

IF and IIF

1. Both the IF and IIF first check if the test is true; but the IIF then tests if the value is False. IF doesn't test for the False component – it treats everything not True in the same way. IIF handles those items that aren't True or False (or Unknown) differently to IF.
2. Although these two logical functions are similar, there are differences. The key difference is the IIF statement handling unknown values.
3. The simplest way to explain is by an example. The field [Sales] contains three values: 15; Null; 65. The test is if Sales > 50.
4. IIF([Sales]>50,"High","Low","No value")
5. The equivalent formula using an IF statement:
6. IF [Sales]>50 THEN "High" ELSE "Low" END
7. The two If statements return slightly different results:

Test Value	IIF result	IF result
15	Low	Low
Null	No value	Low
65	High	High

8. Notice the results of the Null sales value.

Fixed LOD

1. find percentage sales contribution of each sub category to total sales of each product category
2. In the same view, how can we get sales of category and subcategory?
3. **Create calc field -> name it “fixed category sales” -> Calculation formula-**{ FIXED [Category]:SUM([Sales]) }****

4. Drag category to rows -> Drag subcategory to rows -> drag sales to measures (this is a subcategory sales) -> drag fixed category sales to measures
5. Create calculated field “percentage contribution” -> $\text{sum(sales)/sum(fixed category sales)}$ -> Drag percentage contribution to measures -> perc contribution is all 0
6. Format percentage contribution -> Right click on percentage contribution in the measures tab -> click format -> in the left tab click drop down with number -> click percentage
7. Format Sales -> right click on the sales in the “measure values” tab -> format -> numbers -> currency
 - a. Also go to currency(custom)-> Display Units -> Millions (M)
8. Imagine there were duplications on the table due to bad joinings

Catg	Product	Sales
A	x	100
A	x	100
A	y	200

9. How do we remove duplicate occurrence of catg, product?
10. Can we do **{fixed [Category] [Product] : max([Sales])}** instead of sum you can do max / min - sum would add up the duplicates

Include LOD

Business problem -find the difference between total sales for each region and average sales per customer for each region

Region	Sales	Avg sales per customer for each region
Central	501,240	797
East	678,781	1,007
South	391,722	765
West	725,458	1,058

I.e for each customer name , we have the table split by region (Like custA can be mapped

to N and W)

The view will be at a region level , but to calculate avg sales per customer for each region, the calculation also need to take into account sales at a customer level (even though customer name is not in the view) . Here is why we use include

Creating include LOD calculation by customer name

When you use **{ FIXED [Customer Name]:SUM([Sales])}** -> you just directly find the overall avg sales by customer name without taking into account the region

So when you drag fixed customer sales to the view which has only region , For N, if cust A has bought in N and S -> North sales for custA will also include the sale of custA in S

20. Create calculated field -> **{ INCLUDE [Customer Name]:SUM([Sales])}** -> Name it "include customer sales"

21. Drag region to rows -> drag "include customer sales" to measures -> right click on "include customer sales" -> click on Measures (SUM) -> make it average -> Here we get avg sales per customer for each region

1. Right click on "include customer sales" title on the table in the view -> edit alias -> call it "avg sales by customer for each region"
2. Drag sales to measures -> This will automatically calculate sum(sales) for each region

This becomes useful if you want to see total sales by region and avg sales by customer per region in the same view

Exclude LOD-

<https://www.rigordatasolutions.com/post/how-to-use-exclude-level-of-detail-expression-in-tableau>

Business problem - find the difference between sales for each region by month and total sales for each month

Creating exclude calculation

3. Create calculated field "total monthly sales" -> Calculation formula - **{ EXCLUDE [Region]:SUM([Sales])}**
4. Drag region to columns -> Drag order date to rows -> right click on order date in rows -> click month -> Drag sales to columns -> Go to marks -> make it a bar chart
5. Drag "total monthly sales" to color -> the tooltip you show will have monthly sales and monthly-region level sales

Table Calculations

1. Using Index to explain the concepts
2. **Drag region, category to columns; Drag year(order date), quarter(order date) to rows**
3. **create calc field name index -> index() -> drag index to measures**
4. How do we change the default order in which index is numbered
5. **Right click index on marks -> edit table calculation -> click Table(down)** see how its different. Look at across then down

Cumulative Sum / Running Total using Addressing and Partitioning

6. **Calc Field -> name it Running sum of sales -> Running_sum(sum(Sales))**
7. **Drag category, subcategory, running total to rows**
8. we see that the running sum continues even after a category is over. A new catg does not start a fresh running sum
9. **Drag category, subcategory to rows -> sales to measures**
10. **Right click on sales in measures -> quick table calculation -> percent of total**
11. **drag another sales to measures (Which wont be running total)**
12. we see that the running sum continues even after a category is over. A new catg does not start a fresh running sum
13. **Right click on sum(sales) with triangle icon -> click on edit table calculation -> click on pane (down)**
14. **OR right click marks sales -> edit table calculation -> Specific dimensions - Choose Whatever dimension. In our case we want sub catg**

Rank using Addressing and Partitioning

- What if I want to rank within a catg
- **Rows - Catg, Subcatg ; Bring sales to measures**
- **Right click sales from marks -> quick table calc -> rank**
- The scope of the rank is full table down. To partition the rank by catg
- **right click marks sales -> edit table calculation -> Specific dimensions - Subcatg**
- If we want to color it -> bring sales to colors and do the same above **right click marks sales -> edit table calculation -> Specific dimensions - Subcatg**
- **Marks -> Square**

Percent of Total using Addressing and Partitioning

- Drag year(order date) to columns -> Drag category and subcategory to rows -> drag sales to measures
- **Right click sales from marks -> quick table calc -> percent of total**
- By default its computed across , to check it :
- **Click analysis on top -> totals -> show row grand totals**

JOINS

Recap on different kinds of joins:

- What is joins . Merging of table
- If we have 2 data source in 2 different databases (oracle, mysql) - can we join these two tables .
- We cant do this in sql so for such purposes, industry uses softwares like Alteryx, Informatica, Dataiku DSS etc
- **Joining - 2 tables in the same databases**
- **Blending - 2 tables from different databases**

- We are going to use the other sheets in the excel like people and returns
- Returns has Order ID duplicates removed
- **Analyse: Sub Catg level - Find the revenue / profit lost after returns**
- We get revenue info from orders and returns info from return sheet
- What would be the joining condition? Order ID
- In Excel sheet - show what would be the issue is order ID duplicates were not removed ?
 - There will be duplicate rows after joining and you ll end up subtracting extra revenue
- **Drag order sheet to the middle space ; Double click on Orders in the middle space ; a box will come around ; Drag returns sheet to middle space ; Click on set icon to specify the join**
- We need left join. It automatically defined the fields in which the joining happens
- Lets see what happens to the table - extra columns have been added.
- Some places are null . why? Cause there are no returns for that order
- Go to sheet - we can see fields coming from the order and returns table in the left pane
- **Rows - Catg, Sub catg, Sum(sales), Sum(profit)**
- This has all the orders sales summed up irrespective of returns
- How do we see sum(sales) lost due to returns?
- **Drag returns - Order ID to filter ; Exclude Null**
 - **Or we can make a set on returns**
 - **Or filter for returned = yes**
- **Show filter for Returned;** You can select null or yes based on whether you want to sales after returning or lost due to returning
- How do we change null from “Returned” to No - **Alias**
- **Left Pane - Right click on Returns - Alias - Change Null to No**

- Using calculated fields if/else , can we get the sales before return and lost due to return?
- **Create calculated Field Returned Sales “IIF([Returned]="Yes" , [Sales],0)”**
- **Create calculated Field Non Returned Sales “IIF(ISNULL([Returned]) , [Sales],0)”**
- **New sheet - Rows - Catg, Subcatg, Returned Sales, Non Returned Sales**

UNION

- Use world bank CO2 dataset
- You want to union CO2 (kt) pivoted and New CO2 (kt) pivoted
- **Drag CO2 (kt) pivoted to white middle space - > Drag New CO2 (kt) pivoted to white middle space right below orders 1** - There will be a text that pops up saying “Drag table to union”

Blending

- Find for each country total number of olympic medals won and CO2 per capita (metric tons) emission till 2008
- **Import one dataset - drag the required sheet to the middle white space -**
- **Top pane, Data , New Data Source -> Add the data source** Now you see a new screen with this data source. The other data source is already there if you go to sheets
- Go to sheet - now you can see 2 datasources
- **Top Pane -> Data -> Edit Blend relationships -> Go to customs and join on country name, country**
- Bases on the data source you selected the left pane under data - all the fields related the that data source shows up
- A join combines the data and then aggregates . Blend aggregates the data and then combines
- **Rows - [co2 table] Country Name & Co2(kt) (make it discrete) and Total (from olympics second data source)**
- Blue is the primary data source , Orange is the secondary data source
- For the secondary datasource , Make sure the link “paper clip” icon is the “linked” in the left pane