COLLEGE OF ENGINEERING
COMPUTER SCIENCE
VIRGINIA TECH

Information Visualization

CS 5764

LAB # 3

In this LAB, you will practice different plots from the Matplotlib package. The dataset for this LAB is "Sample super store" which can be found on the course GitHub. Display numbers with 2-digit decimal precisions. Use the 'seaborn-whitegrid' matplotlib style.

1. Load the "Sample – Superstore.xls" dataset from the course GitHub. Drop the following features from the dataset. Display the first 5 rows of the dataset with the removed features. [5pts]

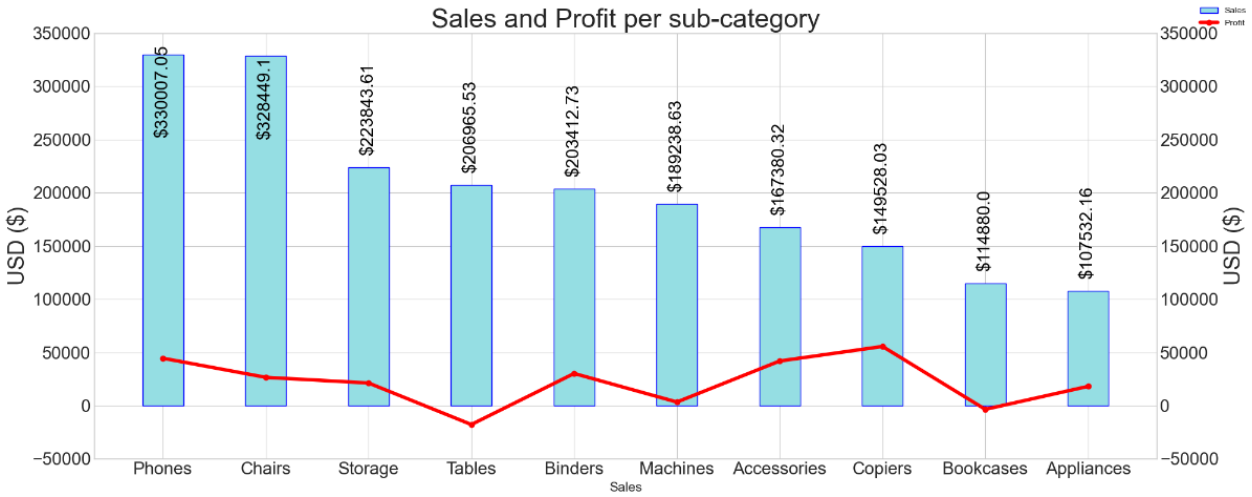
```
['Row ID', 'Order ID', 'Customer ID','Customer Name', 'Postal Code',
'Product ID','Order Date', 'Ship Date', 'Country', 'Segment']
```

2. Using matplotlib package, develop a code that generates a 2x2 subplot and displays the total profit, total discount, total quantity, and total sales in each "Category" in percentage using **pie chart**. Which category has the maximum and minimum in each plot? Using the explode option, pop-up the minimum category in each plot. Display the max and min on the console. [20pts]
   a. Figure size 18x18.
   b. Subplot title: 'family'-> 'serif', 'color'->'blue', 'size'->35
   c. No need for legend
   d. Pie text font size: 30

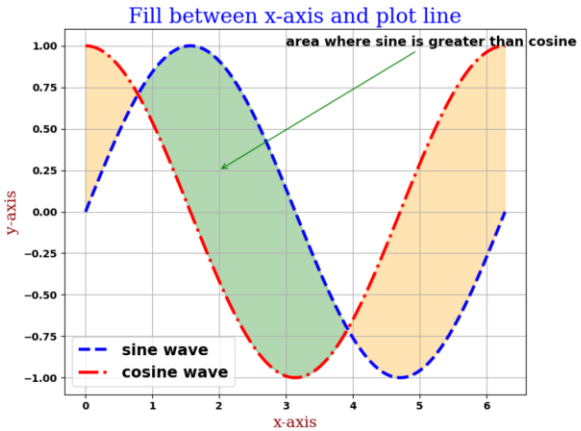
3. Create the following table for the previous question. [10pts]

Super store - Category				
	Sales ($)	Quantity	Discounts ($)	Profit ($)
'Furniture'				
'Office Supplies'				
'Technology'				
Maximum Value				
Minimum Value				
Maximum feature				
Minimum feature				

4. Using matplotlib package, develop a code that generates the following plot. [20pts]
    a. Bar width = 0.4
    b. Fig size = 20,8
    c. Y & X label font size = 25
    d. Y & X tick label size = 20
    e. Figure title = 30
    f. Vertical numbers on the bar font size = 20
    g. Profit line width 4
    h. Bar plot edge color: blue, color: #95DEE3

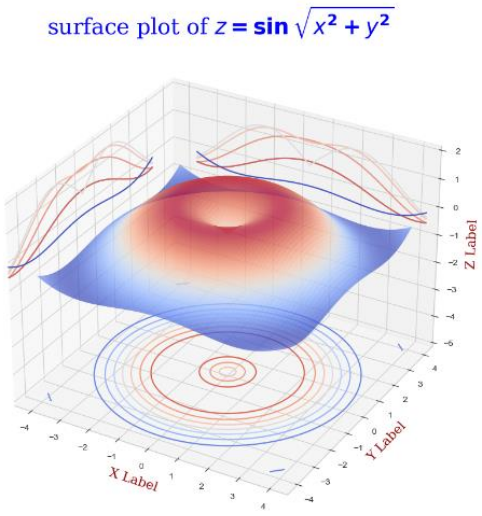


5. Using matplotlib package, develop a code that generates the following plot. $x \in [0,2\pi]$ [10pts]
    a. Line width = 3
    b. Legend font size = 15
    c. Highlighted area color : green and orange with alpha = 0.3
    d. Title : {'family':'serif', 'color':'blue', 'size':20}
    e. x & y label : {'family':'serif', 'color':'darkred', 'size':15}



6. Using matplotlib package, develop a code that generates the following 3D plot and the corresponding contours on the x, y & z axis. The number of observations 800 [0.01 interval]. [15pts]

a. Color = ‘coolwarm’
b. Linewdth = 1
c. Figure size = 10,10
d. Axis font: 'family':'serif', 'color':'darkred','size':15
e. Title font: {'family':'serif', 'color':'blue', 'size':25}



7. Using matplotlib package, develop a code that generates the following subplot. [20pts]
   a. No need for explode in the pie chart.
   b. Bar plot [sales] color= '#95DEE3', edgecolor='blue'
   c. Bar plot [profit] color= lightcoral, edgecolor=’red’
   d. Figure size 9,7
   e. Bar Width = 0.4
   f. Title fonts size 15 the rest of axis fonts 10.