mark to circle.
- Adjust the sizes. Make circles bigger and bars narrower.



Lollipop Chart

- Add Girls Participation as a color mark in the General(All) Marks tab.
- Add Girls Participation as a label on second marks tab, use top alignment.
- Remove headers.

Female Participation by States



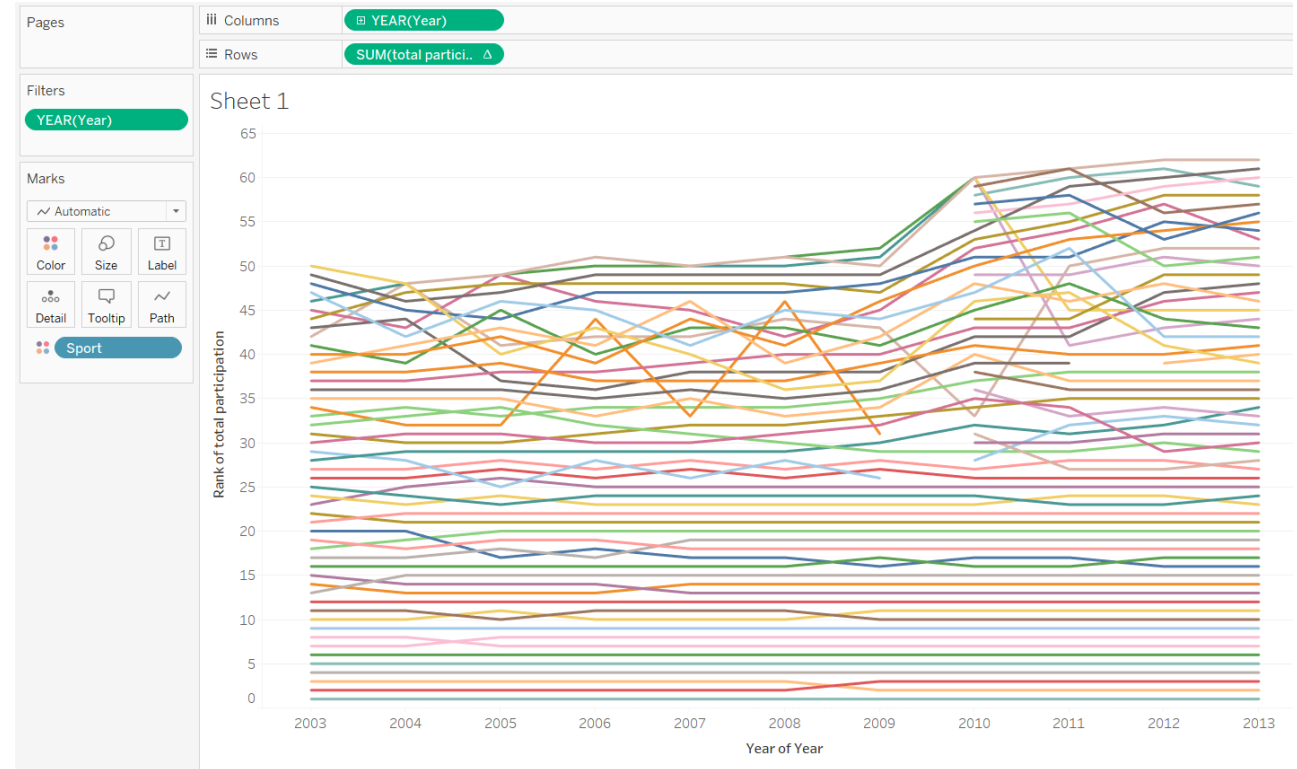
III Advanced Charts



Bump Chart

Bump chart is a complex chart used to show how the rankings of variables in the dataset change over time.

- Add **Years** into Columns, make sure it is continuous.
- Create **Total Participation**(*[Boys Participation] + [Girls Participation]*) variable, add it to rows.
- Make Sport a color mark.
- Now you have a line for each sport's trend over years to rank them by their participation numbers
- Right click on **Total Participation**, choose **Quick Table**
- **Calculation** and click **Rank**.
- Choose **Compute Using** and select **Sport**.



Bump Chart

- To have variables ranked correctly, create a copy of **SUM(Total Participation)**, and choose **Dual Axis**.
- Right click both of the Y axis headers and edit them.
- Filter to show **Top 20 sports** by **total participation**.
- Choose **Reversed** for each one of them.

Edit Axis [Rank of total participation] ×

General

Tick Marks

Range

☒ Automatic ☒ Include zero

☐ Uniform axis range for all rows or columns

☐ Independent axis ranges for each row or column

☐ Fixed

Automatic ▼

Automatic ▼

0

12

Scale

☒ Reversed

☐ Logarithmic

☒ Positive

☐ Symmetric

Axis Titles

Title

Rank of total participation

Subtitle

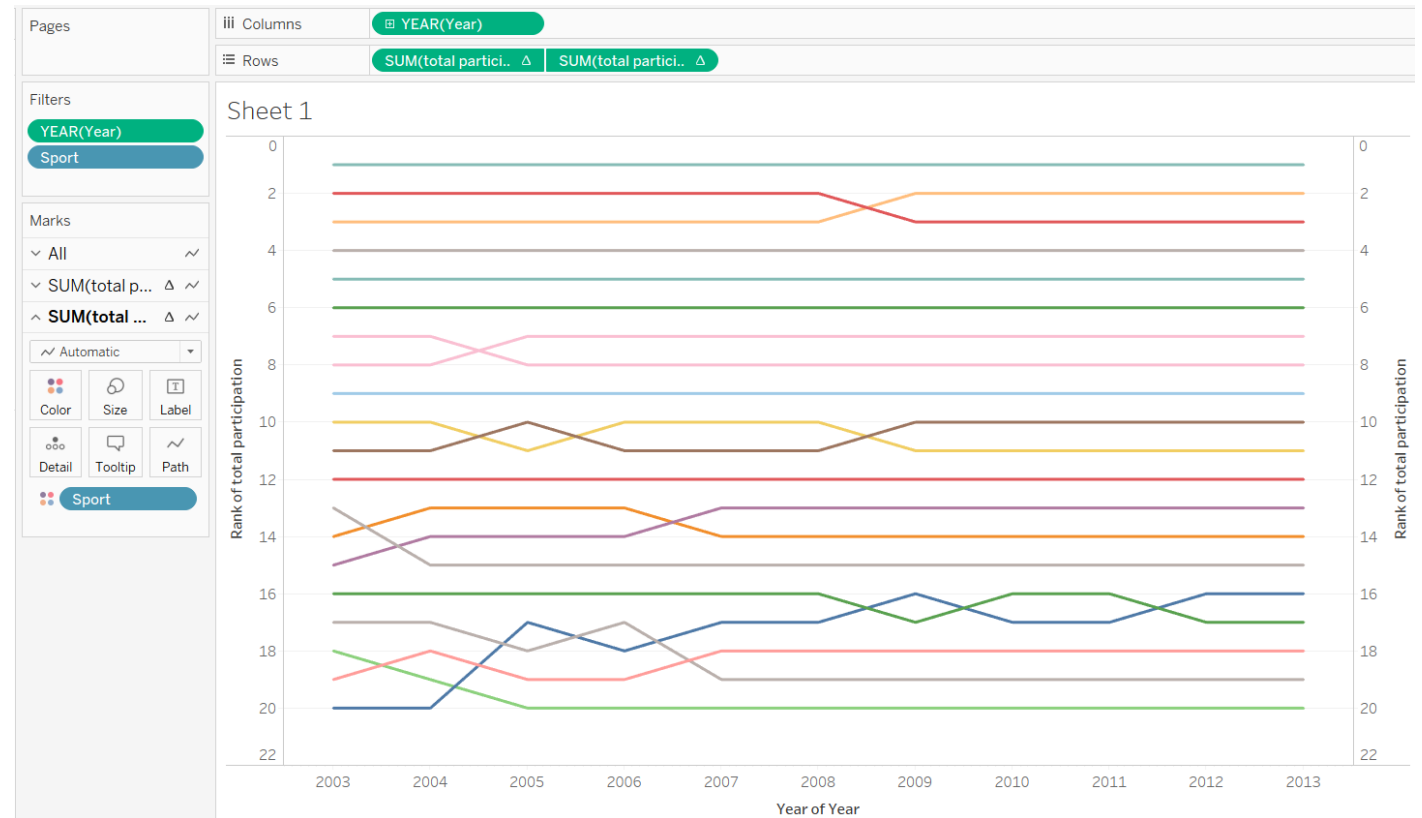
Subtitle

☒ Automatic

↺ Reset

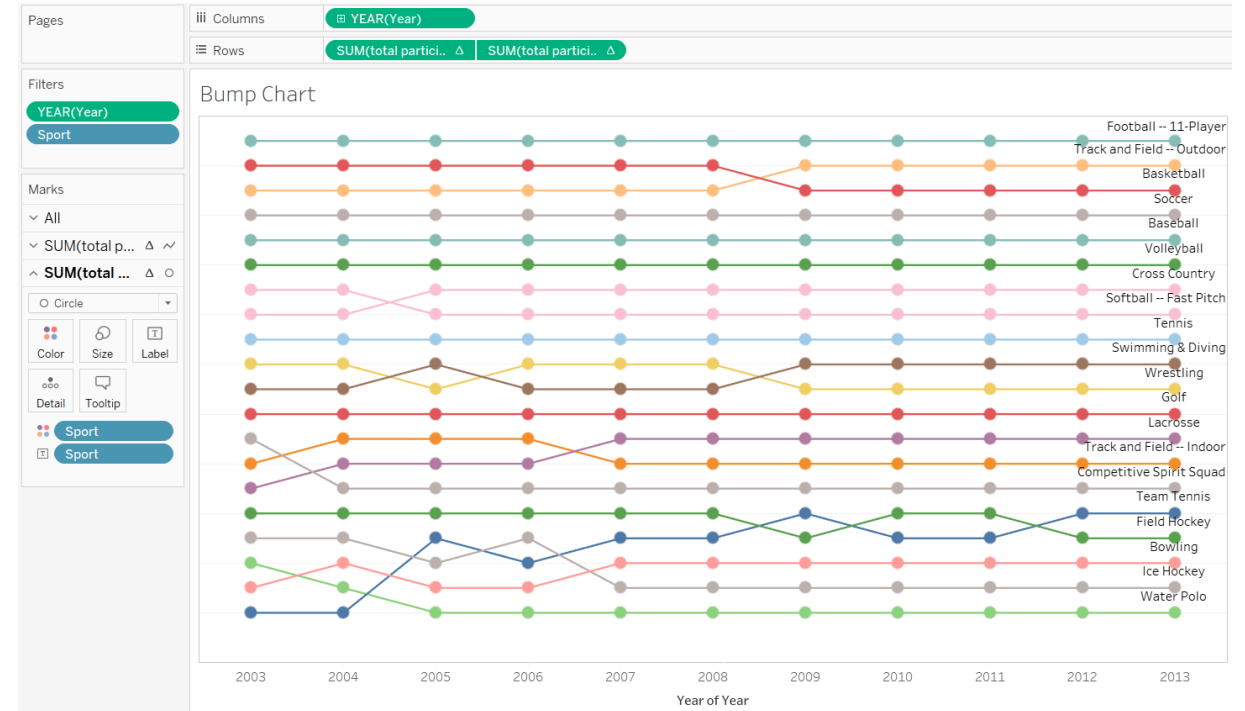
Bump Chart

- Now filter to show Top 20 sports by total participation.



Bump Chart

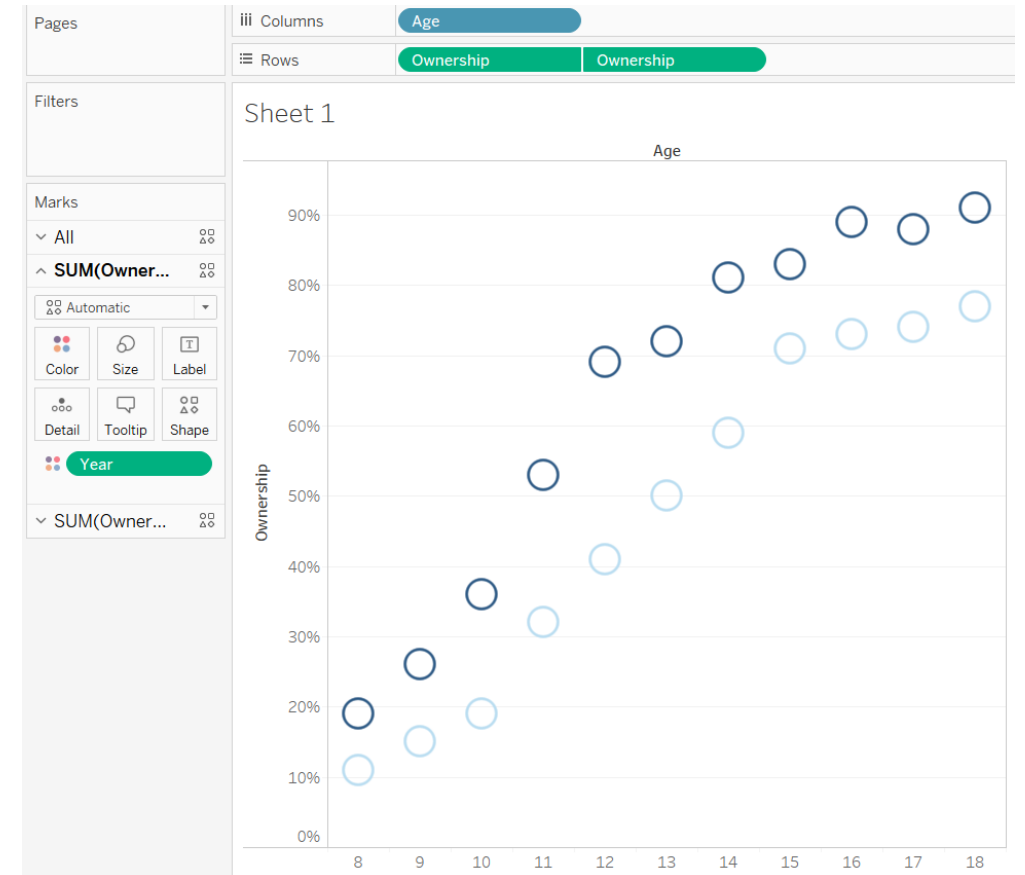
- Go to marks for our second Total Participation variable.
- Change the mark from line to circle. Adjust the size.
- Add *Sport* to label, set the mark as **most recent**.
- Adjust the alignment to center and above.



Dumbbell Chart

- Dumbbell chart is used to display the values of two categories at the same time.

- Convert **Age** into a dimension.
- Turn off Aggregate Measures.
- Bring Age and Ownership to Columns and Rows.
- Set Year as the colour mark.
- Now create a copy of Ownership and set Dual Axis.



Dumbbell Chart

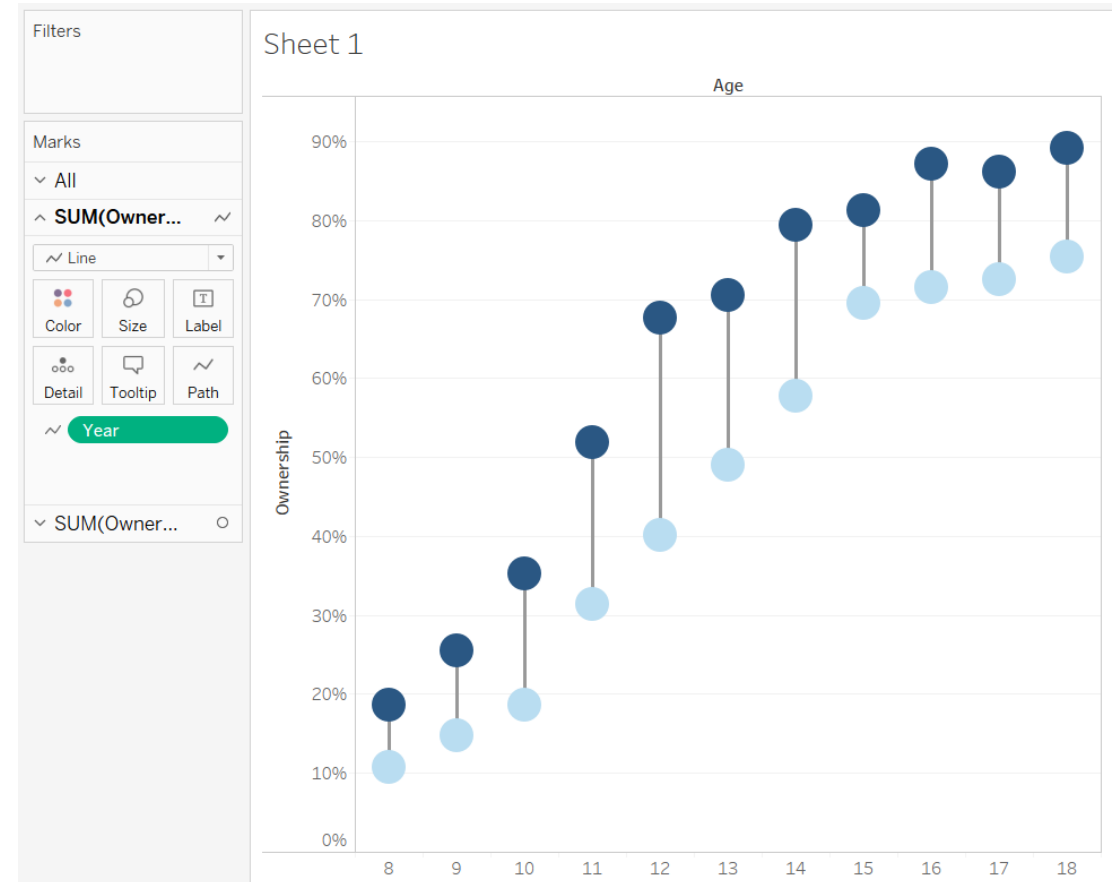
- Change the first mark to Line and second mark to Circle.
- Drag Year in first mark from color to Path.
- To add labels, create 2 calculated fields for 2015 and 2019 years

2015

```
if [Year] = 2015 then [Ownership]END
```

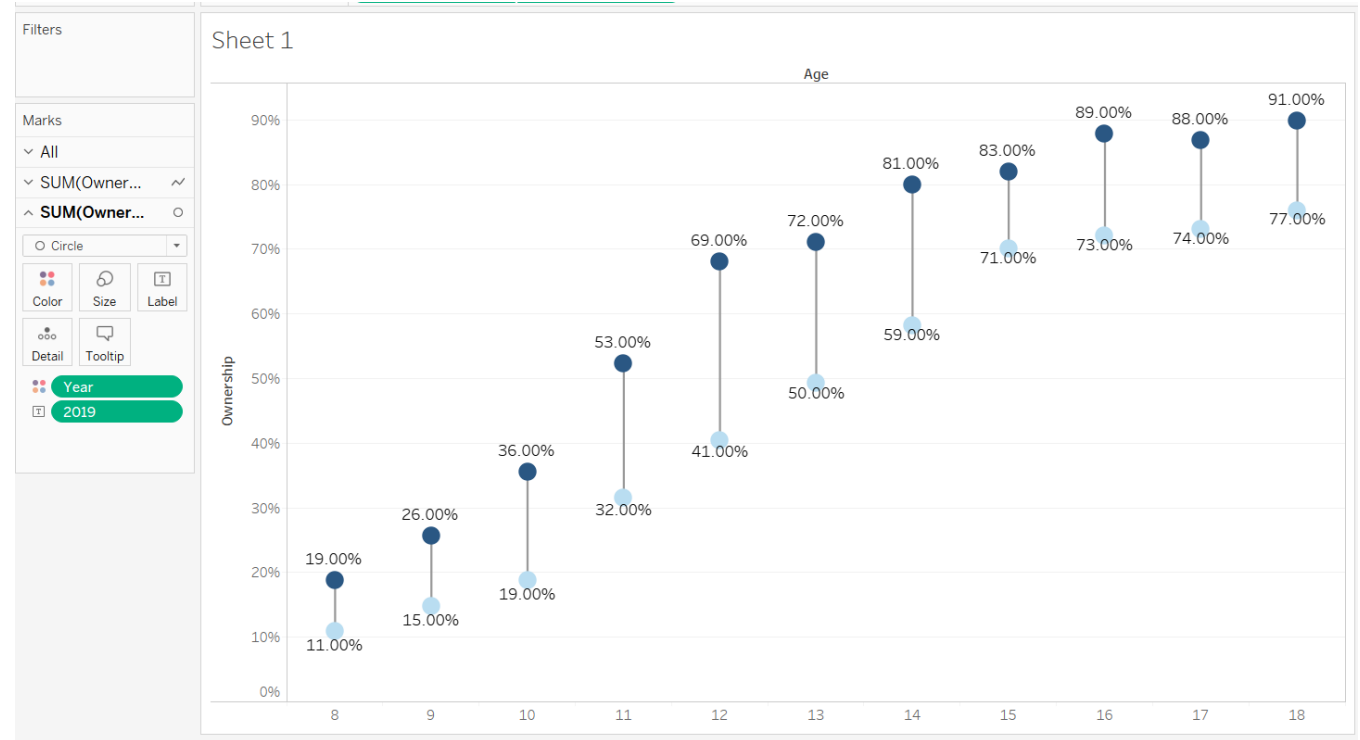
2019

```
if [Year]= 2019 then [Ownership] END
```



Dumbbell Chart

- Add 2015 to first mark's label and change alignment to bottom.
- Add 2019 to second mark's label and change alignment to top.
- Change ownership's number property to percentage.



Thank you!