Power BI Questions (Information Technology)

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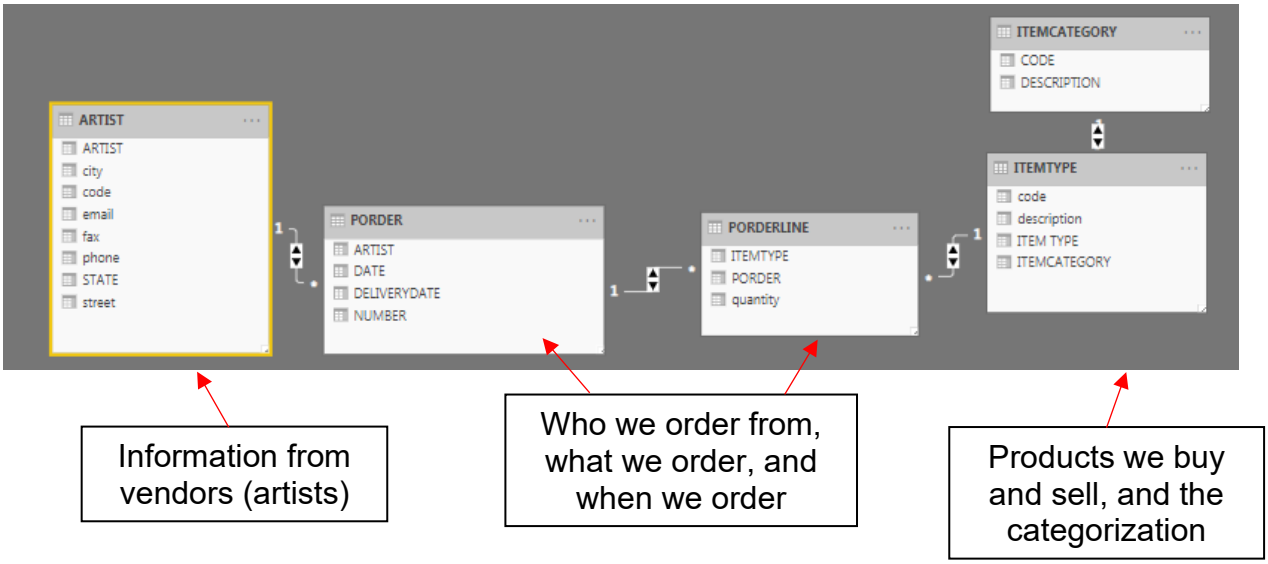
POWER BI QUESTIONS (INFORMATION TECHNOLOGY)

Question 1

You are the financial analyst of the Artist Guild of New Brunswick. The organization recently hired you because it has had issues sourcing product and has often had empty shelves because it has been unable to get enough stock. The CEO has asked you to analyze the supply of KaDo dolls, a new product, as he does not want this pattern to repeat. You have been compiling data from all KaDo doll suppliers the organization has purchased from. The data files have been loaded into Power BI for you. The file is ITE_Question_1.

First, let's have a look at the data we will be using to build our dashboard. Open the ITE_Question_1 file. Choose the Model view; now you can see the following relationships that have been built:



This diagram tells us the relationships between the data. POrder and POrderLine describe which supplier was ordered from, when the order was placed, what was ordered, and how many items were ordered. ItemCategory further categorizes KaDo products.

Now click to the Data view. This will show you the raw data that was imported. Here is a summary of the data you will be working with:

ARTIST

- code: the artist or vendor code
- ARTIST, city, email, phone, STATE, and so on: specific information for each artist

PORDER

- ARTIST: the artist or vendor code (corresponds with the “code” field from the ARTIST table)
- DATE: the order date of each sale
- DELIVERYDATE: the date of delivery
- NUMBER: the sales order number for each order

PORDERLINE

- ITEMTYPE: the code of each item type (corresponds with the code from the ITEM TYPE table)
- PORDER: the PORDER number (corresponds with the NUMBER from the PORDER table)
- quantity: quantity of items ordered for each item ordered

ITEMTYPE

- code: code for the item types
- description: detailed description of items
- ITEM TYPE: full name of each item type
- ITEMCATEGORY: the code for each category (corresponds with CODE from the ITEMCATEGORY table)

ITEMCATEGORY

- CODE: code for the name of each category
- DESCRIPTION: full name of each category

Now that you are familiar with the data, choose the Report view and use the detailed instructions below to create a dashboard that shows the following information:

a) Use a card visualization to show how many orders we have placed since we started selling the KaDo dolls.

b) Use a table visualization to show which variety of KaDo dolls we have sold the most of and the least of.

c) Use a card visualization to determine how many different varieties of KaDo dolls we have sold.

d) Use a map to identify the location of our suppliers on a new tab called “Location”.

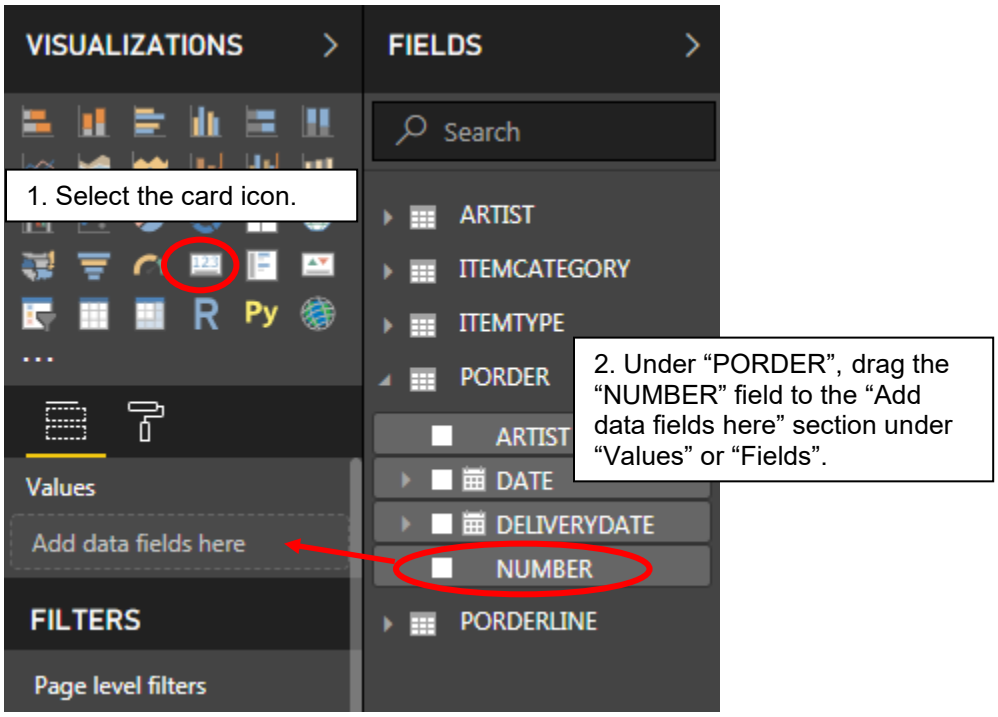
e) Create a bar chart of the number of orders by artist.

Hint: Visualizations must be selected before you can work on them. To select a visualization, simply click on it in Power BI within the visualization section of the main screen.

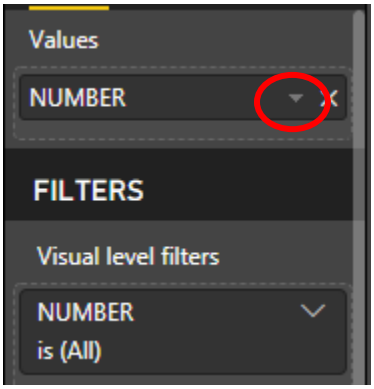
Hint: Visualizations may look slightly different depending on the version of software used and formatting done.

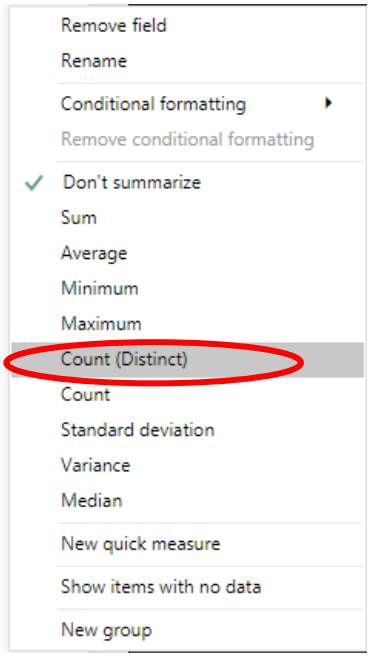
Detailed instructions:

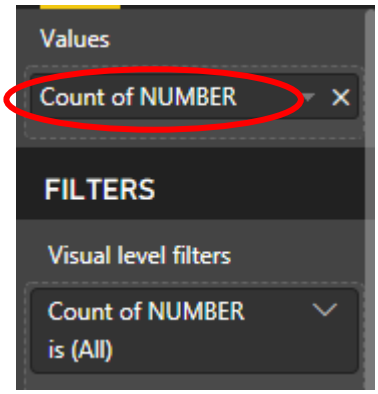
a) Use a card visualization to show how many orders we have placed since we started selling the KaDo dolls.



3. Then use the drop-down arrow to select “Count (Distinct)”. The “Values” field will change to “Count of NUMBER” — see images below and to the right.







b) Now you know that 70 orders of KaDo dolls have been made since you started selling them. The next step is to determine, of those 70 orders, which type of doll you have sold the most of and the least of.

Use a table visualization to show which variety of KaDo dolls we have sold the most of and the least of.

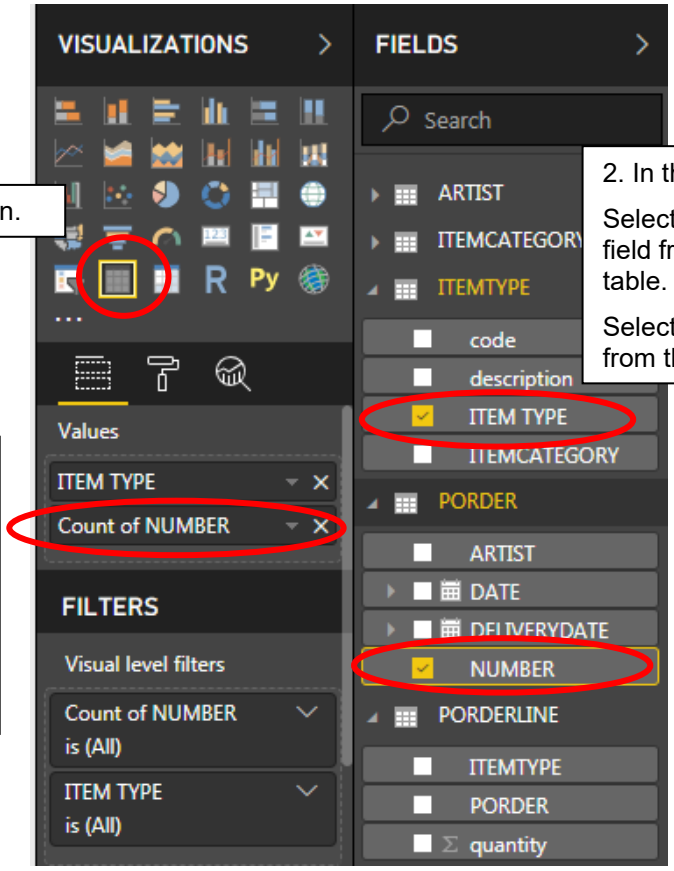
1. Select the table icon.

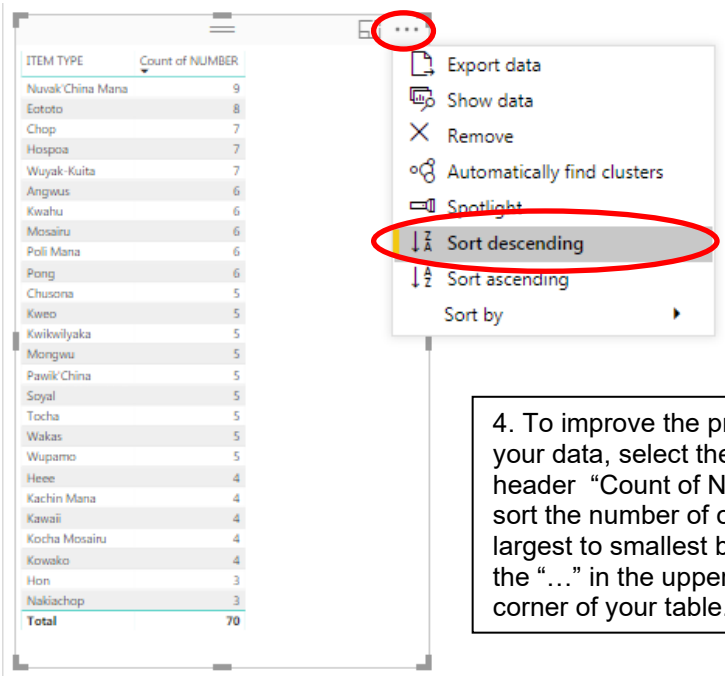
2. In the "FIELDS" section:

Select the "ITEM TYPE" field from the "ITEM TYPE" table.

Select the "NUMBER" field from the "PORDER" table.

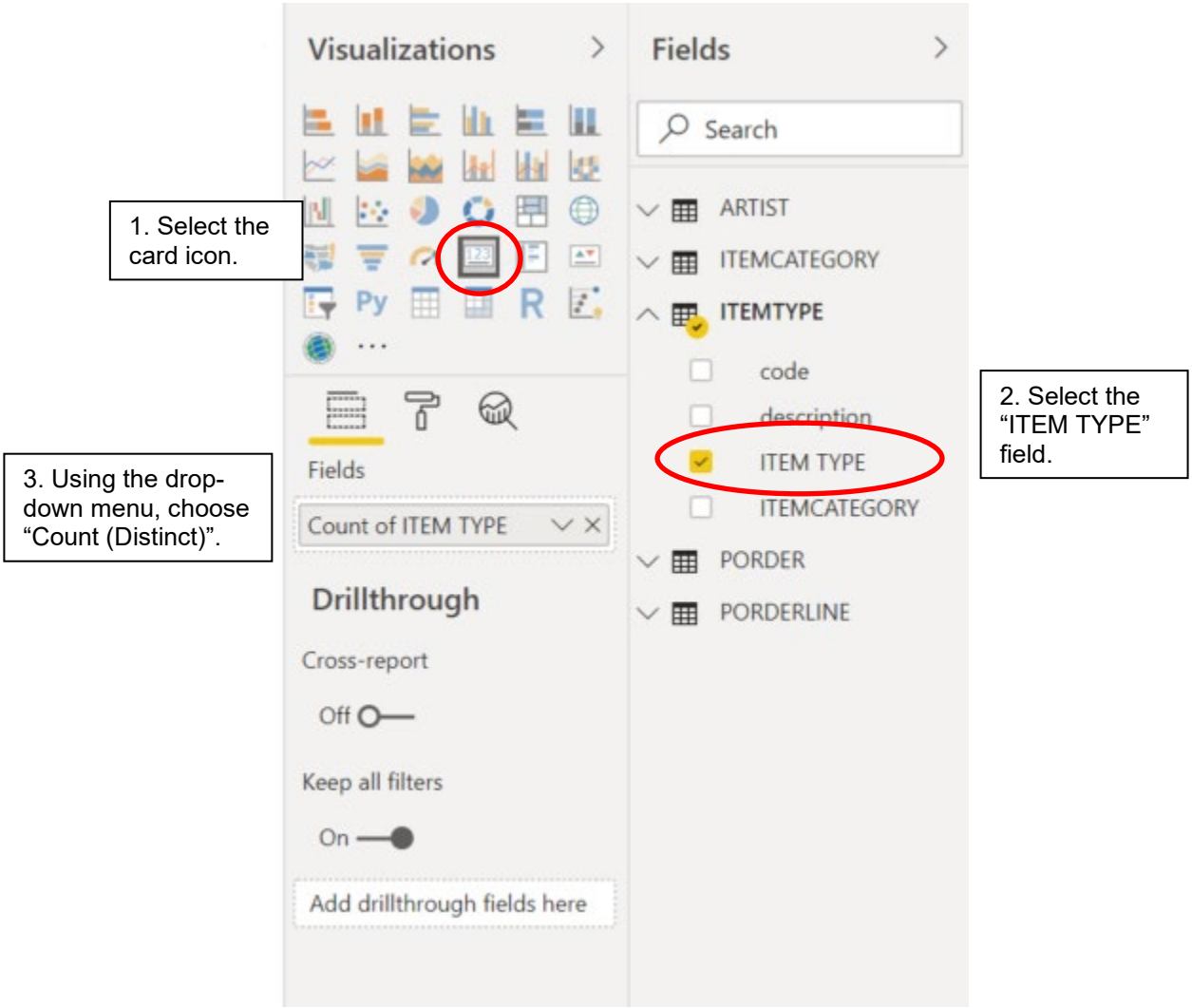
3. You now have "NUMBER" as one of your values. Use the drop-down arrow to select "Count". The "Values" field will change to "Count of NUMBER".





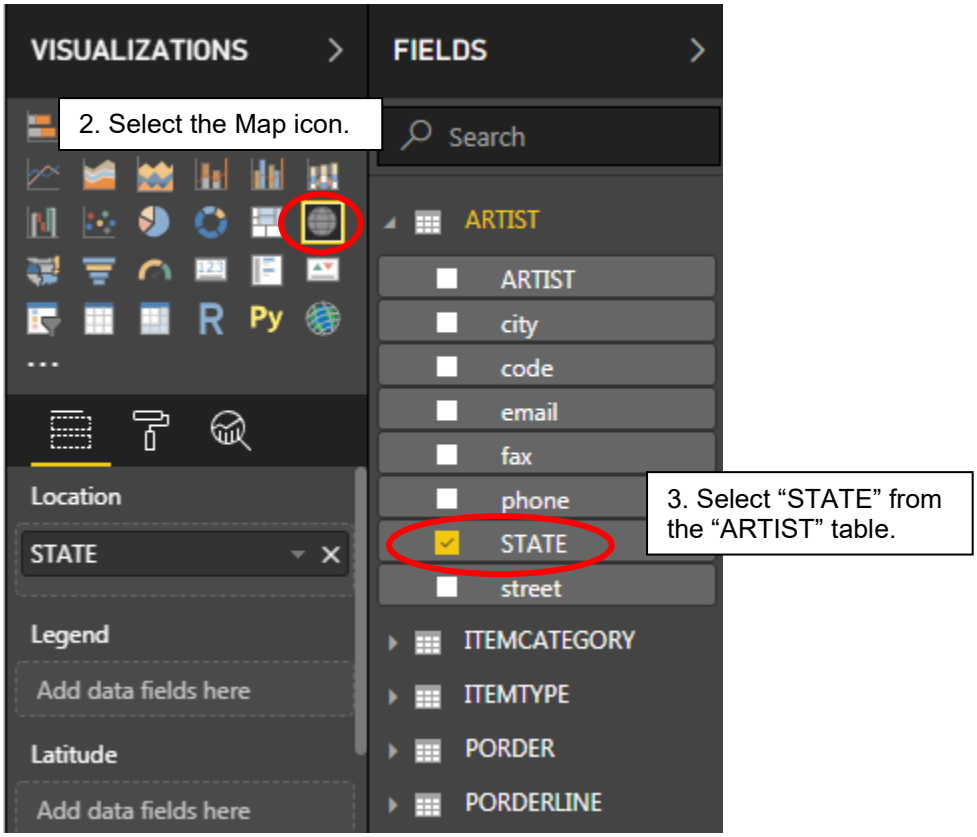
4. To improve the presentation of your data, select the column header "Count of NUMBER" and sort the number of orders from largest to smallest by expanding the "…" in the upper right-hand corner of your table.

c) Use a card visualization to determine how many different varieties of KaDo dolls we have sold.

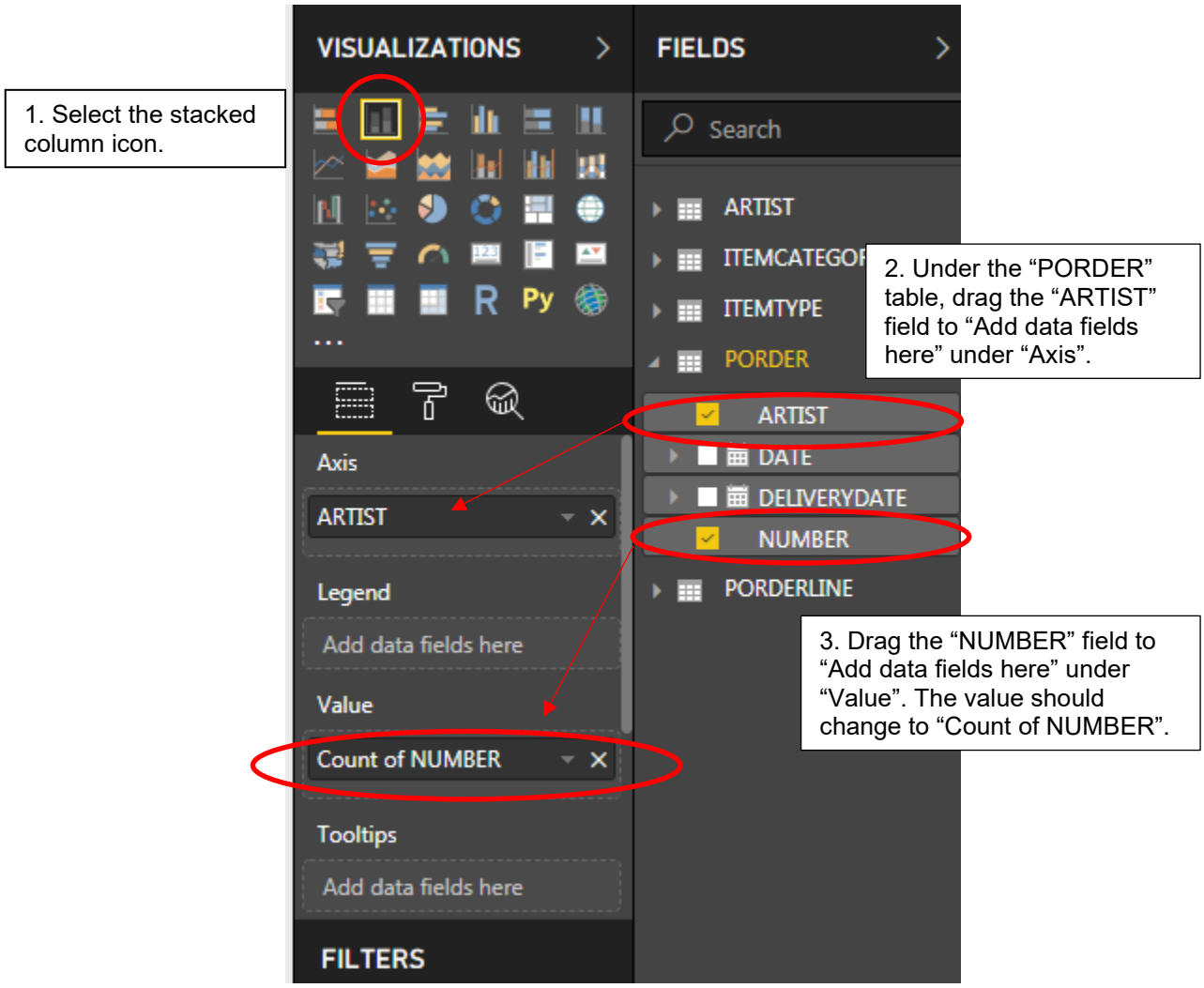


d) Use a map to identify the location of our suppliers on a new tab called “Location”.

1. Create a new tab, click on the “+” button on the bottom, left-hand side of your screen. Right-click on the new tab and select “Rename Page” from the menu that appears. Rename the tab “Location”.



e) Create a bar chart of the number of orders by artist.



Question 2

Using the Power BI file “ITE_Question_2”, create a dashboard with a pie chart that shows the following information:

Note: Step-by-step instructions are provided following this problem.

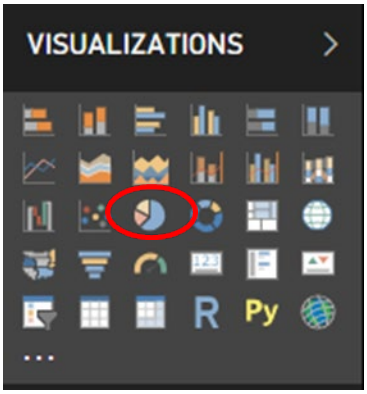
Assuming that any combined tax rate lower than 5% is considered LOW, while any combined tax rate that is 5% or higher is considered HIGH, create a pie chart that shows the percentage of states with a LOW tax rate and the percentage of states with a HIGH tax rate. Add LOW and HIGH labels to the pie chart.

The dataset provided contains the following fields:

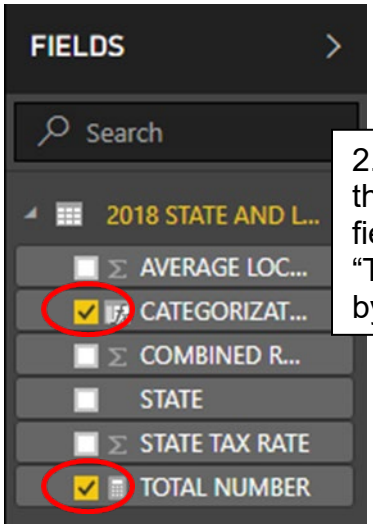
FIELD	DISCUSSION
STATE	Name of the state
STATE TAX RATE	The tax percentage on sales in a specific state
AVERAGE LOCAL TAX RATES	Local tax: tax levied by a local authority (such as county), where applicable Average local tax rate: the average of the tax rates levied by local authorities in a specific state
COMBINED RATE	STATE TAX RATE + AVERAGE LOCAL TAX RATE
CATEGORIZATION	“High” or “Low” as applicable
TOTAL NUMBER	A count of the number of states in the dataset

Step 1:

1. Select “Pie Chart” under “VISUALIZATIONS”.



Step 2:

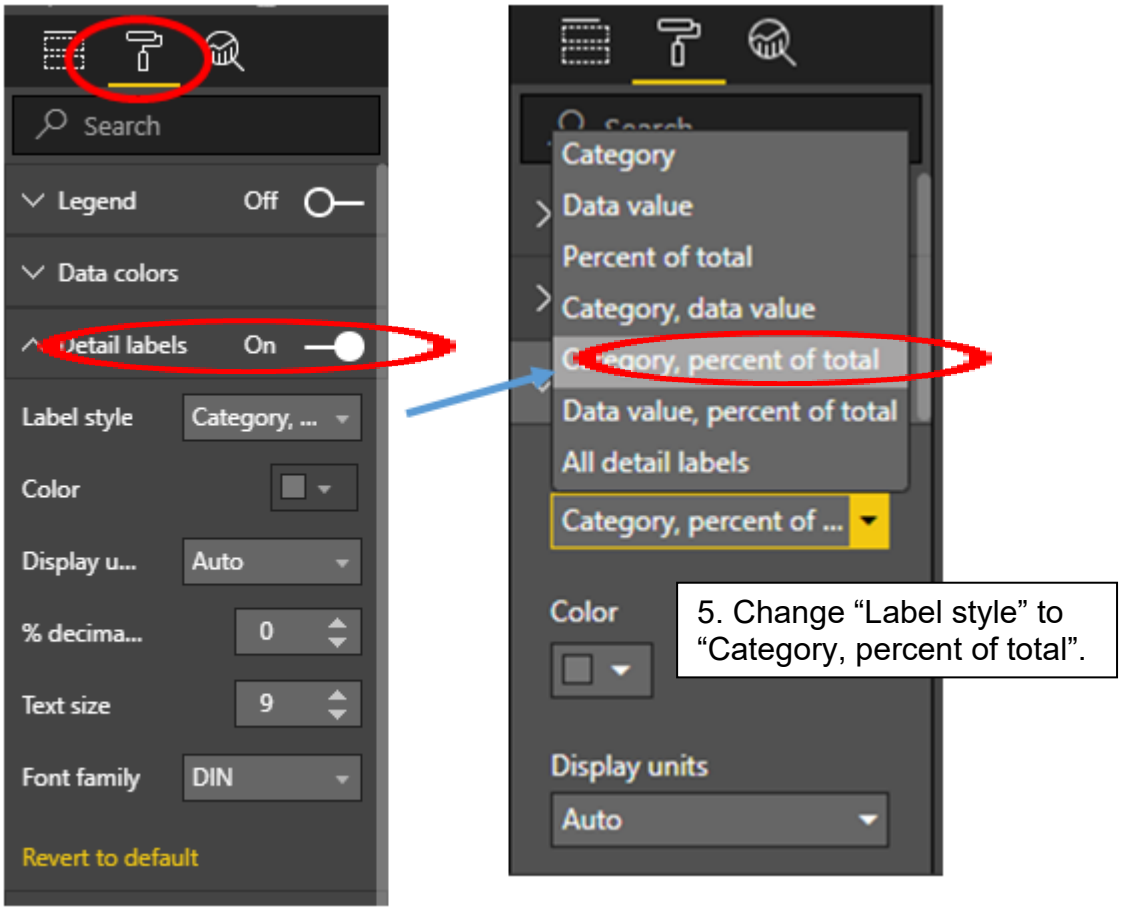


2. Under “FIELDS”, select the “CATEGORIZATION” field as well as the “TOTAL NUMBER” field by clicking on the fields.

Step 3:

3. Next, while your visualization is still selected, select the paint roller (under the “VISUALIZATIONS” area). This will open the formatting menu for your visualization.

4. Toggle “Detail labels” to “On” if it isn’t already, and then expand the “Detail labels” menu by clicking on the small arrow to the left of “Detail labels”.



Submission: Include a screenshot of the pie chart you created as your solution to Question 2.

Note: Visualization appearance will differ based on software versions and/or formatting choices.

Question 3

Use the “ITE_Question_3” file for this question. All of the information has already been imported. There is only one table: ORDERDATA.

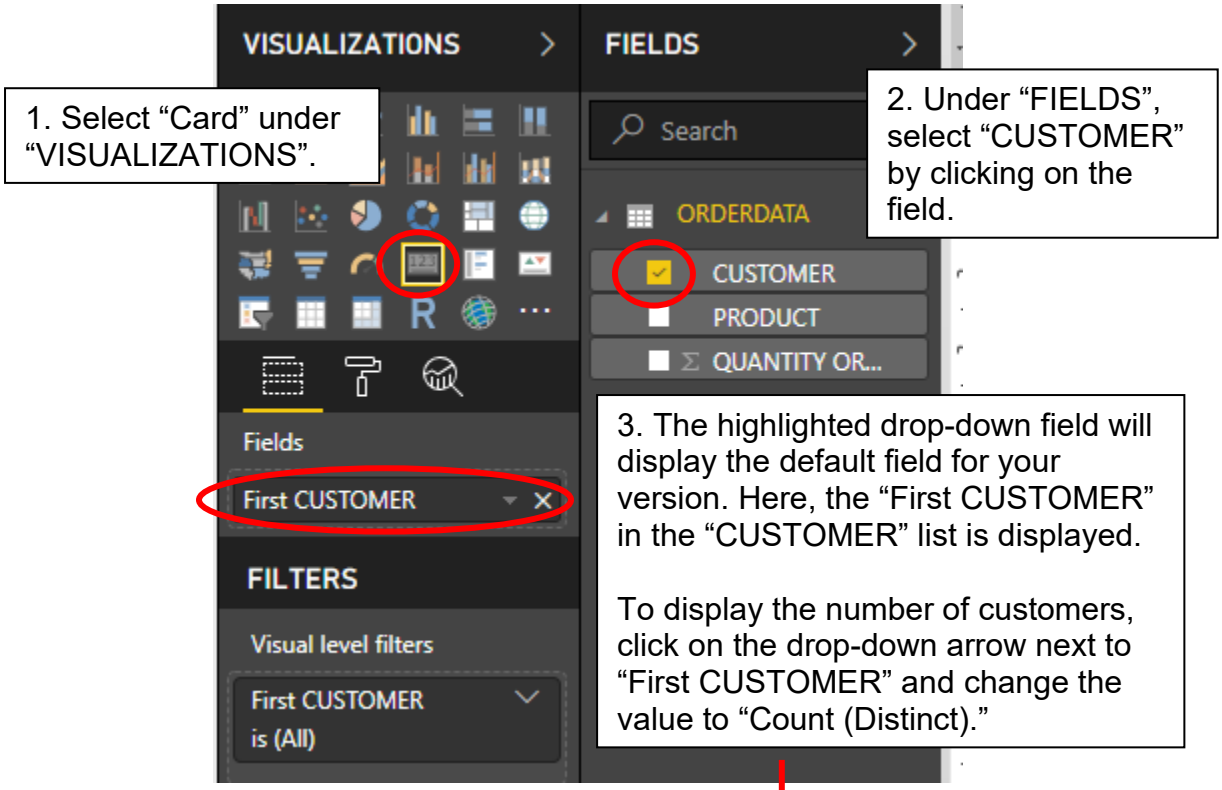
The ORDERDATA table has three columns:

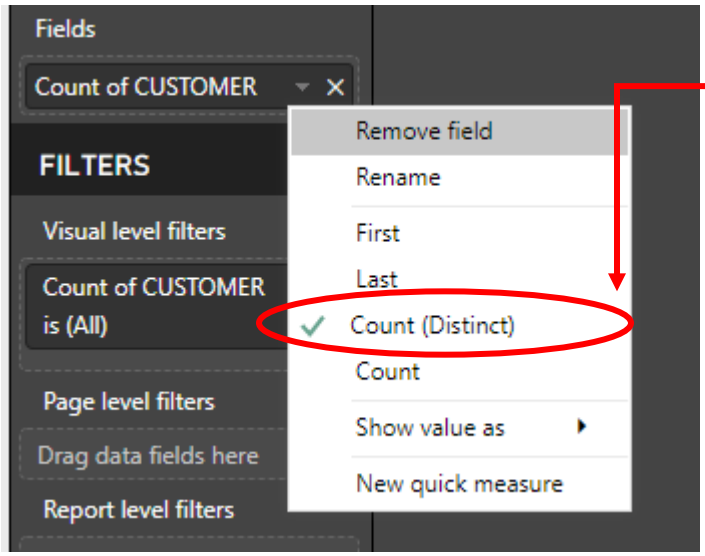
FIELD	DISCUSSION
CUSTOMER	Name of the customer
PRODUCT	Name of the product
QUANTITY ORDERED	Quantity ordered per product per customer

Use the data in the Power BI file to create a dashboard to answer the following questions:

Note: Step-by-step instructions are provided following each task.

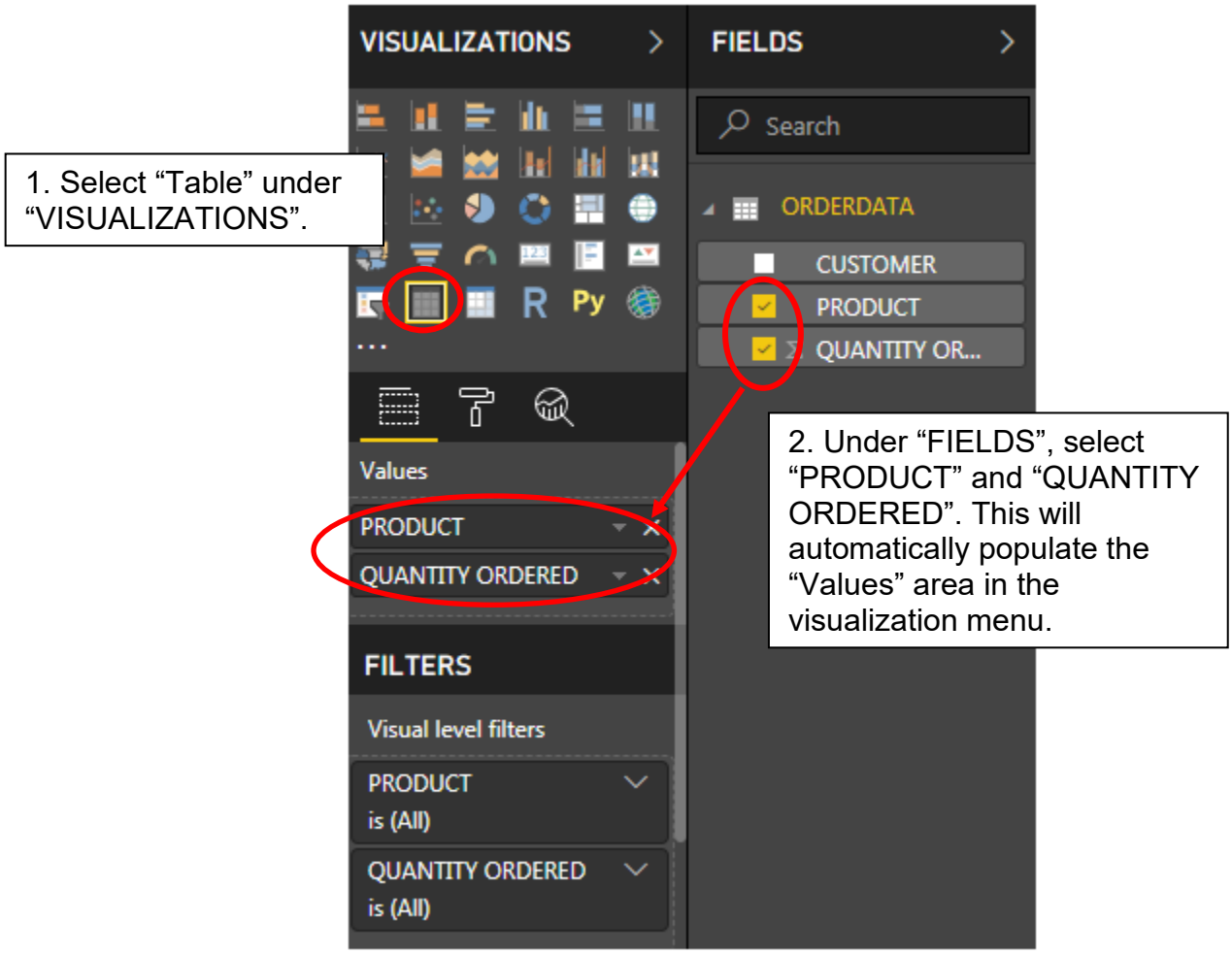
a) How many customers do we have in total?

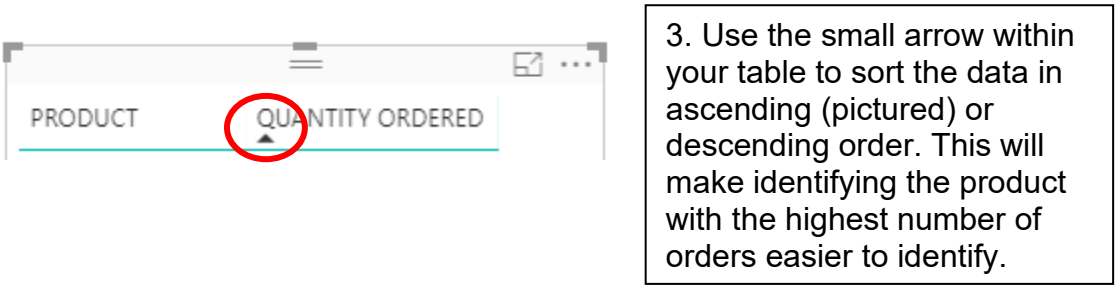




Submission: Include a screenshot of the card you created as your solution to Question 3 (a).

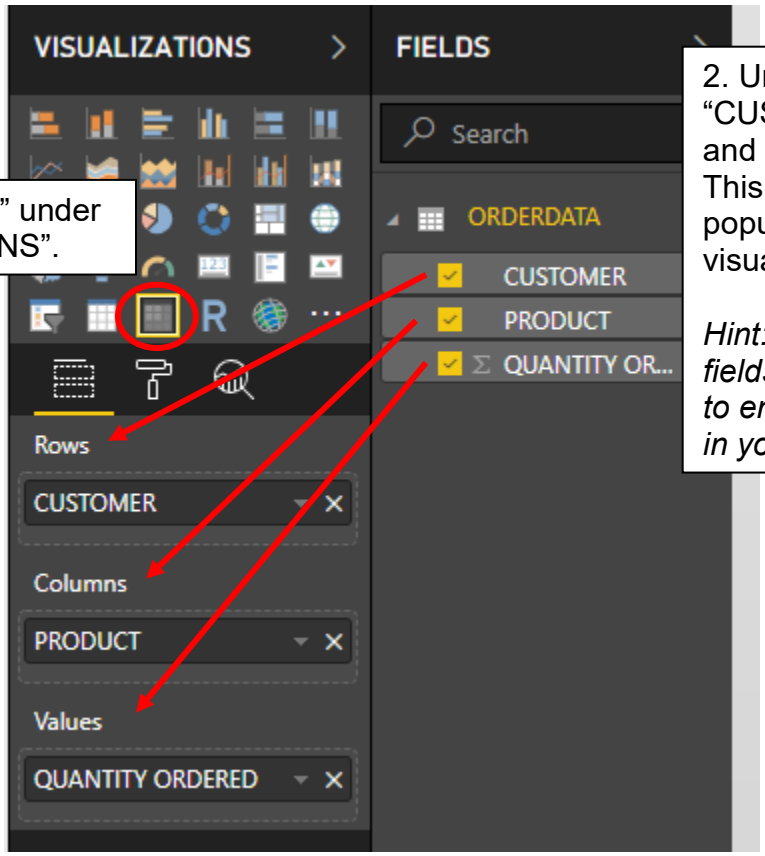
b) Which product has been ordered the most?





Submission: Include a screenshot of the table you created, as well as a line or two to identify the product with the highest order, as your solution to Question 3 (b).

c) Determine which customer has the highest number of orders and how many of each type of product was ordered.



1. Select “Matrix” under “VISUALIZATIONS”.

2. Under “FIELDS”, select “CUSTOMER”, “PRODUCT”, and “QUANTITY ORDERED”. This will automatically populate the areas in the visualization menu.

Hint: Make sure to select the fields in the order listed above to ensure the “x” and “y” axes in your matrix are correct.

3. Use the small arrow within your matrix to sort the data in ascending or descending (pictured) order. This will make identifying the customer with the highest number of orders easier to identify.

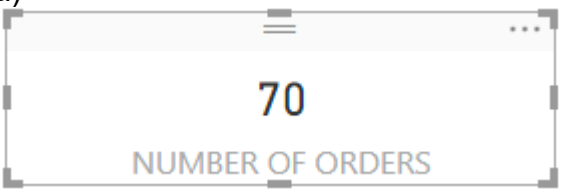
Submission: Include a screenshot of the matrix table you created, as well as a line or two to identify the customer with the highest number of orders and what they ordered, as your solution to Question 3 (c).

Solutions

Solution to Question 1

Note: Visualization appearance will differ based on software versions and/or formatting choices.

a)



b) Your table should look like this:

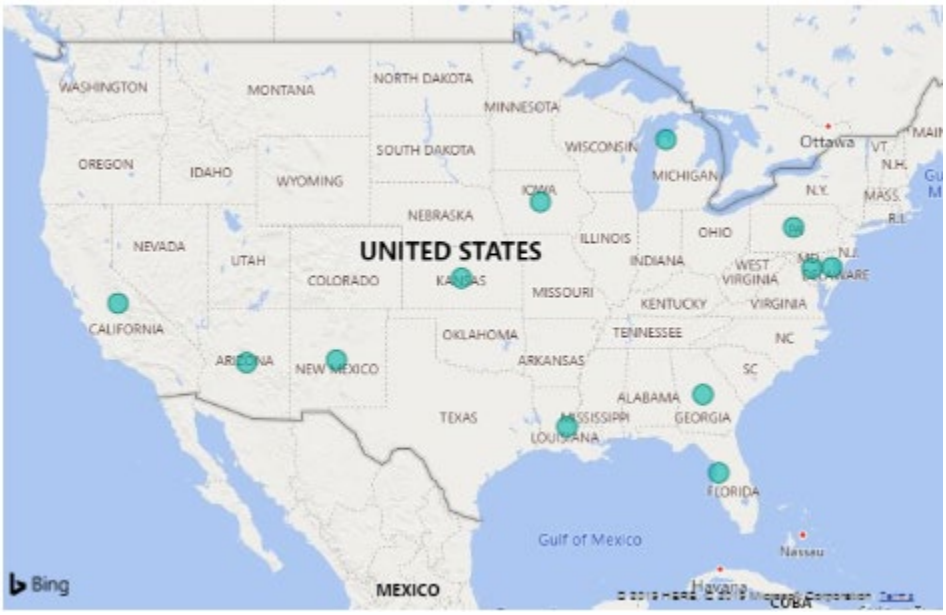
ITEM TYPE	Count of NUMBER
Nuvak'China Mana	9
Eototo	8
Chop	7
Hospoa	7
Wuyak-Kuita	7
Angwus	6
Kwahu	6
Mosairu	6
Poli Mana	6
Pong	6
Chusona	5
Kweo	5
Kwikwilyaka	5
Mongwu	5
Pawik'China	5
Soyal	5
Tocha	5
Wakas	5
Wupamo	5
Heee	4
Kachin Mana	4
Kawaii	4
Kocha Mosairu	4
Kowako	4
Hon	3
Nakiachop	3
Total	**70**

You can now easily see that we sold nine Nuvak'China Mana dolls, making this doll the most purchased, while Hon and Nakiachop are the least-purchased dolls, at three of each purchased.

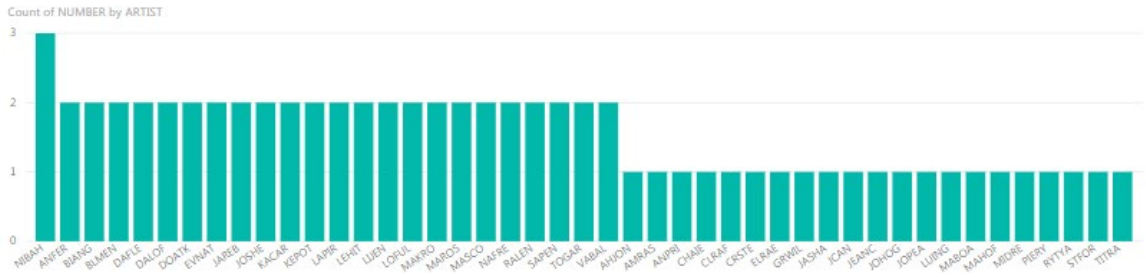
c) Your card should look like this:

You can see that you have ordered 26 varieties of dolls.

d) Your map should look like this (*note: you may need to resize your map by dragging the edges*):



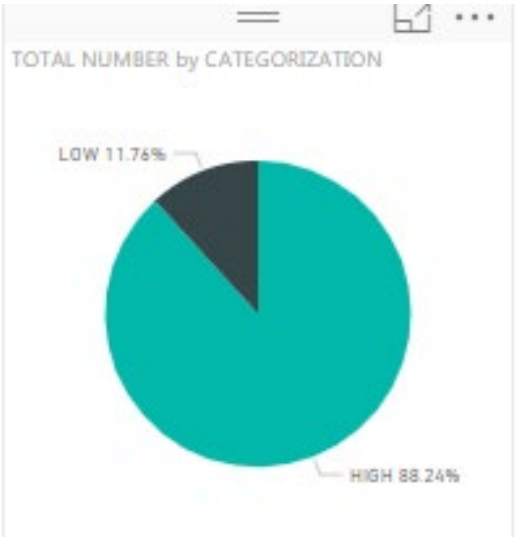
e) The bar chart should look like this (remember you may have to resize):



Solution to Question 2

Note: Visualization appearance will differ based on software versions and/or formatting choices.

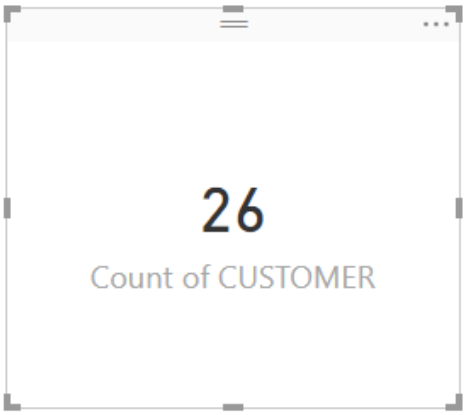
Your pie chart should resemble the following:



Solution to Question 3

Note: Visualization appearance will differ based on software versions and/or formatting choices.

a) There are 26 customers.



b) The Caramel product has been ordered the most, with 884 orders received.

PRODUCT	QUANTITY ORDERED
BELGIAN LION	156
RAISIN CLUSTERS	331
SPARTY	336
CHERRY CLUSTERS	518
PRETZEL BITES	562
GIANT SMORES	721
CARAMEL	884
Total	**3508**

c) Kristin's Kandies (KK) is the customer with the highest number of orders, at 469.

The orders include:

- 155 Caramel
- 56 Cherry Clusters
- 201 Giant Smores
- 23 Pretzel Bites
- 34 Raisin Clusters

KK has not ordered any Belgian Lion or Sparty products.

CUSTOMER	BELGIAN LION	CARAMEL	CHERRY CLUSTERS	GIANT SMORES	PRETZEL BITES	RAISIN CLUSTERS	SPARTY	Total
Kristin's Kandies		155	56	201	23	34		**469**
My-Joy Munchies			55	75	199	3		**332**
Holland Cookies			99		109	91		**299**
Broke & Sons Candy Store		198	22		23	54		**297**
Country Cricket Candies		88		111	23			**222**
Grandiose Gourmet		87	23	43	39		15	**207**
Jason's Candy Bar		31		123	21			**175**
Muskegon Deli		23	45	98				**166**
Hubsons		34	54			66		**154**
The Coffee Garden		76	32			29		**137**
Time For Tea			93			21		**114**
Dusty's Kitchen	23	34	17			10	23	**107**
Myers		12			34		56	**102**
Lion Country Safari	99							**99**
Flintstones Bakery		52			29			**81**
Aunt Patsy's Pastries	22				34	22		**78**
Collegiate Clothes							76	**76**
Brenda's Bakery		34	22		16	1		**73**
Pierre Legume							66	**66**
ABC Greenery							56	**56**
Billy Bonka Candies		11		25	12			**48**
Jane's Jello				45				**45**
Pennies Only		45						**45**
Student Supplies							44	**44**
Lansing City Zoo	12							**12**
Stacy's Card Shop		4						**4**
Total	**156**	**884**	**518**	**721**	**562**	**331**	**336**	**3508**