VRK
Venkata Reddy Konasani

DAX QUESTIONS

Venkata Reddy Konasani

Q1) Open File Name: PB1.pbix and Create a calculated column in the Buildings table to show the average height of each floor for each building (divide the Metres column by the Floors column)

(Note: If you add this column to your table and sort by it, you'll see Giant Owl Towers appears at the top.

Rank	Building	Floors	Metres	Average floor height
61	Giant Owl Towers	0	345.00	Infinity
48	Bank of America Tower	54	365.80	6.77
53	Emirates Office Tower	54	355.00	6.57
32	China Resources	67	392.50	5.86

The problem is that this building has zero floors (this looks like a sloppy data input error). Amend your formula so that it shows a blank for the average floor height for buildings with no floors)

Rank	Building	Floors	Metres	Average floor height
61	Giant Owl Towers	0	345.00	
42	Empire State Building	102	381.00	3.74
45	Federation Tower (East Tower)	95	373.70	3.93
56	The Marina Torch	86	352.00	4.09
21	Willis Tower (formerly the	108	442.10	4.09

Q2) Open File Name: PB2.pbix and add a calculated column to the Product table

Use the SUMX function to add the following calculated column to this table:

Column name	Contents
Total sales	Find the total sales by multiplying(row-wise multiplying) the values in the "price" and "quantity" columns from the "purchase" table.

Result:

Animal	Legs	Total Sales
Butterfly	6	5,26,041.26
Camel	4	5,26,041.26
Clownfish	0	5,26,041.26
Dachsund	4	5,26,041.26
Elephant	4	5,26,041.26
Fox	4	5,26,041.26
Frog	4	5,26,041.26
Impala	4	5,26,041.26
Jackdaw	2	5,26,041.26
Lemur	2	5,26,041.26
Meerkat	4	5,26,041.26
Natterjack toad	4	5,26,041.26
Otter	4	5,26,041.26
Owl	2	5,26,041.26
Parakeet	2	5,26,041.26
Penguin	2	5,26,041.26
Rattlesnake	0	5,26,041.26
Snake	0	5,26,041.26
Yak	4	5,26,041.26

Q3) Open File Name: PB3.pbix and Add column, your task will be to divide the series into viewing figure bands.

In the underlying table, create a new column called Viewing Band which uses the **SWITCH function** to allocate series to different bands according to these rules:

Million viewers	Band
Up to and including 5	Niche
6 to 8	Mainstream
9 to 12	Cult
More than 12	National treasure

Result:

Channel	Cult	Mainstream	National treasure	Niche	**Total**
BBC One	1		2		**3**
BBC Two		1		3	**4**
Channel 4	1				**1**
Total	**2**	**1**	**2**	**3**	**8**

Q4) Open File Name: PB4.pbix and The aim of this exercise is to add 3 new columns to this table

The aim is to show for each quadrant how many regions it contains, how many towns it contains and what the ratio between the two figures is.

Start by adding two new measures to this table:

Column	What it should contain
Number of regions	The number of regions in the related regions table.
Number of towns	The number of towns in the related towns table.

Use the COUNTROWS function to count how many rows there are in each related table.

Result:

QuadrantName	Number of Towns	Number of Regions	Towns per region
South	81	2	40.50
West	35	2	17.50
North	33	2	16.50
East	19	2	9.50

Q5) Use the file PB4.pbix; Add two calculated columns to the towns table

QuadrantName	RegionName	Count of TownName
		2
East	East Anglia	7
East	East Midlands	12
South	London	22
North	North	16
	North West	35
South	South East	59
West	South West	15
West	West Midlands	20
North	Yorkshire & Humberside	17
Total		**205**

However, two rows contain blanks, possibly because the id numbers don't match up between the tables.

The region column should show **No region assigned** if there is no related region in the regions
The quadrant column should show **No quadrant found** similarly if there's no quadrant for a town.

(Hint: Use the **RELATED** function to pick up columns from other tables, and
the **ISBLANK** function to test if anything is returned.)

Result:

Quadrants	Regions	Count of TownName
East	East Anglia	7
East	East Midlands	12
No Quadrant Found	No Region Assigned	2
No Quadrant Found	North West	35
North	North	16
North	Yorkshire & Humberside	17
South	London	22
South	South East	59
West	South West	15
West	West Midlands	20
Total		**205**

Q6) Open File Name: calendar.xlsx Create a new Power BI file, and load both tables from the workbook in the above folder:

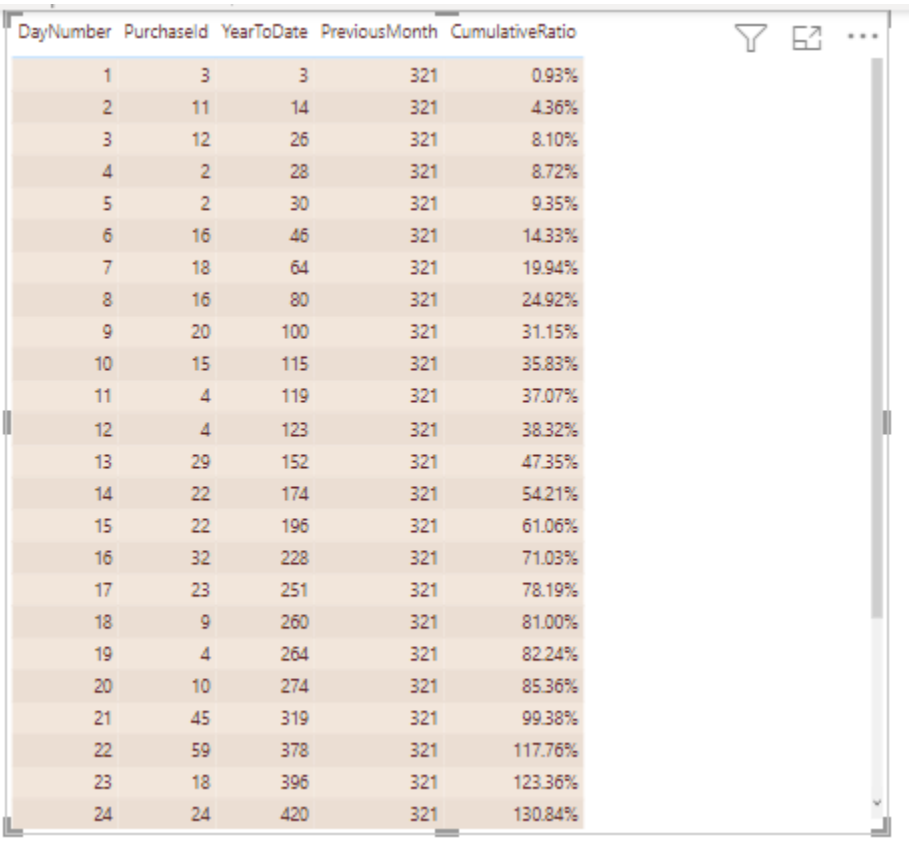
Create a relationship between the two tables by the date field in each, and set your calendar table up to work correctly. You should now be able to produce a matrix like this:

create measures for the last 3 columns, using the guidance notes below:

Measure	Notes
YearToDate	Count the cumulative year-to-date number of purchases, using either the TOTALYTD function or the CALCULATE and DATESYTD functions combined.
PreviousMonth	Use the CALCULATE function to count the number of purchases, with the PARALLELPERIOD function to change the filter context to the dates for the previous month.
CumulativeRatio	Divide the first measure by the second!

Remember to filter your table to show only figures for January 2019. – Select jan and 2019 in filters

Result:



DayNumber	PurchaseId	YearToDate	PreviousMonth	CumulativeRatio
1	3	3	321	0.93%
2	11	14	321	4.36%
3	12	26	321	8.10%
4	2	28	321	8.72%
5	2	30	321	9.35%
6	16	46	321	14.33%
7	18	64	321	19.94%
8	16	80	321	24.92%
9	20	100	321	31.15%
10	15	115	321	35.83%
11	4	119	321	37.07%
12	4	123	321	38.32%
13	29	152	321	47.35%
14	22	174	321	54.21%
15	22	196	321	61.06%
16	32	228	321	71.03%
17	23	251	321	78.19%
18	9	260	321	81.00%
19	4	264	321	82.24%
20	10	274	321	85.36%
21	45	319	321	99.38%
22	59	378	321	117.76%
23	18	396	321	123.36%
24	24	420	321	130.84%

Q7) Create a new Power BI file, and load both tables from the workbook (File Name: calendar.xlsx):

Create a relationship between the two tables by the date field in each, and set your calendar table up to work correctly.

Create a matrix to show total sales by quarter and month for 2019, reading the notes below carefully!
Create and show a measure to show quarter-to-date figures:

(Hint:You can either use the **TOTALQTD** function, or the **CALCULATE** function (restricting the dates used with the **DATESQTD** function.

Use the **CALCULATE** function to sum quantity, but using the **DATEADD** function to go back one quarter in time from the filter context's dates.)

Result:

Quarter	Quantity	Quarter-to-date	Quarter-to-date 2	Previous quarter
⊟ Q1				
February	919	2198	2198	774
January	1279	1279	1279	1319
March	1352	3550	3550	708
⊟ Q2				
April	1159	1159	1159	1279
June	1083	3403	3403	1352
May	1161	2320	2320	919
⊟ Q3				
August	1132	2116	2116	1161
July	984	984	984	1159
September	1448	3564	3564	1083
⊟ Q4				
December	1005	3820	3820	1448
November	1385	2815	2815	1132
October	1430	1430	1430	984

Q8) Create a new Power BI file, and load the Excel workbook from (File Name: Voting.xlsx)

Create a measure to show for any filter context the total remaining vote divided by the total electorate.

The measure should be a simple calculation of the form **SUM(X) / SUM(Y)**.

Too easy? Create another measure to show the total value for any filter context of the difference between the leave and remain votes to get something like this:

Use the SUM/**SUMX** function to sum the expression **X - Y** over the **Voting** table, where **X** = the number of leave votes and **Y** = the number of remain votes.

Result:

Area	Remain_Avg	TotalLeaveSurplus
City of Edinburgh	54.26%	-123,298
Northern Ireland	34.95%	-91,265
Glasgow City	37.42%	-83,861
Lambeth	52.93%	-81,244
Wandsworth	53.96%	-79,042
Hackney	51.08%	-60,530
Southwark	48.14%	-59,084
Brighton and Hove	50.76%	-54,621
Haringey	53.29%	-54,136
Bristol, City of	45.13%	-53,609
Islington	52.88%	-51,240
Lewisham	44.02%	-49,437
Camden	49.03%	-47,457
South Lanarkshire	41.20%	-42,544
Richmond upon Thames	56.85%	-41,986
Manchester	36.04%	-41,832
Barnet	44.84%	-39,387
Tower Hamlets	43.51%	-37,787
North Lanarkshire	37.53%	-36,149
Cardiff	41.77%	-33,972
Liverpool	37.26%	-33,352

Q9) Open the Power BI file File Name: PB5.pbix, Create a fourth table to hold your measures, and create and show two simple measures and a table to display them in:

Create two simple measures to show the **average box office takings** and **average budget** spend for each film in millions of dollars, and show the measures in a table.

Now create and show a measure called **Average profit margin** showing that the film business is a good one to be in (at least for the films listed in the table):
The profit margin for a film is defined as the box office takings minus the budget for the film, divided by the box office takings.

Result:

Certificate	Average Profit Margin	Average Box Office(m)	Average Budget(m)
U	994.24%	279.74	44.69
PG	986.12%	217.40	42.38
12	530.47%	332.05	67.65
12A	649.58%	580.47	142.32
15	936.90%	163.93	38.93
18	987.58%	109.43	21.24
Unknown		16.21	
Total	**892.45%**	**258.92**	**55.61**

Q10) Open the Power BI file (File Name: PB5.pbix), Create a table called Film measures to hold your measures:

create 3 measures.

Create a measure called **Average Box Office** to show the average box office takings (dividing by 1,000,000 to make the figures more readable):

You can right-click on the measure in the field well to apply conditional formatting by this measure (in this case to show that 12A **Fantasy** films have the highest average box office takings - although if you scroll down you'll find 12 certificate **Romance** films do even better).

Result:

Genre	U	PG	12	12A	15	18	Unknown	Total
Action		162.08	479.36	625.00	221.89	88.96		**346.09**
Adventure	68.64	301.27	252.94	800.86	289.66	120.60		**337.64**
Animation	526.32	568.59						**536.39**
Awful				737.53				**737.53**
Biography	5.77	61.52		260.68	155.89	213.73		**161.87**
Comedy	60.69	173.93	263.52	246.03	140.00	48.06		**158.85**
Crime		28.86	450.72	362.74	68.67	64.55	16.21	**74.45**
Disaster		169.83		443.50	139.70			**234.48**
Documentary				29.53				**29.53**
Drama	7.99	81.77	245.87	89.27	153.13	129.93		**116.73**
Family	198.60	222.27						**212.80**
Fantasy	35.20	596.16		931.85	130.32	131.18		**545.69**
History	30.00	120.26			141.18			**121.69**
Horror		12.00			153.75	142.58		**141.08**
Martial Arts			137.25	161.72	46.89	168.36		**121.32**
Musical	53.96	270.04			91.48			**98.69**
Mystery			351.70	511.68	485.90			**485.14**
Romance	134.99	117.84	1346.24	368.10	251.08			**334.98**
Romantic Comedy	40.00		299.30		234.30	43.40		**170.41**
Science Fiction	562.54	258.63	378.99	714.26	173.52	108.46		**383.16**
Sport	59.00	197.07		169.50		23.40		**144.66**
Total	**279.74**	**217.40**	**332.05**	**580.47**	**163.93**	**109.43**	**16.21**	**258.92**

Create another measure called **Average Profit**, to show the average difference between the box office takings and budget for each film:

Once more, 12A **Fantasy** films rule (although again, scrolling will reveal that 12 certificate **Romance** films do even better).

Result:

Genre	U	PG	12	12A	15	18	Unknown	Total
Action		83.45	364.36	451.88	163.35	57.80		**243.95**
Adventure	55.20	247.57	186.92	608.08	194.41	80.60		**259.61**
Animation	439.34	429.89						**437.09**
Awful				650.53				**650.53**
Biography	1.12	44.99		188.93	103.20	156.73		**113.39**
Comedy	53.44	140.93	229.98	187.03	122.07	34.39		**133.06**
Crime		24.22	365.72	252.74	40.88	48.69	16.21	**52.76**
Disaster		146.45		288.50	125.40			**179.33**
Documentary			-1.00	29.46				**14.23**
Drama	6.73	64.36	163.39	45.27	125.68	111.34		**93.20**
Family	157.10	143.93						**149.20**
Fantasy	28.81	475.95		744.31	100.18	91.18		**434.64**
History	23.80	95.61			72.06			**76.24**
Horror		5.69			112.18	114.75		**103.26**
Martial Arts			100.65	99.32	27.26	147.50		**90.70**
Musical	45.54	249.04			89.64			**88.50**
Mystery			276.70	421.28	335.90			**388.43**
Romance	118.99	94.12	1,235.24	298.10	238.70			**287.21**
Romantic Comedy	37.10		261.30		215.60	39.78		**155.04**
Science Fiction	523.94	199.27	280.30	552.58	113.50	80.05		**297.00**
Sport	53.50	179.07		124.50		5.40		**120.73**
Total	**234.57**	**167.53**	**255.59**	**439.18**	**119.44**	**84.44**	**16.21**	**197.23**

Create one more measure called Number of films to count the number of films for the filter context (use COUNTROWS). Create a table on a separate page to show your measures:

Genre	Certificate	Average Box Office(m)	Average profit	Number of films
Romance	12	1346.24	1,235.24	2
Fantasy	12A	931.85	744.31	11
Adventure	12A	800.86	608.08	11
Awful	12A	737.53	650.53	4
Science Fiction	12A	714.26	552.58	25
Action	12A	625.00	451.88	41
Fantasy	PG	596.16	475.95	12
Animation	PG	568.59	429.89	15
Science Fiction	U	562.54	523.94	7
Animation	U	526.32	439.34	48
Mystery	12A	511.68	421.28	5
Mystery	15	485.90	335.90	1
Action	12	479.36	364.36	4
Crime	12	450.72	365.72	1
War	12	449.22	309.22	1
Disaster	12A	443.50	288.50	2
Thriller	12A	438.88	321.88	15
Science Fiction	12	378.99	280.30	9
Romance	12A	368.10	298.10	1
Crime	12A	362.74	252.74	1
Mystery	12	351.70	276.70	1
Thriller	12	304.52	228.85	6
Adventure	PG	301.27	247.57	26
Total		**258.92**	**197.23**	**1000**