# SESSION 34: TABLEAU DESKTOP (CONTD.)

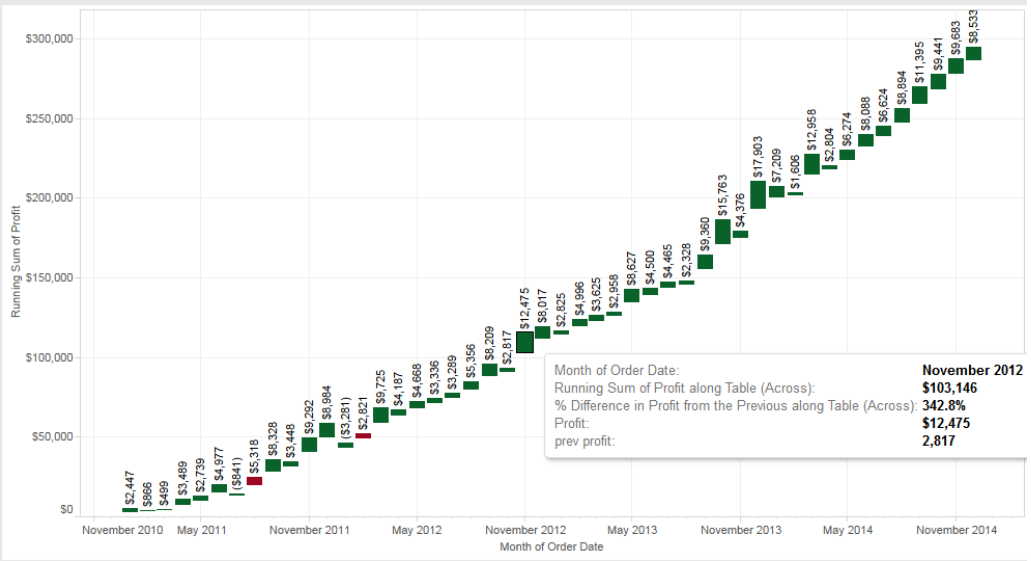
## Assignment 1

### 5. Problem Statement

1. Create a Waterfall chart which would show running total profit over a period of time.

2. The color of the mark should be red if the profit recorded for that Month is less than the profit recorded compared to previous month, else Green

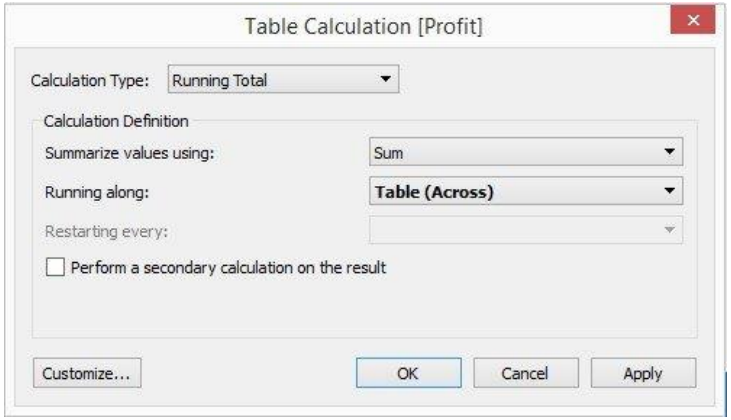
3. Adjust the tooltip to show as given in the picture below.



Waterfall charts are powerful visuals for your data dashboard because they effectively display the cumulative effect of

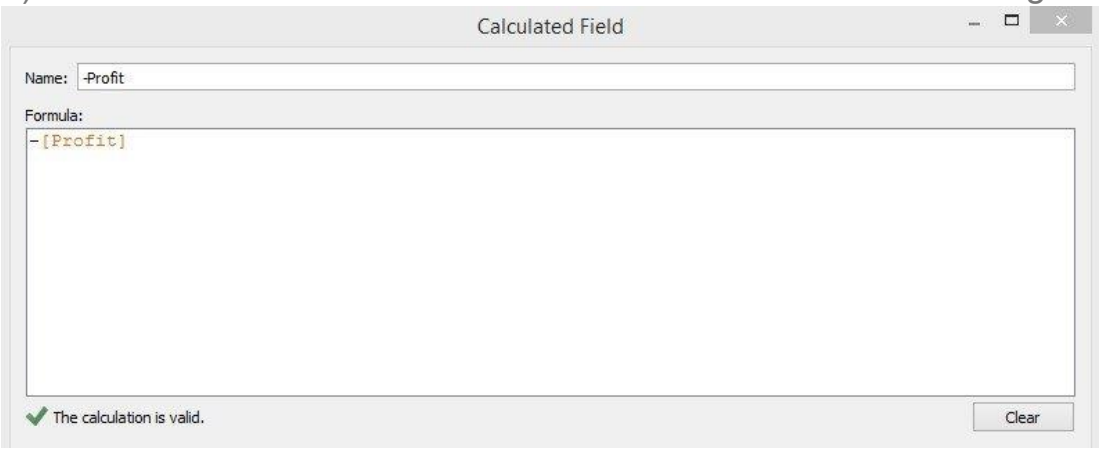
sequential positive and negative values. Building waterfall charts in Tableau requires a few specific steps.

1) Connect to the “Sample – Superstore Subset (Excel)” excel file (2014 – 2017) given as link by AcadGild
2) Drag the Orders worksheet into the Drag Sheets Here section and select the orange Go to Worksheet button.
3) Drag a dimension (order data(month)) to the Columns Shelf and (profit (sum profit)) measure to the Rows Shelf.
4) Right-click on the Month field on the Columns Shelf to convert it to “Discrete”.
5) Add a Running Sum of Total Table Calculation to the measure on the rows shelf. To do this, right-click on the Profit pill,
6) select Add Table Calculation, and add the table calculation:




6)Change the mark type from Automatic to Gantt Bar in the Marks Card.

7) Create a calculated filed named “-Profit” and write the following formula: -[Profit]




8) Drag the new measure “- Profit” to the size tab on the Marks Card. Positive values will therefore extend our bar upwards and negative values will extend the bar downwards.

9) Add the Profit measure to the color tab on the marks card and edit the colors and change the color palette to be two stepped. Now, we
have a working waterfall chart showing growth and contraction in profit from one quarter to the next.

10) All the graph details obtained are provided as screen shot for easy reference

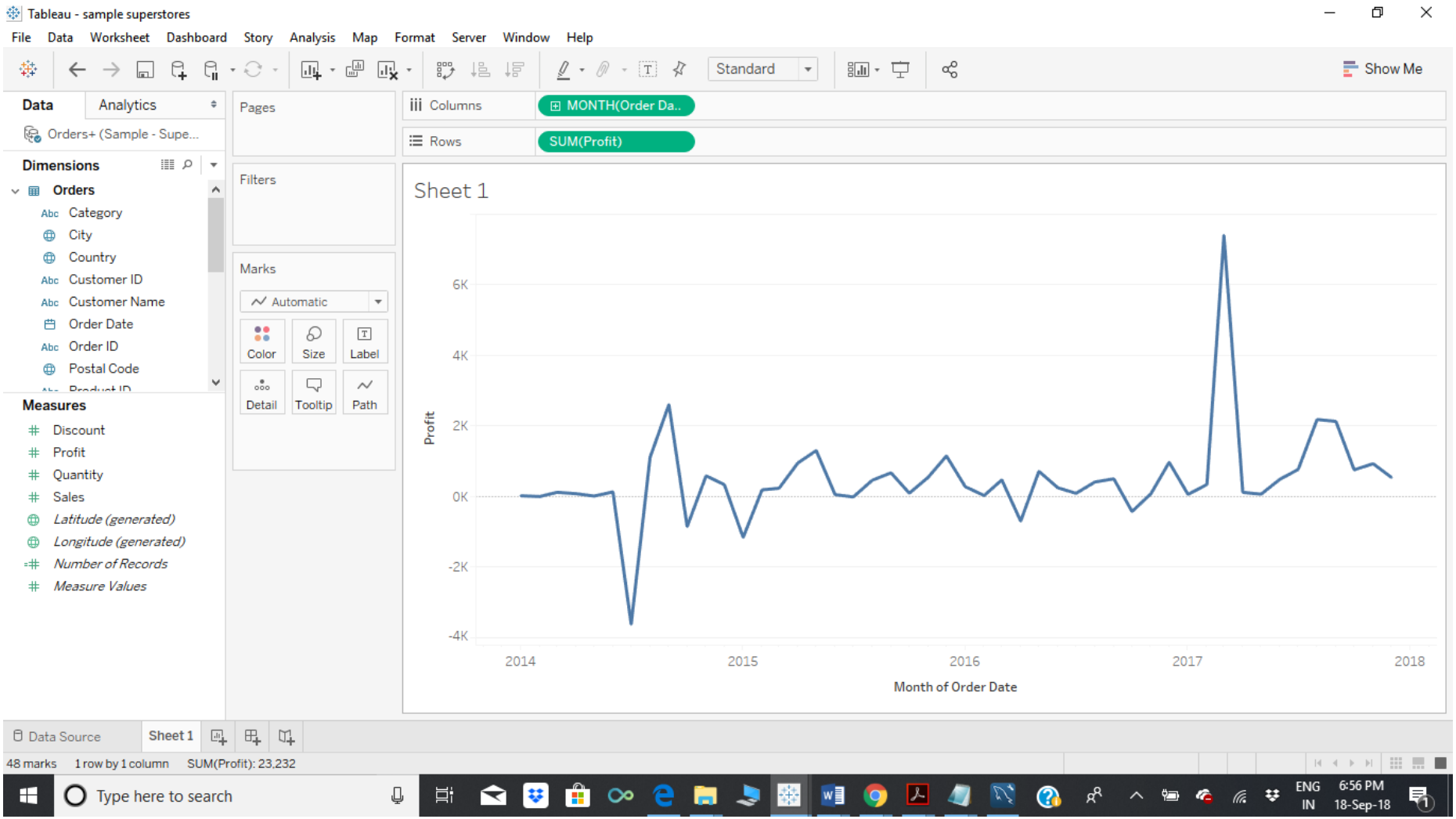


Tableau - sample superstores
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Color
Size
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Tooltip
Path
Columns
MONTH(Order Da..
Rows
SUM(Profit)
Sheet 1
6K
4K
2K
0K
-2K
-4K
Profit
2014
2015
2016
2017
2018
Month of Order Date
Data Source
Sheet 1
48 marks
1 row by 1 column
SUM(Profit): 23,232
Type here to search
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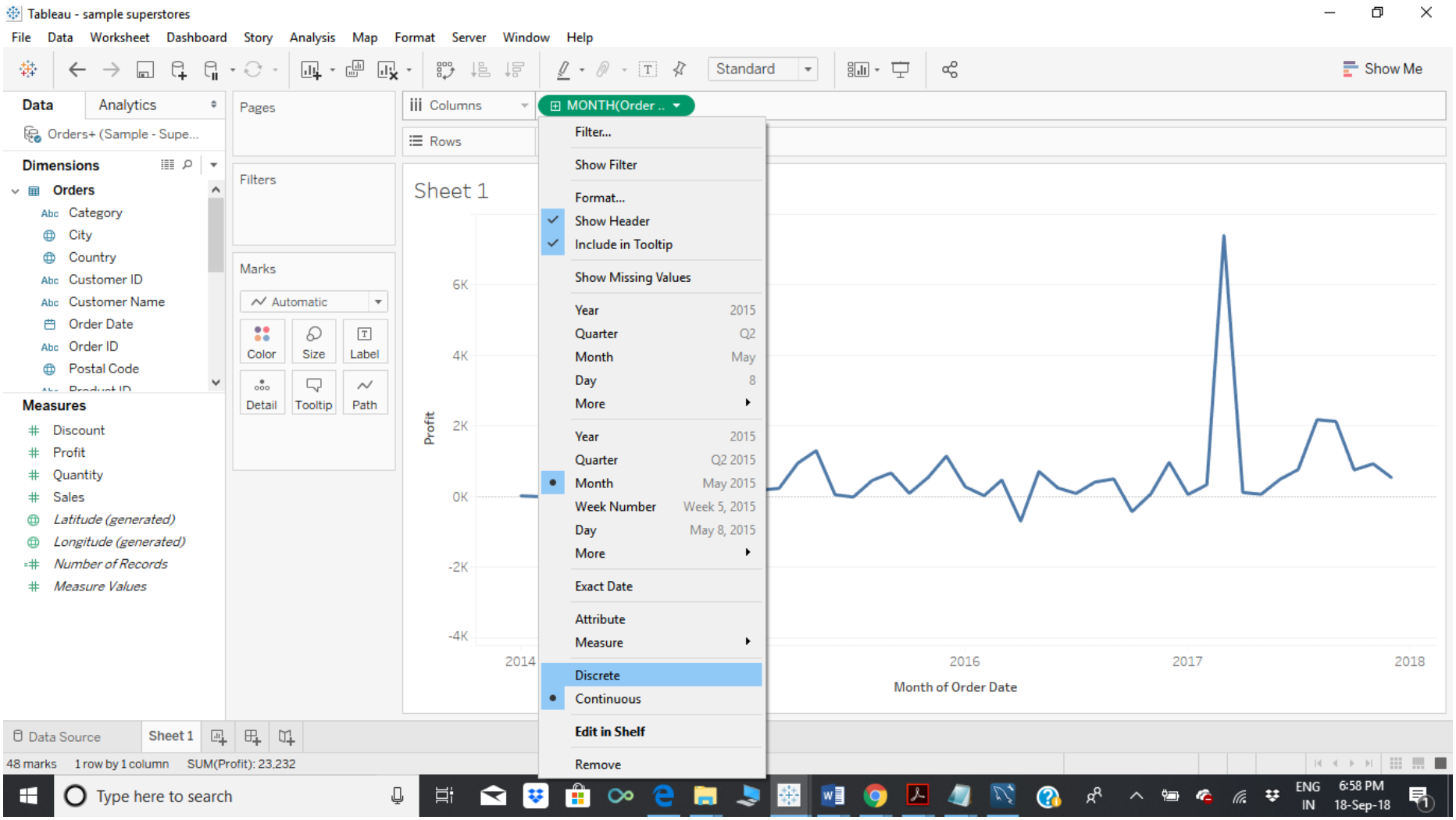
18-Sep-18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Sheet 1
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2014
2016
2017
2018
Month of Order Date
Filter...
Show Filter
Format...
Show Header
Include in Tooltip
Show Missing Values
Year 2015
Quarter Q2
Month May
Day 8
More
Year 2015
Quarter Q2 2015
Month May 2015
Week Number Week 5, 2015
Day May 8, 2015
More
Exact Date
Attribute
Measure
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Edit in Shelf
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Data Source
Sheet 1
48 marks
1 row by 1 column
SUM(Profit): 23,232
Type here to search
ENG
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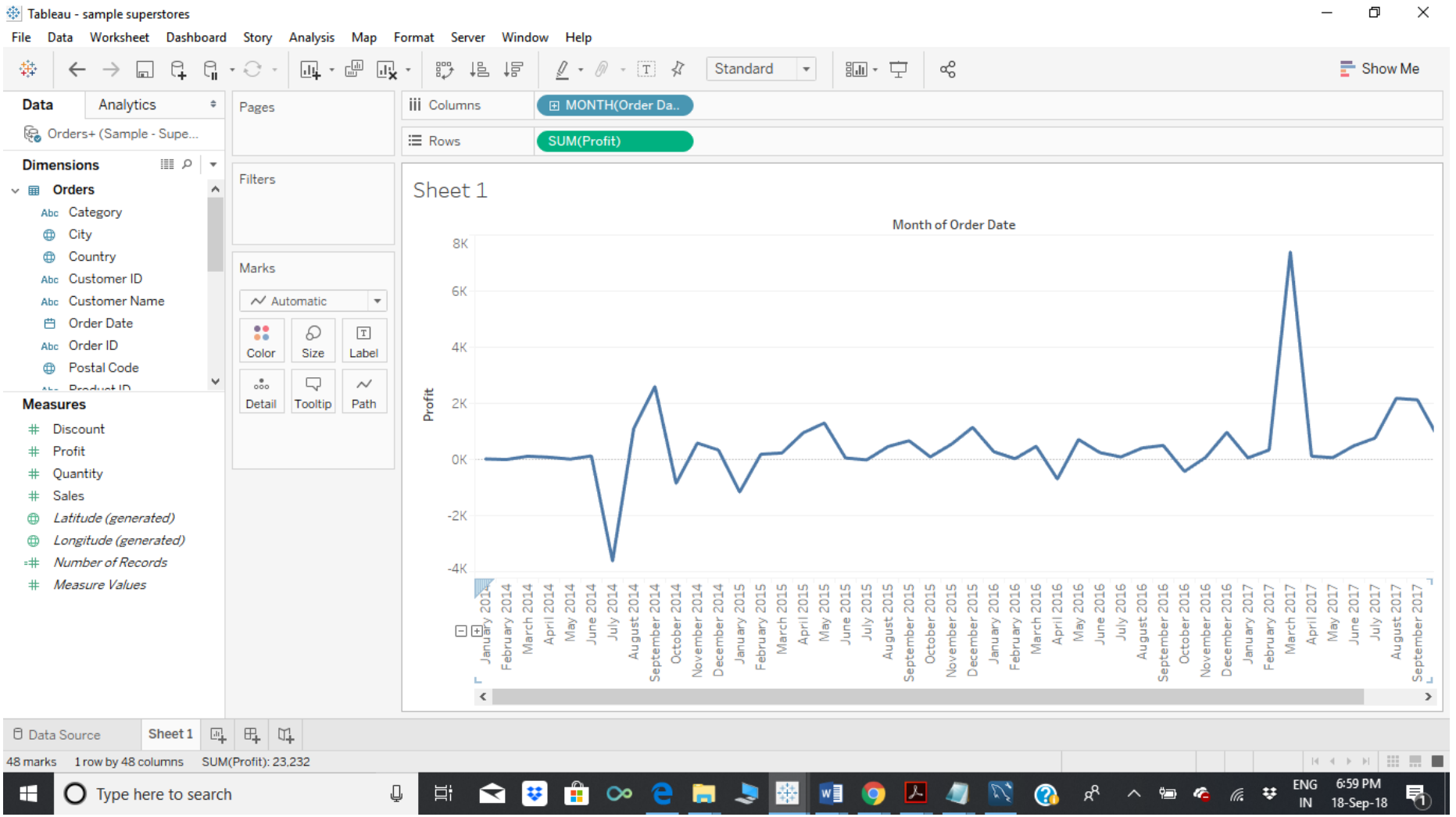
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Number of Records
Measure Values
Pages
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Color
Size
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Path
Columns
MONTH(Order Da..
Rows
SUM(Profit)
Sheet 1
Month of Order Date
Profit
8K
6K
4K
2K
0K
-2K
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January 2014
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March 2014
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August 2014
September 2014
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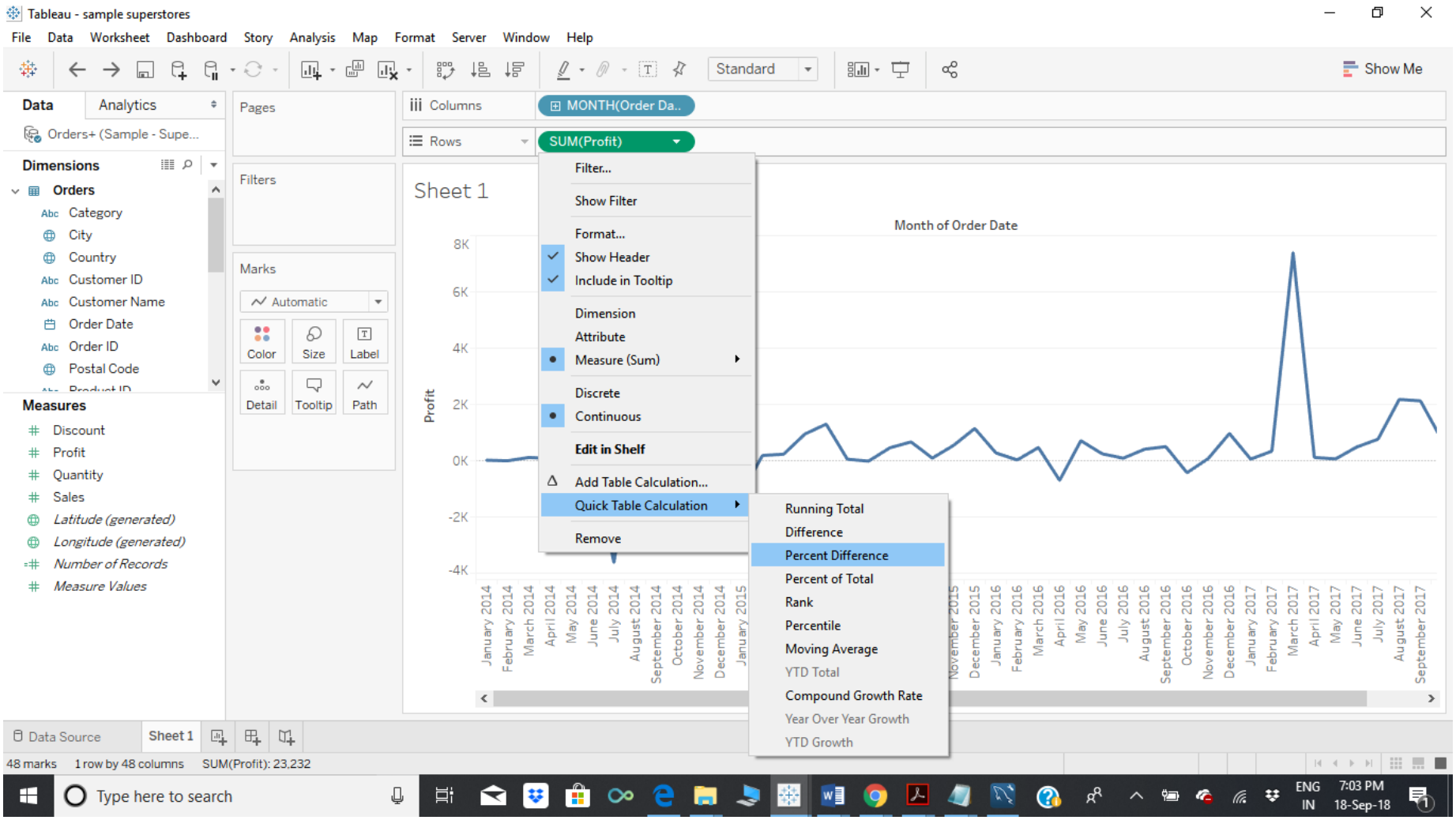
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Color
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Sheet 1
Month of Order Date
Profit
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Attribute
Measure (Sum)
Discrete
Continuous
Edit in Shelf
Add Table Calculation...
Quick Table Calculation
Remove
Running Total
Difference
Percent Difference
Percent of Total
Rank
Percentile
Moving Average
YTD Total
Compound Growth Rate
Year Over Year Growth
YTD Growth
Data Source
Sheet 1
48 marks
1 row by 48 columns
SUM(Profit): 23,232
Type here to search
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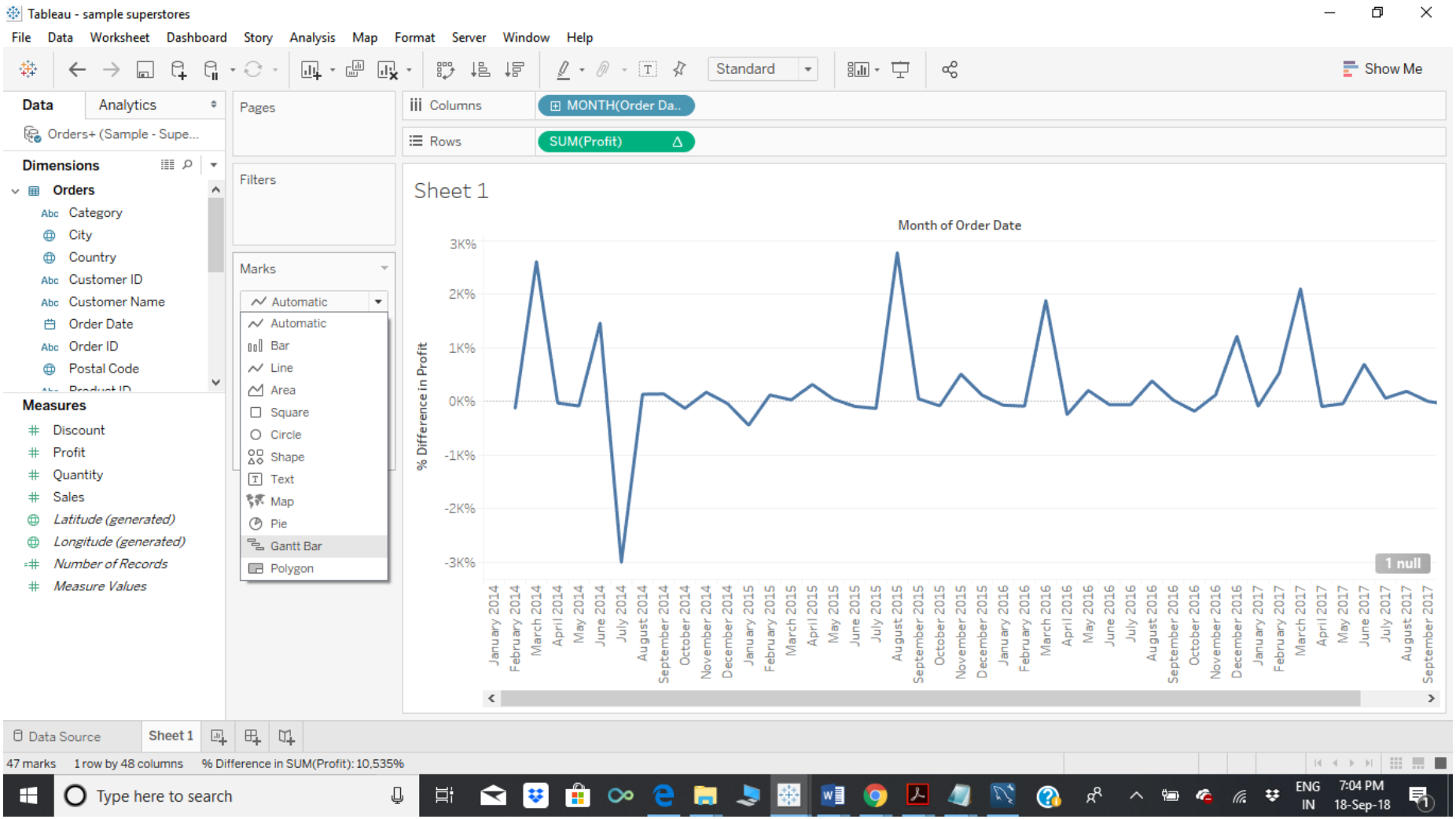
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SUM(Profit)
Sheet 1
Month of Order Date
% Difference in Profit
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2K%
1K%
0K%
-1K%
-2K%
-3K%
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Data Source
Sheet 1
47 marks
1 row by 48 columns
% Difference in SUM(Profit): 10,535%
Type here to search
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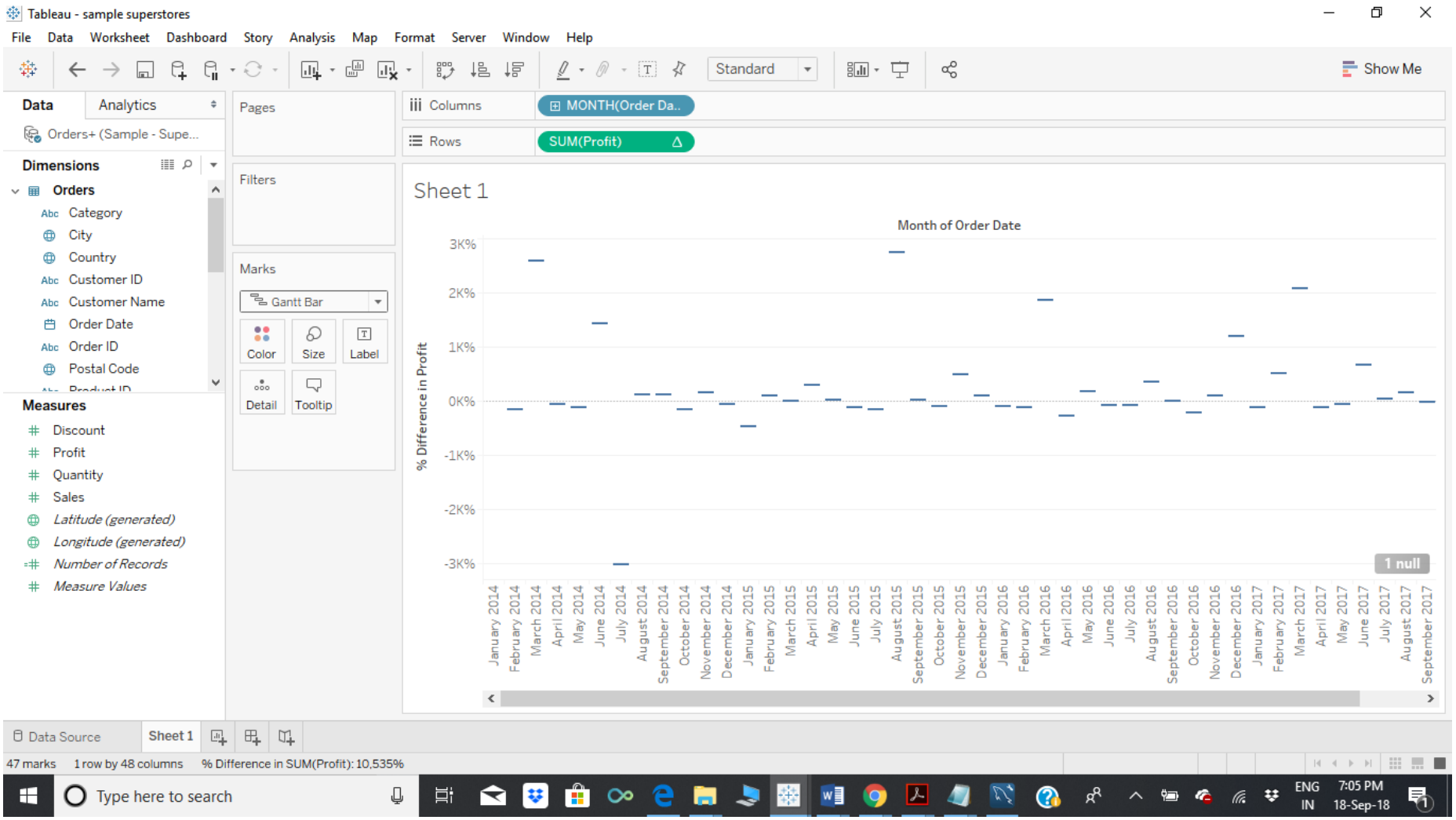
18-Sep-18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% Difference in Profit
3K%
2K%
1K%
0K%
-1K%
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% Difference in SUM(Profit): 10,535%
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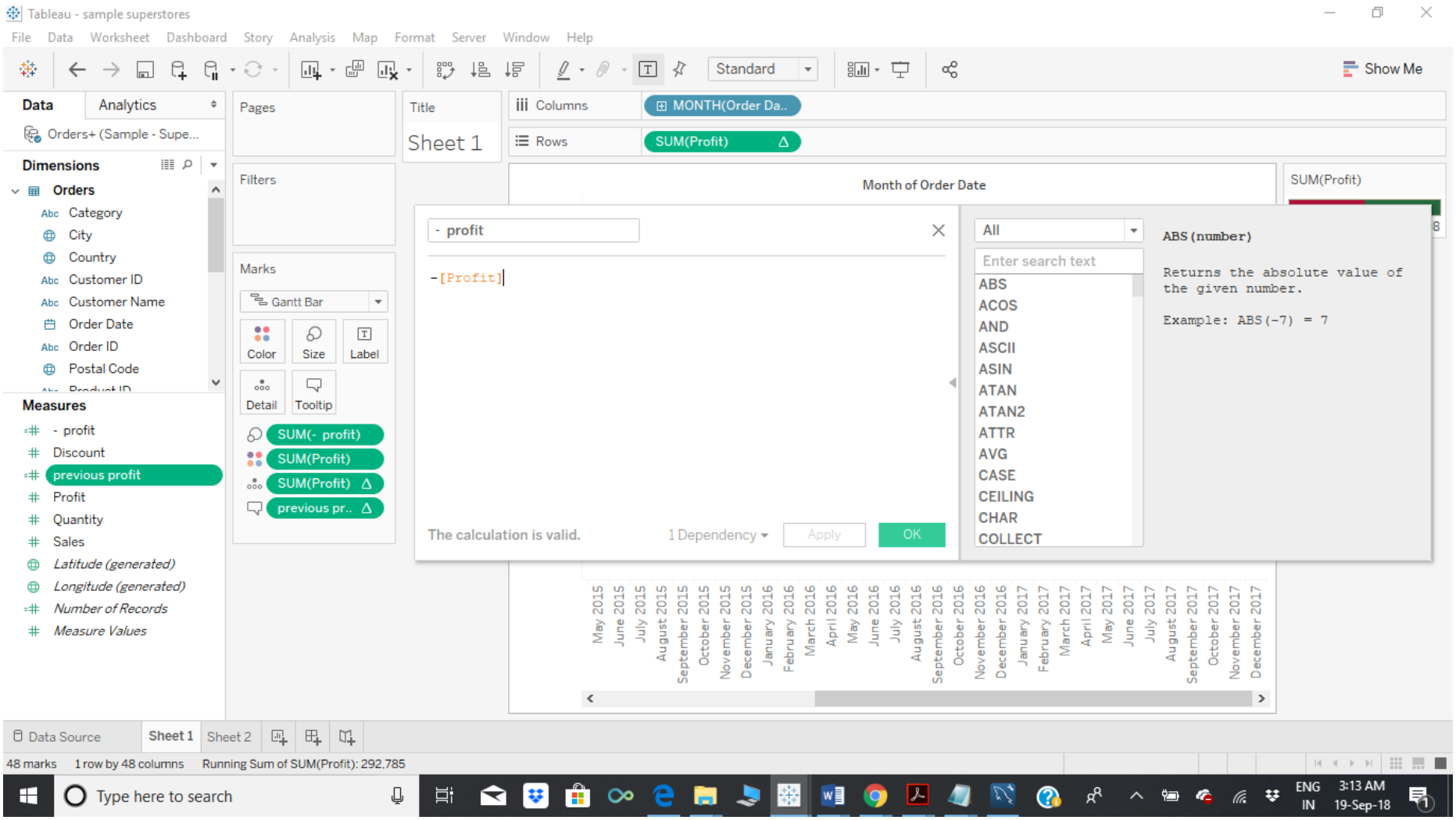
18-Sep-18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Size
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Detail
Tooltip
SUM(- profit)
SUM(Profit)
SUM(Profit)
previous pr..
Title
Sheet 1
Columns
MONTH(Order Da..
Rows
SUM(Profit)
Month of Order Date
SUM(Profit)
- profit
-[Profit]
The calculation is valid.
1 Dependency
Apply
OK
All
Enter search text
ABS
ACOS
AND
ASCII
ASIN
ATAN
ATAN2
ATTR
AVG
CASE
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CHAR
COLLECT
ABS(number)
Returns the absolute value of the given number.
Example: ABS(-7) = 7
May 2015
June 2015
July 2015
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Data Source
Sheet 1
Sheet 2
48 marks
1 row by 48 columns
Running Sum of SUM(Profit): 292,785
Type here to search
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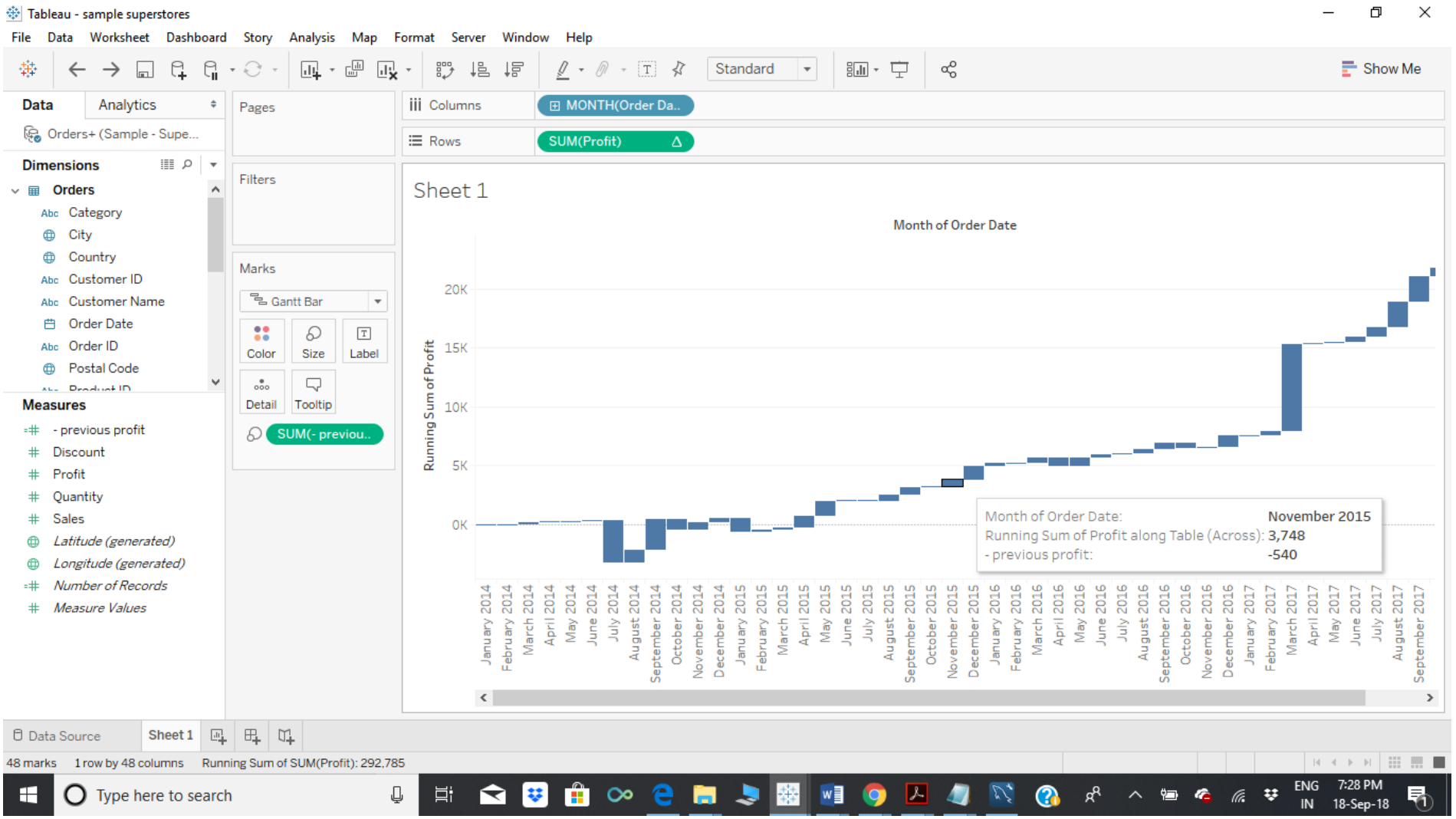
3:13 AM
19-Sep-18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- previous profit
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Columns
MONTH(Order Da..
Rows
SUM(Profit)
Sheet 1
Month of Order Date
Running Sum of Profit
20K
15K
10K
5K
0K
Month of Order Date: November 2015
Running Sum of Profit along Table (Across): 3,748
- previous profit: -540
January 2014
February 2014
March 2014
April 2014
May 2014
June 2014
July 2014
August 2014
September 2014
October 2014
November 2014
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Sheet 1
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Running Sum of SUM(Profit): 292,785
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18-Sep-18

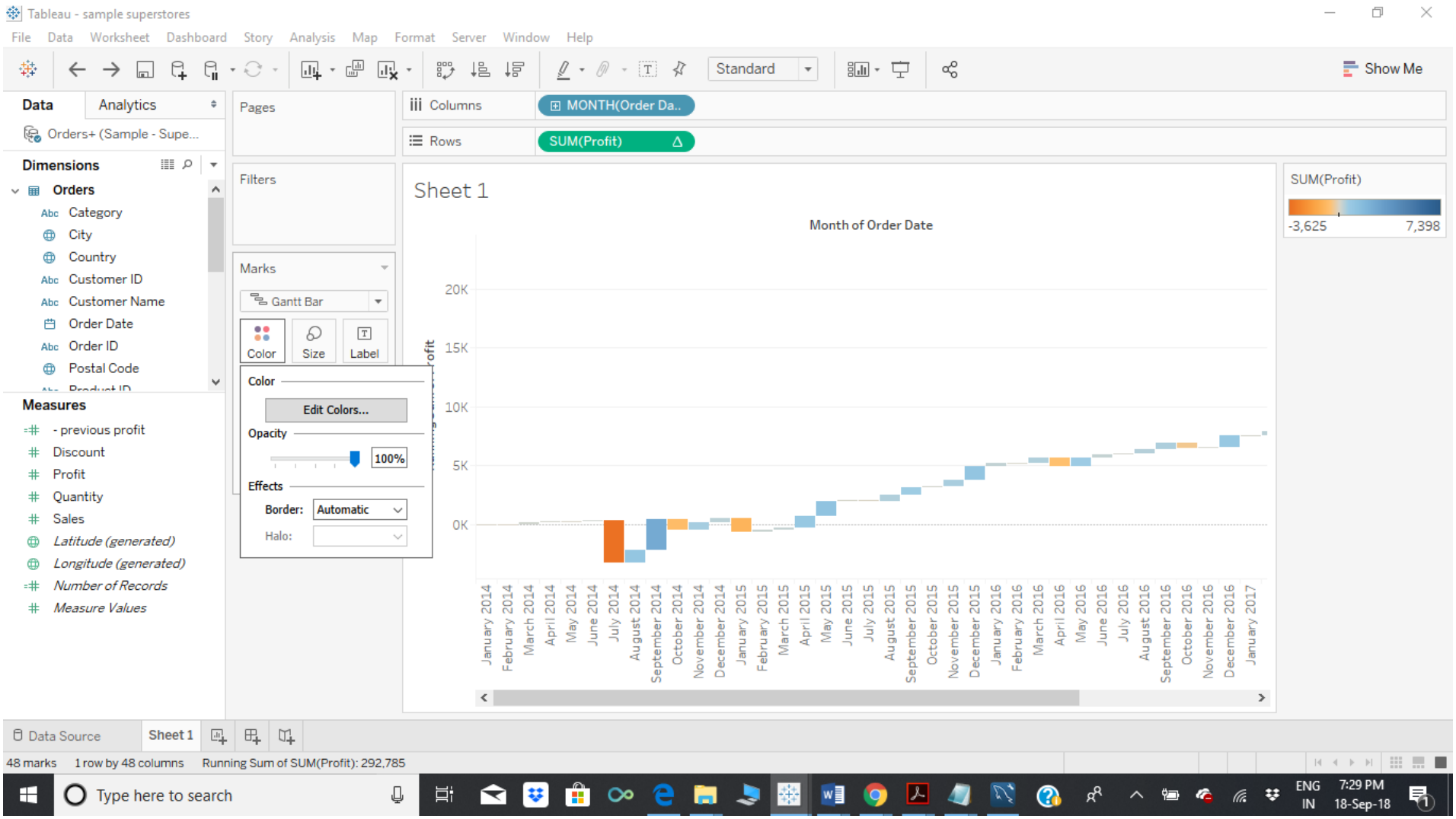
Tableau - sample superstores
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Size
Label
Color
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100%
Effects
Border: Automatic
Halo:
Columns
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SUM(Profit)
Sheet 1
Month of Order Date
SUM(Profit)
-3,625
7,398
20K
15K
10K
5K
0K
January 2014
February 2014
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Data Source
Sheet 1
48 marks
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Running Sum of SUM(Profit): 292,785
Type here to search
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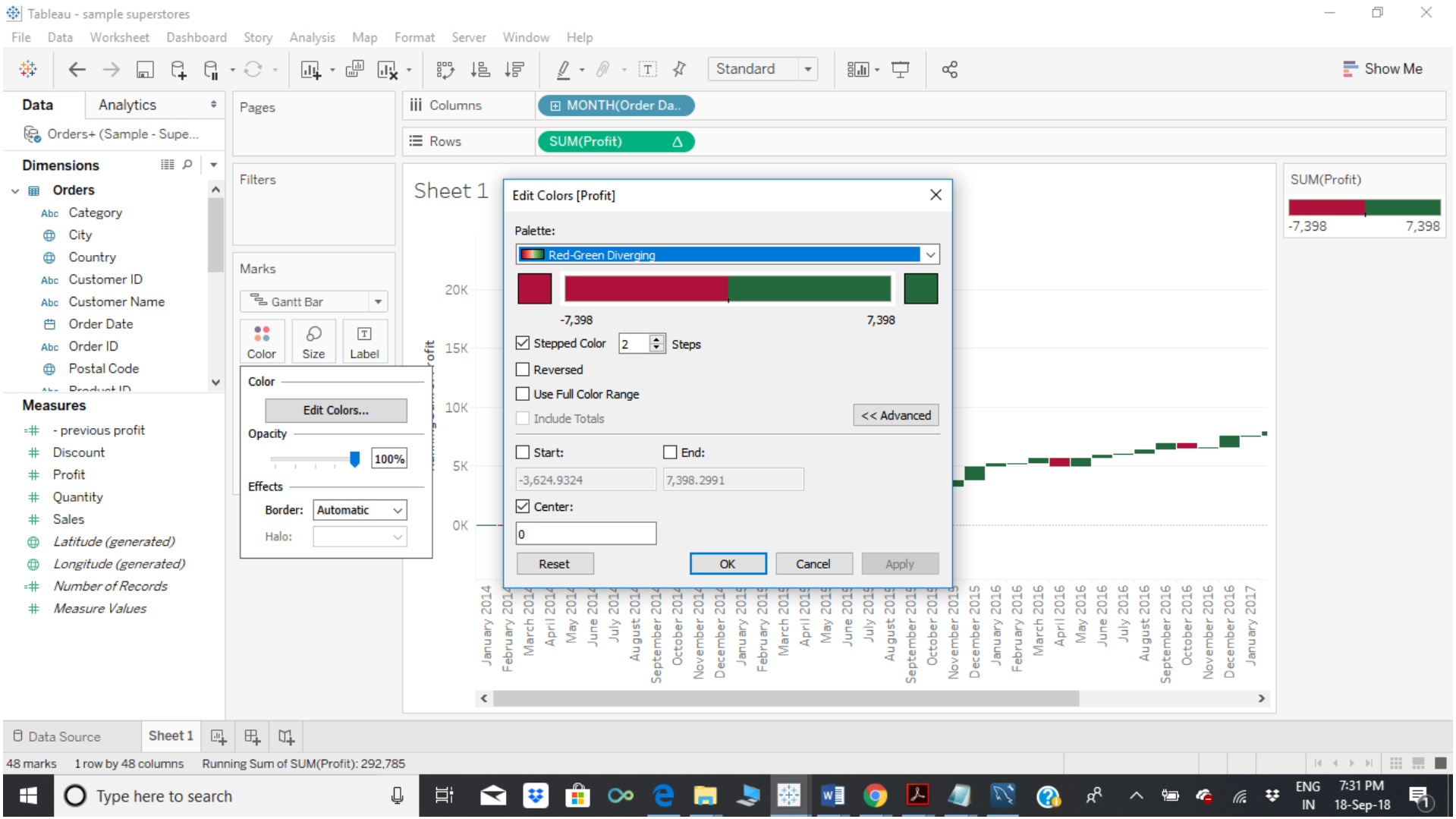
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Color
Size
Label
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Opacity
100%
Effects
Border: Automatic
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Columns
MONTH(Order Da..
Rows
SUM(Profit)
Sheet 1
Edit Colors [Profit]
Palette:
Red-Green Diverging
-7,398
7,398
Stepped Color
2
Steps
Reversed
Use Full Color Range
Include Totals
<< Advanced
Start:
End:
-3,624.9324
7,398.2991
Center:
0
Reset
OK
Cancel
Apply
SUM(Profit)
-7,398
7,398
20K
15K
10K
5K
0K
Data Source
Sheet 1
48 marks
1 row by 48 columns
Running Sum of SUM(Profit): 292,785
Type here to search
ENG
IN
7:31 PM
18-Sep-18

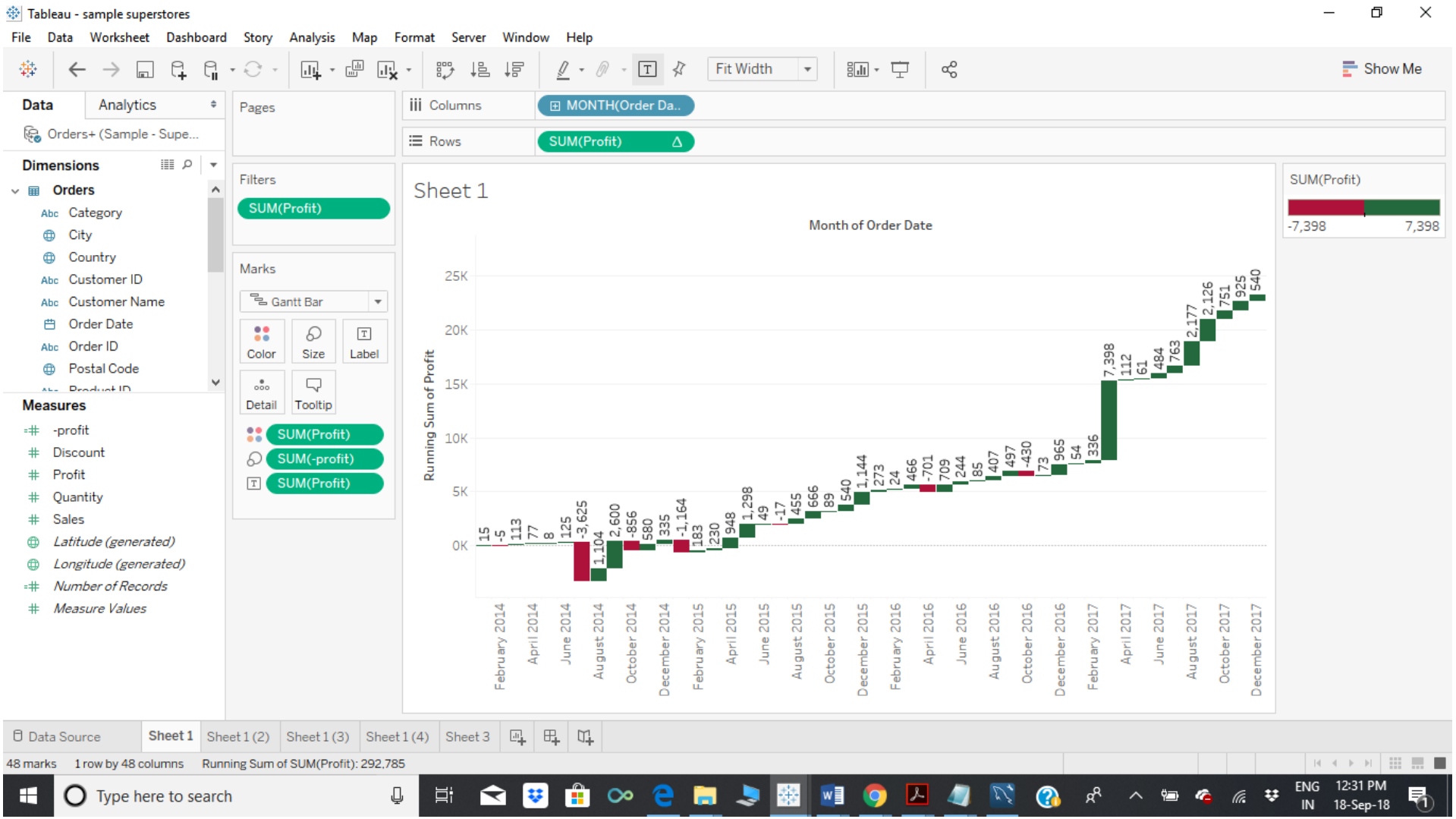
Tableau - sample superstores
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Customer Name
Order Date
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-profit
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Profit
Quantity
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Marks
Gantt Bar
Color
Size
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Detail
Tooltip
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SUM(-profit)
SUM(Profit)
Columns
MONTH(Order Da..
Rows
SUM(Profit)
Sheet 1
Month of Order Date
Running Sum of Profit
25K
20K
15K
10K
5K
0K
February 2014
April 2014
June 2014
August 2014
October 2014
December 2014
February 2015
April 2015
June 2015
August 2015
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December 2015
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June 2016
August 2016
October 2016
December 2016
February 2017
April 2017
June 2017
August 2017
October 2017
December 2017
15
-5
113
77
8
125
-3,625
1,104
2,600
-856
580
335
-1,164
183
230
948
1,298
49
-17
455
666
89
540
1,144
273
24
466
-701
709
244
85
407
497
-430
73
965
54
336
7,398
112
61
484
763
2,177
2,126
751
925
540
SUM(Profit)
-7,398
7,398
Data Source
Sheet 1
Sheet 1 (2)
Sheet 1 (3)
Sheet 1 (4)
Sheet 3
48 marks
1 row by 48 columns
Running Sum of SUM(Profit): 292,785
Type here to search
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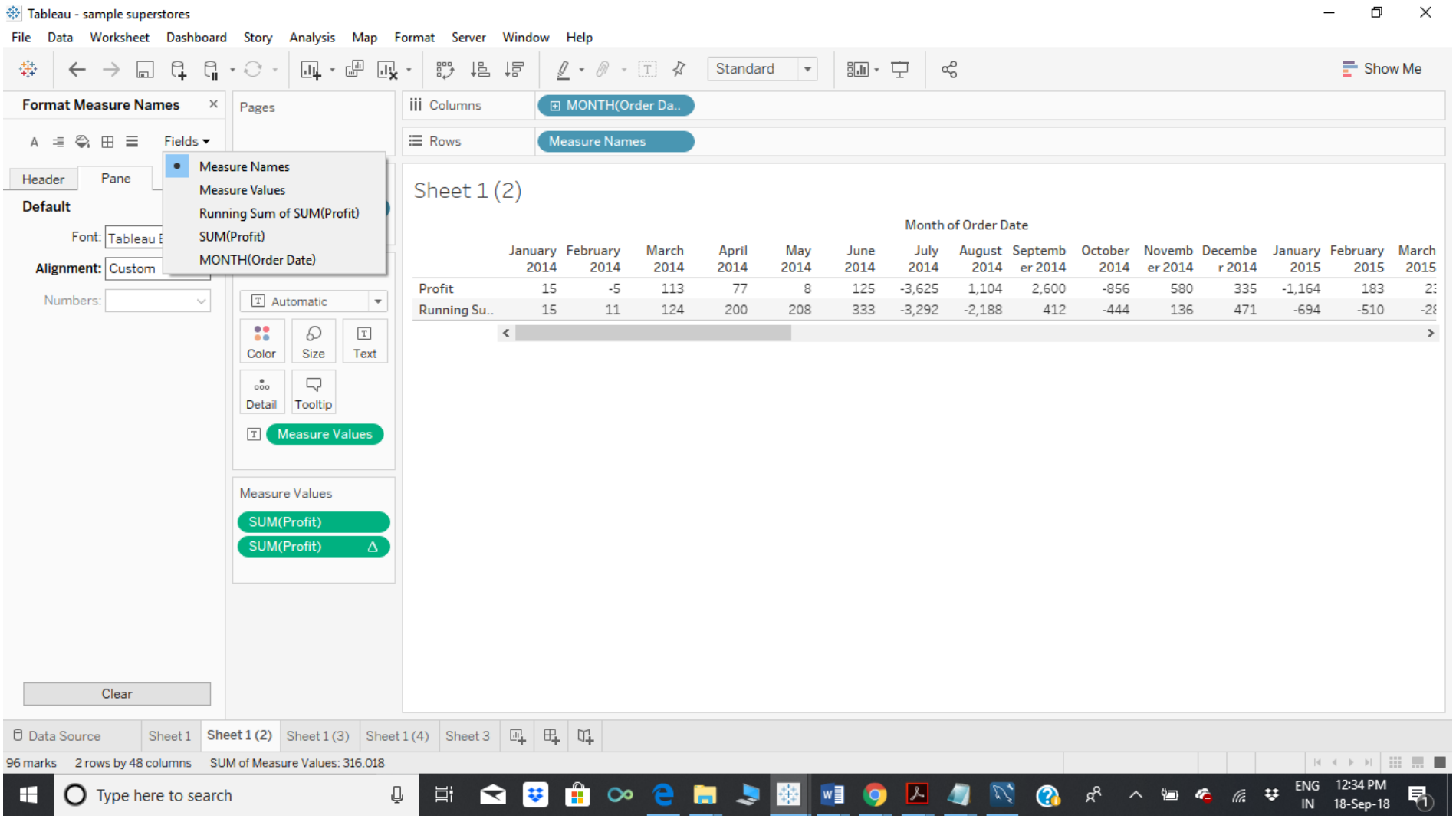
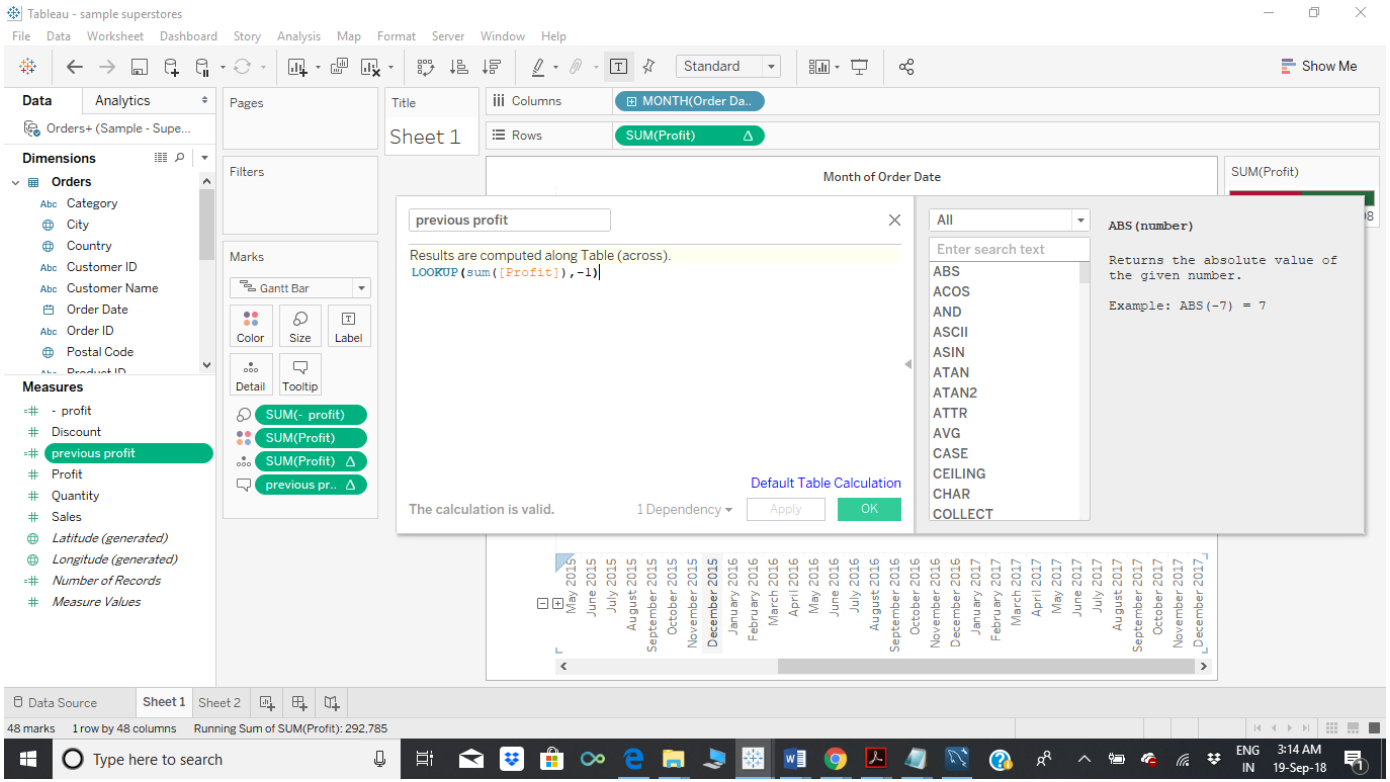
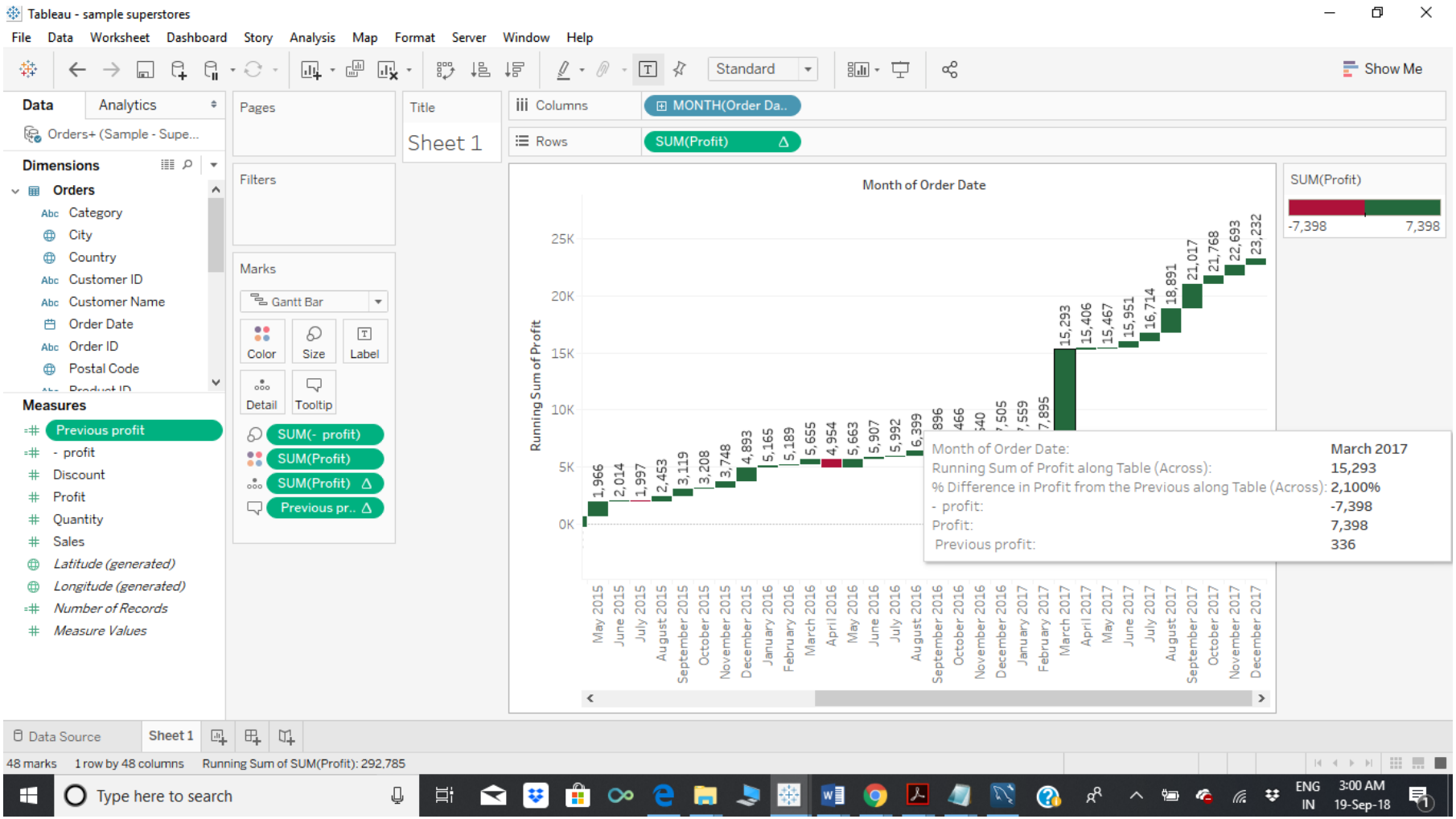
18-Sep-18




To Add the Previous profit to the chart as given in the Assignment question, add a calculated value as given below.




Final Output as required in the Assignment is given below and just to show the correctness of the previous profit value the second one highlighting the previous one is shown again for easy reference.




Confirmation graph is given below to show the previous profit value as given in the above graph in the tooltip.

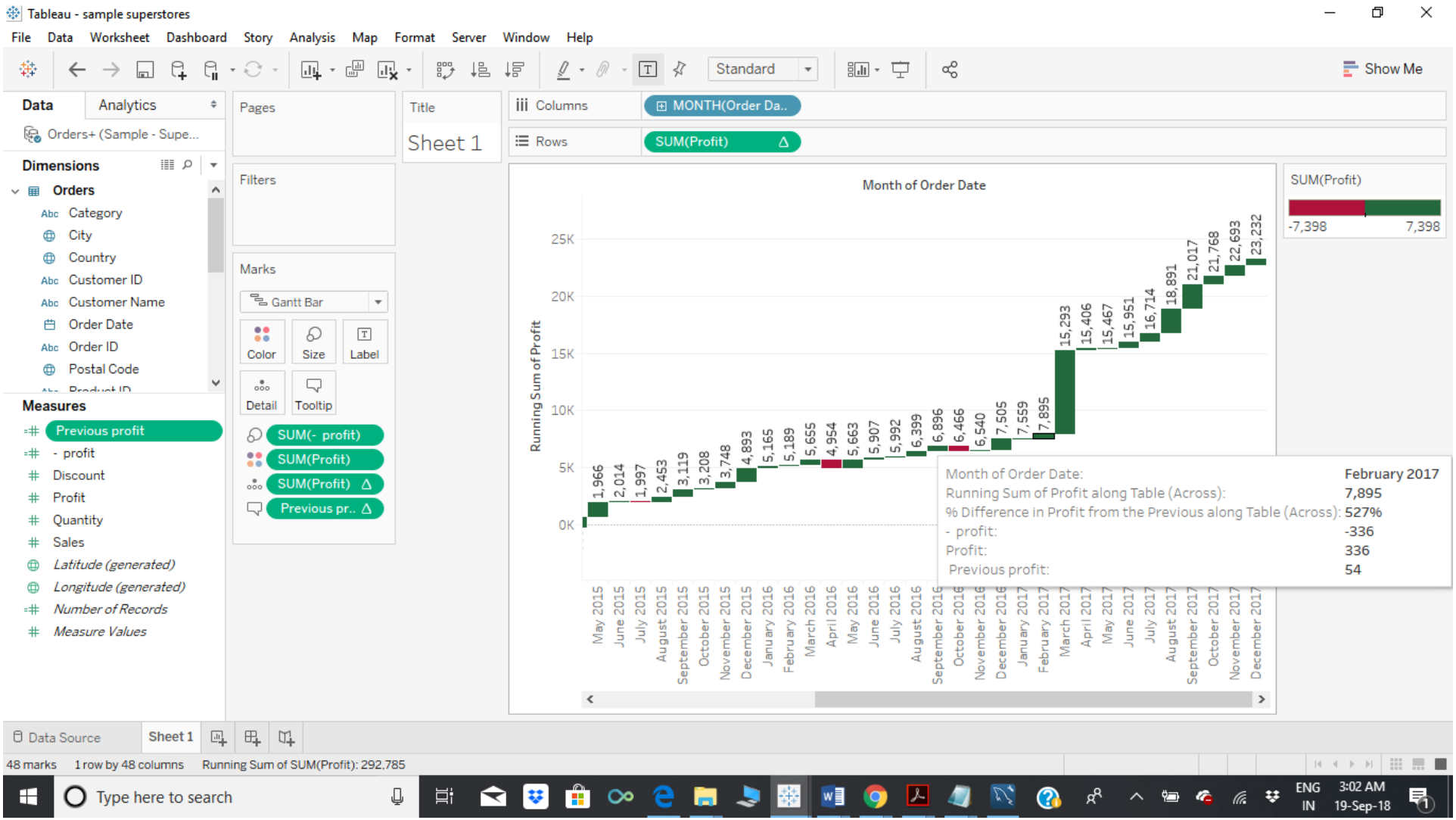


Tableau - sample superstores
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Standard
Show Me
Data
Analytics
Orders+ (Sample - Supe...
Dimensions
Orders
Category
City
Country
Customer ID
Customer Name
Order Date
Order ID
Postal Code
Measures
Previous profit
- profit
Discount
Profit
Quantity
Sales
Latitude (generated)
Longitude (generated)
Number of Records
Measure Values
Pages
Filters
Marks
Gantt Bar
Color
Size
Label
Detail
Tooltip
SUM(- profit)
SUM(Profit)
SUM(Profit) Δ
Previous pr.. Δ
Title
Sheet 1
Columns
MONTH(Order Da..
Rows
SUM(Profit) Δ
Month of Order Date
Running Sum of Profit
25K
20K
15K
10K
5K
0K
1,966
2,014
1,997
2,453
3,119
3,208
3,748
4,893
5,165
5,189
5,655
4,954
5,663
5,907
5,992
6,399
6,896
6,466
6,540
7,505
7,559
7,895
15,293
15,406
15,467
15,951
16,714
18,891
21,017
21,768
22,693
23,232
May 2015
June 2015
July 2015
August 2015
September 2015
October 2015
November 2015
December 2015
January 2016
February 2016
March 2016
April 2016
May 2016
June 2016
July 2016
August 2016
September 2016
October 2016
November 2016
December 2016
January 2017
February 2017
March 2017
April 2017
May 2017
June 2017
July 2017
August 2017
September 2017
October 2017
November 2017
December 2017
Month of Order Date: February 2017
Running Sum of Profit along Table (Across): 7,895
% Difference in Profit from the Previous along Table (Across): 527%
- profit: -336
Profit: 336
Previous profit: 54
SUM(Profit)
-7,398
7,398
Data Source
Sheet 1
48 marks
1 row by 48 columns
Running Sum of SUM(Profit): 292,785
Type here to search
ENG
IN
3:02 AM
19-Sep-18