Software Requirement Specification: SAC Planning Advance

A Global Company

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The Business Story

Stefany's company is planning for expansion of the business based on potentials in different regions. A company's potential for growth is dependent on its ability to keep its gross margin % high with high operating profit %. However, it is always important to keep watch on operating expense ratio. These are the key drivers for the growth also considered as main KPIs for operations.
In this document Stefany has to see, how to work with SAC planning capabilities to calculate KPIs, Apply formula's at the model level, Creating Allocation Rules To Same Dimension and Using Formulas, Allocate Marketing Expenses based on FTE, allocate operating expense to the product level based on the previous year's sales, Add Steps in allocation rules and filters, Formula Lookups, Conditional Logic and Exception Aggregation for Sales Volume Scenario. We will also learn Advanced Formulas using dynamic Time and conditional Logic for YTD FTE Scenario.
Finally, she will create value driver tree and data actions in the planning. This will conclude the all the key planning features of SAP analytics cloud. Covering almost all the options/features available for planning in SAC and their functional use cases.

Requirement 1: Create a simple Operating Income sheet

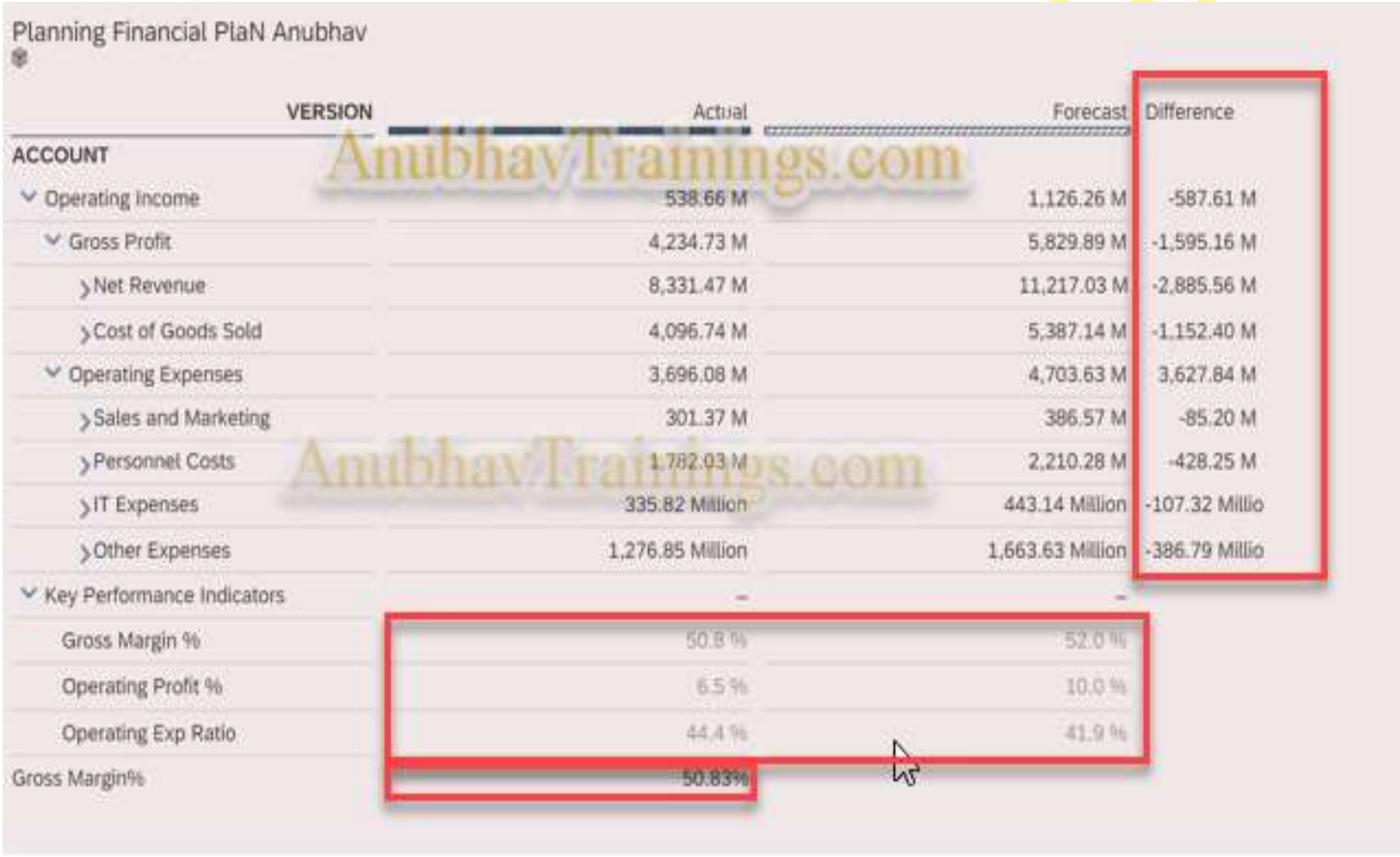
- Create Report for current financials of the co. considering Operating income
- Display the hidden values of unbooked data like KPIs (Gross Margin, Gross Profit and Expense Ratio)
- Learn how can we add excel like formula's directly for Gross Margin %
- Use below formulas to calculate the values at model level
- Also add variance between Actual v/s Forecast value as a new column (calculated using excel like)

Gross Margin %(KPI01) = Gross Profit (H105000) / Net Revenue (H110000)

Operating Profit %(KPI02) = Operating Income (H105000) / Net Revenue (H110000)

Operating Expense Ratio %(KPI03) = Operating Expenses (H105000) / Net Revenue (H110000)

Page Name	KPI Calculations
Data Source	AnubhavPlanningModel
Responsive Fixed Layout	Yes
Rows	Account (**Operating Income, Key Performance Indicators**)
Columns	VERSION (Actual & Forecast)
Filters	NA
Enable Explorer	No



Requirement 2: Allocate Marketing Expenses to the regions of USA based on FTE

Company had recently planned for expansions in the other regions of USA. We have hired the colleagues and now they need to start product marketing, we have meeting with marketing heads of each region. We want to allocate budget for marketing expenses based on number of hires (FTE) in each region. This type of requirement is called Allocations.

- Create New version from Actuals called **Alloc_FTE**
- Expand and observe that Marketing Expenses except northeast region for USA is not allocated
- Show unbooked data of USA Regions
- Create new Process→Allocation Step
- Define Step the Rule in the step

This is how our planning Report looks like

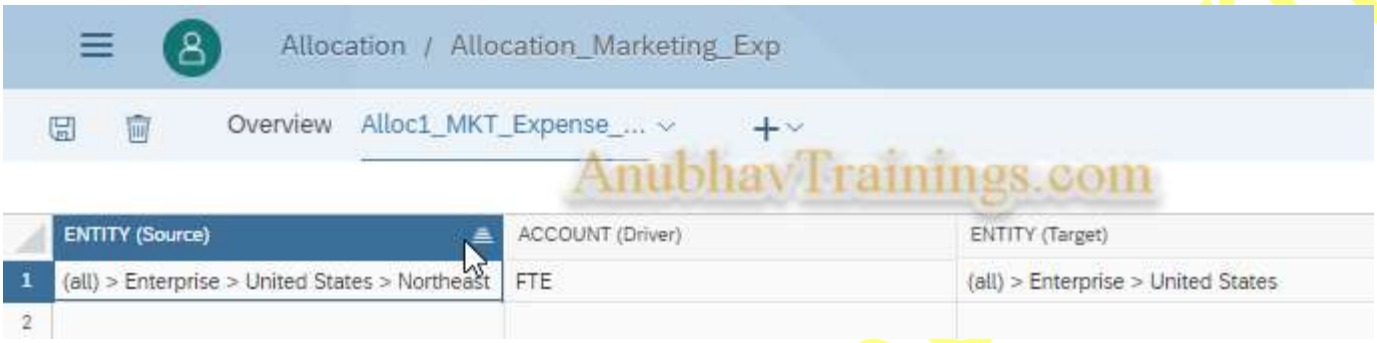
Page Name	**KPI Calculations**
Data Source	AnubhavPlanningModel
Responsive Fixed Layout	Yes
Rows	***Account*** Marketing Expenses (operating expense), FTE (allocation driver section)) ***Entity*** United States Only
Columns	VERSION (Actual,Alloc_FTE,Forecast) TIME (2020)
Filters	NA
Enable Explorer	No

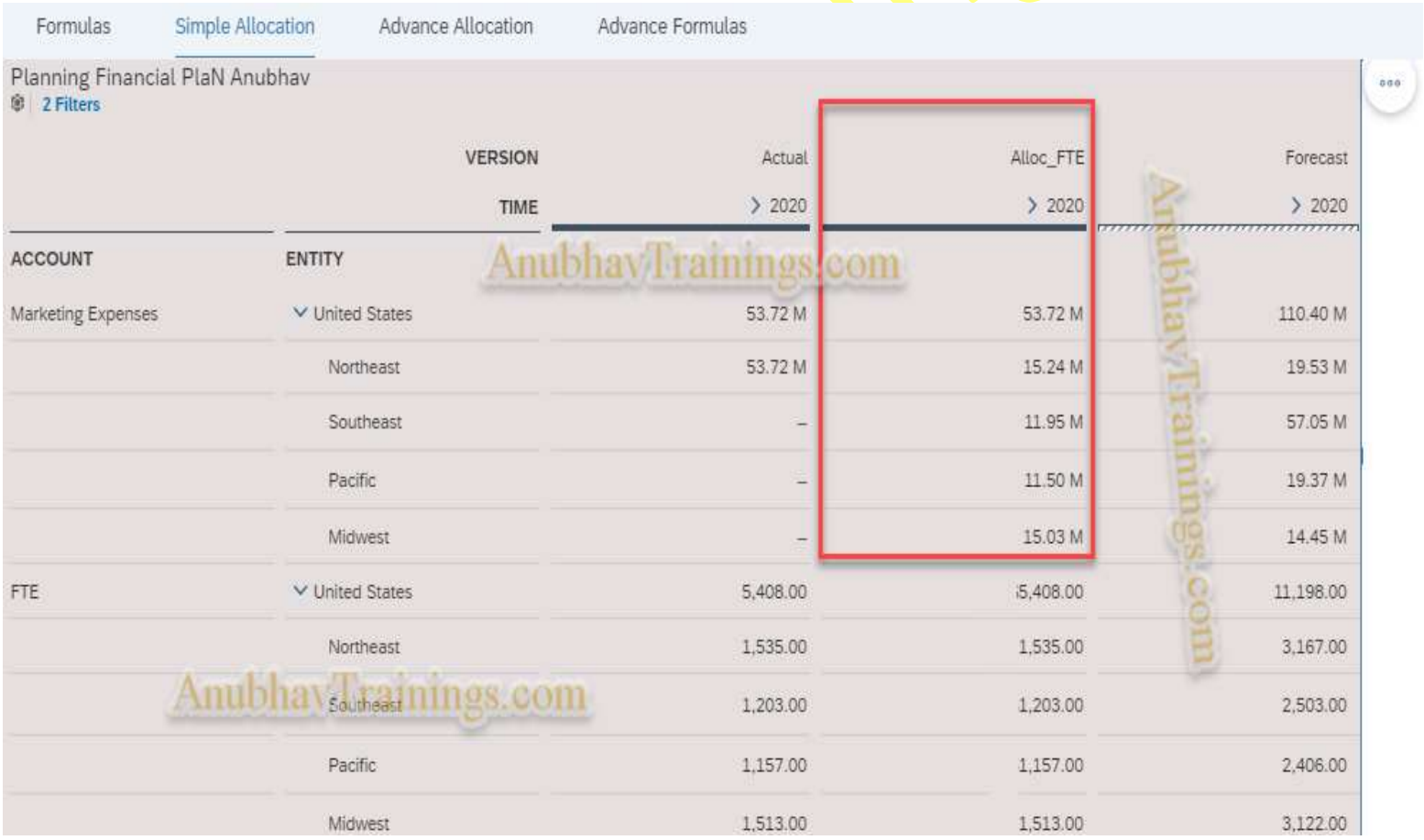
Allocation Step

Step Name	**Allocation_Marketing_Exp**
Description	Allocate Marketing Expenses
Source	ENTITY
Target	**ENTITY**
Filter by Account	ACCOUNT (Marketing Expenses)
Reference Dimension	NA
Booking Account	NA

Allocation Rule

Source	Enterprise>United States >Northeast
Driver	FTE
Target	Enterprise>United States





Requirement 3: Allocate Operating Expense to Product level based on previous Year's Sales

The leads of each marketing zone's now go back to their respective regions, the company have given them the target to sell the products, they are confused about how do they spend the budget provided for their region at the product level now. One good idea is to look at last year sales of the products and based on that allocate budget for each product accordingly. This allocation is intended to demonstrate that we can create allocations based on calculated values as well. The company is only in Apparel business in EMEA and Footwear business in APJ hence make sure we run the allocations accordingly.

Sales Previous Year (DRV0110) = LOOKUP([H111100] , [d/TIME]= Previous("Year",1))
Gross Sales(H111100) WHERE Time = Previous 1 Year

- Create New version from Actuals called **OPEX_By_LAST_Sales**
- Expand and observe that Operational Expenses for products
- Show unbooked data of all Regions
- Create new Process→Allocation Step
- Define Step the Rule in the step

This is how our planning Report looks like

Page Name	**KPI Calculations**
Data Source	AnubhavPlanningModel
Responsive Fixed Layout	Yes
Rows	***Account*** Operating Expenses (operating expense), Sales Previous Year (allocation driver section)) ***Entity*** United States Only
Columns	VERSION (Actuals) TIME (2020) PRODUCT (all)
Filters	NA
Enable Explorer	No

Allocation Step

Step Name	**OPEX_By_LAST_Sales**
Description	Allocate Opex by Last Year Sales
Source	ENTITY
Target	**PRODUCT**
Filter by Account	ACCOUNT (Operating Expenses)
Reference Dimension	ENTITY
Booking Account	NA

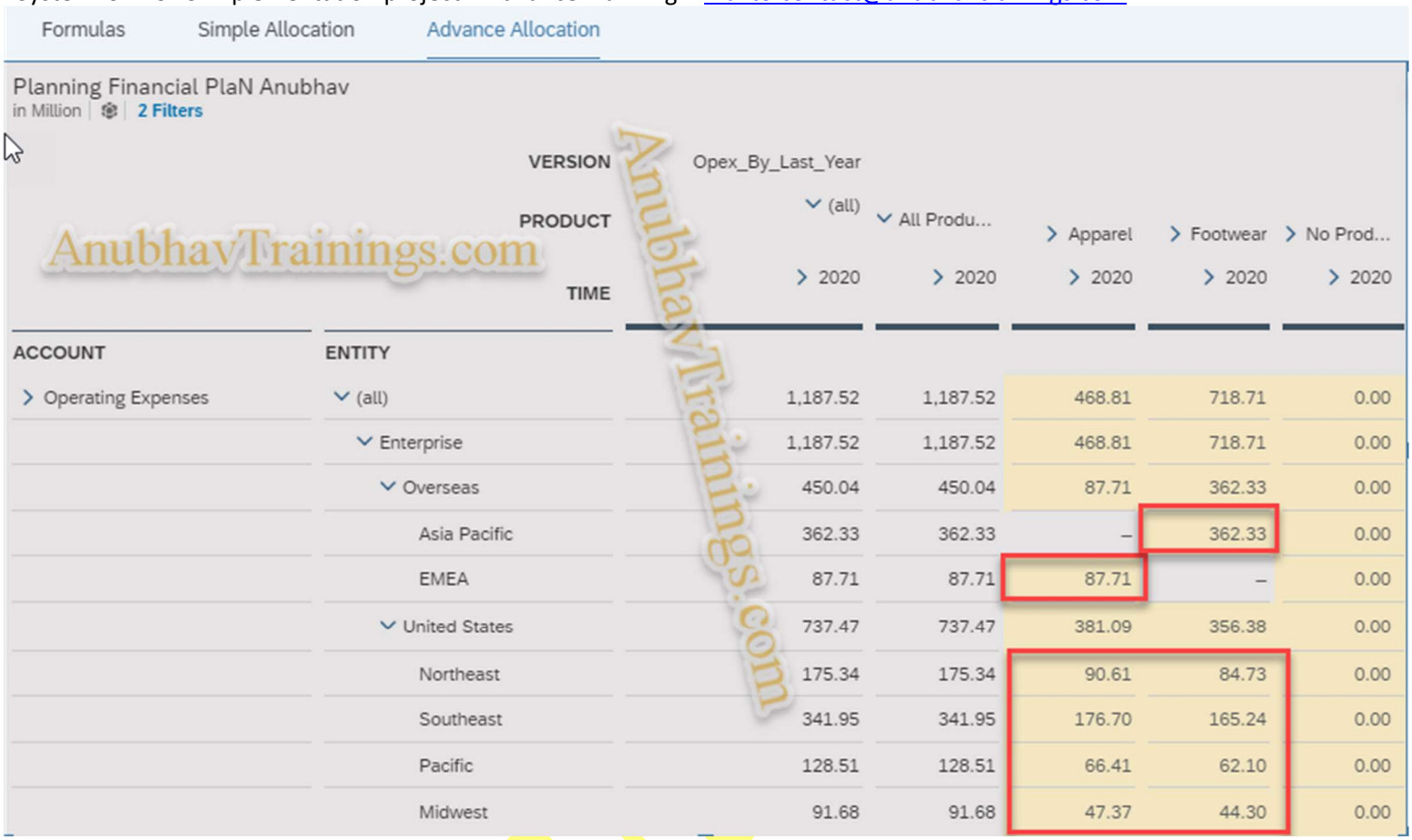
Allocation Rules

Source	Enterprise>United States
Driver	Previous Year Sales
Target	Product->(all)

Source	Enterprise>Overseas>APJ
Driver	Previous Year Sales
Target	Product->Footwear

Source	Enterprise>EMEA
Driver	Previous Year Sales
Target	Product->Apparel

	ENTITY (Source)	ACCOUNT (Driver)	PRODUCT (Target)
1	(all) > Enterprise > United States	Sales Previous Year	(all) > All Products > Apparel, (all) > All Pro...
2	(all) > Enterprise > Overseas > EMEA	Sales Previous Year	(all) > All Products > Apparel
3	(all) > Enterprise > Overseas > Asia Pacific	Sales Previous Year	(all) > All Products > Footwear
4			


Formulas | Simple Allocation | Advance Allocation

Planning Financial PlaN Anubhav
in Million | 2 Filters

ACCOUNT	ENTITY	Opex_By_Last_Year (all) 2020	All Produ... 2020	Apparel 2020	Footwear 2020	No Prod... 2020
Operating Expenses	(all)	1,187.52	1,187.52	468.81	718.71	0.00
	Enterprise	1,187.52	1,187.52	468.81	718.71	0.00
	Overseas	450.04	450.04	87.71	362.33	0.00
	Asia Pacific	362.33	362.33	–	362.33	0.00
	EMEA	87.71	87.71	87.71	–	0.00
	United States	737.47	737.47	381.09	356.38	0.00
	Northeast	175.34	175.34	90.61	84.73	0.00
	Southeast	341.95	341.95	176.70	165.24	0.00
	Pacific	128.51	128.51	66.41	62.10	0.00
	Midwest	91.68	91.68	47.37	44.30	0.00

Requirement 4: Applying Conditional Formulas, Calculations and Exception Agg.

In our main data set the product Forecast data was missing for the products (e.g. athletic shirts) for all regions. We need to calculate the sales by calculating the gross sales of the products using complex and conditional formulas as given below.

DRV0050 = Stored Price
DRV0020 = Units
DRV0055 Lookup Price (NA) = LOOKUP([DRV0050] ,[d/ENTITY]="#")
- Since price for each product for all US regions stored under entity #
DRV0060 Revenue (NA) = [DRV0020]*[DRV0055]
- Exception Agg SUM by PRODUCT;ENTITY;TIME
DRV0080 Revenue (EMEA APJ) = [DRV0020]*[DRV0050]
- Exception Agg SUM by PRODUCT;ENTITY;TIME

This is how our planning Report looks like

Page Name	Sales Planning
Data Source	AnubhavPlanningModel
Responsive Fixed Layout	Yes
Rows	***Account*** Gross Sales (Gross Revenue) Sales (Drivers) - unbooked
Columns	VERSION (Actuals, Forecast) ENTITY (all)
Filters	PRODUCT (Apparel>Athletic Shirts) TIME (2020)
Enable Explorer	No

- Once the formulas for the lookup price and Revenue are applied, we need to perform SUM which is an exception aggregation by other properties.
- Add calculated gross sales based on gross sales for Actuals and Forecasted value, this will be a conditional formula as below
- Finally hide all the non-essentials intermediate values.

DRV0090 = Calc Gross Sales
- Actuals is my real sales pick from [H111100] Gross Sales

For US take DRV0060 Revenue (NA)
- When Entity Hierarchy Level 2 = United States

Else take from DRV0080Revenue (EMEA APJ) Else all cases
- Exception Agg SUM by PRODUCT;ENTITY;TIME

IF([d/VERSION].[p/CATEGORY]="Actuals" ,[H111100] ,
IF([d/ENTITY].[p/ENTITY_H1L2]="United States" ,[DRV0060] ,[DRV0080]))

Requirement 5: Value Driver Tree
Create New Planning Model - Using Blank Model

The Sales Dataset below has information about Sales, Quantity, Discount and Net Sales. We need to create a planning model, this time Mr. Anubhav will use the planning model with a **new blank model** rather uploading file and explain the mapping

Name	Description	Number of Members	Number of Hierarchies	Other Attributes
Version				
Version	Version	1	—	
Account				
ACCOUNT	Account	4	1	
Date				
Date	Date	—	—	
Generic				
SAP_CEP_PRODUCT	Product	23	1	
SAP_CEP_CUSTOMER	Customer	73	1	
PLANNING_LEVEL	Planning Level	1	0	
SAP_CEP_ENTITY	Entity	8	1	$
Organization				
SAP_CEP_SALESORG	Sales Org	8	1	$

After Mapping of Data

Name	Description	Number of Members	Number of Hierarchies	Other Attributes
Version				
Version	Version	1	—	
Account				
ACCOUNT	Account	19	1	
Date				
Date	Date	—	—	
Generic				
SAP_CEP_PRODUCT	Product	28	1	
SAP_CEP_CUSTOMER	Customer	73	1	
PLANNING_LEVEL	Planning Level	3	0	
SAP_CEP_ENTITY	Entity	12	1	$
Organization				
SAP_CEP_SALESORG	Sales Org	9	1	$

It is extremely important for company to understand the overall impact of change, in an account dimension on different accounts. Also, anubhav trainings wants to visualize the change across all the account dimensions and how data flows between different hierarchies. In order to achieve this, we have to design **Value driver trees.**

In context of current scenario, we would like to know how change of Growth Rate, Price Index, Sales Ambition% and Discount % impacts my sales and Discount overall impact of same on entire Net Sales for coming year. The end user should be able to adjust the Growth Rate, Price Index, Sales Ambition% and Discount % anytime in stories and the sales value must change automatically. Finally, we need to simulate and integrate same with story.

Node Name	**Price Index**
Node Type	Data Source Node
Source	Account → Price Index
Filter	Date →2021-2023

Node Name	**Sales Ambition**
Node Type	Data Source Node
Source	Account → Sales Ambition %
Filter	Date → 2021-2023

Node Name	**Growth Rate**
Node Type	Data Source Node
Source	Account → Market Growth Rate Base
Filter	Date → 2021-2023

Node Name	**Discount %**
Node Type	Data Source Node
Source	Account → Discount %
Filter	Date → 2021-2023

Node Name	**Price**
Node Type	YoY Node
Source	Account → Price
Filter	Date → 2021-2023
Child Node	Price Index

Node Name	**Quantity**
Node Type	Union Node
Source	Account → Quantity (Sim)

Filter	Date → 2021-2023
Child Node	Growth Rate , Sales Ambition

Node Name	**Discount**
Node Type	YoY Node
Source	Account → Discounts
Filter	Date → 2021-2023
Child Node	Discount %

Node Name	**Sales**
Node Type	Union Node
Source	Account → Gross Sales
Filter	Date → 2021-2023
Child Node	Price, Quantity

Node Name	**Net Sales**
Node Type	Union Node
Source	Account → Net Sales
Filter	Date → 2021-2023
Child Node	Sales, Discounts

Stefany have also received the data from HR department for the head counts, she has been asked to create

HR Department Scenario in Planning

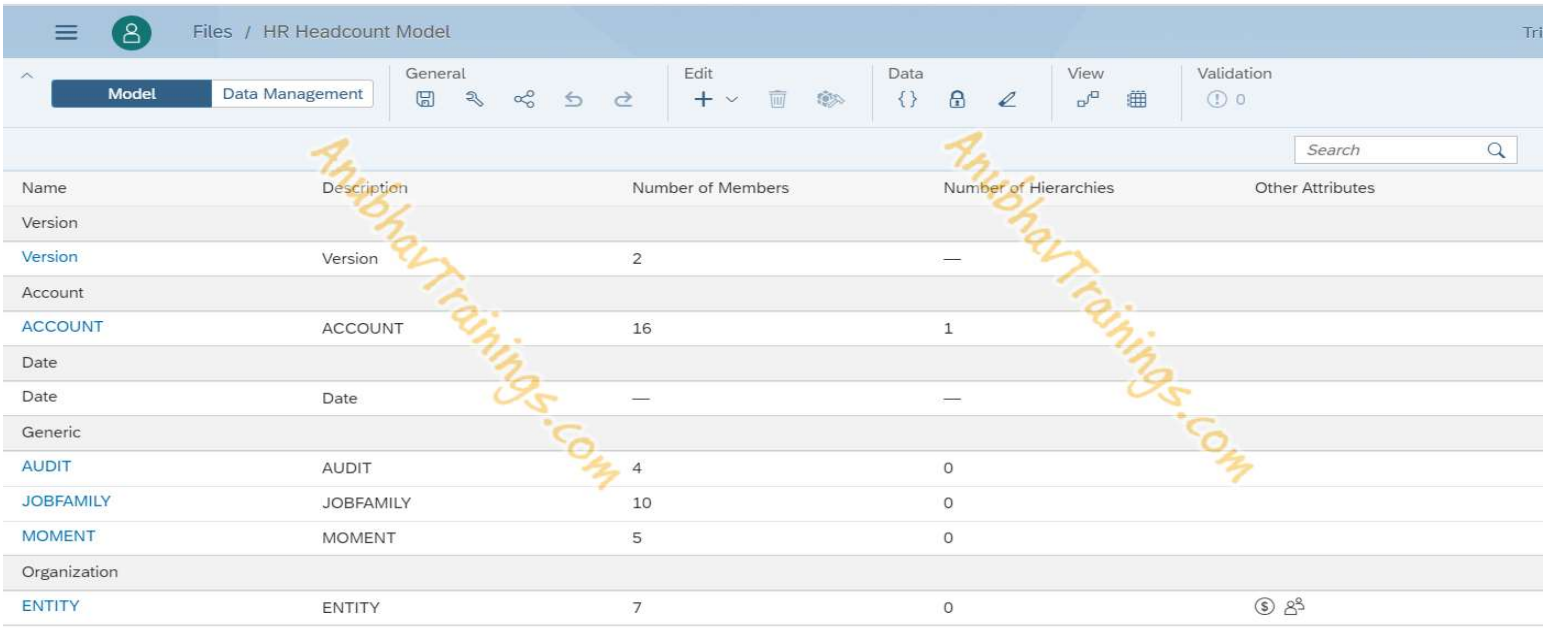
a dashboard which allows HR department to calculate the headcounts based on new hires and terminations. This is a calculation which is nightmare for the department and needs to be well integrated on our planning dashboard.

Requirement 1: Create New Planning model – using blank model

The HR Dataset below has sensitive information about cost of salaries per date, per region wise along with headcounts including new hires and terminations. We need to create a planning model, this time Mr. Anubhav will use the planning model with a **new blank model** rather uploading file and explain the mapping

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ACCOUI	ACCOUI	ACCOUI	Version	ENTITYI	ENTITYI	JOBFAM	JOBFAM	AUDITId	AUDITD	MOVEM	MOVEM	Value	ValueUr	DATE
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	368770	USD	20170101
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	378004	USD	20170201
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	378004	USD	20170301
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	399674	USD	20170401
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	393802	USD	20170501
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	387931	USD	20170601
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	399935	USD	20170701
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	403890	USD	20170801
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	425128	USD	20170901
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	413385	USD	20171001
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	407514	USD	20171101
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	#	Unassigne	AT_SAC_L	Load	#	Unassigne	407514	USD	20171201
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	#	Unassigne	615595	USD	20170101
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	#	Unassigne	677155	USD	20170201
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	#	Unassigne	677155	USD	20170301
TOTAL_CO	Total Cost		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	#	Unassigne	923393	USD	20170401

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ACCOUI	ACCOUI	ACCOUI	Version	ENTITYI	ENTITYI	JOBFAM	JOBFAM	AUDITId	AUDITD	MOVEM	MOVEM	Value	ValueUr	DATE
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	100	Count	20170101
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	110	Count	20170201
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	110	Count	20170301
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	142	Count	20170401
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	147	Count	20170501
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	152	Count	20170601
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	165	Count	20170701
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	182	Count	20170801
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	201	Count	20170901
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	201	Count	20171001
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	201	Count	20171101
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	CLOSING	Closing	201	Count	20171201
HEADCOU	Headcount		Actuals	REG0001	Northeast	JF001	Business C	AT_SAC_L	Load	HIRES	Hires	0	Count	20170101



Name	Description	Number of Members	Number of Hierarchies	Other Attributes
Version				
Version	Version	2	—	
Account				
ACCOUNT	ACCOUNT	16	1	
Date				
Date	Date	—	—	
Generic				
AUDIT	AUDIT	4	0	
JOBFAMILY	JOBFAMILY	10	0	
MOMENT	MOMENT	5	0	
Organization				
ENTITY	ENTITY	7	0	

Requirement 2: Create a Story with headcount report

Page Name	**HR HeadCounts**
Data Source	AnubhavHeadCountModel
Responsive Fixed Layout	Yes
Rows	***Moment***
Columns	***Version*** Actual (Actual) DATE (2017-2018)
Filters	**Account** Headcount
Enable Explorer	No

Report looks like below

HR Headcount Model
1 Filter

Version	Actual								
Date	2017	Q1 (2017)	Jan (2017)	Feb (2017)	Mar (2017)	Q2 (2017)	Apr (2017)	May (20...	Jun (20...
MOMENT									
Closing	927.00	709.00	701.00	713.00	709.00	807.00	765.00	788.00	807.00
Hires	0.00	52.00	37.00	12.00	52.00	19.00	70.00	27.00	19.00
Opening	927.00	713.00	666.00	701.00	713.00	788.00	709.00	765.00	788.00
Terminations	0.00	56.00	2.00	0.00	56.00	0.00	14.00	4.00	0.00

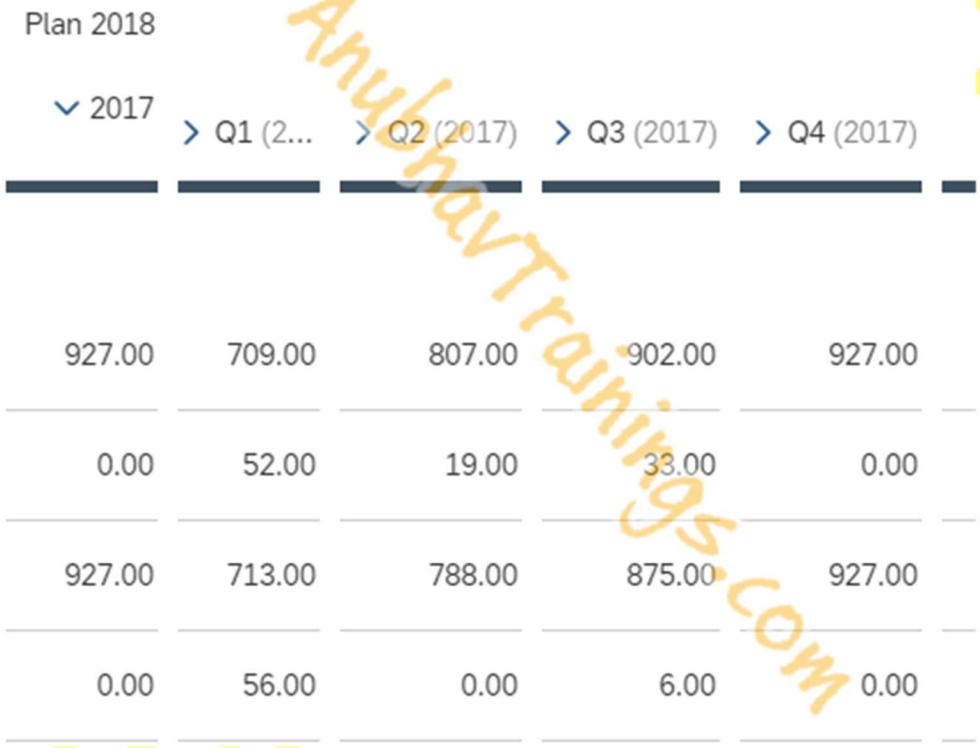
Requirement 3: Create Story action to copy the data of 2017 headcount to 2018 plan version

Page Name	**HR HeadCounts**
Data Source	AnubhavHeadCountModel
Responsive Fixed Layout	Yes
Rows	***Moment***
Columns	***Version*** (Actual, Plan 2018) DATE (2017-2018)
Filters	**Account** Headcount
Enable Explorer	No

Create a copy action to copy data from **Load** Audit data to

Action Name	Copy Data from Actuals
Data Source	AnubhavHeadCountModel
Filters	Version – Actual, Date -2017
Copy Rule	Dimension - AUDIT From - load To – Stored Logic Calculation
Write mode	***Overwrite***

Once we create the plan version and execute the action, the data looks below

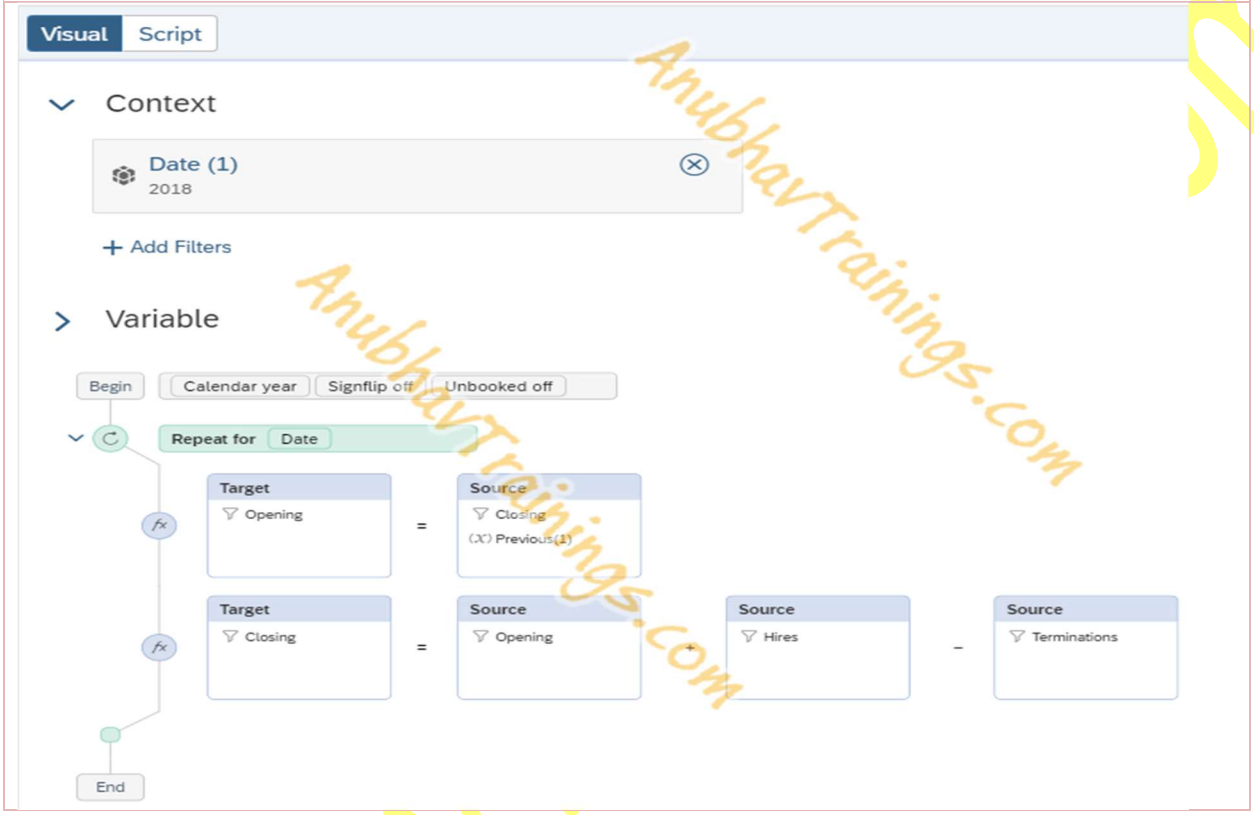


Requirement 4: Auto calculate headcounts based on Scripting based actions

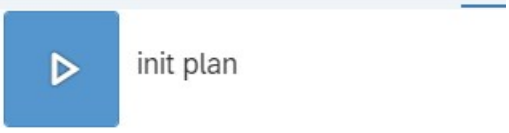
Finally, we would like to calculate the headcounts based on Hires and Terminations. For calculation, we have to set the opening balance to the ending balance of previous period and Add new hires and subtract the terminations to calculate the final balance. These set of actions needs to be repeated for entire duration on MoM basis.
This is performed using the scripting-based actions, for the ease of writing Anubhav will also show Visual way of writing the script.

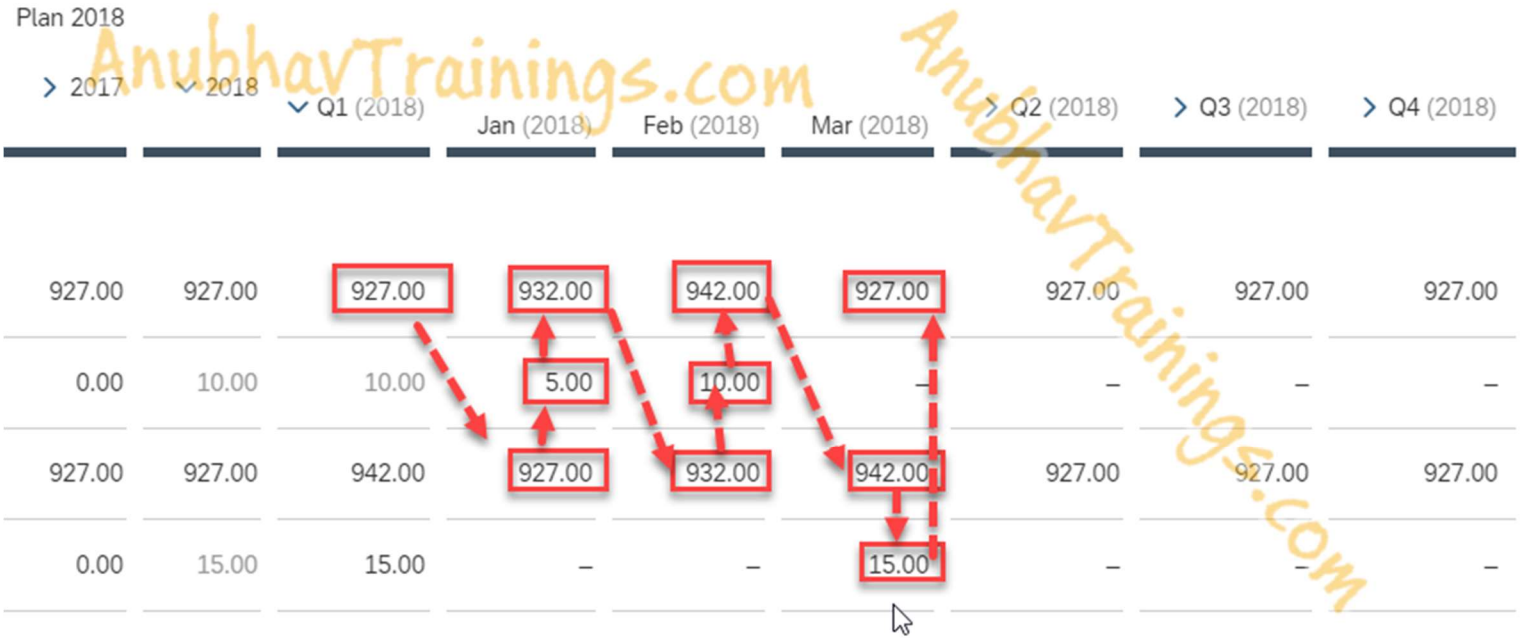
Context	Date 2018
CONFIG.TIME_HIERARCHY = CALENDARYEAR CONFIG.FLIPPING_SIGN_ACCORDING_ACCTYPE = OFF CONFIG.GENERATE_UNBOOKED_DATA = OFF MEMBERSET [d/Date] = (BASEMEMBER([d/Date].[h/YQM], "2018")) FOREACH [d/Date]	

DATA([d/MOMENT] = "OPENING") = RESULTLOOKUP([d/MOMENT] = "CLOSING", [d/Date] = Previous(1))
DATA([d/MOMENT] = "CLOSING") = RESULTLOOKUP([d/MOMENT] = "OPENING") + RESULTLOOKUP([d/MOMENT] = "HIRES") - RESULTLOOKUP([d/MOMENT] = "TERMINATIONS")
ENDFOR



Finally, we add an action trigger on the story, with the click of a button all the data gets copied to plan version and headcount calculations will be triggered





For detailed training on SAP Analytics cloud with such real time scenarios, feel free to get in touch with us on
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