**Intro to Tableau lab**

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CS 48A, Professor Lankester

Open the built-in "Super Store Data" dataset in Tableau.

1. Create a bar plot of the profit for each sub-category of product. Title the plot "Profit by product sub-category, JL" but fill in your own initials instead of JL. Sort the plot so that the viewer can easily see the most and least profitable sub-categories.
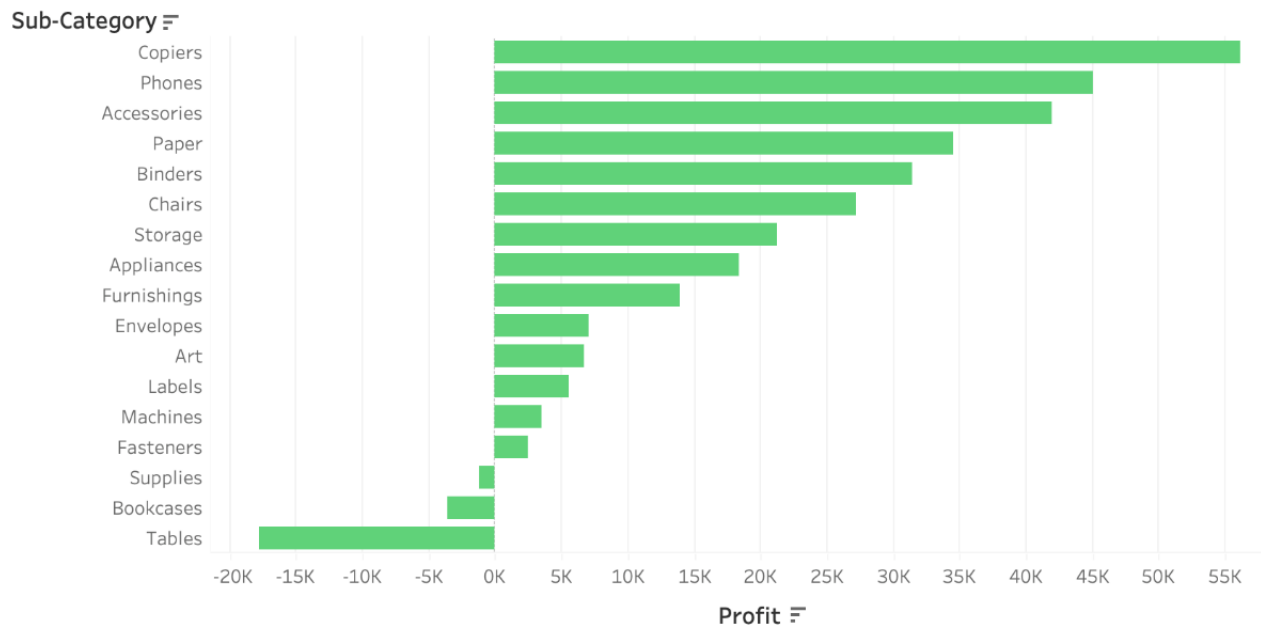
2. Create a heat map of the profit by sub-category over time. The heat map should use color, but not size, to represent the profit. Title it appropriately, including your initials in the title. Sort the heat map by most to least profitable in the last year that had complete data.
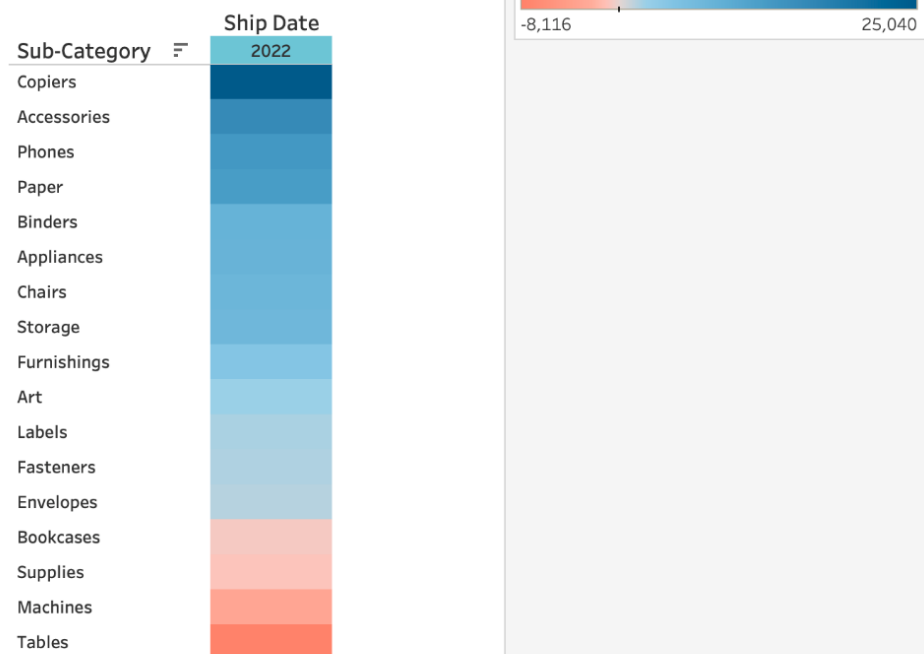
3.   Answer the following questions about the heat map:
   a. Was the color scheme automatically created in the heat map sequential or diverging?
      The color scheme was set to diverging.
   b. Why was this the best color scheme for this use case?
      Yes – because there are both negative and positive values, we want to show sub-categories with loss compared to sub-categories with profit.
   c. Why was it better to represent profit using color rather than size of the box?
      Using color on a heat map is more visually impactful in this type of plot. It is less effective to show a loss in profit denoted by size.

4.   Create a table of profit by sub-category over time. Title it appropriately. Leave the sub-categories in alphabetical order to make look up easier for the viewer.
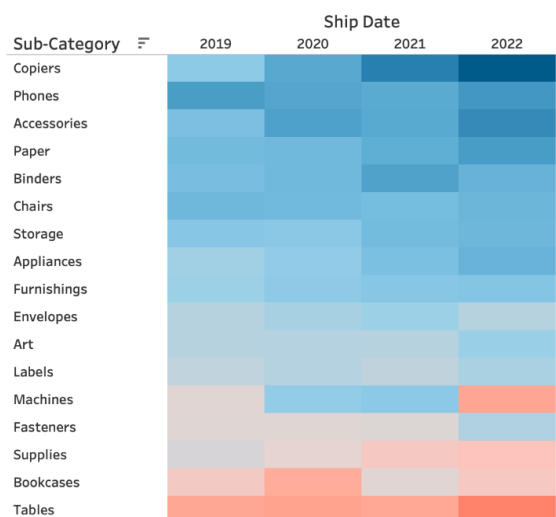
Profit by sub-category over time, AS

Sub-Category	Ship Date				
	2019	2020	2021	2022	2023
Accessories	5,352	11,248	9,651	15,686	
Appliances	2,031	3,049	5,301	7,892	57
Art	1,419	1,499	1,457	2,262	16
Binders	5,650	6,709	11,095	8,045	-73
Bookcases	-622	-2,501	148	-659	1
Chairs	6,971	6,516	5,858	7,447	431
Copiers	3,381	9,930	17,743	25,040	
Envelopes	1,473	1,877	2,196	1,442	
Fasteners	194	201	325	1,684	25
Furnishings	2,226	3,275	4,049	4,229	113
Labels	1,107	1,503	1,158	1,771	35
Machines	120	2,979	3,581	-3,218	
Paper	6,396	6,732	9,085	12,170	129
Phones	12,072	10,449	9,555	12,946	29
Storage	4,072	3,636	6,244	7,100	232
Supplies	483	-10	-709	-941	5
Tables	-3,018	-3,692	-2,926	-8,116	

Optional:

5.   Filter out the following year's data, which is incomplete, from the last two plots.
      When filtering out data from 2023, plot 1 still looks fairly similar. However, see below for plot 2 and table 1 when data from 2023 is omitted:

Profit by sub-category over time, AS

Sub-Category	Ship Date			
	2019	2020	2021	2022
Copiers				
Phones				
Accessories				
Paper				
Binders				
Chairs				
Storage				
Appliances				
Furnishings				
Envelopes				
Art				
Labels				
Machines				
Fasteners				
Supplies				
Bookcases				
Tables				

SUM(Profit)
-8,012   25,040

Profit by sub-category over time, AS

Sub-Category	Ship Date			
	2019	2020	2021	2022
Accessories	5,352	11,248	9,651	15,644
Appliances	2,031	3,049	5,301	7,892
Art	1,419	1,499	1,457	2,262
Binders	5,650	6,709	11,095	8,051
Bookcases	-622	-2,501	148	-659
Chairs	6,971	6,516	5,858	7,376
Copiers	3,381	9,930	17,743	25,040
Envelopes	1,473	1,877	2,196	1,442
Fasteners	194	201	325	1,669
Furnishings	2,226	3,275	4,049	4,206
Labels	1,107	1,503	1,158	1,771
Machines	120	2,979	3,581	-3,218
Paper	6,396	6,732	9,085	12,170
Phones	12,072	10,449	9,555	12,946
Storage	4,072	3,636	6,244	7,100
Supplies	483	-10	-709	-941
Tables	-3,018	-3,692	-2,926	-8,012

6. Create an annotated heat map, that is, a heat map that has the tabular numbers in the boxes as well as the colors representing the profit.

Profit by sub-category over time, AS

SUM(Profit)

-8,012 ▬▬▬▬▬▬▬ 25,040

Sub-Category	2019	2020	2021	2022
Copiers	3,381	9,930	17,743	25,040
Phones	12,072	10,449	9,555	12,946
Accessories	5,352	11,248	9,651	15,644
Paper	6,396	6,732	9,085	12,170
Binders	5,650	6,709	11,095	8,051
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Appliances	2,031	3,049	5,301	7,892
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Machines	120	2,979	3,581	-3,218
Fasteners	194	201	325	1,669
Supplies	483	-10	-709	-941
Bookcases	-622	-2,501	148	-659
Tables	-3,018	-3,692	-2,926	-8,012

Ship Date